



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Recommendation Two

Instruction, Assessment, and Intervention

"One paramount characteristic of great teaching is the facilitation of activities during which learning happens. Great teaching is a series of purposeful acts, professional judgments, and designed decisions based on experience and theory about how learning happens best. Although learning may occur with or without great teaching, learning is enriched, enhanced, and empowered by the actions of a teacher whose clarity of purpose and artful execution of experiences orchestrate moments of insight and feelings of success. Rather than being left to chance, moments that maximize learning are the direct result of a conscientious, knowledgeable, reflective teacher."¹

Recommendation 2 — Instruction, Assessment, and Intervention

Engage middle grades students with challenging lessons and opportunities to think critically and demonstrate their learning in a variety of ways. Differentiate strategies to deliver standards-based, grade-level instruction that reflects individual student needs and results from ongoing common assessments. Use data on individual students' progress to deliver appropriate, accelerated classroom and schoolwide academic interventions and enrichment opportunities.

Instruction, Assessment, and Intervention is one of the Recommendations in the Focus Area on [Academic Excellence](#).

Instruction, assessment, and intervention each have strong ties to academic excellence. Although many people associate assessment with accountability (Refer to Recommendation Eleven—" [Accountability](#)"), assessment is, in fact, critical to instruction and intervention.

The three sections of this Recommendation mirror the three questions Dr. Rick DuFour encourages professional learning communities to use to improve student achievement.

- The first—what do we want students to know?—forms the basis of the section on instruction.
- The second—how will we know when they learn it?—guides the section on assessment.
- The third—how do we respond when students experience difficulty?—is the focus of the discussion in the section on interventions.²

Contents

[Instruction](#) | [Assessment](#) | [Intervention](#)

[Instruction](#) - How to Teach What all Students Must Learn

- [Standards-Based Content](#)

- [Instructional Strategies](#)
- [Instructional Content Areas](#)
 - ◆ [English-language arts instruction](#)
 - ▶ [Teaching writing](#)
 - ▶ [English language development \(ELD\)](#)
 - ▶ [Bilingual instruction](#)
 - ◆ [Mathematics instruction](#)
 - ▶ [Algebra](#)
 - ◆ [Science instruction](#)
 - ◆ [History-social science instruction](#)
 - ◆ [Foreign/world languages](#)
 - ◆ [Visual and performing arts](#)
 - ◆ [Career technical education](#)
 - ◆ [Physical education](#)
 - ◆ [Health education](#)
- [Differentiated Instruction](#)
 - ◆ [Direct instruction](#)
 - ◆ [Study skills—teaching students how to learn](#)
 - ◆ [Questioning strategies](#)
 - ◆ [Connections to prior knowledge](#)
 - ◆ [Scaffolding](#)
 - ◆ [Homework](#)
 - ◆ [Student grouping \(flexible\)](#)
 - ◆ [Educational technology \(Ed Tech\)](#)
- [Teaching Students with Special Needs](#)
 - ◆ [Response to intervention and special education](#)
 - ◆ [Least restrictive environment](#)
 - ◆ [Gifted students](#)
 - ◆ [Alternative education options](#)

[Back to Contents](#)

[Assessment](#) - How to Know When Each Student has Acquired the Knowledge and Skills

- [Assessment Purposes](#)
 - ◆ [Assessment for continual progress monitoring](#)
 - ◆ [Assessment for program planning](#)
 - ◆ [Assessment for decision making](#)
 - ◆ [Assessment for curriculum development](#)
- [The Elementary and Secondary Education Act \(No Child Left Behind\) Assessment Requirements](#)
 - ◆ [California's Assessment System](#)
 - ◆ [Standardized Testing and Reporting \(STAR\) Program](#)
 - ◆ [CSTs](#)
 - ◆ [California Writing Standards Test in Grade Seven](#)
 - ◆ [CAHSEE and the middle grades](#)
 - ◆ [STAR CST Blueprints](#)
 - ◆ [English language proficiency and the California English Language Development Test \(CELDT\)](#)
 - ◆ [Primary language assessment](#)
 - ◆ [California Alternate Performance Assessment \(CAPA\)](#)
 - ◆ [California Modified Assessment \(CMA\)](#)
- [Assessing Students with Special Needs](#)
 - ◆ [California Alternate Performance Assessment \(CAPA\) and English Learners](#)
- [Local Assessment Data Collection and Analysis](#)

- ◊ [Common benchmark assessments](#)
- ◊ [Authentic assessments](#)
- ◊ [Rubrics](#)
- ◊ [Test preparation](#)
- ◊ [Data management](#)
- ◊ [Test interpretation](#)
- ◊ [Test celebrations](#)

[Back to Contents](#)

[Intervention](#) - How to Respond When Students Experience Difficulty

- [Response to Instruction and Intervention \(RTI²\)](#)
- [Types of Accelerated Academic Interventions](#)
 - ◊ [Benchmark interventions—reinforcement](#)
 - ◊ [Strategic interventions—reteaching](#)
 - ◊ [Intensive interventions—teaching](#)
- [Schedule Implications](#)
 - ◊ [Before, during, and after-school programs](#)
 - ◊ [Tutoring and homework centers](#)
 - ◊ [After-school academies](#)
 - ◊ [Saturday school](#)
 - ◊ [Summer school options](#)
 - ◊ [Retention options](#)
- [Interventions for Bilingual Students](#)
- [Interventions in English Language Arts](#)
- [Interventions for Mathematics](#)

[Back to Contents](#)

[Recommendations for Success Index](#)

Footnotes

¹Mark Reardon and Seth Derner, "Strategies for Great Teaching: Maximize Learning Moments" *Prufrock Press Inc.*, (2009), 10

²Richard DuFour, "[What Is a Professional Learning Community?](#)" (PDF; Outside Source) *Educational Leadership*, Vol. 61, No. 8 (May 2004) 6-11.

[Back to Top](#)

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



**Recommendation 2:
Instruction,
Assessment, and
Intervention**

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Instruction

How to Teach What all Students Must Learn

The California academic content standards identify what students must learn at each grade level. However, the diversity of California's student population and the many skill levels in the middle grades require masterful instruction that engages even the most reticent and resistant young adolescents.

The National Forum to Accelerate Middle Grades Reform identifies in its [School Self-Study and Rating Rubric](#) (DOC; 575KB; 9pp.) important aspects of instruction:

- Curriculum, instruction, assessment, and appropriate academic interventions are aligned with high standards.
- The curriculum emphasizes deep understanding of important concepts and the development of essential skills.
- Instructional strategies include a variety of challenging and engaging activities that are clearly related to the grade-level standards, concepts, and skills being taught.
- Teachers use a variety of methods to assess and monitor the progress of student learning (e.g., tests, quizzes, assignments, exhibitions, projects, performance tasks, portfolios).
- Teachers know what each student has learned and still needs to learn.

Related Links

- [School Self-Study and Rating Rubric](#) (DOC; 575KB; 9pp.)
- [School Self-Study and Rating Rubric Tool](#) (DOC; 658 KB; 20pp.)
- [School Self-Study and Rating Rubric Tool Manual](#) (DOC; 305KB; 16pp.)

Previous

[Recommendation 2 - Instruction, Assessment, Intervention](#)

Next

[Standards-based content](#)

[Back to Top](#)

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations
for Success](#)
[Recommendations
in Action](#)
[Standards and
Testing](#)
[Stakeholder
Organizations](#)
[References and
Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent
Development](#)
[Practices In the
Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
TCSII

Standards-Based Content

As noted in Recommendation One, [Rigor](#), California's standards are part of a coherent system that includes content standards (what to teach), recommended and required instructional minutes,¹ adopted instructional materials, assessments, and accountability. Based on current research in education and in the subject area, the [curriculum frameworks](#) provide a firm foundation for curriculum and instruction by describing the scope and sequence of knowledge and the skills that all students are expected to master. The frameworks are dedicated to the balance of factual knowledge, fundamental skills, and the application of knowledge and skills.²

[Adopted instructional materials](#) represent those approved by the California State Board of Education because they meet the criteria for adoption. For more on materials adoption, refer to the CDE [Instructional Materials Adoptions](#) on the California Department of Education Web site.

Although the California standards system does not specifically dictate methods of instruction, it does outline the curricular content. English language arts and mathematics are necessary, but California *Education Code* (EC) Section 51220 requires that local school districts offer a broad course of study for grades seven to twelve in the following areas of study:

- a. English, including literature, language, composition and the skills of reading, listening, and speaking
- b. social sciences including anthropology, economics, geography, history, political science, psychology, sociology, history, and government of California and the United States of America; American legal system and the state and federal constitutions; American economic system, eastern and western cultures and civilizations; human rights issues (i.e. genocide, slavery, and the Holocaust), and contemporary issues
- c. foreign language or languages, understanding, speaking, reading, and writing the particular language
- d. physical education, with emphasis given to physical activities conducive to health and to vigor of body and mind, as required by *EC* Section 51222
- e. science, physical and biological, scientific investigation, humans in ecological systems, interrelation and interdependence of the sciences
- f. mathematics, designed to develop mathematical understandings, operational skills, and insight into problem-solving procedures
- g. visual and performing arts, including dance, music, theater, and visual arts
- h. applied arts, consumer education, homemaking education, business education, and agriculture
- i. vocational, technical, career education for employment preparation

j. other studies as may be prescribed by the governing board

For the purposes of the highly qualified teacher provisions of federal law, the NCLB defines ten core academic subject areas: English, reading/language arts, mathematics, science, foreign languages, civics/government, economics, arts, history, and geography.⁴

Previous

[Recommendation 2 - Instruction](#)

Next

[Instructional strategies](#)

Footnotes

¹ [Middle Grades Courses of Study and Instructional Time](#) (DOC; 107KB; 9pp, September 2007).

² [Fact Book 2009—Handbook of Education Information](#) (PDF; 1.09MB; 155pp.). Sacramento: California Department of Education, 2009, 75.

³ [Frequently Asked Questions](#)—From parents, educators, and school boards on middle grades education. Sacramento: California Department of Education.

⁴ [NCLB Teacher Requirements Resource Guide](#) (PDF; 249KB; 40pp.). Sacramento: California Department of Education, December 2007.

[Back to Top](#)

[Print](#)

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Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Instructional Strategies

The art or science of instruction is critical to the success of standards-based reform. While state and federal mandates outline course content by grade level, it is the teacher who makes that content come to life in students' imaginations and ignites them with a passion for learning. Effective teachers infuse learning with drama, excitement, and novelty. Without that human inspiration through masterful teaching, many young adolescents will fail to see the reason for or value in learning required course material.

Technically, teachers learn the art of instruction in their teacher-preparation courses. However, there is no middle grades credential, so teachers either learn elementary [pedagogy](#) that is tailored to young learners, or they learn to teach content as secondary education subject specialists. In many cases, neither the elementary nor secondary credentialing program specializes in learning how to teach young adolescents.

As a result, it is up to principals, school leadership teams, district office personnel, and county offices of education to provide professional development experiences at the middle grades level that will help each instructor learn about what works in teaching young adolescents. Refer to [Recommendation 10—Professional Learning](#), for more on this subject. Team members can help one another learn how to differentiate learning for middle grades students through the following strategies:

- [Direct instruction](#)
- Visual cues (pictures, diagrams)
- Vicarious experiences (videos)
- Simulated experiences (computer simulations, class work on models)
- Brain-based learning, [Brain Compatible Learning Links](#), (Outside Source) ETTC Educational Technology Training Center
- Constructivism, or inquiry-based learning (direct experiences such as project-based learning, laboratory work, explorations, discovery, or field trips)

Skilled instruction ensures that learning transfer, or the ability to learn in one situation and then use that learning in other situations, occurs. Deep understanding of initial learning is necessary for transfer of learning to happen. Research indicates the kinds of learning experiences that support transfer include:

- Students appear to have more success transferring knowledge when teachers help them create abstract representations of the concept.
- Transfer is best viewed as an active, dynamic process rather than a passive end product of a particular set of learning experiences.
- All new learning involves transfer based on previous learning, and this fact has important implications for the design of instruction that helps students learn.¹

Related Links

- [Differentiated instruction](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Doing What Work: research-based education practices online](#), (Outside Source), U.S.

Department of Education.

- [The National Student Research Center: Serving Students, Teachers, and Parents Around the World](#) (Outside Source)

Previous

[Standards-based content](#)

Next

[Instructional Content Areas](#)

Footnote

¹National Research Council, How People Learn: Brain, Mind, Experience, and School (Chapter Three). John D. Bransford; A. L. Brown; and R. R. Cocking, editors. Washington, D.C.: National Academies Press, 1999.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



**Recommendation 2:
Instruction,
Assessment, and
Intervention**

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Instructional content areas

- [Career technical education](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [English-language arts instruction](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Foreign/world languages](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Health education](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [History-social science instruction](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Mathematics instruction](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Physical education](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Science instruction](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Visual and performing arts](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.

Previous

[Instructional strategies](#)

Next

[English language arts instruction](#)

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

English-language arts instruction

As noted in Recommendation 1—Rigor, [academic literacy](#) includes vocabulary development, comprehension activities, writing, listening, and speaking. Since academic literacy strategies are necessary for all subjects in the middle grades, members of the English language arts department often play a lead role in helping members of their grade-level team teach academic literacy within their content areas.

English-language arts change dramatically in the middle grades, causing some educators to say that in elementary school, children **learn to read**, but by middle school children need to **read to learn**. In elementary school, the English language arts content standards emphasize development of phonemic awareness, decoding, basic comprehension, and writing conventions (such as sentence and paragraph structure). The middle grades content standards build on these skills but emphasize expository writing, word analysis, and the reading of informational materials.

The U.S. Department of Education has expanded its Doing What Works (DWW) Web site to include new materials designed to help educators improve [adolescent literacy](#) (Outside Source) at the middle and high school levels.

Four major learning modules comprise the adolescent literacy section:

1. Vocabulary Instruction
2. Comprehension Strategies
3. Engaging Text Discussions
4. Intensive Intervention

DWW organizes content for each practice into four areas:

1. The **Practice Summary** provides an overview of a practice and the issues it addresses.
2. The **Learn What Works** section provides information from experts through video interviews—a way to understand the research behind the practice.
3. The **See How It Works** section offers access to examples of schools engaged in these practices through both video and audio presentations.
4. The **Do What Works** section provides tools such as classroom observation templates, workshop overviews, and self-assessments to help one improve his/her own practice.

The site also includes:

- **Overview Media and Materials** providing a visual overview of the four recommended practices and an expert interview.
- **State/District Policy and Planning** materials which include three planning templates to help districts and schools support teachers working with struggling readers.
- **Related Links** providing access to a variety of Web sites that focus on literacy.

The DWW modules on adolescent literacy complement several features on TCSII that also support literacy development as it relates to a number of the Recommendations for Middle Grades Success.

The [English-Language Arts Content Standards for California Public Schools Kindergarten](#)

[Through Grade Twelve \(2007\)](#) (PDF; 548KB; 92pp.) define what each student should know by grade level. The [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve \(2007\)](#) (PDF; 6.06MB; 386pp.)¹ provides a design for organizing instruction so that every student meets or exceeds the language arts content standards. Both the standards and framework focus on the three pillars of “authentic literacy” advocated by Schmoker (reading, writing, and talking) while adding an emphasis on listening.²

The Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve and standards are divided into four domains: reading, writing, written and oral conventions, listening and speaking. The framework specifies the design of K-8 instructional materials, curriculum, instruction, and professional development for K-12. The Reading/Language Arts Framework includes research-based approaches for instruction that ensure optimal benefits for all students, including those with special learning needs (e.g., English learners, students who use African American vernacular, students with learning and reading difficulties, and advanced learners).

The listening and speaking standards are not among those that are assessed by the California Standards Tests. However, the testing considerations should not preclude teachers from incorporating reading, writing, comprehension, and listening activities into each subject.

The Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve (2007) uses ten guiding principles to direct the purpose, design, delivery, and evaluation of instruction (refer to pages 4-6). The first principle is that the framework and instruction are based on the content standards. The English-language arts standards are categorized by domain: reading, writing, written and oral English-language conventions, and listening and speaking. Within each domain, standards are grouped in strands and substrands. The strands called Reading Comprehension, Literary Response and Analysis, Writing Applications, and Listening and Speaking Strategies require students to develop critical thinking and application skills. For example, the framework says,

A comprehensive program ensures that students learn to read and write, comprehend and compose, appreciate and analyze, and perform and enjoy the language arts. They should spend time immersed in high-quality literature and work with expository text, learn foundational skills in the alphabetic writing system, and study real books. A comprehensive program ensures that students master foundational skills as a gateway to using all forms of language as tools for thinking, learning, and communicating.³

Appendix A of the framework provides an overview of the domain, strands, and substrands by grade level.

According to a report from the National Reading Panel, eight kinds of instruction appear to be effective and most promising for teaching comprehension:

1. Comprehension monitoring teaches the reader how to focus on his or her understanding during reading and how to deal with problems in understanding as they arise.
2. Cooperative learning helps readers work together to learn strategies in the context of reading.
3. Graphic and semantic organizers help readers to represent graphically (write or draw) the meanings and relationships of the ideas that underlie the words in the text.
4. Story structures help the reader learn to ask and answer who, what, where, when, and why questions about the plot and, in some cases, map out the timeline, characters, and events in stories.
5. Question-answering skills help the reader to answer questions posed by the teacher and to receive feedback.
6. Question generation teaches readers to ask what, when, where, why, what will happen, how, and who questions.
7. Summarization helps the reader identify and write the main or most important ideas and tie the text into a coherent whole.
8. Multiple-strategy teaching engages readers in interaction with the teacher over the

text.⁴

In the Spotlight

A. C. Stelle Middle School, Las Virgenes Unified School District

Upon opening in September 2003, A.C. Stelle's English/language arts (ELA) department consisted of three seasoned middle school teachers and three teachers new to the profession. To form a dynamic team, the department analyzed its strengths and weaknesses and developed a long-range plan to create a community of readers and writers. Using textbooks, the department initially implemented a structured standards-driven program. Within one year, most students read without enjoyment, and student writing was formulaic and lacked critical thinking.

To bring back a love of reading and authentic writing, teachers implemented the six-trait model within the writing process. After reviewing the research of Nancie Atwell and others, teachers adopted a reading and writing workshop philosophy to enhance the writing process. Several teachers interned with Nancie Atwell in a week-long reading and writing workshop.

Using strategies learned as Atwell interns, teachers revamped the curriculum to focus on student-choice book selections. To ensure active reading, teachers implemented **book chats** where students tell about the books they are reading and keep a **someday list** of books they want to read based on classmate recommendations.

Additionally, Stelle's librarian has become an integral part in the ELA program providing book chats, multimedia presentations, and author/book events such as a Twilight party for the seventh and eighth graders who have or are enjoying the Stephenie Meyers series.

For more information about how teachers at A. C. Stelle Middle School enhance their writing instructional techniques, please refer to the In the Spotlight box on the page titled [Professional learning from content experts](#) in Recommendation 10—Professional Learning, TCSII.

- [Alice C. Stelle DataQuest School Profile](#)
- [A. C. Stelle Middle School](#) (Outside Source)

Contemporary adolescent literature offers a rich variety of stories to use as a springboard for engaging students as lifelong readers. Many of the new adolescent novels explore highly charged topics that ignite discussion about morals, ethics, and relationships.

Technology applications for English language arts. Teachers can use online scoring of essays, plagiarism checkers, podcasts, videos, streaming (online) video, student broadcasting, library/media centers, and publication/presentation of student work followed by peer critique. In addition, students can learn more about novelists, writing, and other language arts themes through online research. Technology standards are embedded in the [English-Language Arts Content Standards for California Schools Kindergarten Through Grade Twelve](#) (PDF; 548KB; 92pp.) and in the [California Career Technical Education Model Curriculum Standards for Grades Seven through Twelve](#) (PDF; 2.13MB; 441pp.) (2005).

Jerome Burg's [Google Lit Trips](#) (Outside Source) offer tech-savvy students a different way to read and understand great literature. Using [Google Earth](#) (Outside Source) (a free software program), students discover where in the world the greatest road trip stories of all time took

place. Some of the teacher-created Lit Trips include PowerPoints and Podcasts. The site's Downloads section offers teachers pedagogical discussion options, Lit Trips step guides, suggestions for integration, and additional resources.

Related Links

- [An Academically Rigorous Program for All Students](#)
- [Academic discourse](#)
- [Academic Literacy](#)
- [California Association of Teachers of English](#) (CATE) (Outside Source)
- [California Reading List \(CRL\)](#), California Department of Education.
- [Cross-curricular connections: writing across curriculum](#)
- [English-Language Arts Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 548KB; 92pp.), California Department of Education.
- [English language development \(ELD\)](#)
- [Individuals with Disabilities Education Act and literacy](#) (Outside Source), SchoolsMovingUp, WestEd.
- [Information literacy](#)
- [Kinsella 1—Engaging Middle Grades Learners](#), Kate Kinsella, Professional Learning Activities, TCSII.
- [Kinsella 2—Teaching Vocabulary in the Middle Grades](#), Kate Kinsella, Professional Learning Activities, TCSII.
- [Kinsella 3—Building Language and Literacy Skills Through Structured Tasks](#), Kate Kinsella, Professional Learning Activities, TCSII.
- [Kinsella 4—Enhancing Students' Academic Discussion Skills \(Parts 1 and 2\)](#), Kate Kinsella, Professional Learning Activities, TCSII.
- [Literature Links](#), California Department of Education.
- [National Council of Teachers of English](#) (Outside Source)
- [National Reading Panel Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implication for Reading Instruction—Reports of the Subgroups](#) (PDF; Outside Source), National Institutes of Health, Eunice Kennedy Shriver, National Institute of Child Health & Human Development.
- [Online field trips boost reading scores](#) (Outside Source), eSchool News: Technology News for Today's K-20 Educator.
- [Reading across the curriculum](#)
- [Reading/Language Arts](#), California Department of Education.
- [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve \(2007\)](#) (PDF; 6.06MB; 386pp.), California Department of Education.
- [Recommended Literature \(K-12\)](#), California Department of Education.
- [School board policy on adolescent literacy](#), Doc Library, TCSII.
- [What Does the Research Say About Designing Quality Literacy Instruction?](#) (Outside Source), SchoolsMovingUp, WestEd.
- [Writing Across the Curriculum](#)

Previous

[Instructional content areas](#)

Next

[Teaching Writing](#)

Footnotes

¹ [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 6.06MB; 386pp.). Sacramento: California Department of Education, 2007.

² Mike Schmoker, *Results Now: How We Can Achieve Unprecedented Improvements in Teaching and Learning*, Alexandria, Va.: Association for Supervision and Curriculum Development, 2006, 58-60.

[Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#). (PDF; 6.06MB; 386pp.) Sacramento: California Department of Education, 2007, 5.

⁴[Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction; Reports of the Subgroups](#) (PDF; Outside Source). Rockville, Md.: National Reading Panel, National Institute of Child Health and Human Development, 2000, 4-6.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Teaching writing

According to researcher Douglas Reeves, writing improves reading comprehension and student performance in several academic areas, including social studies, science, and mathematics. He also asserts writing, particularly when paired with analysis, editing, and rewriting, will improve students' abilities to communicate and succeed on state and local writing tests.¹

The California High School Exit Examination (CAHSEE) requires all students to demonstrate their writing ability. As a result, the middle grades become a gateway for preparing students with the writing skills they need to succeed in high school and beyond. The seventh-grade writing proficiency results from the California Standards Test provide eighth-grade teachers with an important tool for assessing student progress and targeting strategies intended to bring students up to grade-level proficiency before the transition to high school.

The Web-based project, 826, seeks to improve writing skills for middle grades learners. The 826 Valencia is a Web-based project dedicated to supporting sixth through twelfth grade writing skills in the San Francisco Bay Area. The 826 Valencia's Student Writing Gallery includes samples of student writing in English and Spanish. The 826LA provides a variety of free programming for students ages 6–18, designed to challenge and enchant while strengthening writing skills in the Los Angeles area. The 826 National is a Web site dedicated to helping students, ages 6-18, with expository and creative writing at seven locations across the country.

To help teachers improve student writing, the Alliance for Excellent Education released a report titled Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools. It calls for effective writing instruction in middle and high schools. The report describes 11 components of a schoolwide writing program that will help students learn to be effective writers:

1. Writing strategies (brainstorming, writing, revising, rethinking, and editing a text)
2. Summarization
3. Collaborative writing (working together to plan, draft, revise, or edit a text)
4. Specific product goals (having a well-written prompt)
5. Word processing
6. Sentence combining
7. Prewriting
8. Inquiry activities (analyzing concrete and immediate data to develop ideas for writing)
9. Process writing approach (include writing activities in a workshop environment that stresses extended writing opportunities, writing for authentic audiences, personalized instruction, and cycles of writing)
10. Study of models
11. Writing for content area learning²



In the Spotlight



Rancho Cucamonga Middle School, Cucamonga Elementary School District, is a 2006 On the Right Track school

After only five students passed the seventh-grade writing proficiency test in 2002, teachers at Rancho Cucamonga developed what they called a “writing wheel” to help students learn writing skills and prepare for the seventh-grade writing proficiency test. In addition to regular classroom instruction in writing, three times a year the seventh-grade team devoted a two-day block to the writing wheel that covered persuasive essays, expository writing, and response to literature. They divided the seventh-grade class into two sections. Half of the class spent the first day on the multipurpose **writing wheel**, where teachers helped students learn a new genre. The other half of the seventh graders spent the day in mathematics projects and remediation.

In the morning, all the students working on the writing wheel received direct instruction in writing techniques related to one genre, such as expository writing or fictional critique. In the afternoon, the students used the techniques they learned that morning to write a paragraph.

The next day the student groups switched so that those who received mathematics remediation the previous day had their turn to learn the writing strategies. In the afternoon, the students returned to their individual language arts classes for intense guided practice. Teachers developed recipes so that students could follow an easy-to-remember formula for each genre of writing. The writing wheel is not an elective.

The teachers at Rancho Cucamonga found that the collegial dialogues and shared teaching of writing helped all of them to reinforce key writing skills in all subject areas throughout the year.

Santa Cruz County Office of Education

The Santa Cruz County Office of Education conducts yearly staff development sessions on the writing program, Step Up to Writing. The Step Up To Writing strategies support standards-based, state-adopted writing programs already in place in our local schools. These user-friendly strategies remove writing barriers as well as de-mystify the writing process for all students. The Internet provides many examples of Step Up to Writing materials. For example, a poster that includes science writing tips was posted by PS3 -- a project that grew out of the Bay Area Schools for Excellence in Education (BASEE).

Wiseburn Elementary School District

Working with the Los Angeles County Office of Education, the Wiseburn Elementary School District staff created the Seventh Grade Response to Literature Writing Rubric. The five-point rubric helps students and teachers see expected proficiency levels for conventions, word choice and sentence fluency, and ideas and organization. The attached rubric includes a chart for teachers to list student scores. During professional development exercises, teachers discuss exemplars showing how an essay was scored by a team of teachers.

- [Rancho Cucamonga DataQuest School Profile](#)
- [Rancho Cucamonga Middle School](#) (Outside Source)
- [On the Right Track](#)

- [Santa Cruz County Office of Education DataQuest Profile](#)
- [Santa Cruz County Office of Education](#) (Outside Source)
- [Step Up to Writing](#) (Outside Source)

- [Wiseburn Elementary DataQuest District Profile](#)
- [Wiseburn School District](#) (Outside Source)
- [Wiseburn School District: Seventh Grade Response to Literature Writing Rubric](#)

Related Links

- [826LA](#) (Outside Source)
- [826 National](#) (Outside Source)
- [826 Valencia](#) (Outside Source)
- [826 Valencia Writing Gallery](#) (Outside Source)
- [English-Language Arts Study Guide—California High School Exit Examination](#) (PDF; 8.8MB; 133pp.), California Department of Education.
- [Appendices—Appendix A CAHSEE Scoring Guide](#) (PDF; 526KB; 53pp.), California Department of Education.
- [California Standards Tests Teacher Guide for the 2008 California Writing Standards Test in Grade Seven](#) (PDF; 1.33MB; 73pp.), California Department of Education.
- [The California Writing Project](#) (Outside Source), California Writing Project: Because Writing Matters: Helping Your Children Become Confident, Skilled Writers, In and Beyond School.
- [Computer-Assisted Instruction and Writing](#) (Outside Source), The Access Center: Improving Outcomes for All Students k-8.
- [Differentiated Instruction for Writing](#) (Outside Source), The Access Center: Improving Outcomes for All Students k-8.
- [JCU Study Skills Online: Mind Mapping](#), (Outside Source), James Cook University.
- [Middle Grades Courses of Study and Instructional Time](#) (DOC; 107KB; 9pp.), California Department of Education.
- [Sample A.1—Six-Trait Assessment for Beginning Writers](#) (Outside Source), Toolkit98, Northwest Regional Educational Laboratory, Education Northwest: Creating Strong Schools & Communities.
- [Teaching Writing to Diverse Student Populations](#) (Outside Source), The Access Center: Improving Outcomes for All Students k-8.
- [The Neglected "R:" The Need for a Writing Revolution](#) (PDF; Outside Source), The National Commission on Writing—In America's Schools and Colleges.
- [Writing across the curriculum](#), Recommendation 1—Rigor, TCSII.
- [Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools](#) (PDF; Outside Source)
- [Writing Prompt Guidelines for Teacher Teams](#), Document Library, TCSII.

Previous

[English language arts instruction](#)

Next

[English language development \(ELD\)](#)

Footnotes

¹Douglas B. Reeves, *Reason to Write: Help Your Child Succeed in School and in Life Through Better Reasoning and Clear Communication*. New York: Kaplan Publishing, 2002, 3.

²Steve Graham and Dolores Perin, [Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools](#) (PDF; Outside Source), Washington, D.C.: Alliance for Excellent Education, 2007, 4-5.

[Back to Top](#)

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

English language development (ELD)

Standards-based instruction for English learner (EL) students is critical to California's success in closing the achievement gap. California has adopted instructional materials for ELs (intensive intervention) as well as Spanish-language versions of K-6 reading programs. The state-adopted basic reading/language arts programs include additional instruction for EL students. The [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve \(2007\)](#) (PDF; 6.06MB; 386pp.) calls for material to cover one hour of instruction for EL students.

The American Educational Research Association identifies the following critical components of reading instruction for EL students.

- Word recognition
- Vocabulary development (academic language)
- Reading comprehension
- Speech¹

Specially designed academic instruction in English (SDAIE) is an instructional method that helps EL students who have intermediate fluency in English learn grade-level content in the core curriculum. SDAIE—as the name implies—requires specially trained teachers (refer to , [Recommendation 10—Professional Learning](#)) and student grouping of intermediate EL students together in one classroom. For more on SDAIE, refer to "[English Language Learners](#)" (Chapter 10 from the original *Taking Center Stage*) or the [SDAIE handbook](#) (Outside Source). In addition, the [Santa Clara County Office of Education](#) (Outside Source) has developed many support materials for teaching EL students.

A study by the Public Policy Institute, [English Learners in California Schools](#) (PDF; Outside Source), found that middle school EL students have lower rates of growth on the California English-Language Development Test than elementary school EL students (page 61). The authors noted several reasons to expect lower gains for middle school students:

- Fewer middle school students are EL students, so the infrastructure for helping EL students may not be as prevalent as in elementary schools.
- EL students at the middle and high school levels share the added difficulty of learning advanced academic material in specific subjects in addition to learning English.
- Many EL students in middle school were not reclassified in elementary school. These students did not learn English as quickly as fluent English proficient students who have been reclassified.
- Generally, students learn faster in elementary school grades than in later grades (page 61).²

In a review of the literature about effective strategies for teaching non-English-speaking students, Bob Slavin and Alan Cheung (2004) found that non-native speakers of English are often shy and unwilling to use English because they may be ridiculed in class. The research suggests organizing opportunities for EL students to work in pairs or to work in small groups. In their literature review, Slavin and Cheung also found consistent positive effects of programs that use systematic phonics.³ The Public Policy Institute found that one-to-one and small-group tutoring models also demonstrated positive effects.⁴

In a 2007 report on best practices in middle schools, Springboard Schools studied what it called HP2 schools—those that are both high performing and high poverty. Springboard found that the successful schools built a coherent system to support students learning English through one of three ways:

- As part of their English language arts (ELA) class, all students receive direct English language development (ELD) instruction regardless of ELD status.
- The schools add an additional period of support for students, including EL students who are struggling in their ELA class.
- Students not yet proficient in English take an ELD language development class as an elective class (sometimes tied to their ELA class).

The key difference between high- and average-performing schools did not appear to be which approach they chose but rather the coherence of the program: how data are used to monitor student progress and the way in which ELA and ELD standards are used to connect students' regular English classes with extra classes for those learning English.⁵

Mathematics instruction is another place to reinforce literacy skills for EL students. The Center for Applied Linguistics report, [Reforming Mathematics Instruction for ESL Literacy Students](#) (Outside Source), outlines the following as important steps in teaching mathematics to EL students:

1. Select mathematics tasks that engage students' interests and intellect.
2. Orchestrate classroom discourse in ways that promote the investigation and growth of mathematical ideas.
3. Use technology and help students use technology and other tools to pursue mathematical investigations.
4. Seek and help students seek connections to previous and developing knowledge.
5. Guide individual, small-group, and whole-class work.⁶

[The Map of Standards for English Learners \(Grades 6-12\)](#) (Outside Source) is a free WestEd resource to help teachers integrate instruction and assessment of ELD and ELA standards in California. A companion [Guide to ELD Student Report: Grades 6-12](#) (PDF; Outside Source) includes ELD report cards in Spanish and English that align with the map and the ELD standards, allowing teachers to report in a meaningful, seamless way on their EL students' progress.

On October 30, 2008, [Taking Center Stage—Act II](#) was featured on a SchoolsMovingUp Webinar titled [Taking Center Stage—Act II: Building Effective Programs for English Learners in the Middle Grades](#) (Outside Source). As a part of the Webinar, TCSII provided the following list of valuable tools for educators as they evaluate their site plans for EL students.

- [Babel Fish Translation Tool](#) (Outside Source)
- [California Association for Bilingual Education](#) (CABE) (Outside Source)
- [California Association of Teachers of English to Speakers of Other Languages](#) (CATESOL) (Outside Source)
- [Commission on Teacher Credentialing](#) (Outside Source)
- California Department of Education Web page on:
 - ◆ [Bilingual Teacher Training](#)
 - ◆ [California English Language Development Test](#) (CELDT)
 - ◆ [Clearinghouse for Multilingual Documents](#)
 - ◆ [Document Translation References](#)
 - ◆ [English-Language Development Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 657KB; 91pp.) (*in English*)
 - ◆ [English-Language Development Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 456KB; 98pp.) (*in Spanish*)
 - ◆ [English Learners](#)
 - ◆ [English Learner Subgroup Self Assessment](#) (XLS; 264KB; 2p.)
 - ◆ [English Learners \(EL\) Instrument for Categorical Program Monitoring \(CPM\): An Ongoing Monitoring Process](#) (DOC; 158KB; 13pp.)
 - ◆ [English Learner & Curriculum Support Division](#)
 - ◆ _____

Resources

◆ [Title III](#)

◆ [Two-Way Language Immersion Program Resources](#)

- [Center for Applied Linguistics \(CAL\)](#) (Outside Source)
- [Center for Multilingual, Multicultural Research: University of Southern California](#) (Outside Source)
- [Center for Research on the Educational Achievement and Teaching of English Language Learners \(CREATE\)](#) (Outside Source)
- [Developing Reading and Writing in Second-Language Learners: Lessons From the Report of the National Literacy Panel on Language-Minority Children and Youth](#) (Outside Source) International Reading Association
- [Doing What Works: Teaching Vocabulary to English Learners](#) (Outside Source)
- [Office of English Language Acquisition \(OELA\)](#) (Outside Source)
- [Programs for English Language Learners: Resource Materials for Planning and Self-Assessment](#) (Outside Source), Office of Civil Rights (OCR) US Department of Education
- [Project GLAD \(Guided Language Acquisition Design\)](#) (Outside Source) National Training Center
- [Project QuEST, Quality English and Science Teaching](#) (Outside Source) Center for Research on the Educational Achievement and Teaching of English Language Learners (CREATE)
- [Quality Teaching for English Learners \(QTEL\)](#) (Outside Source) WestEd
- [SchoolsMovingUp Webinars](#) (Outside Source)
- [Sheltered Instruction Observation Protocol \(SIOP\)](#) (Outside Source)
- [Successful Bilingual Schools: Six Effective Programs in California](#) (PDF; Outside Source) San Diego County Office of Education.
- [Teachers of English to Speakers of Other Languages \(TESOL\)](#)

Related Links

- [Double the Work: Challenges and Solutions to Acquiring Language and Academic Literacy for Adolescent ELLs](#) (Outside Source), SchoolsMovingUp, WestEd.
- [English Language Acquisition Program](#), California Department of Education.
- [English Language Arts/English Language Development: Standards Correlation Matrix](#), California Department of Education.
- [English-Language Development Standards for California Public Schools: Kindergarten Through Grade Twelve](#), (PDF: 657KB; 91pp.), California Department of Education.
- ["English Language Learners: Boosting Academic Achievement"](#) (PDF; Outside Source), *AERA Research Points*, Vol. 2, Issue 1, Winter 2004.
- [Findings from the National Literacy Panel on Language Minority Children and Youth](#) (Outside Source), SchoolsMovingUp, WestEd.
- [Multilingual Programs](#), (Outside Source), Santa Clara County Office of Education: A Champion for Children, Schools and Community.
- [Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction, Reports of the Subgroups](#)(PDF; Outside Source), National Reading Panel.
- [What are We Doing to Middle School English Learners? Findings and recommendations for change from a study of California EL Programs](#) (PDF; Outside Source), WestEd.

Previous

[Teaching writing](#)

Next

[Bilingual instruction](#)

Footnotes

¹["English Language Learners: Boosting Academic Achievement"](#) (Outside Source), *AERA Research Points*, Vol. 2, Issue 1 (Winter 2004), 3.

²Christopher Jepsen and Shelley De Alth, "[English Learners in California Schools](#)" (PDF; Outside Source), Sacramento: Public Policy Institute, April 2005.

³Robert Slavin and Alan Cheung, "[How Do English Language Learners Learn to Read?](#)" (Outside Source) *Educational Leadership*, Vol. 61, No. 6 (March 2004), 52-57.

⁴"[Making Schools Work with Hedrick Smith](#)" (Outside Source), PBS.org transcript.

⁵[Balancing Act: Best Practices in the Middle Grades \(Executive Summary\)](#) (PDF; Outside Source). San Francisco: Springboard Schools, Spring 2007, 11.

⁶Keith Buchanan and Mary Helman, "[Reforming Mathematics Instruction for ESL Literacy Students](#)" (Outside Source), *Cal Digest* (December 1997) .

[Back to Top](#)

[Print](#)

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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



**Recommendation 2:
Instruction,
Assessment, and
Intervention**

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Bilingual instruction

A growing body of research indicates that bilingualism provides cognitive advantages for students.¹ Additionally, new research suggests that it also improves brain functioning into later life and appears to delay the onset of dementia.²

The five-year study of Proposition 227, [Effects of the Implementation of Proposition 227 on the Education of English Learners, K-12: Findings from a Five-Year Evaluation](#) (PDF; Outside Source), found no conclusive evidence that one instructional model for educating English learners (ELs), such as full English immersion or a bilingual approach is more effective for California's ELs than another.³ The study further found that certain factors did appear to make a difference for students, including:

- Staff capacity, characteristics, and training to address EL needs
- Curriculum and instruction targeted toward EL progress
- Shared vision for ELs
- School and classroom organization around supporting EL progress
- Systematic assessment and data disaggregated for ELs
- District support of EL instruction
- Community outreach to increase EL family involvement⁴

Districts that demonstrate positive results typically implemented the components noted above with a high degree of fidelity.

The [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve \(2007\)](#) (PDF; 6.06MB; 386pp.) states:

To learn English and achieve mastery of the English-language arts content standards, students must participate in instructional programs that combine skill and concept development in both English literacy and the English language. For those students whose parents have chosen a program that teaches literacy in the primary language, students must work to achieve the same standards contained in the *English-Language Arts Content Standards*. Appropriate modifications should be made for the language of instruction.⁵

In a review of current research studies on English language development, Bob Slavin found that bilingual education was an effective instructional approach. For example, 17 studies of elementary reading instruction were favorable to bilingual approaches. Most studies found significant positive effects of bilingual education on reading performance, and other studies found no differences—but in no case did positive results from an English-only strategy exceed those from a bilingual strategy.⁶

Diane August and Timothy Shanahan reviewed the body of available literature that met the criteria for scientific research in their book, [Developing Literacy in Second-Language Learners: Report for the National Literacy Panel on Language-Minority Children and Youth \(Executive Summary, 2006\)](#) (PDF; Outside Source). Their report points out that research on acquiring literacy for ELs continues to be limited. However, some of the key findings of the National Literacy Panel include the following:

- Instruction that provides substantial coverage in key components of reading (phonemic awareness, phonics, fluency, vocabulary, and text comprehension) had clear benefits for language minority students (page 3).
- Instruction in the key components of reading is necessary but not sufficient for teaching language minority students to read and write proficiently in English. Oral proficiency in English is critical as well (page 4).
- Oral proficiency and literacy in the first language can be used to facilitate literacy development in English (page 5).
- Individual differences contribute significantly to English literacy development (page 5).



In the Spotlight

Bernice Ayer Middle School, Capistrano Unified School District, a 2005 Schools to Watch™-Taking Center Stage Model School

To help English learners, Bernice Ayer Middle School provides both a two-way English/Spanish immersion program and a structured English immersion program.

- [Bernice Ayer DataQuest School Profile](#)
- [Bernice Ayer Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Bernice Ayer Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

Beyond the discussion about bilingual education as an effective way of teaching English, many people are concerned that some "heritage languages" may be lost.² Additionally, fluency in more than one language may be a significant advantage in future careers.

Related Links

- [2009 California Distinguished Middle and High Schools](#), California Department of Education.
- [2010 Educational Resources Catalog](#) (PDF; 5.73MB; 36pp.), California Department of Education.
- [BICS and CALP. Jim Cummins. University of Toronto](#), (DOC; Outside Source), Texas A&M University Commerce.
- [Brain Research: Implications for Second Language Learning](#) (PDF; Outside Source), ERIC Digest.
- [California Association for Bilingual Education](#) (Outside Source)
- [Center for Applied Linguistics \(CAL\)](#) (Outside Source)
- [English Language Learners](#), (Outside Source) SchoolsMovingUp, WestEd.
- [English Learners](#), California Department of Education.
- [English Learners and the Language Arts](#) (Outside Source), SchoolsMovingUp, WestEd.
- [National Association for Bilingual Education \(NABE\)](#) (Outside Source)
- [Successful Bilingual Schools: Six Effective Programs in California](#) (PDF; Outside Source), San Diego County Office of Education.
- [The Two-Way Immersion Toolkit \(2005\)](#), (Outside Source), The Education Alliance, Brown University.
- [What does research show about the benefits of language learning?](#) (Outside Source), American Council on the Teaching of Foreign Languages.

Previous

[English language development \(ELD\)](#)

Next

[Mathematics instruction](#)

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¹Ellen Bialystok, Fergus I. M. Craik, Raymond Klein, and Mythili Viswanathan, "[Bilingualism, Aging, and Cognitive Control: Evidence from the Simon Task](#)" (Outside Source), *Psychology and Aging*, Vol. 19, No. 2 (2004), 290-303.

²Ellen Bialystok, Fergus I. M. Craik, and Morris Freedman, "[Bilingualism as a Protection Against the Onset of Symptoms of Dementia](#)" (Outside Source), *Neuropsychologia* Vol. 45, Issue 2 (2007) 459-464.

³[Effects of the Implementation of Proposition 227 on the Education of English Learners, K-12: Findings from a Five-Year Evaluation](#) (PDF; Outside Source). Washington D.C.: Prepared by the American Institutes for Research and WestEd for the California Department of Education, January 2006, ix.

⁴Ibid., x.

⁵[Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 6.06MB; 386pp.). Sacramento: California Department of Education, 2007, 232.

⁶Robert Slavin and Alan Cheung, "[How Do English Language Learners Learn to Read?](#)" (Outside Source) *Educational Leadership*, Vol. 61, No. 6 (March 2004), 52-57.

⁷Mary Ann Zehr, "Heritage Speakers: Loss of a Treasure?" *Education Week*, April 5, 2006.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Mathematics instruction

California's mathematics content standards are divided by grade levels: kindergarten through grade seven and grades eight through twelve. The elementary standards are grouped into five categories called strands:

- Number Sense
- Algebra and Functions
- Measurement and Geometry
- Statistics, Data Analysis, and Probability
- Mathematical Reasoning

As students move to higher grade levels, the problems require increasingly advanced knowledge and understanding of mathematics, greater use of inductive and deductive reasoning, and proof. The mathematics content standards for grades eight through twelve are organized by discipline:

- Algebra I
- Geometry
- Algebra II
- Trigonometry
- Precalculus
- Mathematical Analysis
- Probability and Statistics.

The Mathematics Framework for California Public Schools Kindergarten through Grade Twelve (2005) refers to the mathematics standards students need to master in prealgebra classes. Chapter 2, The California Mathematics Content Standards, of the framework states:

“To allow local educational agencies and teachers flexibility, the standards for grades eight through twelve do not mandate that a particular discipline be initiated and completed in a single grade. The content of these disciplines must be covered, and students enrolled in these disciplines are expected to achieve the standards regardless of the sequence of the disciplines” (page 18).¹

In Chapter 5, [Mathematics Teaching for Understanding: Reasoning, Reading, and Formative Assessment](#) (PDF; 154KB; 16pp), authors Paula Miller and Dagmar Koesling describe the role that literacy plays in three central elements of the math instruction. Readers see how a teacher helps students solve complex word problems and read difficult mathematical text, as well as how to assess students' understanding.

The chapter emphasizes that literacy helps students with weak math skills develop the problem-solving and reasoning skills that make advanced mathematics courses accessible. The chapter also illustrates how to marry the mathematical reasoning process with a reading process to help students understand the context and concepts of math problems. The authors illustrate how teaching this way benefits students in terms of their engagement, understanding, achievement, and post-secondary options.*

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Although not all eighth-grade students participate, results from [The Nation's Report Card: Mathematics 2009—National Assessment of Educational Progress \(NAEP\) at Grades 4 and 8](#) (PDF; Outside Source) continue to show significant concerns about mathematics achievement in California based on testing in the eighth grade. For example:

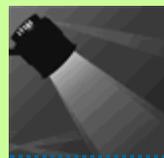
- The percentage of students in California who performed at or above the NAEP proficient level was 23 percent in 2009. This percentage was not significantly different from that in 2007 (24 percent) but was greater than that in 1990 (12 percent).²

Results from the [2010 STAR Tests Results](#) show that 25 percent of the eighth-grade students score at the proficient level or above in mathematics.

Whether educators look at NAEP or CST results, there is concern about mathematics proficiency. When discussing how to improve student achievement in mathematics, teams of teachers from [California Schools to Watch™-Taking Center Stage](#) schools indicated that although their goal is to provide heterogeneous groupings for students in all electives and English Language Arts, they often resort to separate groupings for mathematics. For example, to provide geometry for advanced students, teachers find it necessary to separate those students from classmates still needing prealgebra since the content is so different.

However, a 2006 study on heterogeneous grouping of students in accelerated mathematics courses showed that mixed ability grouping could positively affect the academic performance of all students. The heterogeneous grouping did not appear to negatively affect the achievement of high-achieving students.³

[English Learners in Secondary Mathematics: Rigor and Excellence](#), (Outside Source), is an archived SchoolsMovingUp Webinar which took place on November 5, 2008. Leslie Hamburger, Senior Program Associate in the [Teacher Professional Development Program](#) (Outside Source) at WestEd, demonstrates carefully structured secondary mathematics scaffolding tasks that challenge students while providing them with the necessary support to achieve the lesson's specific learning objectives. These tasks enhance the linguistic and content knowledge needed to succeed in secondary mathematics.



In the Spotlight

Alvarado Intermediate School, Rowland Unified School District, a 2004 Schools to Watch™-Taking Center Stage Model School

Teachers use PowerPoint to teach mathematics. The program allows teachers to add new pieces of the equation after they walk around to see how well students are grasping the first part. It also allows the mathematics team members to develop parts of the lesson and share with each other, thus lessening the overall lesson development time required for each.

Bernice Ayer Middle School, Capistrano Unified School District, a 2005 Schools to Watch™-Taking Center Stage Model School

Resource teachers join the mathematics teachers as a team to help teach the concepts to students who need more help.

Rancho Cucamonga Middle School, Cucamonga Elementary School District, a 2006 On the Right Track School

Mathematics teachers found that they had more success in helping students pass the algebra test if they took chapters one through four in their state-adopted textbook after the testing window in the year prior to taking algebra officially. By

giving early lessons in the spring, students were ready to start in chapter five in September, thus completing all the standards before testing.

- [Alvarado Intermediate DataQuest School Profile](#)
- [Alvarado Intermediate School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Alvarado Intermediate Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

- [Bernice Ayer Middle DataQuest School Profile](#)
- [Bernice Ayer Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Bernice Ayer Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

- [Rancho Cucamonga Middle DataQuest School Profile](#)
- [Rancho Cucamonga Middle School](#) (Outside Source)
- [On the Right Track](#)

Researchers who studied factors that led to Boston and San Diego having the highest gains in mathematics on the NAEP (Outside Source), found that educators in those districts relied on similar strategies. First, they built students' conceptual mathematical skills. Second, the administrators in those districts invested in professional development to help elementary and middle school teachers learn how to use conceptual mathematics strategies.⁴

Conceptual mathematics helps young adolescent brains to attach significance to facts so they become stored in long-term memory. Rather than presenting mathematics as a series of equations and figures, teachers who use conceptual mathematics strategies also help students understand the meaning of the operations. Teachers build meaning from information by using:

1. **Feelings:** Information must engage the emotional aspect of the brain—students must have feelings about what they learn in order to perceive it as meaningful. The brain releases a series of specific chemicals throughout the body during an emotional experience to signal that something important and meaningful is happening. Learners may perceive these signals either consciously or unconsciously.
2. **Relevance:** Information must relate to something the learner already knows. The more relevant information is, the greater meaning it will have. For example, a mathematics lesson that draws parallels between daily life and the study problem helps students to see mathematics as being meaningful.
3. **Context:** The brain always seeks to create meaning by fitting new information into a recognizable context or pattern that may be social, spiritual, intellectual, natural, et cetera.

In September 2006, the National Council of Teachers of Mathematics issued a report called [Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence](#) (PDF; Outside Source). In consensus with many university professors, the report urges mathematics teachers in kindergarten through eighth grade to focus on a few basic skills. The report did not take a stand on instructional methods, but it did attempt to outline a curriculum narrowed to the most important skills in each grade.

Related Links

- [California Mathematics Council](#) (Outside Source)
- [Mathematics Engineering Science Achievement \(MESA\)](#) (Outside Source)
- [Mathematics Teaching for Understanding: Reasoning, Reading, and Formative Assessment](#) (PDF; 154KB; 16pp)
- [Middle School Resources](#) (Outside Source), National Council of Teachers of Mathematics.
- [National Council of Teachers of Mathematics](#) (Outside Source)

Previous

[Bilingual instruction](#)

Next

[Algebra](#)

Footnotes

¹[Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve](#) (PDF; 3.19MB; 411pp.). Sacramento: California Department of Education, 2005, 365.

²[The Nation's Report Card: Mathematics 2009 Snapshot State Report—California, Grade 8, Public](#) (PDF; Outside Source). Washington, D.C.: Institute of Education Sciences (IES), National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

³C. C. Burris, J. P. Heubert, and H. M. Levin. "Accelerating Mathematics Achievement Using Heterogeneous Grouping," *American Educational Research Journal*, Vol. 43, No. 1, (2006), 105-136.

⁴Sean Cavanagh, "[Big Cities Credit Conceptual Math for Higher Scores](#)," (Outside Source) *Education Week*, January 11, 2006.

[Back to Top](#)

[Print](#)

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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Algebra

Most students, parents, and teachers at the middle grades level have had at least one discussion about **the** hot topic—algebra. *California Education Code (EC) Section 51224.5 (a)* states, "The adopted course of study for grades 7 to 12, inclusive, shall include algebra as part of the mathematics area of study." EC Section 51224 goes on to state the requirement must be completed by grade twelve and that completion of an algebra course that meets or exceeds the rigor of Algebra I state content standards is a requirement for receiving a high school diploma. This requirement means that many middle grades students need remedial instruction if they are not yet proficient in prealgebra skills and concepts (refer to page 225 of the [Mathematics Framework for California Public Schools Kindergarten through Grade Twelve \(2005\)](#) (PDF; 3.19MB; 411pp.) for more information about readiness for algebra).

The organization of the standards raises questions at the middle school level: Should all eighth graders take algebra whether they are ready or not, or should those students who are below grade level in mathematics take prealgebra so that they are truly prepared when they enter high school? The *Mathematics Framework for California Public Schools Kindergarten through Grade Twelve (2005)* provides an answer to this important question.

"It is imperative for students, whether in grade eight, grade nine, or even a higher grade, to master prealgebraic skills and concepts before they enroll in a course that meets or exceeds the rigor of the content standards for Algebra I adopted by the State Board of Education."¹

The *Mathematics Framework* lists 16 standards (13 from grade seven and three from Algebra I) that should be included in an algebra readiness program. This list along with the list of referenced standards from foundational skills and concepts provides a basis on which to build algebra-readiness instruction. [Algebra Offered in the Middle Grades](#) answers frequently asked questions about the algebra-readiness issue for eighth-grade algebra.

The California State Board of Education and the State Superintendent of Public Instruction agree that all students should have algebra early in their secondary phase of education. Algebra not only develops problem-solving and critical thinking skills, it also provides skills needed for higher mathematics and science classes that can ultimately lead to postsecondary education and higher-paying careers.

The decision to place students in algebra should be based on what is best for students. Schools that use the California Standards Tests seventh-grade mathematics test as one of the predictors of success in algebra and place their basic students in algebra will need to provide continuing support in order for students to gain proficiency on seventh-grade standards. Preparation for the California High School Exit Examination (CAHSEE) and algebra is needed. This support can be scheduled as a double block of mathematics for eighth-grade students, sometimes referred to as a shadow class. A shadow class reinforces and teaches standards not yet mastered and preteaches concepts in algebra so that students are exposed to new information, vocabulary, and preparation for algebra. Students who are not proficient or advanced in seventh-grade mathematics standards need support classes. These students are most at risk of not doing well in algebra or failing the CAHSEE, which is heavily based on seventh-grade standards. (Refer to page 225 of the *Mathematics Framework for California Public Schools Kindergarten through Grade Twelve [2005]* for more information about

readiness for algebra.)

In addition to algebra-readiness programs for students who are not yet ready to succeed in an algebra course, the 2007 Mathematics Adoption also calls for mathematics intervention programs for students in grades four through seven. These programs are intended to provide strategic and intensive support for students in grades four through seven. The programs are not intended to be full-year or full-course programs but to move students efficiently to grade-level instruction.²

Every student who takes the full-year algebra course must take the algebra standards test. Those students who take the course before attaining grade-level mastery of mathematics concepts have difficulty passing the CST algebra test. Their low scores affect the school's overall totals, although the numbers may not be significant. To teach all the Algebra I standards, teachers need to cover them at a rate of about one per week up to the testing windows in April/May.



In the Spotlight

Main Street Middle School, Soledad Unified School District

Student scores in Algebra 1 have improved steadily since 2005, when no Main Street students scored Advanced in Algebra 1 and only four percent scored Proficient. By contrast, in 2008 four percent of students scored Advanced on Algebra 1, and thirty-one percent scored Proficient. This progress in student math achievement has been the result of a concentrated schoolwide effort in a number of areas at the site.

- Curriculum is segmented into six-week chunks.
- Teachers use common assessments developed at the site.
- Results from data analysis are consistently used to inform instruction.
- Teachers hold mini-conferences during class with each student four times a year to discuss class work and test scores.
- Students graph their success and write their academic goal for the next conference.
- Teachers allow students who do not score well to participate in study sessions and then re-take the test to improve their performance.

Math teachers are located in the same area of the school and work in teams to incorporate strategies gleaned from lesson study. Math classes include a focus on academic literacy to provide necessary vocabulary to enhance understanding. Students are taught how to ask questions, including how to rephrase a question and how to ask for clarification. The process is working. Main Street Middle School is increasing the number of Algebra I sections and scores continue to rise.

- [Main Street DataQuest School Profile](#)
- [Soledad Unified School District](#) (Outside Source)

Many researchers argue that algebra is not just for the advanced students. In fact, one study found that algebra seems to produce almost as much achievement gain for low-achieving students as for their high-achieving peers.

The study of algebra, in particular, appears to serve as a gatekeeper to the college-preparatory track. Students who take algebra by the eighth or ninth grade are far more likely to take calculus in high school and pursue higher education than those who do not. Results

are especially promising when average students take high-level classes. Conversely, placing students in lower-level mathematics classes has never been shown to benefit them. This tends to suggest that accelerated curricula could make a difference for many middle grades students.³



In the Spotlight

Toby Johnson Middle School, Elk Grove Unified School District, is a 2006 Schools to Watch™-Taking Center Stage Model School

Teachers give quizzes and common formative assessments that help determine how well students are progressing toward proficiency on grade-level standards. After results from the common formative assessments come back, teachers help students develop a study guide for problems they did not understand. When students take common standards-based assessments, they must score 80 percent or more. If they do not achieve the 80 percent level, they must attend study sessions before, during, or after school. The times are flexible to ensure students have every opportunity to attend. Mathematics teachers also model good study skills that will help students keep up when they reach high school. In team meetings, mathematics teachers establish shared PowerPoint presentations of key concepts that they post on the school's shared server. Bridge teachers and substitute teachers access these PowerPoint presentations to reteach and reinforce skills.

- [Toby Johnson DataQuest School Profile](#)
- [Toby Johnson Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Toby Johnson Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

Technology applications for mathematics. Teachers can use graphing calculators, mathematics tutoring software, graphing sites, online mapping and graphing programs and Web sites, instant feedback student response systems, and timed practice programs for increasing student efficiency with basic mathematics facts. Technology standards are embedded in the mathematics content standards and in the [California Career Technical Education Model Curriculum Standards Grades Seven Through Twelve](#) (PDF; 2.13MB; 441pp.). Chapter 9 of the Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve contains helpful information about using technology in the mathematics curriculum. In addition, the booklet [Math at Home: Helping Your Children Learn and Enjoy Mathematics](#) (PDF; 419KB; 23pp) (Outside Source), published by the Sonoma County Office of Education, contains suggestions about student uses of technology (page 9).

The U.S. Department of Education's Doing What Works Web site contains a series of pages to help teachers prepare students for algebra. The site is organized to present research and strategies through three formats:

- Learn what works (research)
- See how it works (videos, Power Points)
- Do what works (use tools to improve your practice)

The [National Math Panel: Critical Foundations for Algebra](#) (Outside Source) from Doing What Works, contains videos, school profiles, and tools teachers can use to provide comprehensive instruction in algebra. The site also includes links to the report from the National Math Panel: Critical Foundations for Algebra.

Related Links

- [2007 Mathematics Primary Adoption: Basic Grade-level, Intervention and Algebra Readiness programs](#), California Department of Education.
- [Activities, Lessons, Standards, and Web Links](#) (Outside Source), NCTM, Illuminations, Resources for Teaching Math.
- [Algebra I Graduation Requirement](#), California Department of Education.
- [Algebra Offered in the Middle Grades](#), California Department of Education.
- [California Distinguished Middle Schools: Signature Practices](#), California Department of Education.
- [California Mathematics and Science Partnership](#), California Department of Education.
- [California Online Mathematics Education Times \(COMET\)](#), (Outside Source) California Mathematics Project.
- ["Connecting Mathematics and Science for All Students"](#), (PDF; Outside Source), *Teaching Exceptional Children*, March/April 2002, Vol. 34, No. 4, pp. 14-19, TeachingLD, Division for Learning Disabilities (DLD), Council for Exceptional Children.
- [Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence](#) (PDF; Outside Source), National Council of Teachers of Mathematics.
- [Doing What Works](#) (Outside Source)
- [Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do](#) (PDF; Outside Source), Southern Regional Education Board.
- [Making Algebra Work: Instructional Strategies That Deepen Student Understanding](#) (Outside Source), The Center for Comprehensive Reform and Improvement.
- [Math](#) (Outside Source), The Access Center: Improving Outcomes for All Students k-8.
- [Mathematics Content Standards for California Public Schools Kindergarten Through Grade Twelve](#), (PDF; 534KB; 72pp.), California Department of Education.
- [Mathematics Framework for California Public Schools Kindergarten through Grade Twelve \(2005\)](#) (PDF; 3.19MB; 411pp.), California Department of Education.
- [Appendix E Mathematics Intervention and Algebra Readiness Instructional Materials](#) (PDF; 649KB; 36pp.) Mathematics Framework for California Public Schools, Kindergarten through Grade Twelve (2005): , California Department of Education.
- [California Mathematics Project Mathematics: The Power Within](#) (Outside Source)
- [National Council of Teachers of Mathematics](#) (Outside Source)
- [The Algebra Project](#) (Outside Source)
- [The Mathematics Improvement Toolkit of The National Forum to Accelerate Middle-Grades Reform](#) (Outside Source)
- [Tools for Understanding: A Resource Guide for Extending Mathematical Understanding in Secondary Schools](#) (Outside Source)
- [What is Discrete Mathematics?](#) (Outside Source), Making Math Engaging: Discrete Mathematics for K-8 Teachers.

Previous

[Mathematics instruction](#)

Next

[Science instruction](#)

Footnotes

¹ [Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve](#) (PDF; 3.19MB; 411pp.). Sacramento: California Department of Education, 2005, 365.

² [Criteria for Evaluating Mathematics Instructional Materials](#) (PDF; 96KB; 12pp.) Adopted by the State Board of Education, (March 2005).

³ [Academic Achievement in the Middle Grades: What Does the Research Tell Us?](#) (PDF; Outside Source) Atlanta, Ga.: Southern Regional Education Board, 2003, 4.

⁴ Arlene Hambrick and Asta Svedkauskaite, [Critical Issue: Remembering the Child: On Equity & Inclusion In Math and Science Classrooms](#) (Outside Source). Naperville, Ill.: North Central Regional Educational Laboratory (NCREL), 2005.

[Back to Top](#)

[Print](#)

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Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Science instruction

The [Science Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 354KB; 61pp.) focus on three areas: physical science, earth science, and life science. In grades six through eight, the science content standards emphasize one area of science each year. This organization supports greater depth of learning in each of the three areas and helps provide a solid foundation for high school-level science:

- Grade five—earth science, life science, and physical science focus (page 14)
- Grade six—earth science focus (page 18)
- Grade seven—life science focus (page 22)
- Grade eight—physical science focus (page 26)

Each grade level and course level includes an Investigation and Experimentation (I&E) strand that incorporates student-initiated inquiry and experimentation. Students develop their own questions and perform investigations that address the content of the grade-level science standards. Instruction on the I&E standards describe learning that "should be integral to, and directly and specifically support, the teaching of the content strands and disciplines."¹

The 2009 National Assessment for Educational Progress (NAEP) science assessment was administered to students in grades four, eight, and twelve in schools throughout the country from January to March 2009. [The Nation's Report Card: Science 2009—State Snapshot Report](#) (PDF; Outside Source) showed that only 30 percent of eighth-grade students scored at the proficient level or above in science. Results also showed that the average score of California's eighth grade students was 137; this was lower than the national average of 148.²

The No Child Left Behind (NCLB) science test mandate requires states to test students in science once a year in grades three through twelve. California has been testing eighth grade science on the California Standards Tests (CSTs) since 2006 ([California Department of Education August 16, 2010 News Release, Table 12](#)), and 59 percent of eighth graders scored at the proficient level or above in 2010. In contrast, 29 percent of California's eighth-grade students scored below basic on the Science 2009 NAEP. Additional results appear in [The Nation's Report Card: Science 2009—National Assessment of Educational Progress \(NAEP\) at Grades 4, 8, and 12](#) (PDF; Outside Source).

This mandate means that all students need access to science classes that will prepare them for the required tests. To help middle grades educators prepare their students, the California Department of Education developed the [California Standards Test, Released Test Questions, Introduction - Grade 8 Science](#) (PDF; 2.6MB; 21pp.) from 2006 through 2008.

The National Research Council (2006) issued a report on the need for a major overhaul in K-8 science education so that educators could concentrate on key concepts central to understanding science. The authors said that science standards are too broad, and science education fails to link concepts within a single year and from grade to grade. The report also said teachers need better training in how to apply current research. Apparently, focusing on a relatively small number of major concepts and gradually building on them works most effectively. The report, [Taking Science to School: Learning and Teaching Science in Grades K-8](#) (Outside Source), is available from [The National Academies Press](#) (Outside Source).



In the Spotlight

McCaffrey Middle School, Galt Joint Union Elementary School District

For several years, a seventh-grade class at McCaffrey Middle School conducted a study of salmon. Students hatched and raised salmon eggs in their classroom and worked with the California Fly Fishermen Association, California Department of Fish and Game, and the local office of Parks and Recreation to release salmon into local rivers. The teacher taught numerous standards-based lessons about the fish over several months. Students kept journals and carefully noted each day how the salmon hatchlings grew. They discussed changes in light of cell differentiation and evolution. As a culminating event, the class visited a local park to release salmon into the American River.

Course assessments indicate that the lessons were successful in conveying grade-level content knowledge. For example, 79 percent of students demonstrated proficiency on the standard for life science/evolution, and 81 percent of students tested proficient on the cell biology standards.

Willowside Middle School, Oak Grove Union Elementary School District

Eighth-grade students bred and raised endangered Mexican salamanders indigenous to their community. They studied the salamanders that live in the nearby habitat and proposed solutions to the many economic and political issues between environmentalists and developers. In collaboration with experts from the California Department of Fish and Game, the students participated in ongoing studies of local and regional salamander populations and helped to establish counting points in their area, gathering data, and relaying it to the scientists. Students created a map of salamander habitat in their area. They identified relationships, analyzed information, and theorized about what might encourage successful salamander colonies.

On a broader scale, students discussed examples of coexistence between endangered species and a growing human population. Students also studied the need for construction and development as human population increases. They identified the difficulties that arise from conflicting needs in society and evaluated benefits and costs of their proposed solutions to the local plight of the salamanders. In addition, they investigated cloning and genetic manipulation, discussing the controversy with responsible adults.

As a part of their study, the students met with such local governmental bodies as the school site council, the California Department of Fish and Game, the school board, and the county board of supervisors to inform and advise the representatives on a plan for increasing the protection of endangered species, including the local salamander, while respecting the needs of the growing human population.

These lessons address eighth grade science standard number nine: Investigation and Experimentation:

"Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will: a) plan and conduct a scientific investigation to test a hypothesis; b) evaluate the accuracy and reproducibility of data; c) distinguish between variable and controlled parameters in a test;"³

In addition, these lessons reinforce and build on learning from previous lessons in other subjects. For example, it incorporates content from history/social science standards: 8.3, 8.6, 8.7; English language arts standards: 1.1, 2.5; and life science standards: 6.7.5, 6.7.6, 7.2.7.

- [McCaffrey DataQuest School Profile](#)
- [McCaffrey Middle School](#) (Outside Source)

- [Willowside DataQuest School Profile](#)
- [Willowside Middle School](#) (Outside Source)
- [Science Content Standards for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 354 KB; 61pp.)

Project QuEST—Quality English and Science Teaching is a research project that explores a systematic intervention model developing science content while strengthening language and literacy skills for English learners in the middle grades. The project research is designed by Diane August, Ph.D., at the Center for Applied Linguistics.

Many science teachers enhance lab experiments by using technology applications including: science probes, simulations, virtual dissection, virtual field trips, podcasts, videos, and presentation or publication of student work. In addition, students can learn more about science through online research. Technology standards are embedded in the [Science Content Standards for California Schools Kindergarten Through Grade Twelve](#) (PDF; 354KB; 61pp.) and in the [California Career Technical Education Model Curriculum Standards for Grades Seven Through Twelve](#) (PDF; 2.13MB; 441pp).

[Back to Top](#)

Related Links

- [ASSET, Incorporated—Achieving Student Success Through Excellence in Teaching](#) (Outside Source)
- [California Environmental Education Interagency Network \(CEEIN\)](#), California Department of Education.
- [California Mathematics and Science Partnership](#) California Department of Education.
- [California Science Teachers Association](#) (Outside Source)
- [California Student Assessment Project: The Effects of Environment-based Education on Student Achievement](#) (PDF; Outside Source), State Education & Environment Roundtable (SEER).
- [Center for Applied Linguistics](#) (Outside Source)
- [Chabot Space & Science Center](#) (Outside Source)
- [CREEC Network—California Regional Environmental Education Community](#) (Outside Source)
- [Education and the Environment Initiative Home Page](#) (Outside Source), California Environmental Protection Agency.
- [Environmental Education: Compendium for Energy Resources](#) (PDF; Outside Source), Energy Quest.
- [Environmental Education Curriculum Resources](#), California Department of Education.
- [Environmental Literacy Council](#) (Outside Source)
- [In the Classroom and on the Campus: CalRecycle Services for Teachers, Districts, and School Facilities](#) (Outside Source), CalRecycle.
- [Instructional Materials: Science](#) California Department of Education.
- [Middle School Science: Access for Students with Autism Spectrum Disorder](#) (Outside Source), The Access Center: Improving Outcomes for All Students k-8.
- [National Science Teachers Association](#) (Outside Source)

- [Project QuEST, Quality English and Science Teaching](#) (Outside Source)
- [Reading Science for Understanding in Middle and High School](#) (Outside Source), Schools Moving Up, West Ed.
- [Science](#) (Outside Source), The Access Center: Improving Outcomes for All Students k-8.
- [Science 2006 Primary Adoption](#), California Department of Education.
- [Science After School \(SAS\) Consumers Guide](#) (Outside Source), The National Center for Quality Afterschool, SEDL: Advancing Research, Improving Education.
- [Science Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 354KB; 61pp.), California Department of Education.
- [Science Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 3.84MB; 313pp.), California Department of Education.
- [The Nation's Report Card: Science 2009—National Assessment of Educational Progress at Grades 4, 8, and 12](#): (Outside Source), U.S. Department of Education Institute of Education Sciences, National Center for Education Statistics.
- [The EIC Model™ Using the Environment as an Integrating Context for improving student learning](#) (Outside Source) State Education and Environment Roundtable (SEER).

Previous

[Algebra](#)

Next

[History-social science instruction](#)

Footnotes

¹[Science Content Standards for California Public Schools, Kindergarten Through Grade Twelve](#) (PDF; 354 KB; 61pp.). Sacramento: California Department of Education, 2000,. 2.

²[The Nation's Report Card: Science 2009—National Assessment of Educational Progress at Grades 4, 8, and 12](#) (PDF; Outside Source). Washington, D.C.: Institute of Education Sciences (IES), National Center for Education Statistics, National Assessment of Educational Progress (NAEP), U.S. Department of Education.

³[Science Content Standards for California Public Schools Kindergarten Through Grade Twelve](#), (PDF; 354 KB; 61pp.). Sacramento: California Department of Education, 2000, 26.

[Back to Top](#)

[Print](#)

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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



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Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



**Recommendation 2:
Instruction,
Assessment, and
Intervention**

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

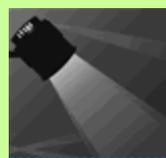
TCSII

History-social science instruction

The [Curriculum Frameworks—History-Social Science](#) emphasizes three main goals:

- **Knowledge and Cultural Understanding.** This goal helps students develop historical literacy, ethical literacy, cultural literacy, geographic literacy, economic literacy, and sociopolitical literacy.
- **Democratic Understanding and Civic Values.** This goal helps students develop an understanding of national identity; constitutional heritage; and civic values, rights, and responsibilities.
- **Skills Attainment and Social Participation.** This goal helps students develop participation skills, critical thinking skills, and basic study skills.

In addition, the standards call for students to learn analysis skills and how to understand and use primary sources.



In the Spotlight

Del Norte County Unified School District

In the multiyear Brother Jonathan Artifact Conservation Project, an average of 20 middle school students from Del Norte County Unified School District annually assist the Flynn Maritime Conservation Lab with the restoration and conservation of glass artifacts from the shipwreck of the S.S. Brother Jonathan. Through the conservation project students address the language arts, science, and history content standards. The restoration process involves biweekly water testing, cleaning of artifacts, setting up for desalinization, and recording of all processes conducted on each artifact. Students also research the medicine bottles undergoing conservation to prepare and present reports to the Del Norte County Historical Society on the history of bottles in the collection.

- [Del Norte County DataQuest District Profile](#)
- [Del Norte County Unified School District](#) (Outside Source)

California's world history standards received the highest score of all states from the Fordham Institute's analysis of history standards.¹ The report notes that "California and Oklahoma excel . . . in covering the non-Western world . . ." (page 28), and that "California's premise is that 'history is a story well told.'"² The institute had previously given California "A" grades for its standards in English, mathematics, and science.

The STAR history test covers content from grades six, seven, and eight. Unlike English

language arts standards, which build upon each other, the history concepts are completely different each year, making it difficult for teachers to prepare their students for the test without the help of their departmental team members.



In the Spotlight

Rio Norte Junior High School, William S. Hart Union High School District

The Rio Norte history team enjoys the excitement generated by the state-adopted Social Studies Alive! America's Past lessons. The department members link History Alive! projects into their lesson plans and common assessments. They find it a useful tool in helping students understand that history is a fascinating story.

Luther Burbank Middle School, Burbank Unified School District

As a part of their eighth-grade history unit, students at Luther Burbank Middle School learned about the Constitution and the functions of governments as they explored their communities, identified problems, and tried to make a positive change in public policy. One problem they identified in the community was that teens were not being judged by a jury of their peers in the court system. They researched the law enforcement process as it affects a teen breaking the law and the best way to prevent repeat offenses. Students collaborated with personnel from the City of Burbank, the Burbank Unified School District, and the Burbank Police Department. They interviewed and contacted the police department to gather information and create a display panel that described the problem and alternative solutions to develop a new public policy. Their final action was to promote the implementation of a teen peer court program. Through the program, students learned about offenses most often committed by teens, the different jobs associated with law enforcement, and the judicial system. Students reported feeling empowered that they can impact the legal system and participate in the political process. Student assessment results indicated that 88 percent of the students achieved proficiency in the history-social science standards addressed in this activity.

- [Luther Burbank DataQuest School Profile](#)
- [Luther Burbank Middle School](#) (Outside Source)

- [Rio Norte DataQuest School Profile](#)
- [Rio Norte Junior High School](#) (Outside Source)
- [Social Studies Alive! America's Past](#) (Outside Source)

Young people nationwide often lack knowledge of world geography—a study that would enhance world history classes. A Web site to help students gain geographic awareness, [MyWonderfulWorld.org](#) (Outside Source), provides resources for parents and teachers to engage young people in learning about the world. The site also provides tools for communicating to policymakers and education leaders about the importance of geographic literacy. The [History-Social Science Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 599KB; 68pp.) for each of the middle grades emphasize geographic awareness.

Technology applications for history/social science. Many teachers enhance history lessons by using such things as simulations, virtual field trips, television broadcasts, streaming videos (online), podcasts, links to historic artifacts (pictures, audiocasts, broadcasts, historic news clips, etc.), videos, and presentation or publication of student work. In addition, students can learn more about history through online research. Technology standards are embedded in the

History-Social Science Content Standards for California Public Schools—Kindergarten Through Grade Twelve and in the [California Career Technical Education Model Curriculum Standards, Grades Seven Through Twelve](#) (PDF; 2.13MB; 441pp.).

Related Links

- [California Council for History Education](#) (Outside Source)
- [California Council for the Social Studies](#) (Outside Source)
- [calisphere: a world of primary sources and more](#) (Outside Source), University of California.
- [Civic literacy](#), Recommendation 8—Safety, Resilience, and Health, TCSII.
- [Digital History: using new technologies to enhance teaching and research](#) (Outside Source)
- [Historical Documents](#), California Department of Education.
- [History-Social Science Curriculum Framework](#), California Department of Education.
- [Middle Grades Courses of Study and instructional Time: Based on California Education Code Requirements, California Department of Education Recommendations and National Subject-Area Associations' Recommendations](#) (DOC; 107KB; 9pp.), California Department of Education.
- [National Council for Geographic Education](#) (Outside Source)
- [National Council for History Education: Leading the Teaching and Learning of History](#) (Outside Source)

Previous

[Science instruction](#)

Next

[Foreign/world languages](#)

Footnotes

¹Walter Russell Mead, Chester E. Finn, Jr., Martin A. Davis, Jr., [The State of State—World History Standards](#) (Outside Source). Washington, D.C.: Thomas B. Fordham Institute, June 2006, 27.

²Ibid., 38.

[Back to Top](#)

[Print](#)

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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Foreign/world languages

No Child Left Behind legislation considers foreign language as a core academic subject. The term **core academic subjects** means English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography (NCLB, Title IX, Section 9101[11]).

California *Education Code (EC)* Section 51220(c) stipulates that foreign languages be offered no later than grade seven:

"The adopted course of study for grades 7 to 12, inclusive, shall offer courses in the following areas of study. . . . Foreign language or languages, beginning not later than grade 7, designed to develop a facility for understanding, speaking, reading, and writing the particular language."

Nevertheless, most California students begin foreign language study in high school. A smaller number of students begin in grades five through eight, and the fewest number of students begin in the primary grades. Students study English–language arts, mathematics, science, social studies, and the arts throughout their school careers; they need to have the same sustained opportunity for attaining foreign language proficiency through an extended sequence of study.¹

The ability to communicate in another language helps students to grow academically and personally. To be most effective in today's global society, a person must have knowledge of, and the ability to interact with, people from different cultures in both California and throughout the world. Moreover, learning a second language helps pupils from different backgrounds interact with each other and build self-esteem. As California corporations continue to establish production facilities in developing countries, there is an increasing need for linguistic competence and cultural understanding in languages other than English.

In 2007, Jack O'Connell, California's Superintendent of Public Instruction from 2003 through 2011, signed an [agreement establishing a collaborative relationship between Italy and California to support the teaching of Italian language and culture in California public schools that teach Italian](#). At the time of the agreement, two California middle schools offered courses on Italian language and culture:

- San Lorenzo Middle in the King City Union Elementary School District
- Burlingame Intermediate in Burlingame Elementary School District

The following research studies indicate that there are substantial benefits to studying a second language:

- In 1992, the College Entrance Examination Board reported that students with an average of four or more years of foreign language study score higher on the verbal section of the Scholastic Aptitude Test than students who had studied four or more years of any other subject.²
- A study by Moran and Hakuta (1995) found that students who speak more than one language perform higher than their monolingual counterparts on tests of academic achievement, cognitive flexibility, and creativity.³

- A report on Louisiana foreign-language students (2003) found that they significantly outperformed their nonforeign-language counterparts on every subtest of the Louisiana Educational Assessment Program for the 21st century test. In addition, first-year third-grade foreign-language students who continued their foreign-language study through and including the fifth grade in Louisiana public schools significantly outperformed their nonlanguage peers on the language portion of the fifth-grade Iowa Tests of Basic Skills.⁴
- Recent brain research indicates that being bilingual has distinct advantages. Research conducted by Andrea Mechelli of London's Wellcome Department of Imaging Neuroscience (2004) revealed that bilingual speakers had denser gray matter compared with monolingual participants. Since gray matter is associated with skills in the areas of language, memory, and attention, the findings indicate that knowing a foreign language can actually change the brain's anatomy.⁵

Unfortunately, only 25 percent of students in low-income and low-performing urban schools study a foreign language in contrast to 65 percent of students in wealthy and private suburban schools. This disparity heightens the achievement gap.⁶



In the Spotlight

Hilltop Middle School, Sweetwater Union High School District
The Foreign Language and Global Studies (FLAGS) magnet program integrates foreign languages with history and cultural studies. Students take either Spanish or French in both seventh and eighth grades.

- [Hilltop DataQuest School Profile](#)
- [Hilltop Middle School](#) (Outside Source)

The ability of Americans to speak foreign languages is increasingly important in the global economy. For example, the Committee for Economic Development, a policy group of business leaders and university presidents, issued a report on the critical importance of foreign languages. Called [Education for Global Leadership: The Importance of International Studies and Foreign Language Education for U.S. Economic and National Security](#) (PDF; Outside Source), the 2006 report emphasized that the global economy requires U.S. corporations to hire multinational teams. If American students hope to be employed as members of those teams, they will need to understand both foreign languages and cultures.⁷ The report also outlined requirements for “an educated American in the twenty-first century,” saying that students . . . “should be proficient in at least one foreign language, have studied at least one global issue or region in depth, and be knowledgeable of the geography and history of our country as well as other world regions.”⁸ The U.S. Senate also emphasized the importance of language instruction for American competitiveness by passing Resolution 170 (Dodd) declaring 2005 as the Year of Languages. The initiative promoted the concept that every American should develop proficiency not only in English but also in other languages.

The [National Security Language Initiative \(NSLI\)](#) (Outside Source) is a plan to strengthen national security and prosperity in the 21st century through education, especially in developing foreign language skills. The NSLI will dramatically increase the number of Americans learning critically needed foreign languages, such as Arabic, Chinese, Russian, Hindi, Farsi, and others, through new and expanded programs from kindergarten through university and into the

workforce. Under the direction of the President, a comprehensive national plan is being developed by the Secretaries of State, Education, and Defense and the Director of the Central Intelligence Agency to expand foreign language education in the U.S. with new programs and resources. Instruction will begin in early childhood and continue throughout formal schooling and into the workforce. The initiative has the following three broad goals:

- Expand the number of Americans mastering critically needed languages and start study at a younger age.
- Increase the number of advanced-level speakers of foreign languages, with an emphasis on critically needed languages.
- Increase the number of foreign language teachers and the resources for them.

Chapter 4 of the [Foreign Language Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.73MB; 73pp.) calls for schools to teach multiple languages.

“Local educational agencies should offer to their students as many foreign language options as possible. The wider the choices, the more likely that California will produce high school graduates who have progressed to the higher stages of the Language Learning Continuum in second and even third languages. These students will also have knowledge of more than one culture.”⁹

To meet that need, many schools have begun offering classical languages, heritage languages, and American Sign Language (ASL) courses. (*EC* Section 51225.3 states, “A course in American Sign Language shall be deemed a course in foreign language.”)

Technology applications for foreign language study. Many teachers use movies, virtual field trips, podcasts, audiotapes of native speakers, Web sites, and presentation or publication of student work to enhance foreign language instruction. In addition, students can learn more about world language and culture through online research.

Related Links

- [2009 Distinguished Middle and High Schools](#), California Department of Education.
- [American Council on Teaching of Foreign Languages \(ACTFL\)](#) (Outside Source)
- [California Language Teachers' Association \(CLTA\)](#) (Outside Source)
- [California Two-Way Immersion Programs Directory](#), California Department of Education.
- [Center for Applied Linguistics \(CAL\)](#) (Outside Source)
- [Foreign Language Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.73MB; 73pp.), California Department of Education.
- [Foreign Language Resource Centers: Title VI U.S. Department of Education Grant Projects](#) (Outside Source)
- [Fulbright International Educational Exchange Program](#) (Outside Source), U.S. Department of State Bureau of Educational and Cultural Affairs.
- [International Baccalaureate \(IB\)](#) (Outside Source)
- [JNCL-NCLIS \(Joint National Committee for Languages and National Council for Languages and International Studies\)](#) (Outside Source)
- [National Network for Early Language Learning](#) (Outside Source)
- [NCSSFL \(National Council of State Supervisors of Foreign Languages\)](#) (Outside Source),
- [The California Foreign Language Project: CFLP Online](#) (Outside Source)

Previous

[History-social science instruction](#)

Next

[Visual and performing arts \(VAPA\)](#)

Footnotes

¹ [Foreign Language Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.73MB; 73pp.). Sacramento: California Department of Education, 2003, 31-32.

²College-Bound Seniors. 1992 Profile of SAT and Achievement Test Takers. National Report . New York: College Entrance Examination Board, 1992.

³C. Moran, and K. Hakuta, "Bilingual Education: Broadening Research Perspectives," in *Handbook of Research on Multicultural Education*. Edited by J. A. Banks and C. A. M. Banks. New York: Macmillan, 1995, 445-462.

⁴Carolyn Taylor-Ward, [The Relationship Between Elementary School Foreign Language Study in Grades Three Through Five and Academic Achievement on the Iowa Tests of Basic Skills \(ITBS\) and the Fourth-Grade Louisiana Educational Assessment Program for the 21st Century \(LEAP 21\) Test. A dissertation submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College](#), December 2003. (PDF; Outside Source)

⁵A. Mechelli, "[Neurolinguistics: Structural Plasticity in the Bilingual Brain](#)" (Outside Source), *Nature*, Vol. 431, October 2004, 757.

⁶Susan Black, "Our Tongue-Tied Students" (Outside Source), *American School Board Journal*, August 2006.

⁷[Education for Global Leadership—The Importance of International Studies and Foreign Language Education for U.S. Economic and National Security](#) (PDF; Outside Source). Washington, D.C.: Committee for Economic Development, 2006, 6.

⁸*Ibid.*, 13.

⁹[Foreign Language Framework for California Public Schools—Kindergarten Through Grade Twelve](#) (PDF; 3MB; 73pp.). Sacramento: California Department of Education, 2003, 34-35.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Visual and performing arts (VAPA)

At the middle grades level, visual and performing arts and other interest-based courses provide windows to the future for students. Visual and performing arts courses (dance, music, theatre, and visual arts/digital arts) also provide students with important emotional, physical, and psychological supports that engage them in learning about themselves and about skills leading to workforce opportunities. Compliance with the No Child Left Behind Act has led some schools to focus primarily on reading, writing, and mathematics. However, the arts and other electives develop **habits of mind** that assist student learning in all subjects.

The Education Commission of the States (2005) launched an initiative called The Arts—A Lifetime of Learning based upon the belief that the future ability of our economy and this country will be based on the fact that we have students who are able to be more creative with what they've learned than anyone else. The commission, following the Arkansas model, recommends 40 minutes of visual arts instruction two times per week and 40 minutes of music two times in the same week.¹

A study by Stanford University (2005) found that musical training improves how the brain processes the spoken word. Stanford researchers hypothesize this could lead to strategies for improving the reading ability of children who have dyslexia and other reading problems.²

- The Arts Education Partnership published [Critical Links: Learning in the Arts and Student Academic and Social Development](#) (PDF; Outside Source) to highlight 67 studies that illustrate the impact of dance, music, theatre, and visual arts educational instruction on academics and social development. One study found that incarcerated and low-income, non-English-proficient middle school students “reported gains in confidence, tolerance, and persistence related to dance instruction. It resulted in hypotheses that may explain why dance is particularly well suited to promoting such gains.” (page 12)
- Another study showed that “in the United States, high school seniors who have been highly involved in the arts since middle school do better academically than those who have not been involved in the arts.” (page 70)
- In the concluding essay, The Arts and the Transfer of Learning, by James S. Catterall states that:
 - ◆ Early childhood music training helps cognitive development.
 - ◆ Piano/keyboard learning helps spatial reasoning and mathematic proficiency.
 - ◆ Piano and voice help long-term spatial reasoning and mathematic proficiency.
 - ◆ Music listening helps spatial reasoning, spatial temporal reasoning, quality of writing, and conciseness of writing.
 - ◆ Music performance helps self-efficacy and self-concept.
 - ◆ Instrument training helps reading and SAT verbal scores.
 - ◆ Music with language learning helps with English skills for English as a Second Language learners (pages 152 and 153).
 - ◆ Visual arts training helps with sophisticated reading skills and interpretation of text.
 - ◆ Instruction in visual arts helps with reading readiness.
 - ◆ Drawing builds cognitive capacities in content of organization of writing.

- ❖ Dance instruction builds nonverbal reasoning, reading skills, persistence, and self-confidence.
- ❖ Theatre/drama supports development of story comprehension and character identification.
- ❖ Theatre/drama provide skill development with subsequently read and unrelated texts.³



In the Spotlight

John Glenn Middle School of International Studies, Desert Sands Unified School District, a 2004 Schools to Watch™-Taking Center Stage Model School

John Glenn Middle School provides a required course program covering world languages, art, drama, and international music. The exploratory course develops students' awareness and appreciation of these subjects.

- [John Glenn DataQuest School Profile](#)
- [John Glenn Middle School of International Studies](#) (Outside Source)
- [School to Watch™-Taking Center Stage—Model School-Visitor's Guide: John Glenn Middle School of International Studies](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

The visual and performing arts content standards were adopted by the State Board of Education (SBE) in 2001. The State Board approved and published the [Visual and Performing Arts](#) Framework in 2004. The framework provides support and resources for the inclusion of dance, music, theatre, and visual arts courses in the school day (consistent with California *Education Code* sections 51210 and 51220). Each of the four disciplines of visual and performing arts has five strands that provide connectors within each arts discipline. The following strands serve as the common factor across all four arts disciplines: artistic perception, creative expression, historical and cultural context, aesthetic valuing, and connections/relationship/applications. These strands serve to nurture high-level thinking through sequential standards-based learning.

Technology applications for the visual and performing arts. Many teachers use new media tools such as synthesizers, digital cameras, software, virtual field trips, podcasts, videos, and Web sites in addition to traditional instructional tools. Students gain skills in the use of these tools as they acquire knowledge from dance, music, theatre, and visual arts courses.

California's county offices of education, through their California County Superintendents Educational Service Association (CCSESA), may provide additional support to districts and schools working to maintain or establish dance, music, theater, and/or visual arts courses for their students.



In the Spotlight

Georgetown School, Black Oak Mine Unified School District

The arts program at Georgetown receives district support so that exiting students are prepared for the strong high school arts program. The community supports the program by exhibiting student work in local business throughout the year.

Margarita Middle School and Gardner Middle School, Temecula Valley Unified School District

To provide a well-rounded learning environment, support students' self-esteem and problem-solving skills, and develop creativity among students, both Margarita Middle School and Gardner Middle Schools offer strong visual arts programs.

Mills Middle School, Folsom-Cordova Unified School District

Mills Middle has a strong visual arts program involving many students who have become actively engaged in school and in their own learning. Because the arts engage students in learning, the school staff has used the arts programs to provide additional support for student learning.

Vista Academy for Visual and Performing Arts, Vista Unified School District

Vista Academy students learn from credentialed dance, visual arts, music, and theatre teachers who teach to the standards. The entire faculty and community believe that the inclusion of the arts in the students' day sharpens their focus and problem-solving abilities and reduces conflicts within the school. As a result, Vista Academy for Visual and Performing Arts teachers present the arts sequentially from kindergarten through the eighth grade by integrating arts into the curriculum of other content areas. The arts at Vista support students' growth as individuals and their learning.

- [Gardner Middle DataQuest Profile](#)
- [Gardner Middle School](#) (Outside Source)

- [Georgetown DataQuest School Profile](#)
- [Georgetown School](#) (Outside Source)

- [Margarita DataQuest Profile](#)
- [Margarita Middle School](#) (Outside Source)

- [Mills DataQuest School Profile](#)
- [Mills Middle School](#) (Outside Source)

- [Vista Academy DataQuest School Profile](#)
- [Vista Academy for Visual and Performing Arts](#) (Outside Source)

Related Links

- [2009 Distinguished Middle and High Schools](#), California Department of Education.
- [CBEDS Assignment Codes Definitions](#), California Department of Education.
- [December 2007 NCLB Teacher Requirements Resource Guide](#) (PDF; 248KB; 40pp.), California Department of Education.
- [Gaining relevance through visual and performing arts](#), Recommendation 4—Relevance, TCSII.
- [President's Committee on the Arts and the Humanities](#) (Outside Source).
- [The Kennedy Center ArtsEdge](#) (Outside Source).
- [Visual and Performing Arts Content Standards for California Public Schools Prekindergarten Through Grade Twelve](#) (PDF; 1.09MB, 172pp.), California Department of Education.
 - ◆ [Dance](#), California Department of Education.

- ◆ [Music](#), California Department of Education.
- ◆ [Theatre](#), California Department of Education.
- ◆ [Visual Arts](#), California Department of Education
- [Visual and Performing Arts Framerwork for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.80MB; 294pp.), California Department of Education.

Previous

[Foreign/world languages](#)

Next

[Career Technical](#)

Footnotes

¹ [Arts in Education: What States Are Doing](#) (Outside Source) Education Commission of the States.

² Carrie Sturrock, "[Playing Music Can Be Good for Your Brain: Stanford Study Finds It Helps the Understanding of Language](#)" (Outside Source), *San Francisco Chronicle*, November 17, 2005.

³ [Critical Links: Learning in the Arts and Student Academic and Social Development](#) (Outside Source), Washington, D.C.: Arts Education Partnership, 2002.

[Back to Top](#)

[Print](#)

California Department of Education
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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Career technical education

The [California Career Technical Education Model Curriculum Standards Grades Seven Through Twelve](#) (PDF; 2.13MB; 441pp.) describes 15 industry sectors that will need to augment the workforce within the next ten years. Young adolescents need to get a glimpse of a possible future in the workforce through both elective classes and projects that integrate career exploration as part of the subject-matter curriculum.

Career technical education, also known as **career tech**, is a program of study that integrates core academic knowledge with technical and occupational knowledge to provide students with a pathway to postsecondary education and careers. At the middle grades level, career technical education usually exists as a component of an **exploratory wheel**, or elective program. According to the original *Taking Center Stage*, "Exploratory and elective classes play an important role in the lives of adolescents. As they pass from childhood to young adulthood, students need to develop a broader schema of opportunities and assess their interests and talents beyond traditional core subjects."¹

The career technical education standards are an aid in planning interdisciplinary units and career days for middle grades students. In addition, the appendix to the standards (pages 366-416), Career Technical Education and Academic Standards Crosswalk, displays a matrix of the industry sectors and relationship to the following subjects:

- Mathematics
- Science
- History–social science
- Visual and performing arts
- English–language arts

Career technical education is a powerful tool in helping young adolescents see the relevance of science, mathematics, and planning for college and careers. The section on [Career technical education](#) in the Recommendation on Relevance includes ideas about how to use career education to engage young adolescents in the excitement of learning new skills that will help them in the future.

Related Links

- [California Career Technical Education Model Curriculum Standards Grades Seven Through Twelve](#) (PDF; 2.13MB; 441pp.), California Department of Education.
- [California Career Planning Guide](#) (PDF; Outside Source), California Career Resource Network, State of California.
- [California CareerZone](#) (Outside Source)
- [californiacareers.info: Providing career development resources for California](#) (Outside Source), California Career Resource Network, State of California.
- [WorkAbility I](#), California Department of Education.

Previous

[Visual and performing arts \(VAPA\)](#)

Next

[Physical education](#)

Footnote

¹ *Taking Center Stage*. Sacramento: California Department of Education, 2001, 23.

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Physical education

National concerns about a childhood obesity epidemic make physical education at the middle school more important than ever. The [Physical Education Model Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.27MB; 72pp.) represent the essential skills and knowledge that all students need to maintain a physically active, healthy lifestyle. According to California *Education Code (EC)* Section 51210, students in grades one to six should participate in 200 minutes of physical education every ten school days, and *EC* Section 51222 provides for 400 minutes of physical education every ten school days for students in grades seven through twelve. [California State Board of Education \(SBE\) Policy # 99-03](#) provides a waiver of time requirements permitted for middle students on a block schedule: the minimum requirement for physical education is 70 minutes a day for at least 18 weeks. Please review the [Middle Grades Courses of Study and Instructional Time](#) (DOC; 107KB; 9pp.) for more information.

Given the obesity epidemic, physical education teachers face a new challenge in finding ways to teach students to love exercise and develop a commitment to fitness. Instead of training a new generation of athletes who will compete on teams, the goal is to expose all students to a wide range of physical activities that they will be able to continue as adults and to help them understand how to maintain a physically active, healthy lifestyle.

The Physical Education Model Content Standards for California Public Schools will help educators establish specific learning goals and objectives for their physical education program. The five overall model content standards for elementary and middle school children are as follows:

- Standard 1: Demonstrate motor skills and movement patterns needed to perform a variety of physical activities.
- Standard 2: Demonstrate knowledge of movement concepts, principles, and strategies that apply to the learning and performance of physical activities.
- Standard 3: Assess and maintain a level of physical fitness to improve health and performance.
- Standard 4: Demonstrate knowledge of physical fitness concepts, principles, and strategies to improve health and performance.
- Standard 5: Demonstrate and utilize knowledge of psychological and sociological concepts, principles, and strategies that apply to the learning and performance of physical activity.

The California State Board of Education adopted the state's first standards-based framework in physical education in 2008. The [Physical Education Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 3.75MB; 342pp.) incorporates the model content standards and includes suggested ways to assess student achievement on the basis of the standards. It highlights connections within and across grade levels and provides guidance for instruction, program development, and support for the teacher. However, unlike other content areas, there are no adopted materials for physical education. (California standards require 200 minutes every 10 days for grades K through sixth grade and 400 minutes every 10 days for grades seventh through twelfth grades.)

Related Links

- [The School Administrator Balancing Athletics and Academics](#) (Outside Source), America Association of School Administrators
- [Curriculum Frameworks—Physical Education](#), California Department of Education.
- [Healthy Children Ready to Learn: Facilities Best Practices](#) (PDF; 2.03MB; 66pp.), California Department of Education.
- [Physical Education Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 3.75MB; 342pp.), California Department of Education.
- [Physical Education Model Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.27MB; 72pp.), California Department of Education.
- [Taking Action for Healthy School Environments Linking Education, Activity, and Food in California Secondary Schools](#) (PDF; Outside Source), California Healthy Kids Resource Center.

Previous

[Career technical education](#)

Next

[Health education](#)

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations for Success](#)
[Recommendations in Action](#)
[Standards and Testing](#)
[Stakeholder Organizations](#)
[References and Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent Development](#)
[Practices In the Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Health education

The middle grades are a time of radical change for young adolescents. As hormones start to surge and bodies begin to grow in sometimes awkward spurts, the mind-set of many young teens also changes from dependence on adult approval to dependence on peer approval. As a result, many middle grades students are at risk for negative health behaviors: smoking, drugs, alcohol, sexual activities, self-cutting, eating disorders, and depression.

These risk factors make health education extremely important in the middle grades. Health education instruction provides students with the knowledge, skills, and confidence to make healthy choices, live a healthy lifestyle, and refrain from high-risk behaviors. Although providing students with knowledge about health-related topics is important, knowledge alone will not change student behavior. Studies conducted by the California Healthy Kids Survey and the Centers for Disease Control and Prevention have shown that even when youths have knowledge of what is harmful to their health, they often do not have the skills to avoid engaging in those risky behaviors.

Students need opportunities to practice skills such as decision making, goal setting, interpersonal communication, critical thinking, and refusal skills. Discussion of different health-related topics will strengthen different skills. For example, critical thinking and decision-making skills are important for choosing a healthy diet and analyzing and resisting peer and media influences to use tobacco. Interpersonal communication skills are needed to negotiate alternatives to risky sexual behavior or refusal of alcohol and other drugs. Practicing these and other skills will give students the ability and confidence to face challenges and make healthy lifestyle choices.

Teachers can address health education in a variety of ways in the school curriculum. Using trained teachers to address health in a dedicated course is the best approach. Sometimes teachers address health education in the context of related issues within another subject, including science, physical education, psychology, social studies, and language arts. However, when addressed solely through other classes rather than in a dedicated course, health issues often receive indirect or superficial coverage with little or no significant increase in student awareness or positive behavioral changes. An integrated, interdisciplinary approach across the curriculum involving teachers of various subjects addressing the same theme is a stronger approach. For example, a thematic approach to learning about health risks of smoking cigarettes or food choices may include several subject areas and activities:

- English teachers can assign essays about the impact of television ads on food or health product choices.
- In science, students can study how nutrients are important to body systems.
- In social studies, lessons on world cultures can include research on how eating habits have changed as societies move from being nomadic, to agriculture-based, to urban.
- Both science and social science lessons can explore different eating patterns in different cultures and the relationship to diseases.
- Art students can design posters on healthy lifestyles for display in the cafeteria.

Regardless of the approach, all teachers and school personnel need to be involved in skills-based health education in order to reinforce learning across the school environment. This coordinated school health approach is addressed in the [Health Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 1.41MB; 264pp.).

Although there are no time requirements for teaching health, there are requirements for students to learn about AIDS, tobacco, drugs, alcohol, and prenatal care. However, with the push for academic rigor, finding time for health education is often difficult in an already packed schedule. Although physical activity is part of a wellness program, physical education is not the same as health. Even though there is a strong tie between health and fitness, physical education minutes cannot be used to provide health education.

The Health Framework for California Public Schools Kindergarten Through Grade Twelve “. . . can be used to support the positive health behaviors of children. The achievement of optimal health, positive health behaviors, and health literacy is a collaborative, support effort.”¹ Health education focuses on helping students gain the knowledge, skills, and behaviors needed for health literacy and on fostering the attitudes they need for lifelong health behaviors.² The Health Framework recommends, “All students should receive sequential, age-appropriate health education every year during the elementary and middle grades and a minimum of a one-semester health education course at the secondary level.”³

Since there are no required instructional minutes for health education, teacher teams must find ways to integrate health education into core classes and in health fairs, student assemblies, and partnerships with community health organizations. Refer to Recommendation 12—Partnerships, for more information on involving community members.

Physical fitness testing determines health-related fitness rather than an understanding of physical education concepts. The test assesses six major fitness areas: aerobic capacity (cardiovascular endurance), body composition (percentage of body fat), abdominal strength and endurance, trunk strength and flexibility, upper body strength and endurance, and overall flexibility. Several test options are provided so that most students can participate.

The [2009-10 California Physical Fitness Report Summary of Results](#) reports that the physical fitness test was administered to 444,024 California students in the seventh grade. Only 35 percent of the seventh graders met the healthy fitness zone in all six areas of the test. For more information about the physical fitness test, including the fitness areas and test options, refer to [Physical Fitness Testing \(PFT\)](#). All public schools in California are required to report results of physical fitness testing annually in the school accountability report cards. Schools are also required to provide students with their individual results. However, no individual student information is reported on the Internet. Please review the [Physical Fitness Testing \(PFT\) Results](#) that are available for the 2009-10 and prior years for schools, districts, counties, and the state.

Related Links

- [2004 Health Primary Adoption](#), California Department of Education.
- [Alcohol, Tobacco & Other Drug Prevention](#), California Department of Education.
- [California Healthy Kids Survey](#), California Department of Education.
- [Childhood Obesity & Diabetes Task Force](#), California Department of Education.
- [Coordinated School Health](#), California Department of Education.
- [Getting Results](#), California Department of Education.
- [Health](#), California Department of Education.
- [Health Education Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 1.30MB; 71 pp.), California Department of Education.
- [Health Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 1.41MB; 264pp.), California Department of Education.
- [Healthy Children Ready to Learn: Facilities Best Practices](#) (PDF; 2.03MB; 66pp.), California Department of Education.
- [Recomendation12—Partnerships](#), TCSII
- [School Nutrition . . . by Design!](#) (PDF; 705KB; 45pp.), California Department of Education.
- [Taking Action for Healthy School Environments: Linking Education, Activity, and Food in California Secondary Schools](#) (PDF; Outside Source), California Healthy Kids Resource Center.

- [Tobacco-Use Prevention Education Program](#)," California Department of Education.

Previous

[Physical education](#)

Next

[Differentiated Instruction](#)

Footnotes

¹[Health Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 1.41MB; 264pp.). Sacramento: California Department of Education, 2003, 4.

²Ibid., 12.

³Ibid., 5.

⁴[State Schools Chief Jack O'Connell Responds to Physical Education Report](#). Sacramento: California Department of Education, press release #64, June 8, 2006.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations for Success](#)
[Recommendations in Action](#)
[Standards and Testing](#)
[Stakeholder Organizations](#)
[References and Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent Development](#)
[Practices In the Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)

TCSII

Differentiated instruction

[Differentiated instruction](#) involves tailoring lessons or instructional strategies to meet the individual needs of students and the state and federal requirements for universal access (refer to pages 229-239 in the [Mathematics Framework for California Public Schools—Kindergarten Through Grade Twelve](#) [PDF; 3.19MB; 411pp.] for more on universal access). Differentiated strategies assume that one size cannot fit all and that teaching to the middle student fails to challenge advanced learners or support those who struggle. Effective teachers quickly learn their students' learning needs and styles through a review of cumulative folders, assessment results from previous years and the first weeks of a new year, as well as through [articulation](#) meetings with feeder schools. For more on articulation, refer to [Recommendation 6—Transitions](#).

The [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve \(2007\)](#) (PDF; 6.06MB; 386pp.), like other curriculum frameworks, emphasizes the importance of differentiating instruction so that all students can achieve. "Although all learners work toward mastery of the same standards, curriculum and instruction are differentiated to meet students' needs."¹ Other frameworks also provide information on meeting instructional needs through differentiated strategies:

- [History-Social Science Framework for California Public Schools](#) (PDF; 2.91MB; 249pp.), page 187.
- [Mathematics Framework for California Public Schools Kindergarten through Grade Twelve \(2005\)](#) (PDF; 3.19MB; 411pp.), Chapter 6.
- [Science Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 6MB; 313pp.), Chapter 7.
- [Visual and Performing Arts Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.80MB; 294pp.), page 1.



In the Spotlight

Rancho Milpitas Middle School, Milpitas Unified School District, a 2008 redesignated School to Watch™-Taking Center Stage Model School

The school's professional learning community members differentiate lessons in every classroom. One strategy for differentiation includes innovative cross-curricular lessons that include projects, field trips, and service projects.

- [Rancho Milpitas DataQuest School Profile](#)
- [Rancho Milpitas Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Rancho Milpitas Middle School](#) (PDF; Outside Source)
- [School to Watch™-Taking Center Stage Model School](#)

In *Classroom Instruction That Works*, Marzano joins other educational experts in calling for teachers to provide avenues of support for students to succeed. He lists nine possible strategies that will give students those avenues of support to learn standards-based content:

1. Identifying similarities and differences
2. Summarizing and note taking
3. Reinforcing effort and providing recognition
4. Homework and practice
5. Nonlinguistic representation (graphic organizers, pictures, and kinesthetic activities)
6. Cooperative learning
7. Setting objectives and providing feedback
8. Generating and testing hypotheses
9. Cues, questions, and advanced organizers²

Through daily informal progress monitoring, as well as periodic formal monitoring, teachers can give students multiple opportunities to redo and refine original assignments until they demonstrate proficiency or excellence.

Dr. Debbie Silver is a renowned expert on differentiated instruction. In making the connection between differentiation and assessment, she quotes researchers (Newmann, Marks, & Gamoran, 1995, p. 3) assessment strategies are moving beyond superficial levels of comprehension and towards deeper understandings such as:

- Construction of knowledge: Students should construct or produce knowledge, instead of merely reproducing or identifying understandings that others have created.
- Disciplined inquiry: Students should engage in cognitive work that requires them to rely on a field of knowledge, search for understanding, and communicate in elaborate forms, their ideas and findings.
- Value beyond school: Students' accomplishments should have value—either aesthetic, utilitarian, or personal—beyond just documenting their competence."³ View Dr. Silver's [archieved Web cast](#) on differentiated instruction.



In the Spotlight

Medea Creek Middle School, Oak Park Unified School District, a 2004 Schools to Watch™-Taking Center Stage Model School

Medea Creek made differentiation of instruction a major focus for the whole school. As a result, every teacher is prepared to create opportunities for differentiated instruction.

- [Medea Creek DataQuest School Profile](#)
- [Medea Creek Middle School](#) (Outside Source)
- [Medea Creek Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

The theory of different learning styles provides some helpful information on identifying ways that teachers can differentiate instruction. For example, staff or team meetings can focus on some of the following models and analyze how they would help specific students:

- VAK (visual-auditory-kinesthetic) models
- Myers-Briggs Type Indicator
- Gardner's theory of multiple intelligences
- Left/right brain theories (for example, a right-brain dominant learner usually prefers

drawing pictures in a mind map rather than taking linear Cornell notes.)

These ideas and other cognitive inventories expose teachers to the possible ways that students learn. Teachers can consider options to try with students who don't get it after initial lessons. Even though these cognitive models are theories, there is a universal understanding that students learn in different ways and that differentiated instruction is valid. For example, teachers might find VAK theories useful in their own teaching, such as realizing when they are in a visual location (by the board), an auditory location (at the head of the class), and a kinesthetic location (within touching distance of a particular student) and consider which location to use for different purposes.

The Center for Comprehensive School Reform and Improvement. featured differentiated instruction in two of its newsletters:

- [A Look at Differentiating Instruction: Tips for Teachers](#), February 2009, The Center: For Comprehensive School Reform and Improvement.
- [A Teacher's Guide to Differentiating Instruction](#) (PDF; Outside Source) January 2007, The Center: For Comprehensive School Reform and Improvement.

Related Links

- [Creating a Differentiated Classroom](#) (PDF; Outside Source), S. Keck and S. C. Kinney, Document No. EJ719942, Education Resources Information Center (ERIC).
- [Differentiated Instruction](#) (Outside Source), NMSA ON TARGET: Association for Middle Level Education.
- [Differentiated Instruction and Implications for UDL Implementation](#) (Outside Source), Tracey Hall, Nicole Strangman, and Anne Meyer, Center for Applied Special Technology (CAST): Transforming Education through Universal Design for Learning.
- [Differentiating the Language Arts for High Ability Learners, K-8](#) (Outside Source), Joyce Van Tassel-Baska, Document No. ED 474306, ERIC Clearinghouse on Disabilities and Gifted Education, Arlington, VA.

Previous

[Health education](#)

Next

[Direct instruction](#)

Footnotes

¹[Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 6.06MB; 386pp.). Sacramento: California Department of Education, 2007, 9.

²Robert Marzano, Debra Pickerling, and Jane Pollock, *Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement*. Alexandria, Va.: Association for Supervision and Curriculum Development, 2001.

³Dr. Debbie Silver, [Thinking "Outside the Lines"](#), (PDF; Outside Source) Written for PBS TAPPED IN Series, 5.

[Back to Top](#)

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations
for Success](#)
[Recommendations
in Action](#)
[Standards and
Testing](#)
[Stakeholder
Organizations](#)
[References and
Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent
Development](#)
[Practices In the
Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Direct instruction

According to the [National Institute for Direct Instruction](#) (Outside Source), Direct Instruction is a model for teaching that emphasizes well-developed and carefully planned lessons designed around small learning increments and clearly defined and prescribed teaching tasks. It is based on the theory that clear instruction eliminating misinterpretations can greatly improve and accelerate learning.

In direct instruction, teachers lecture and present standards-based material to the class according to the adopted textbook and district [pacing guides](#). [What is Direct Instruction \(DI\)](#) (Outside Source) provides more detail to define direct instruction.

Direct instruction is a very effective tool in accelerated interventions. As most middle-level teachers know, however, lecture is not one of the best ways to engage young adolescents and needs to be balanced with other strategies that allow for inquiry and hands-on experience.

Related Links

- [Recommendation 2—Instruction, Assessment, and Intervention](#)

Previous

[Differentiated Instruction](#)

Next

[Study Skills—teaching students how to learn](#)
[Back to Top](#)
[Print](#)

 California Department of Education

 1430 N Street
 Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Study skills—teaching students how to learn

Teaching students how to be effective learners is another critical component of instruction. [Advancement Via Individual Determination \(AVID\)](#) (Outside Source) and [Gaining Early Awareness and Readiness for Undergraduate Programs \(GEAR UP\)](#) (Outside Source) are two programs designed to help teachers prepare students for success, particularly those from socioeconomically disadvantaged families. However, whether students participate in AVID or not, all students need to learn study skills and good academic habits.

Study skills programs teach students to:

- Develop positive work habits.
- Set goals.
- Make effective use of daily planners.
- Manage their time.
- Understand and use academic vocabulary.
- Understand, develop, and apply mnemonic devices.
- Develop reading strategies such as text previewing.
- Take Cornell notes.
- Keep track of homework.
- Plan how and when to study for tests.



In the Spotlight

Serrano Intermediate School, Saddleback Valley Unified School District

Using funds from a Peer Assistance and Review (PAR) Grant, Serrano Intermediate School staff members prepared a student booklet that outlines the practices that successful students often adopt. The booklet, called *Passport on the Sea to Success*, is used to teach **all** students those same practices. The sea theme mirrors the professional learning community focus and gave rise to the passport idea. The booklet focuses on habits to complement the science teachers' use of concepts from the book, *The 7 Habits of Highly Effective Teens* by Sean Covey. The focus on habits reinforces lessons from the Quest character development program used by the school.

The complete *Passport on the Sea to Success* is available from Serrano's Website. Go to the school's home page. select Students, and then select Sea to Success. Students receive a hard-copy booklet in September, but parents can always download individual pages or access the booklet when needed.

Each September, the school's six departments teach various Passport pages to students the first two weeks in September, with reinforcement throughout the year. The department assignments are as follows:

1. Electives: Since electives teachers see new students each trimester, they are responsible for teaching organization skills and checking students' notebooks. Students complete page one, "Check Your Logbook, Matey," during the first week of the new trimester. Students who do not have the recommended supplies are asked to obtain them and are then rechecked. If students still do not bring the required supplies, they are sent to the school's guidance specialist, who gives them the materials they need.
2. Physical education: Since good sportsmanship is needed on the field, PE teachers cover the Citizenship Pledge on page two (signed by a parent) and the Inventory of Study Skills on pages five and six.
3. Science/Health: Science teachers cover pages three and four, "How Good Are Your Study Habits?"; page seven of *The 7 Habits of Highly Effective Teens*; and page 11, "The Academic Habit," which spells out a common policy on late work. This segment is reinforced through the Quest class and student planners, published by Premier Agenda, that are based on the Sean Covey book. The seventh-grade student planners have a special GO Program included in them that develops this material even further (goal setting, study skills, etc.).
4. English: Teachers cover page eight, "Work Habits Pledge" (signed by parents); pages nine and ten, "Setting Academic Goals" (with a focus on encouraging students to set language arts goals); and pages 13-15 that include common paper formats for keyboarded and handwritten essays and keyboarded study questions. These formats are used schoolwide. Teachers also made posters of the three formats and display the posters in classrooms. Teachers require all essays to be in the Modern Language Association format to get students used to it.
5. Mathematics: Because they work with numbers, mathematics teachers cover page 12, "Balancing Activities and Homework," which dovetails with the student planners. Through their mathematics class, students learn how to use their agenda planner. For example, mathematics teachers ask students to record their weekly personal commitments as well as their homework commitments to better see where their time goes during the week.
6. History: History teachers go over page 16, "What's in It for Me?" on textbook utilization strategies; page 17 on "Cornell Notes"; and page 18, "How Do I Remember That?", which covers common mnemonic devices. The History Department is responsible for teaching students Cornell notes, which has been adopted schoolwide. All other academic teachers reinforce their use. Many teachers have developed special use Cornell notes, such as the one designed for research papers with source information at the top. Teachers at Serrano's feeder elementary schools have asked to learn how the middle school teachers incorporate Cornell notes into instruction, which was added as a part of their articulation planning. For more on articulation, refer to Recommendation 6—Transitions.

- [Serrano DataQuest School Profile](#)
- [Serrano Intermediate School](#) (Outside Source)
- [Saddleback Valley Unified School District home page](#) (Outside Source)
- [Peer Assistance and Review \(PAR\) Grant](#)
- [Articulation Agreements with Elementary Schools](#)
- [Recommendation Six—Transitions](#)

Effective teachers prepare students for tests by showing them how to study and what to expect on tests (how many questions; how to keep track of time; and how to make outlines before short essays). Teachers give them practice through regular benchmark assessments that show them how they are progressing toward mastery. The section on [Test preparation](#) will provide more information.



In the Spotlight

John Glenn Middle School of International Studies, a 2004 Schools to Watch™-Taking Center Stage Model School

Desert Sands Unified School District) is an AVID national demonstration school and implements Cornell note taking schoolwide so that all students benefit from AVID strategies.

- [John Glenn DataQuest School Profile](#)
- [John Glenn Middle School of International Studies](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: John Glenn Middle School of International Studies](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

[The Magnificent Eight: AVID Best Practices Study](#) (PDF; Outside Source) is a qualitative research study conducted by Larry and Grace Guthrie of the Center for Research, Evaluation, And Training in Education (CREATE) in Burlingame, California and provides more details about AVID. The study investigates how closely eight California AVID Demonstration schools, schools generally considered to be representative of mature AVID programs, follow the AVID implementation model. The researchers also discuss whether or not all of the eleven AVID essentials are requisite.

Related Links

- [Academic literacy](#), Recommendation 1—Rigor, TCSII.
- [Cornell Note Taking System](#) (PDF; Outside Source)
- [Reciprocal teaching](#), Glossary, TCSII.

Previous

[Direct instruction](#)

Next

[Questioning strategies](#)

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Questioning strategies

According to researchers, "the essence of effective education is built around good questions."¹ Teachers help students learn critical thinking skills by using questioning strategies that lead students on a quest for knowledge. At the beginning of a lesson, questions that elicit a yes/no or single-word response might be appropriate. However, later in a lesson, [Developing, Using, and Communicating Complex Reasoning](#) and [Document Based Questions](#) (Outside Source) teach students to apply analytical thinking to the lessons.

[Bloom's Taxonomy—Implications for Testing](#) (DOC; 24KB; 1p.) is a time-tested tool for teaching higher-level thinking skills. William Daggett has adapted Bloom's Taxonomy into his [Rigor/Relevance Framework](#) (Outside Source) which is an instrument for analyzing instructional lessons to ensure that students gain the ability to apply the lessons to lifelong learning.

The book *Understanding by Design* presents the idea of essential questions that force teachers to use higher-level, big picture questions to stimulate thought. These essential questions lead students to a deeper understanding of the material that allows them to apply the knowledge in other settings.

[Constructed Response](#) (Outside Source) questions are open-ended, short-answer questions that measure application skills as well as content knowledge. These questions use a range of primary and secondary stimuli and authentic real-world examples, including timelines, maps, graphs, cartoons, charts, and short readings. Teachers grade constructed response questions against specific criterion such as by employing a scoring [rubric](#).

Related Links

- [Grades and effective standards-based reporting](#), Recommendation 1—Rigor, TCSII.
- [Questioning Strategies that Lead to Higher-Level Thinking Skills](#), Document Library, TCSII.
- [Rubrics](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.

Previous

[Study skills](#)

Next

[Connections to prior knowledge](#)

Footnote

¹Mike Schmoker, *Results Now: How We Can Achieve Unprecedented Improvements in Teaching and Learning*. Alexandria, Va.: Association for Supervision and Curriculum Development, 2006, 169.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Connections to prior knowledge

One reason why assessment is so important to effective instruction is because it allows teachers to see what students already know as well as what they have missed. By building on what students already know, teachers can increase student confidence as well as reinforce new learning and test-taking skills. An instructional strategy called KWL (Know, Want to Know, Learned) makes use of prior knowledge:

- In a new lesson (for example, a new unit in history) instruct students to make a list of what they already **know** about the topic.
- Based on the title or introduction to the new topic, ask students what they **want to know**.
- After they have studied the new topic, have students tell what they have **learned**.

The ability to identify both what students do know and what they do not yet understand is similar to a scaffolding approach.

Related Links

- [KWL \(Know, Want to Know, Learned\)](#) (Outside Source) National Education Association (NEA)

Previous

[Questioning strategies](#)

Next

[Scaffolding](#)

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations for Success](#)
[Recommendations in Action](#)
[Standards and Testing](#)
[Stakeholder Organizations](#)
[References and Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent Development](#)
[Practices In the Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Scaffolding

In the construction industry, scaffolding is a set of temporary supports that holds people and materials until the final building is in place. The same concept applies in education, where teachers provide temporary supports to help students until they can use new knowledge to build explanations that cement learning.¹ Some examples of scaffolding include:

- Modeling. Teachers model the desired learning task before requiring students to do it on their own.
- [Questioning strategies](#) and expanding. Using another scaffolding strategy, the teacher uses what is correct in the student's response but probes or cues the student to suggest possibilities for broadening the response. (Although the Socratic method of questioning helps expand student knowledge, teachers also need to point out errors in reasoning that would lead students to an incorrect conclusion.)
- [Study skills—teaching students how to learn](#). The teacher models the appropriate thinking or working skills, checks each day to see that students are becoming proficient in using the skills, and gives progressively more responsibility for students to manage study skills on their own.
- Graphic organizers are another type of scaffolding strategy. Venn diagrams, story webs, and a host of other organizers help students build ideas toward a final product. Conference speaker William McBride presented a group of sample [Content Area Reading Graphic Organizers](#) (DOC; 241 KB; 44pp.) at the summer 2005 California League of Middle Schools (CLMS) Institute.
- Manipulatives are a classic scaffolding tool. For example, in a geometry class, a teacher gives student teams a set of popsicle sticks and ask them to create specific geometric forms. The teacher can walk among the teams and quickly assess how well students understand the concept. It is a low-risk way that students can test their growing knowledge.
- Cooperative learning groups students who help each other learn the content.

Related Links

- [California League of Middle Schools \(CLMS\)](#) (Outside source)
- [William McBride](#) (Outside Source)

Previous

[Connections to prior knowledge](#)

Next

[Homework](#)

Footnote

¹L. Vygotsky, *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, Mass.: Harvard University Press, 1978.

[Back to Top](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Homework

In *Classroom Instruction That Works*, Marzano talks about the importance of homework and its two primary purposes:

- To give students practice that will reinforce learning
- To give students feedback based on teacher review of the homework¹

Another purpose for homework is to require students to complete unfinished work from the class period. Since the ultimate purpose of homework is to improve learning, assignments should be meaningful and reinforce the students' mastery of the course content.

However, the homework equation changes with standards-based reporting. How does homework help students master the grade-level standards? How do homework grades relate to proficiency on the standards? How much homework is enough? How much is too much? There is tremendous competition for students' time, so what educators ask students to do outside school must be relevant to the standards and individual student needs and defensible to parents and community members. It is important for teachers to establish schoolwide homework expectations that reflect district policy at the beginning of the school year. It is also critical for teachers to regularly discuss homework-grading policies and to maintain consistency and fairness throughout the school.

The Northwest Educational Technology Consortium (NETC) provides a helpful Web page summarizing the research on [homework and practice](#) (Outside Source). (The NETC is one of the ten Regional Technology in Education Consortia in the United States that receives funding from the U.S. Department of Education). Middle grades teachers may find the following research findings about homework helpful:

- Junior high school students' achievement continued to improve with increased homework until assignments took between one and two hours a night. More homework than this was not accompanied by improved achievement.²
- Teachers should provide feedback on homework assignments. Student achievement can vary based on the kind of feedback provided by the teacher.³

Homework strategies can be a topic for lively discussion at a professional learning community meeting, where members discuss many of the benefits and pitfalls of various homework approaches. Some possible questions to consider include the following:

- What is the purpose of homework? Is it practice? Is it **deeper** work? Is it to finish work started in class?
- What percent of the class grade should homework represent?
- How does homework support learning of the standards?
- How does a grade for homework help students and their parent/guardians to understand their progress toward proficiency on grade-level standards?
- Should homework be a separate grade in the final reports that reflects effort, while proficiency on the standards is the focus of the report?
- What is the difference between competence and compliance? Discussion about the difference between using homework as punishment or busy work (compliance) rather than as a tool to build competence will help the team members to refine their strategies

and goals.

- What level of parental support/assistance can parents reasonably provide?
- How much time should each class assignment take to do?
- What kinds of feedback and how much should teachers give on homework?
- How will the team ensure that students do not receive overlapping assignments that would overload students with large assignments during any given week?
- Does the team agree with Rick Wormeli who cautions against grading practice exercises?⁴



In the Spotlight

The linked [Homework Page](#) (Doc; 31 KB; 1 p.) is an example of a homework management tool for students. It lists teachers and their subject areas by team and divides the page into a daily grid for students to keep track of homework by subject area and day that it is due. The form also provides teacher team members with a reminder to coordinate assignments and avoid overloading students with large projects in more than one subject at a time.

Since many students complain that they do not understand an assignment, lack a quiet place to study, or do not receive help with homework at home, many schools develop after-school study centers to help students complete their work. One school that instituted a Learning Lab (study center) after school saw a large decrease in late or missing homework, as well as a reduction in the number of F grades earned by students. The Learning Lab was available to all students who wanted to receive extra help with their work. However, most students attended because a teacher required attendance. If a student failed to turn in any completed assignment on time, the teacher sent a note to the parents stating that the child must either turn in the assignment the next day or attend the Learning Lab that afternoon. Parents are responsible for arranging transportation. The student must return the signed note. If the note is not signed, the student must call the parent in the presence of the principal.⁵

In 2005, the California Department of Education awarded 97 before- and after-school programs renewable grants under the [After School Education and Safety Program](#). The funds support programs that provide tutoring or homework assistance for students in core academics and educational enrichment. Refer to the section on After school academies for more details about after-school programs.

Related Links

- [After school academies](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Grades and effective standards-based reporting](#), Recommendation 1—Rigor, TCSII.
- [Foreign Language Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.73MB; 73pp.), California Department of Education.
- [Health Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 1.41MB; 264pp.), California Department of Education.
- [History-Social Science Framework for California Public Schools: 2005 Edition with new Criteria for Instructional Materials](#) (PDF; 2.91MB; 249pp.), California Department of Education.
- [Making the Most of Homework](#) (PDF; Outside Source), Parents Place Bulletin.
- [Mathematics Framework for California Public Schools—Kindergarten through Grade Twelve \(2005\)](#) (PDF; 3.19MB; 411pp.), California Department of Education.
- ["No Homework Left Behind"](#) (Outside Source), Gary Garbe and David Guy, Educational

Leadership, Vol. 63, Summer 2006, ASCD.

- [Northwest Educational Technology Consortium \(NETC\)](#) (Outside Source)
- [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 6.06MB; 386pp.), California Department of Education.
- [Science Framework for California Public Schools Kindergarten Through Grade Twelve With New Criteria for Instructional Materials](#) (PDF; 3.84MB; 313pp.), California Department of Education.
- [What research says about the value of homework: Research Review](#) (Outside Source), The Center for Public Education.

Previous

[Scaffolding](#)

Next

[Student grouping \(flexible\)](#)

Footnotes

¹Robert J. Marzano, Debra Pickering, and Jane E. Pollock, "Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement." Alexandria, Va.: Association for Supervision and Curriculum Development, 2001.

²Harris Cooper, [Homework Research and Policy: A Review of the Literature](#) (Outside Source). Carei Research/Practice Newsletter (University of Minnesota), Vol. 2, No. 2, Summer 1994.

³H. J. Walberg. 1991. "Does Homework Help?" School Community Journal, Vol. 1 (1), 13-15.

⁴Rick Wormeli, "Fair Isn't Always Equal: Assessing and Grading in the Differentiated Classroom." Portland, Maine: Stenhouse, 2006, 113-130.

⁵Gary Garbe and David Guy, [No Homework Left Behind](#) (Outside Source), Educational Leadership, Vol. 63, Summer 2006.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Student grouping (flexible)

Adolescents tend to be peer-oriented. As a result, structured learning exercises that require students to work in groups to solve problems or complete projects often result in powerful learning experiences. Teachers group students for a variety of reasons:

- Working on projects
- Solving problems
- Reading and discussing a novel or text

In addition, school personnel may place students who struggle in an intervention class to help them catch up to grade-level standards.

However, all types of groups should be task- rather than student-based. In other words, teachers may place students in intervention classes or small teams in either mathematics or English to help them accelerate learning to make up for missed concepts. The effective master schedule leaves room for these students to move out of intervention classes as soon as they are tested at grade level. In this way, the groupings are temporary and flexible and based on the learning task, not permanent groups based on high or low student ability.

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Although it is often expedient to group students according to ability, many research studies indicate that tracking—where schools place students in permanent ability groups for all subjects—is detrimental to learning. A report from the Southern Regional Education Board found that:

. . . it seems reasonable to conclude that tracking is a disservice to students at all levels. It appears that middle grades schools track students in academic subjects, especially in reading and mathematics. In a review of the research on achievement and the effects of ability grouping in grades six to nine, Slavin (1993) was unable to locate any evidence showing that *permanent* ability grouping had positive effects on achievement. Likewise, Hoffer (1992) found no positive long-term effects of placing low-ability students in low-level mathematics classes. Some researchers argue that tracking has other adverse effects. For example, tracking interferes with middle grades students' personal development (Fuligni et al. 1995; Stevenson 1992); has a negative effect on lower-tracked students' motivation, opportunities to learn and life chances (Mills 1998); and perpetuates socioeconomic and racial inequities (Oakes 1992). Furthermore, at least two studies suggest that students can benefit from being intentionally assigned to a higher track than would otherwise be the case.¹

A recent study, Accelerating Mathematics Achievement Using Heterogeneous Grouping, suggests that although schools traditionally place low-achieving students in remedial courses, new evidence shows that placing these students in high-level classes can have a significant,

positive effect on student achievement and course taking without an adverse effect on their higher-achieving peers.²

Previous

[Homework](#)

Next

[Educational technology \(Ed Tech\)](#)

Footnotes

¹[Academic Achievement in the Middle Grades: What Does the Research Tell Us?](#) (PDF; Outside Source) Atlanta, Ga.: Southern Regional Education Board, 2003, 6.

²Burris, C. C.; J. P. Heubert; and H. M. Levin, "Accelerating Mathematics Achievement Using Heterogeneous Grouping," *American Educational Research Journal*, Vol. 43, No. 1 (2006), 105–136.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Educational Technology (Ed Tech)

Many tools such as electronic grade books, laptop projectors for PowerPoint lessons, and smart boards have revolutionized instruction. Some federal and state programs offer funding to help eligible local educational agencies use technology to enhance teaching and promote learning

Students can use technology in many classes. For example, in science, they can use probeware to monitor temperature fluctuations over time. In mathematics, the data received from experiments using probeware can be entered into graphing software that shows the time-sequence variations graphs. Simulation software helps teachers to bring many subjects to life, just as virtual field trips expand learning. Other technology examples are included in discussions of subject areas throughout Taking Center Stage, Act II.

Related Links

- [4Teachers.org: Teach with Technology](#) (Outside Source)
- [California Technology Assistance Project \(CTAP\)](#), California Department of Education.
- [Center for Implementing Technology in Education](#) (Outside Source)
- [Education Technology](#), California Department of Education.
- [Education technology for professional learning](#), Recommendation 10—Professional Learning, TCSII.
- [Grade 6-8](#), (Outside Source), PBS Teachers, Public Broadcasting System.
- [Integrating technology](#), Recommendation 4—Relevance, TCSII.
- [iste](#) (Outside Source), International Society for Technology in Education.
- [National Education Technology Plan](#) (Outside Source), U.S. Department of Education.
- [PBS Teacher](#) (Outside Source) Featured Classroom Resources.
- [Science Framework for California Public Schools Kindergarten Through Grade Twelve With New Criteria for Instructional Materials](#) (PDF; 3.84MB, 313pp.), California Department of Education.
- [Technology Information Center for Administrative Leadership \(TICAL\)](#) (Outside Source)
- [Technology Support for Leaders](#), Recommendation 9—Leadership, TCSII.
- [TechSets—People supporting technology in schools](#) (Outside Source)
- [The Silk Road Project](#) (Outside Source)
- [The Use of Technology](#), (PDF; 93KB; 8pp.), Chapter 9, Mathematics Frameworks for California Public Schools Kindergarten Through Grade Twelve, California Department of Education.
- [Visual and Performing Arts Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 2.80MB; 294pp.), California Department of Education.

Previous

[Student grouping \(flexible\)](#)

Next

[Teaching Students with Special Needs](#)

[Back to Top](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations
for Success](#)
[Recommendations
in Action](#)
[Standards and
Testing](#)
[Stakeholder
Organizations](#)
[References and
Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent
Development](#)
[Practices In the
Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Teaching Students with Special Needs

Differentiated instruction is important for all learners but is essential to help English learners, gifted and talented students, special education students, and those who have behavioral and social problems. These students need grade-level curriculum but may need additional supports or challenges to make learning meaningful. The following sections discuss teaching students in special education, the Gifted and Talented Education (GATE) program, and educational options for students whose behavior or special needs require an alternative educational setting. For more on teaching English learners, see the previous sections on Bilingual instruction and on English language development.



In the Spotlight

Bernice Ayer Middle School, Capistrano Unified School District, a 2005 Schools to Watch™-Taking Center Stage Model School and Richard Henry Dana Middle School, Wiseburn Elementary School District, a 2006 Schools to Watch™-Taking Center Stage Model School

Like many other schools, these two schools pair resource teachers with mathematics teachers to help students with individualized education programs (IEPs) achieve proficiency in mathematics.

McKinleyville Middle School, McKinleyville Union Elementary School District, a 206 Schools to Watch™-Taking Center Stage Model School

The school schedules a three-period core class in which two periods focus on English language arts and one period focuses on history/social studies. Resource teachers team with English language arts and social studies teachers to support special education students in heterogeneous classes.

- [Bernice Ayer DataQuest School Profile](#)
- [Bernice Ayer Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Bernice Ayer Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

- [Richard Henry Dana DataQuest School Profile](#)
- [Richard Henry Dana Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Richard Henry Dana Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

- [McKinleyville DataQuest School Profile](#)
- [McKinleyville Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide:](#)

[McKinleyville Middle School](#) (PDF; Outside Source)

- [Schools to Watch™-Taking Center Stage](#)

Previous

[Educational technology \(Ed Tech\)](#)

Next

[Response to intervention and special education](#)

[Back to Top](#)

Print

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



**Recommendation 2:
Instruction,
Assessment, and
Intervention**

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

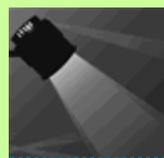
TCSII

Response to Intervention (Rtl) and special education

The Response to Intervention (Rtl) model provides districts and schools with a useful tool for helping all subgroups of underperforming students to achieve.

Rtl is a monitoring system recommended under the reauthorization of the federal [Building the Legacy: IDEA 2004—Individuals with Disabilities Education Act](#) (Outside Source). Although originally designed for special education, Rtl provides a practical model for continuous progress monitoring, carefully tailored instruction, and frequent, accelerated interventions that move students on a strategic path to success. Rtl can help teachers determine if students are learning as expected, or if not, whether they require early intervention services. It can also help teachers determine student eligibility for special education services. A more detailed discussion about the instruction and **intervention** aspect of Rtl can be found at [Response to Instruction and Intervention RTI²](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.

The intent of universal access is to meet the needs of all students, including English Lanaguage Learners (ELL), with reading difficulties, students with disabilities, and advanced learners. All SBE-adopted programs have been designed with additional ancillary materials that are to be used with and beyond the basic program that include extra support for struggling readers and ELL.¹ In cases where students have processing difficulties (e.g., auditory discrimination input difficulties) or lack specific academic vocabulary, as in the case of many new immigrants and bilingual students, lectures and auditory discussions will not provide equal access. These types of instructional methods must be supplemented with multiple support strategies. For example, teachers can use [realia](#) and flash cards to reinforce vocabulary, slide shows, hands-on materials, and aides or tutors to help students learn the material.



In the Spotlight

Alvarado Intermediate School, Rowland Unified School District, a 2004 Schools to Watch™-Taking Center Stage Model School

At Alvarado, frequent inter- and intra- team communications reinforce a schoolwide commitment to students with special needs. Alvarado's Special Day Class students receive the same core curriculum as their peers receive and are mainstreamed into physical education and elective classes. According to their individualized education programs (IEPs), resource specialist program (RSP) students receive an extra period of instruction by a credentialed teacher in reading, writing, mathematics, study/organizational skills, or life skills.

Alvarado DataQuest School Profile

- [Alvarado Intermediate School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School-Visitor's Guide: Alvarado Intermediate School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

It is not possible to address all special needs through differentiated instruction within the classroom with a single teacher. Effective schools also give teachers access to specialists, Student Intervention Teams (better known as [Student Success Teams](#) or Student Study Teams [SST]), tutoring centers, and specialized classes so that no child is left behind.



In the Spotlight

Iron Horse Middle School, San Ramon Valley Unified School District

Special education students receive appropriate instruction in this developmentally responsive school that has received recognition through both the Distinguished School and National Blue Ribbon school programs.

- [Iron Horse DataQuest School Profile](#)
- [Iron Horse Middle School](#) (Outside Source)

Many resources are available to help teachers provide grade-level, standards-based instruction for students with disabilities or special needs. The California Department of Education Web site includes matrices for [Testing Variations, Accommodations, and Modifications](#) (DOC; 2.2MB; 6pp.) 2010.

Related Links

- [Aligning Individualized Education Programs \(IEPs\) With State Standards and Accountability Systems](#) (Outside Source), The Access Center: Improving Outcomes for All Students K-8.
- [Assessment](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Special Education](#), California Department of Education.
- [Testing Variations, Accommodations, and Modifications](#), (DOC; 2.18MB; 5pp.), California Department of Education, 2012

Previous

[Teaching Student with Special Needs](#)

Next

[Least Restrictive Environment](#)

¹ [Academic Program Survey—Middle School Level](#), (DOC; 669KB; 39pp.). Sacramento: California Department of Education, October 2009.

[Back to Top](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Least restrictive environment (LRE)

By federal law, special education students have a right to be educated with their same-age peers to the maximum extent possible according to the regulations on least restrictive environment (LRE). In California's standards-based system and under the No Child Left Behind Act, educators must have high expectations for **all** students, and those students must be prepared to participate in the state's accountability system.



In the Spotlight

Rincon Middle School, Escondido Union Elementary School District
Rincon is a CalSTAT (Technical Assistance and Training) Leadership site because of its seven-year commitment to including special education students in regular classrooms.

- [Rincon DataQuest School Profile](#)
- [Rincon Middle School](#) (Outside Source)

To help schools provide equal access to the least restrictive environments, California Department of Education funds the [Least Restrictive Environment \(LRE\) Resources Project](#) (Outside Source). Resources, training, videos, and consultants are available through the project.

Related Links

- [Aligning IEPs with State Standards and Accountability Systems](#) (Outside Source), The Access Center: Improving Outcomes for All Students K-8.
- [Supporting Struggling Readers with Evidence-Based Practices in California](#) (Outside Source), CalSTAT Technical Assistance and Training.
- [CalSTAT Leadership Sites](#) (Outside Source) CalSTAT Technical Assistance and Training.
- [Clearinghouse for Specialized Media and Technology](#) (CSMT), California Department of Education.
- [Connecting Curriculum to the Standards: Curriculum that Aligns with the California Alternate Performance Assessment \(CAPA\)](#) (Outside Source) Sacramento County Office of Education.
- [Handbook of Goals and Objectives Related to Essential California Content Standards](#) (Outside Source), The Access Center: Improving Outcomes for All Students K-8.
- [Response to Instruction and Intervention \(RTI²\)](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.

- [Rtl: Response to Intervention—Training for California Educators](#) (Outside Source), California Department of Education.
- [Services and Resources](#), California Department of Education.
- [Standards-Based Instruction: Could It Happen in Special Education?](#) (Outside Source), SchoolsMovingUp, WestEd.
- [Successful Strategies for Middle and High School Inclusion](#) (Outside Source), SchoolsMovingUp, WestEd.
- [TeachingLD](#) (Outside Source), Information & Resources for Teaching Students with Learning Disabilities.
- [The Special EDge Newsletter](#) (Outside Source), CalStat, Special Education Division, California Department of Education.
- [Training on Writing IEP Based on State Standards](#), California Department of Education.

Previous

[Response to intervention and special education](#)

Next

[Gifted students](#)

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Gifted students

While many students struggle to reach grade-level proficiency, others master concepts quickly and need additional challenge. Sometimes these advanced students become bored or disruptive when classroom challenge is missing.

According to the U.S. Department of Education, **gifted** students are those who "give evidence of high achievement capability in areas such as intellectual, creative, artistic or leadership capacity, or in specific academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop those capabilities." To help teachers provide the advanced challenge needed by gifted learners, the California Department of Education (CDE) established the [Gifted and Talented Education \(GATE\)](#) program, authorized by [California Education Code \(EC\) sections 52200 through 52212](#) (Outside Source). According to the California Department of Education Web site, the GATE program:

. . . provides funding for local educational agencies (LEAs) to develop unique education opportunities for high-achieving and underachieving pupils in California public elementary and secondary schools who have been identified as gifted and talented. Special efforts are made to ensure that pupils from economically disadvantaged and varying cultural backgrounds are provided with full participation in these unique opportunities.

GATE program options include special day classes, part-time groupings, and cluster groupings. According to law, GATE curricular components must:

. . . be planned and organized as integrated differentiated learning experiences within the regular school day and may be augmented or supplemented with other differentiated activities related to the core curriculum, including independent study, acceleration, postsecondary education, and enrichment. For all programs for gifted and talented pupils, including those programs for pupils with high creative capability and talents in the performing and visual arts, each participating LEA shall concentrate part of its curriculum on providing GATE pupils with an academic component and, where appropriate, with instruction in basic skills.

Although many schools lack funding for GATE programs, partnerships with local colleges or high schools might help in providing enrichment for advanced learners. For example, at Central Middle School in Columbia Heights, Minnesota, students can take courses to prepare them for advanced placement work at the high school level. Students who successfully complete the classes earn high school credits.¹

GATE programs are operated in approximately 800 districts located in all 58 counties. There are over 480,000 public school students identified as gifted and talented in the state—representing roughly 8 percent of California's schoolchildren.

Related Links

- [A Nation Deceived: How Schools Hold Back America's Brightest Students](#) (Outside Source), by Nicholas Colangelo, Susan G. Assouline, and Miraca U. M. Gross, The Templeton National Report on Acceleration.
- [Gifted and Talented Education Program Resource Guide](#), (DOC; 431KB; 56pp.), California Department of Education.
- [Pre-K-Grade 12 Gifted Programming Standards](#) (Outside Source), National Association for Gifted Children.
- [Laws and Regulations](#), California Department of Education.
- [NAGC Position Statement: Meeting the Needs of High Ability and High Potential Learners in the Middle Grades](#) (Outside Source), National Middle School Association and the National Association For Gifted Children.
- [National Association for Gifted Children \(NAGC\)](#) (Outside Source)
- [National Research Center on the Gifted and Talented](#) (Outside Source) University of Connecticut.
- [Recommended Standards for Programs for Gifted and Talented Students](#) (DOC; 97KB; 9pp.), California State Board of Education.

Previous

[Least restrictive environment](#)

Next

[Alternative education options](#)

Footnote

¹Sarah Moran, "Advanced Middle-School Students Get a Challenge," *Star Tribune*, February 6, 2007.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Alternative education options

When students show at-risk behaviors, they sometimes need alternative programs and settings to help them succeed. According to the California Department of Education Web site, the following programs are available as [Educational Options](#) for youths.

- [Community Day Schools](#) serve high-risk youths, including those referred because of expulsion, probation, or a School Attendance Review Board; provide challenging academic curriculum; and develop social skills and resiliency.
- [Home & Hospital Instruction](#) is provided by school districts to maintain instructional continuity during a student's temporary disability.
- [Independent Study](#) is a voluntary alternative instructional strategy for providing regular education from kindergarten through adult education.
- [Juvenile Court Schools](#) serve students who are under the protection or authority of the juvenile court system and are incarcerated in juvenile halls, homes, ranches, camps, day centers, or regional youth facilities.
- [Magnets](#) are programs or schools offered through school districts to meet enrollment needs and offer choices to students.
- [Opportunity Education Programs](#) serve students who are habitually truant, irregular in attendance, insubordinate, disorderly, or failing academically.
- The [Program Access & Retention Initiative](#) promotes dropout prevention, recovery, and retention services for all students at risk of not completing a high school education.

The educational options noted above provide students with alternatives that will help them achieve grade-level proficiency and prepare them for high school, careers, and higher education. However, schools that either refer students to alternative educational options or enroll students from alternative programs need to put special transition programs in place to help these students succeed in new settings.

Related Link

- [Moving at-risk youths into the middle school setting](#), Recommendation 6—Transitions, TCSII.

Previous

[Gifted students](#)

Next

[Assessment](#)

[Back to Top](#)

[Print](#)

Sacramento, CA 95814

Policy



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



**Recommendation 2:
Instruction,
Assessment, and
Intervention**

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

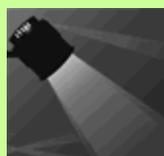
Assessment

How to Know When Each Student Has Acquired the Knowledge and Skills

Teachers use a variety of methods to assess and monitor the progress of student learning (e.g., tests, quizzes, assignments, exhibitions, projects, performance tasks, portfolios).¹

Evaluating student work and providing specific feedback is an essential part of instruction. Parents need to know how well their children are progressing; students need to see what they have learned; educators need reliable data to drive instruction; and districts and policy-makers need to know how well the education system is preparing students for high school and beyond. "Everything students do during instruction provides an opportunity for monitoring their progress."²

Ongoing progress monitoring is an essential part of instruction. For example, reports, homework, benchmark assessments, and answers to questions in class all help teachers identify how well students are learning.



In the Spotlight

Louis Pasteur Fundamental Middle School, San Juan Unified School District, a 2009 California Distinguished School

Pasteur Fundamental Middle is featured on the California Department of Education's (CDE) Closing the Achievement Gap Web site for its signature practice, Assessment Driven Instructional Planning. This exemplary practice addresses several of the CDE's 12 Recommendations for Middle Grades Success including instruction, assessment, and intervention and professional learning.

Pasteur Middle School's Assessment Driven Instructional Planning is a school wide practice that was adopted in 2006 in response to lackluster school wide API (Academic Performance Index) scores. While undertaken to improve learning for all students, the primary target of the plan was the socioeconomically disadvantaged students, who comprised approximately 28 percent of the school's population.

Focusing particular effort in the area of math, due to historically low scores on the California Standards Tests (CSTs), the plan to improve proficiency used a practice called, "The Cycle of Inquiry." Newly formed leadership teams, comprised of teachers and site administrators, identified developmental needs and designed a plan to meet those needs by analyzing data and creating Specific, Measurable, Attainable,

Realistic, and Timely (SMART) goals.

Implementation of the practice was the catalyst for many changes at Pasteur Fundamental Middle School. Cross curricular teams built relationships and developed strategies to engage high-risk students. Teachers questioned standard methods of curriculum delivery and, through collaboration, developed and used new strategies to improve student success. Lunch time study halls were created, and counselors found new ways to work with teachers to encourage parental involvement. A release day allowed team members to develop and share focused strategies. For example, a warm-up curriculum piece, called Cowbells, was created by combining the concept of the week with bell-work.

After implementing these practices, Standardized Testing and Reporting (STAR) scores increased in every department. English-language arts scores rose seven points overall, science jumped 14 points, and all areas of mathematics boasted double digit increases. The targeted socioeconomically disadvantaged students scored 17-18 points higher than the white (not of Hispanic origin) group.

Louis Pasteur Fundamental Middle School is one of the schools featured on the CDE Closing the Achievement Gap Web site. The site contains helpful information, research, and success stories including signature practices from some of California's Distinguished Schools.

- [Louis Pasteur Middle School DataQuest Profile](#)
- [Louis Pasteur Middle School](#) (Outside Source)
- [Assessment Driven Instructional Planning](#) (PDF; Outside Source) Signature Practice
- [Closing the Achievement Gap's School Profile: Louis Pasteur Fundamental Middle School](#) (Outside Source)
- [Practices in the Spotlight Index](#)

In addition, there is more statewide summative testing at the middle grades level than at the elementary level. For example, middle grades testing includes:

- California Alternate Proficiency Assessment (CAPA) for special education students with significant cognitive disabilities (in place of the CSTs).
- California English Language Development Test (CELDT).
- California Standards Tests (CSTs)—English-language arts and mathematics.
- California Standards Tests (CSTs)—history-social science and science.
- California Writing Standards Test.
- National Assessment of Educational Progress (NAEP) is a criterion-referenced test on reading, mathematics, writing, civics, economics, and U.S. history for eighth graders. Eighth-grade students take the science test every five years, but do not take all of the above NAEP tests. Only a small sample of California students take these tests.
- Physical Fitness Testing (PFT).³

Less than two (2) percent of the school year is spent on statewide testing in grade eight (600 minutes), and significantly less than that in grades six (320 minutes) and seven (575 minutes). Until 2009, English learners who had been in the U.S. for less than 12 months or who had been in Spanish instruction also had to take the Aprenda 3 in grades five through eleven. In the beginning of 2009, the Standards-based Tests in Spanish (STS) replaced the Aprenda 3 for all grades. For additional information, please refer to the [Standardized Testing and Reporting Program: Annual Report to the Legislature](#) (DOC; 126KB; 14).

The chart used to calculate testing minutes, [2010 Standardized Testing and Reporting Item and Time Charts](#) (DOC; 59KB; 7), is on the CDE Web site.

Previous

[Alternative education options](#)

Next

[Assessment Purposes](#)

Footnotes

¹ Schools to Watch™-Taking Center Stage [School Self-Study and Rating Rubric](#) (DOC; 575KB; 9)

² [Reading/Language Arts \(RLA\) Framework for California Public Schools, Kindergarten Through Grade Twelve](#) (PDF; 6MB, 386) Sacramento: California Department of Education, 2007, 259.

³ [California Assessment System](#), California Department of Education.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Assessment purposes

Assessment is an integral part of a standards-based system. Assessment data studied at two levels inform a school staff about the effectiveness of curriculum and instruction.

1. School-level information:

- Are all of the school's population subgroups making significant progress toward proficiency?

2. Classroom-level data:

- Are students consistently missing a specific type of question? If yes, is the question poorly worded? Covered in the text? Missing background knowledge?
- Does each of the classes in this subject/grade (such as seventh-grade history) score consistently on each test section? If not, do some of the teachers on the team need coaching/professional development to increase their skills in teaching the concept(s)?
- If certain students are failing to grasp the concepts, what interventions are in place to ensure that they have numerous avenues of support?
- If students are grasping the concepts quickly, what additional challenges and accelerated opportunities are in place to ensure that they do not become bored and that this progress is not hindered?

Ideally, in a standards-based system, teachers use a variety of formal and informal assessment instruments throughout the school year at all grade levels. Large-scale, statewide assessments are designed for accountability purposes rather than diagnostic purposes, and the responsibility for entry-level, ongoing, and some end-of-course (summative) assessments rests with the districts and schools.

In her book, *Using Data to Improve Learning in School Districts*, Victoria Bernhardt developed a chart called "Multiple Uses of Data" that illustrates the intersecting data sources and how they inform school practice.¹ Professor Bernhardt described the chart in more detail in the article, *No Schools Left Behind*, that appeared in *Educational Leadership* in 2003.²

The [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 6MB; 386pp.) and the [Mathematics Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 3.2MB; 411pp.) define the types of assessment:

Entry-level assessments identify what the student already knows and help the teacher place the student at the most efficient starting point for his or her learning. Entry-level assessments measure the extent of students' existing knowledge and skill, helping teachers to determine whether students need review for specific content, and whether some students are ready for greater challenges. Examples of entry-level assessment might include pretests, diagnostic assessments, and K-W-L (know, want to know, learned) charts. If entry-level assessments are used to compare the performance of students in the class or are used to establish a baseline for evaluating later growth, they must adhere to basic psychometric principles. That is, they must be:

1. Administered in the same conditions
2. Administered with the same directions
3. Scaled in increments small enough to detect growth³

Progress monitoring assessments measure the extent to which students have mastered (or are mastering) content sufficiently to proceed in the logical sequence of instruction. Examples of progress monitoring assessments might include interviewing, concept mapping, portfolios, journals, labs, quizzes, games, reports, and projects.

Summative assessments are typically conducted at the end of a chapter, unit, or school year. They measure the extent to which students have mastered the content, understand it, and are able to apply the knowledge. Examples of [summative assessments](#) might include end-of-unit tests, reports, science/mathematics fair projects, and state standardized tests.

School or district comparisons help professional learning communities and [leadership](#) team members determine how well they are preparing their students in relation to other classrooms, schools, or districts. Not only are results from common subject-area assessments, benchmark assessments, and standardized testing important, but school teams also need to analyze information on subgroup progress on all statewide assessments and language acquisition.

The evaluation community uses the term [formative](#) when describing assessments that show how well students are learning and help form (shape) instruction. Both entry-level assessments and progress monitoring are examples of formative assessments. Local assessments are formative because they test **for** student learning and help teachers adjust instruction based on how well students are learning.

Four questions about formative assessments help teachers determine the effectiveness of student learning:

1. **Timeliness:** Does the assessment occur shortly after content teaching?
2. **Thinking:** Does the assessment contain constructed-response (in addition to multiple-choice) questions to demonstrate student reasoning and to identify when there are misconceptions and errors?
3. **Data:** Does the formative assessment provide accurate, reliable information about what students are learning? (Specially designed diagnostic tests help diagnose student instructional needs and problems.)
4. **Follow-up:** Do teachers use assessment results to modify instruction for individual students?

The most critical guideline for monitoring student progress is that monitoring should occur at frequent intervals and that the assessment data should be used quickly to adjust instruction.⁴

Related Links

- [Accountability—Recommendation 11](#), TCSII.
- [Common benchmark assessments](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [K-W-L \(Know, Want to Know, Learned\)](#), (Outside Source), NEA National Education Association.
- [Professional Considerations/Professional Development](#), Document Library, TCSII.
- [What is a Professional Learning Community?](#), Recommendation 10—Professional Learning, TCSII.

Previous
[Assessment](#)

Next
[Assessment for continual progress monitoring](#)

Footnotes

¹V. L. Bernhardt, *Using Data to Improve Student Learning in School Districts*. Larchmont, N.Y.: Eye on Education, Inc., 2006, 11.

²V. L. Bernhardt, "[No Schools Left Behind](#)," (Outside Source) *Educational Leadership*, Vol. 60, No. 5 (2003), 26-30.

³[Mathematics Framework for California Public Schools—Kindergarten Through Grade Twelve](#) (PDF; 3.2MB; 411pp.). Sacramento: California Department of Education, 2006, 222

⁴[Reading/Language Arts Framework for California Public Schools—Kindergarten through Grade Twelve](#) (PDF; 6MB; 386pp.). Sacramento: California Department of Education, 2007, 259.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Assessment for continual progress monitoring

Data provided by continuous progress monitoring informs teachers about student progress toward proficiency. "Progress monitoring can be implemented with individual students or an entire class."¹ Student's current performance levels must be determined and goals set so that learning can occur over time. Instructional approaches and techniques can be adjusted to meet the learning needs of individual students when student academic performance is measured on a regular basis. Progress monitoring can help teachers make more informed instructional decisions, accelerate student learning, and improve accountability.

Teachers need to use a variety of assessments on a regular basis. Numerous progress monitoring tools are available. The National Center on Response to Intervention developed a [Progress Monitoring Tools chart](#) (Outside Source) to help educators become familiar with the options available. Recommendations for specific tools are not made. The National Center on Student Progress Monitoring provides numerous Progress Monitoring Tools including webinars, handouts for download, web-based resources and recommended reading.

The [California Department of Education Academic Program Survey—Middle School Level](#) (DOC; 669KB; 39pp.) describes data requirements for Essential Program Component 7: Student Achievement Monitoring System.

Related Links

- [Essential Program Components](#), California Department of Education
- [Progress Monitoring in an Inclusive Standards-based Assessment and Accountability System](#) (Outside Source), National Center on Educational Outcomes, February 2004.
- [National Center on Response to Intervention](#) (Outside Source)
- [National Center for Student Progress Monitoring](#), (Outside Source)
- [Progress Monitoring Tools](#) (Outside Source), National Center on Student Progress Monitoring.
- [Research Institute on Progress Monitoring \(RIPM\)](#) (Outside Source)
- [Strategies for Making Adequate Yearly Progress—Using Curriculum Based-Measurement for Progress Monitoring](#), (Outside Source), Student Achievement and School Accountability Conference, U. S. Department of Education, October 2002.

Previous

[Assessment purposes](#)

Next

[Assessment for program planning](#)

Footnotes

¹ [What is Progress Monitoring?](#) (Outside Source), National Center on Student Progress Monitoring.

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Assessment for program planning

The foundation of California's assessment system is the Standardized Testing and Reporting (STAR) Program, particularly the California Standards Tests (CST). Scores from standards-based tests identify levels of student performance. Policymakers use the results for monitoring accountability in meeting standards and for program planning. The results also help schools and districts plan instructional practices, targeted professional development, and allocation of time and resources. School, district, county can disaggregate information and demographic subgroups so that programs can be specifically designed to close achievement gaps between statistically significant subgroups as well as to raise overall student achievement.

Individual STAR program reports show students' individual CST results as performance levels and reporting clusters:

- **Performance levels.** The State Board of Education adopted the following performance levels on results from the STAR tests:
 - ◆ Advanced (A)
 - ◆ Proficient (P)
 - ◆ Basic (B)
 - ◆ Below Basic (BB)
 - ◆ Far Below Basic (FBB)

- **Reporting clusters.** All CST results are reported by content areas that describe how a student performs on clusters of standards within each subject area. For example, the six content areas used to report on the CST in English-language arts results are:
 - ◆ Word Analysis, Fluency, and Systematic Vocabulary Development
 - ◆ Reading Comprehension
 - ◆ Literary Response and Analysis
 - ◆ Written Conventions
 - ◆ Writing Strategies
 - ◆ Writing Application¹

Cluster data are found in the summary reports sent to schools, districts, and counties and on individual STAR student reports.

Information from a variety of assessments rather than from just one particular test should guide instructional practices. Assessment results from statewide tests are just one factor to consider when planning instruction and learning support programs.

Related Links

- [Recommendation 11— Accountability](#), TCSII.
- [STAR Help](#), California Department of Education.

Previous

[Assessment for continual progress monitoring](#)

Next

[Assessment for decision making](#)

Footnote

¹ [California Standards Test, Released Test Questions, Introduction—Grade 7—English Language Arts](#) (PDF; 848KB; 69pp.), California Department of Education.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations for Success](#)
[Recommendations in Action](#)
[Standards and Testing](#)
[Stakeholder Organizations](#)
[References and Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent Development](#)
[Practices In the Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Assessment for decision making

Validity, reliability, and fairness are essential components of assessment results that inform important decisions such as promotion, retention, remediation, and recognition.

The original *Taking Center Stage* defined validity, reliability, and fairness.

- **Validity** means that an assessment measures what it is supposed to measure. To ensure validity of the tests, the test contractor, CDE content specialists, and members of the test's Assessment Review Panel review every test question. Their reviews ensure that the questions align with the state's content standards, use appropriate vocabulary for the level tested, and include only one correct answer.
- **Reliability** means consistency in measuring what the assessment is designed to measure. Reliability is the extent to which test results accurately or consistently measure "true" achievement of an individual or group. This is a statistical term that defines the extent to which errors of measurement are absent from a measurement instrument. Does the assessment provide accurate, reliable information each time and under different circumstances? If a sixth-grade student took an examination on one day in one school and the same examination again a month later in another school (hypothetically assuming he or she did not remember taking the first test and had acquired no other knowledge or skills in the interim that would affect the outcome), would the student score the same? Alternatively, if the student took a different form of the assessment, would the scores be consistent? Reliable scores are easier to obtain from selected response assessments where there is only one correct answer and when machines can score the test uniformly. Obtaining reliable scores from performance assessments is not as easy, because the scores depend on human judgment and there are multiple ways of a student's demonstrating proficiency. Therefore, those who score performance assessments must receive training on consistency, and an outside group must monitor their rate of reliability carefully. If test instruments provide consistent results, then the difference between the results on a pretest and the results on a post-test provides a reliable source of information about student learning over time.
- **Fairness** means that the assessment is fair and free of bias for all students. No group of students is advantaged or disadvantaged because of bias based on gender, culture, socioeconomics, background knowledge, or access to resources. For instance, an assessment based on a historical television documentary that all eighth-grade students were to watch at home and critique in class the following day would be an example of an unfair assessment. Not all students may have had access to a television or the authority within their family to select the program. Some students may have had other obligations. Some variables can have powerful and unfair influence on the test scores, thus providing an inaccurate picture of student achievement.¹

Previous

[Assessment for program planning](#)

Next

[Assessment for curriculum development](#)

Footnote

¹[Taking Center Stage](#), (PDF; 4MB, 276pp.), Sacramento: California Department of Education, 2001, 57-58.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Assessment for curriculum development

In a standards-based system, assessment and lesson planning are two parts of a whole. Before teaching a lesson, teaching teams design common benchmark assessments to answer the question, "What evidence from students will demonstrate their proficiency on this standard?"

Standards-based scoring rubrics help students understand their levels of proficiency on writing assessments. The Teacher Guide for the 2008 California Writing Standards Tests in Grade Seven includes a copy of the four-point scoring rubric. The documents also include commentary on student writing samples and reasons for the scores they received. Examples and commentary precede the rubric.

Related Links

- [Common benchmark assessments](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Grades and effective standards-based reporting](#), Recommendation 1—Rigor, TCSII.
- [Teacher Guide for the 2008 California Writing Standards Tests in Grade Seven](#), (PDF; 1.3MB, 73pp.)

Previous

[Assessment for decision making](#)

Next

[The Elementary and Secondary Education Act \(No Child Left Behind\) Assessment Requirements](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

The Elementary and Secondary Education Act (No Child Left Behind) Assessment Requirements

The [Elementary and Secondary Education Act](#) (Outside Source) (also known as the No Child Left Behind Act of 2001) requires tests that measure performance against state-adopted academic content standards. The No Child Left Behind (NCLB) raises the bar for proficiency every few years to a higher level. Each year, schools must make [Adequate Yearly Progress](#) so that by 2014, 100 percent of students will be proficient.

In addition, the NCLB explicitly mandates several assessment components:

- Use of multiple, up-to-date measures of student performance that are valid and reliable for clearly identified purposes.
- Administration of standards-aligned science tests at least once each year in grade spans three through five, six through nine, and ten through twelve and disaggregation of achievement data to show the performance of students by gender, ethnicity, socioeconomic status, program, and other subgroups.
- Use of a minimum of three [performance levels](#) (two showing levels of proficiency and one for lack of proficiency). California complies with five performance levels: Far Below Basic, Below Basic, Basic, Proficient, and Advanced.
- Determination of what constitutes proficiency and accountability of districts and schools for meeting such targets.

Since 1969, the U.S. Department of Education has administered the [National Assessment of Educational Progress \(NAEP\)](#) (Outside Source) to monitor and report on the educational achievement of American students. The NAEP is conducted periodically in reading, writing, mathematics, science, history, geography, and foreign language and is given to a **sample** population, not to all students.

In spring 2003, the NAEP assessments were administered in reading and mathematics. This was the first administration of the NAEP under the NCLB Act, which required state participation in reading and mathematics assessments in grades four and eight. The results for California and the nation are on the NAEP Web site.

Related Links

- [Accountability](#)—Recommendation 11, TCSII.

Previous

[Assessment for curriculum development](#)

Next

California's Assessment System

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

California's assessment system

A chart of the California's assessment system is composed of several testing programs. The elements of the statewide system are detailed on the [California Assessment System chart, 2010-11](#).

Standardized Testing and Reporting (STAR) Program

In 1997, legislation authorized the STAR Program for English language arts and mathematics in grades two through eleven. In 2003, the program added history-social science for grade eight, and in 2006, science was added for grade eight.

The following components of the STAR program affect middle grades students. The STAR program charts (on the CDE Web site) include the following information:

- The subject areas that are tested
- The testing instruments
- The grade levels
- The testing purposes
- The dissemination system for disclosing results

More detailed descriptions of the tests follow. Also refer to the California Department of Education (CDE) description of the [Key Elements of Testing](#) (PDF; 124.7KB, 8pp.).

The California Standards Tests (CSTs)

The CSTs are aligned to the state's rigorous academic content standards and administered in the second through eleventh grades. The subject areas assessed are:

- English language arts (grades two through eleven)
- Mathematics (grades two through seven and end-of-course grades eight through eleven)
- Algebra I (grade seven)
- History/social science (grades eight, ten, and eleven—world history can be taken in grade nine)
- Science (grades five, eight, ten, and end-of-course grade nine through eleven)

The CSTs are criterion-referenced assessments designed to reveal what a student knows, understands, or can do in relation to specific objectives or standards. The CSTs measure students' achievement of California's content standards. Writing assessments, for which students write **on demand** in response to a writing prompt, at grades four and seven are administered as part of the English language arts CSTs. Refer to the [Key Elements of Testing](#) (PDF; 124.7KB, 8pp.) on the CDE Web site for a discussion of criterion referenced and other elements of testing.

The California Writing Standards Test in Grade Seven

The CSTs' writing assessments for grades four and seven, challenge students to demonstrate their ability to respond to a prompt on constructed-response items. Every other year, the seventh-grade writing prompt includes a reading passage (short story that must be read and analyzed). The inclusion of reading in the 60-minute test may result in test score fluctuations, especially among English learners and at-risk students. Along with results from local benchmark writing assessments, the writing assessment allows middle grades teachers to see how well students are progressing in their ability to address a writing prompt, as will be needed for the writing portion of the California High School Exit Examination (CAHSEE). The [Teacher Guide for the 2008 California Writing Standards Test in Grade Seven](#) (PDF; 1.33MB, 73pp.) provides sample writing prompts as well as rubric grading scores and explanations about the scoring for sample student work.

California High School Exit Examination (CAHSEE) and the middle grades

Senate Bill 2X (1999) authorized the development of the [California High School Exit Examination \(CAHSEE\)](#). Beginning with the graduating class of 2006, California public school students must pass this test to receive a high school diploma. The middle grades are a critical time for students to acquire the knowledge and skills necessary to pass the CAHSEE.

STAR CST Blueprints

The CDE provides [STAR CST Blueprints](#) to help guide teachers in preparing their students to take the California Standards Tests. They also serve to let students and parents, the community, and other education stakeholders know the depth/breadth of the content of the standards. The blueprints help make the assessment system transparent. At grades four and seven, the English language arts CSTs include a writing component, the [California Writing Standards Test: Teacher Guide for the California Writing Standards Tests at Grades 4 and 7](#) (PDF; 390KB, 56pp.), which addresses a writing applications standard selected for testing each year. The blueprints indicate how many questions relate to each of the grade-level standards covered on the test. The standards that, while important, cannot be assessed using a multiple-choice format are identified with the notation NA* (not assessed). Although these standards are not assessed, they are important to the comprehension of the strand.

English language proficiency and the California English Language Development Test (CELDT)

In 2000, the State Board of Education (SBE) adopted English-language development standards that focus on English learners' proficiency in listening, speaking, reading, and writing in English. The instrument used to assess those students' progress toward fluency in English is the [California English Language Development Test \(CELDT\)](#).

Federal law (No Child Left Behind Act of 2001, Title III) and state law (California *Education Code* [EC] sections 313, 60810, and 60812) require a statewide English-language proficiency test that school districts must give to students in kindergarten through grade twelve whose home language is not English. In 1997, Assembly Bill 748 authorized the California English-Language Development Test (CELDT). The CDE developed the CELDT to:

- Identify pupils who are limited in English.
- Determine the level of English language proficiency of pupils who are limited in English.
- Assess the progress of ELs in acquiring the skills of listening, speaking, reading, and writing in English.

School districts are required to administer the CELDT to all students whose home language is not English. Students must be tested within 30 calendar days after they enroll for the first time in a California public school. Districts also are required to administer the CELDT annually to identified English learners (EL) until ELs are reclassified as fluent English proficient (FEP).

CELDT data are used to calculate the annual measurable achievement objectives (AMAOs) required by Title III.

The CELDT assesses listening and speaking skills (grades kindergarten through twelve) and reading and writing skills (grades two through twelve) that are aligned to the English language development standards adopted by the SBE. In May 2001, the SBE approved cut scores for beginning, early intermediate, intermediate, early advanced, and advanced. CELDT results show the English proficiency level attained by students in each skill area and overall. Individual student reports and student data files are sent to the school district. Districts must inform parents of test results within 30 calendar days of receiving student results from the testing publisher. Detailed information about the [CELDT Initial/Annual Scales Score Ranges](#) is available on the CDE Web site. Each year the CDE Web site posts CELDT [Program Updates and Notes](#) about the testing window and details about results.

"Guidelines for Reclassification of English Learners" can be reviewed in the [California English Language Development Test \(CELDT\): Understanding and Using 2009-10 Individual Results](#) (PDF; 709KB, 56pp.). Reclassification guidelines, established by the SBE, clarify the criteria in EC Section 313(d) to be used in reclassifying a pupil from EL to FEP.

Primary language assessment

Schools are required to assess each English learner for proficiency in the primary language within 90 calendar days of first enrollment in a California school "[t]o the extent that assessment instruments are available . . ." (EC 52164.1[c]).

The research study [Effects of the Implementation of Proposition 227 on the Education of English Learners, K-12—Findings from a Five-Year Evaluation](#) (PDF; Outside Source) indicates that EL students benefit from accelerated interventions that move them into mainstream classes as soon as possible.¹

California Alternate Performance Assessment (CAPA)

The California Alternate Performance Assessment is an alternate assessment for children with severe cognitive disability. Information for the [California Alternate Performance Assessment \(CAPA\)](#) is available for both English-Language Arts and mathematics on the STAR Web site.

California Modified Assessment (CMA)

In April 2007, the United States Department of Education enacted regulations for an alternate assessment based on modified achievement standards. The CDE, in response to the federal regulations, is continuing to develop and implement an alternate assessment of the California content standards based on modified achievement standards for children with disabilities who have an individualized education program (IEP). Information about the (CMA) is available on the CDE [California Modified Assessment \(CMA\)](#) Web site.

Related Links

- [CAHSEE Information for Middle School Teachers and Administrators](#) (PDF; 52KB, 2pp.) September 2008.
- [CAHSEE Information for Middle School Students and their Parents or Guardians](#) (PDF; 64KB, 2pp.) September 2008.

Previous

[The Elementary and Secondary Education Act \(No Child Left Behind\) Assessment Requirements](#)

Next

[Assessing Students with Special Needs](#)

Footnote

¹[Effects of the Implementation of Proposition 227 on the Education of English Learners, K-12—Findings from a Five-Year Evaluation](#) (PDF; Outside Source), Washington, D.C.: Prepared by the American Institutes for Research and WestEd, January 2006.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Assessing students with special needs

Universal access is a term that essentially calls for fairness. It means that students with special needs will receive differentiated instruction and educational support so that they can access the content standards. According to the Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve, providing universal access means that teachers "Assess each student's understanding at the start of instruction and continue to do so frequently as instruction progresses, and use the results of assessment for student placement and program planning."¹ It also means that instruction, assignments, and assessments are universally accessible and are aligned with each other.

To ensure accessibility, California has developed a detailed system of accommodations and modifications for students with special needs or those who are learning English as a second language. These variations, accommodations, and modifications ensure that both special education students and English learners (ELs) receive a fair appraisal of their progress toward mastery of the standards.

One modification for ELs is the use of a translation glossary/word list. The Los Angeles County Office of Education has used this approved variation and produced two compact discs that include science vocabulary for approximately 15 languages. The [California Alternative Performance Assessment \(CAPA\)](#) is an alternate assessment for children with severe cognitive disabilities. The [CAPA Core Adaptations](#) list provides an overview of allowed modifications.

The reauthorized Individuals with Disabilities Education Act (IDEA), [Building the Legacy: IDEA 2004](#) (Outside Source), eliminated the need to use a discrepancy model for determining special education eligibility. Part B, Section 614(a)(6), contains a provision on diagnosing a specific learning disability (SLD):

. . . a local educational agency shall not be required to take into consideration whether a child has a severe discrepancy between achievement and intellectual ability in oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematical calculation, or mathematical reasoning.

However, a local educational agency (LEA) may use a process that determines if the child responds to scientific, research-based intervention as a part of the evaluation procedures described in Section 614(b)(2) and (3). This new model is referred to as the Response to Intervention (RtI).²

The federal IDEA regulations about universal access specify that a child shall not be determined to be a child with a disability if the determination is due to a lack of appropriate instruction in reading or mathematics or limited English proficiency. The federal IDEA regulations dated August 16, 2006 further lay out the criteria for identifying students with specific learning disabilities and encourage districts to implement a general education.

Under federal guidelines for universal access, programs for special education students should result in **educational benefit** that can be measured in a variety of ways:

1. Achieving passing marks

2. Advancing from grade to grade
3. Making progress toward meeting goals and objectives
4. Improved scores on statewide or district assessments
5. Assessment strategies that conform to the findings of the [Larry P. Task Force Report, Policy and Alternative Assessment Guideline Recommendations](#) (Outside Source)

suggest the following types of developmentally appropriate assessments:

- Developmental assessment
- Dynamic assessment
- Ecological assessment
- Information processing
- Neuropsychological assessment
- Psychological processing
- Skills within subjects³

The California Department of Education's Special Education Web site includes a section on [Services and Resources](#). Included on that page are links to information about the [California High School Exit Examination \(CAHSEE\)](#) and CAPA.

Previous

[California's Statewide Assessment System](#)

Next

[California Alternate Performance Assessment \(CAPA\) and English learners](#)

Footnotes

¹[Mathematics Framework for California Public Schools—Kindergarten Through Grade Twelve](#) (PDF; 3.2MB, 411pp.). Sacramento: California Department of Education, 2005, 229.

²[Individuals with Disabilities Act \(IDEA\) of 2004](#) (Outside Source), Public Law 108-446, 108th Congress.

³Holly Evans-Pongratz and Bernard Yaklin, [Revisiting Larry P. v. Riles—A CASP Convention 2006 Report](#). (PDF; Outside Source), February 2006.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

California Alternate Performance Assessment (CAPA) and English learners

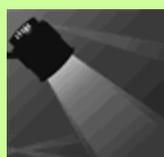
Many times when districts exceed the one percent limitation on the California Alternate Performance Assessment (CAPA), the excess is due to an English learner (EL) issue. Many teachers and school administrators lack the training needed to differentiate between ELs and special education needs. Likewise, when ELs are placed in special education classes, many of their parents are unable to understand district letters about testing or placement. Therefore, they are not in a position to advocate for their child to be retested, re designated, or reassigned. For more information on how to involve parents, including those who do not speak English, refer to [Recommendation 12—Partnerships](#).

Teaching team members need to understand results from the [California English Language Development Test \(CELDT\)](#) tests and home language surveys so that they can be more adept in placing and teaching ELs. Curriculum specialists from the district or county office can help team members learn more about how to use results from these tests to improve student learning.

The very real need for the middle grades to equip students with many of the skills they will need to pass the [California Achievement High School Exit Examination \(CAHSEE\)](#) in the tenth grade means that the teacher and administrators must prepare EL and special education students with grade-level curriculum so they are able to master the content of the standards. Professional development that focuses on delivering curriculum to special education and EL students requires that teachers understand when and how to use the [CAPA Core Adaptations](#) and to use [differentiated instruction](#) to meet the needs of EL and special education students. Increased teacher skills in this area will help many districts and schools have steady achievement and may help meet the instructional needs of their students.

Additionally, when EL or special education students are referred to Student Study Team (SSTs—also known as [Student Success Teams](#)), members need information about the use of non biased individual assessments, including those that assess information processing and neural processing.

Now part of the Academic Program Survey, the [English Learner Subgroup Self Assessment](#) helps school and district administrators to evaluate EL assessment results as they prepare the Local Educational Agency Plan.



In the Spotlight

Mathson Middle School, Alum Rock Union School District, a 2006 On the Right Track School

Mathson's API score rose steadily from 2002 through 2006. The school staff

members attribute much of their success to a strategic use of data to focus instruction for English learners. Mathson staff members also increased the school day by 50 minutes to provide intervention and to accelerate language acquisition. Language development is woven into the curriculum due to staff understanding that language must not be a barrier to learning the standards. To understand more about the strategies used at Mathson, view the profile developed for the SchoolsMovingUp online Web conference: Mathson Middle School Archived Presentation.

- [Mathson DataQuest School Profile](#)
- [Mathson Middle School](#) (Outside Source)
- [On the Right Track 4 Symposium](#)
- [SchoolsMovingUp](#) (Outside Source)
- [Schools on the Right Track: Mathson Middle School](#) (Outside Source)

Related Links

- [California Alternate Performance Assessment \(CAPA\)](#), California Department of Education.
- [National Dissemination Center for Children with Disabilities](#) (Outside Source)
- [Quality Assurance Process](#), California Department of Education.

Previous

[Assessing students with special needs](#)

Next

[Local Assessment Data Collection and Analysis](#)

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Local assessment data collection and analysis

In general, statewide assessments serve the primary purpose of providing year-end accountability by aggregating data that help educators to compare classroom, school, and district performance. However, the statewide results usually arrive too late to help guide instruction—at least for the students in a teacher's current class. In addition, state tests require students to choose from pre selected answers printed on the form, while many creative thinkers might choose other, equally correct answers.

In contrast, local assessments are timely and provide more detailed information about individual student progress toward achieving grade-level standards. By identifying learning gaps in a timely manner, teachers can adapt instruction rather than waiting all year to find out what a student does not know. Teachers can also use classroom responses, handheld devices, homework results, and authentic assessments that assess student creativity and problem solving. State assessments are primarily multiple-choice, machine-scored instruments. Local assessments can take a variety of forms. For example, statewide tests do not measure skills identified in the English language arts standards for listening or speaking—skills that are difficult to measure in a selected-response format. In the classroom, however, assessments become part of the learning process as students demonstrate their grasp of standards or concepts through responses to questions, projects, and oral and written reports. These local assessments help students to practice higher levels of thinking and problem solving and help prepare them for the global economy, where they will need to think creatively and **outside the box**.

Related Links

- [Authentic Assessments](#), Recommendation 2—Instruction, Assessment, and Intervention, TCSII.
- [Recommendation 11—Accountability](#), TCSII.

Previous

[California Alternate Performance Assessment \(CAPA\) and English learners](#)

Next

[Common benchmark assessments](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



**Recommendation 2:
Instruction,
Assessment, and
Intervention**

Contents

Adolescent Development

Practices In the Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

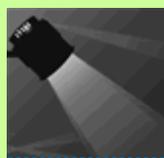
Common benchmark assessments

School or district wide benchmark assessments are a supplement to classroom assessments and provide consistency across classrooms and grade levels. Benchmark assessments sometimes call for performance tasks but more commonly use standardized administration and scoring procedures to help maintain validity, reliability, and fairness. [Vertical teams](#) within one subject area (such as history) use common assessments to provide consistency between grade levels. Similarly, grade-level content teachers, [horizontal teams](#) use common assessments to ensure consistency between classrooms (for example, all seventh-grade history students take the same benchmark test during the same week.)

Typically, teachers administer common benchmark assessments to all students in the same course and grade level in the district at prescribed intervals—usually every six weeks, at the end of a unit of study, or at the end of a quarter. Common assessment instruments measure proficiency on subsets of standards and might include writing samples, literary responses, oral reports, demonstrations showing understanding of how-to-manuals, dramatizations, open-ended mathematics problems, memory maps, laboratory investigations, keyboarding or typing tests, and projects using specialized software in the school's computer lab.

Through these uniform benchmark assessments, teachers can evaluate how well their students are doing relative to the selected standards in not only their classrooms but also other grade-level classrooms in the district. These benchmark assessments provide valuable information for classroom practice and school and district wide decision making. They are a powerful extension of the learning process.

The Student Assessment Continuum Based on Bloom's Cognitive Taxonomy from the original *Taking Center Stage*¹ aligns Benjamin Bloom's cognitive taxonomy to the continuum of assessment. These formats range from selected-response to constructed-response and other performance tasks. Many professional learning communities use Bloom's taxonomy and/or Bill Daggett's [Rigor/Relevance Framework](#) (Outside Source) for developing or selecting common assessments that identify the standards-based skills and knowledge students have mastered. The focus on higher-level thinking skills helps to engage young minds and attach relevance to their learning.



In the Spotlight

Rio Norte Junior High School, William S. Hart Union High School District

Teachers join with colleagues throughout the district to develop and score benchmark assessments by department. In this way, middle grades teachers work with elementary and high school teachers to ensure that content, instruction, assessments, and instructional materials provide students with a seamless transition from one grade to the next.

- [Rio Norte DataQuest School Profile](#)
- [Rio Norte Junior High School](#) (Outside Source)

Related Links

- [Developing Local Benchmark Assessments](#), Document Library, TCSII.
- [Developing, Using, and Communicating Complex Reasoning](#), Document Library, TCSII.
- [Recommendation 4—Relevance](#), TCSII
- [Rigor/Relevance Framework™](#), (PDF; Outside Source) International Center for Leadership in Education.

Previous

[Local Assessment Data Collection and Analysis](#)

Next

[Authentic assessments](#)

Footnotes

¹ [Student Assessment Continuum Based on Bloom's Cognitive Taxonomy](#) (DOC; 24KB; 1p.), Bloom's Taxonomy—Implications for Testing, *Taking Center Stage*, California Department of Education, 2001, 62.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Authentic assessments

According to Grant Wiggins, "Assessment is authentic when we directly examine student performance on worthy intellectual tasks."¹ [Portfolios](#) of student work over the course of a semester or year provide an important look at student learning. Portfolios are [authentic assessments](#) because they show student applications of knowledge in essays, projects, and homework rather than limiting assessment to multiple-choice answers. Teachers who direct students to keep a portfolio of work as part of the final course grade help students to organize their work and to assess their own growth over time.

Portfolios are an invaluable tool in student-led conferences, where students explain to their family members their work and the standards-based rubric scores the work received. In cases where students may not have access to safe storage at home, teachers keep the student work in files at school.

Related Links

- [Accountability through student-led parent conferences](#), Recommendation 11—Accountability, TCSII.
- [Student Portfolios: Classroom Uses](#), (Outside Source), Education Consumer Guide, Office of Research, Office of Educational Research and Improvement, U.S. Department of Education.

Previous

[Common benchmark assessments](#)

Next

[Rubrics](#)

Footnote

¹Grant Wiggins, [The Case for Authentic Assessment](#), (Outside Source), *ERIC Digest*, 1990.

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Search

Change Text Size: [A](#) [A](#) [A](#)

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Rubrics

Educational [rubrics](#) provide students with a set of guidelines by which they can measure their progress toward proficiency on specific, standards-based tasks. A typical rubric contains a scoring scale; states all the different major traits or elements to be examined; and provides criteria for deciding what score to assign to student responses or performances. Scales may be quantitative (for example, a score from 1 to 6) or qualitative (for example, **adequate performance** or **minimal competency**) or a combination of the two.

Rubrics provide students with important information about their progress based on specific criteria. The [California Standards Tests—Teacher Guide for the California Writing Standards Tests at Grades 4 and 7](#), includes a sample rubric for seventh grade on pages 54-55. It also provides [exemplars](#) and teacher commentaries about how sample student work was scored relative to each level on the rubric.

However, rubrics are not useful in all cases and are used most often for grading writing samples or research projects, as noted in the Grades and effective standards-based reporting section in Recommendation 1—Rigor. On those assignments, rubrics provide students with specific criteria to meet at each score level but still allow room for subjectivity in the final grading. For example, a score of **4** on a writing rubric might include the following requirement: "Build a strong case supporting the thesis statement." However, two different teachers could disagree on whether or not the supporting statements used by the student truly built a strong case. For this reason, it is important for departmental teams to practice using a rubric while grading sample student work together so they can calibrate their scoring practices and develop consistency school wide.

Rubrics are not used for most mathematics assignments, although they would be useful for projects that involve math. Similarly, science and history projects or research papers can be graded using standards-based rubrics, but should be developed by departmental teams and used school wide for fairness and consistency.

Related Links

- [6+1 Trait® Rubrics \(aka Scoring Guides\)](#), Education Northwest, (Outside Source)
- [California Standards Tests—Teacher Guide for the California Writing Standards Tests at Grades 4 and 7](#), (PDF; 390KB, 56pp.)
- [Education Northwest: Creating Strong Schools & Communities](#), (Outside Source)
- [Four-Point Scoring Guides](#), Document Library, TCSII.
- [Grades and effective standards-based reporting](#), Recommendation 1—Rigor, TCSII.
- [Rubrics and Evaluation Resources](#), (Outside Source), MidLink Magazine.

Previous

[Authentic assessments](#)

Next

[Test preparation](#)

[Back to Top](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Test preparation

As stated in the [Guidelines on Academic Preparation for State Assessments](#) (PDF, 219KB, 4pp.), approved by the State Board of Education,

The best academic preparation for state assessments is good instruction. This can be broadly defined as instruction in the content specified in California's academic content standards, employing the instructional principles and practices set forth in the content-area frameworks. It is the standards and frameworks, not the tests, that guide instructional programs. Instructional programs are designed to ensure that students master the standards at their own and earlier grade levels.¹

There is a distinct difference between preparing students academically to be successful on a test and teaching students test-taking strategies that are universal for all tests. First, students need to develop proficiency in grade-level content standards that will be on the tests. Teachers can find out which items will be on the tests by viewing the [STAR CST Blueprints](#). These guidelines for academic preparation for the California Standards Tests show, by grade and subject area, which standard the tests will cover. The blueprints also show how many test items there are for each standard. Appropriate academic preparation for state assessments provides students with a fair opportunity to prepare academically while ensuring that such preparation does not invalidate test results.

Students need to understand how to use a Scantron form, how to track where they are in the test booklet, how to check that they are marking the response in the appropriate spot, and how to check their answers. In addition, teachers can provide students with test-taking strategies such as those in the Reyburn example.



In the Spotlight

Reyburn Intermediate School, Clovis Unified School District

The after-school intervention teacher gives students strategies and **cues** for what to look for in reading texts and in taking tests. For example, when preparing students for the six-week course pretest, the teacher leads students in a question-and-answer discussion about testing, including the following instructions:

- Always read directions first.
- Read the whole question.
- Make sure you are answering the number corresponding to the question (she cautioned them about the fact that some test numbers run down a page and some across).
- Look at the title to get cues about the content of the passage.

- Read the section.
- Go back and review the question.
- If you are not sure about an answer, make a **light** question mark on the correct number on the answer sheet and come back to it later. Be sure to completely erase the mark before turning in the answer sheet.
- Look for words such as **best** or other cues in italics or bold print.

Each after-school session covers two standards. Students take a test after each section, and the teacher tracks daily and weekly progress. Student scores in the after school intervention grow after each lesson and test session.

- [Reyburn Intermediate DataQuest School Profile](#)
- [Reyburn Intermediate School](#) (Outside Source)

The State of California has statutes to address test preparation. For example, California *Education Code (EC)* Section 60611 3(a) states that schools “shall not carry on any program of specific preparation of pupils for the statewide assessment program or a particular test used therein.” However, *EC* Section 60611 3(b) states that schools “may use instructional materials provided by the department of education or its agents in the academic preparation of pupils if those instructional materials are embedded in an instructional program that is intended to improve student learning.”

Regarding advance preparation for state tests, the *California Code of Regulations, Title 5*, Section 854 (a) states:

Except for materials specifically included within the designated achievement test, no program or materials shall be used by any school district or employee of a school district that are specifically formulated or intended to prepare pupils for the designated achievement test. No administration or use of an alternate or parallel form of the designated test for any stated purpose shall be permitted for any pupils in grades 2 through 11, inclusive.²

As a condition of adoption, instructional materials have been reviewed and found to adhere to state statutes and regulations regarding test preparation.

An article in *Educational Leadership*, *Having It All—Challenging the Status Quo*, by David J. Ferrero, found that a combination of strategies was effective in boosting achievement in schools and made a difference in student achievement. The strategies included not only attention to grade-level content and test-taking skills but also “collaboratively developed thematic projects grounded in controversy and designed to cultivate student voice and civic engagement.”³ These types of developmentally responsive practices are an important part of the middle grades approach to testing.

Related Links

- [CST Released Test Questions](#), California Department of Education.
- [Guidelines on Academic Preparation for State Assessments](#) (PDF; 219KB, 4pp.), California Department of Education.
- [Program Resources](#), California Department of Education.
- [Relationships](#)—Recommendation 5, TSCII.
- [Relevance](#)—Recommendation 4, TSCII.
- [Scoring Process](#), California Department of Education.
- [Services & Resources](#), California Department of Education.
- [STAR CST Blueprints](#), California Department of Education.
- [STAR Program Resources](#), California Department of Education.

Previous

[Rubrics](#)

Next

[Data management](#)

Footnotes

¹ [Guidelines on Academic Preparation for State Assessments](#) (PDF; 219KB; 4pp.).
Sacramento: California Department of Education, December 2009, 1.

² Ibid.

³ David J. Ferrero, "[Having It All—Challenging the Status Quo](#)," (Outside Source), *Educational Leadership*, Vol. 63, No. 8, May 2006, 8-15.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Data management

Receiving test result information is only the first step in a long process of test interpretation. Ideally, the data help professionals keep students and parents informed and help teachers learn which aspects of the instructional program are effective and which need improvement.

California's statewide assessment system is composed of several testing programs. The elements of the statewide system are detailed on the [California's assessment system](#). Additionally, teachers must coordinate tests, analyze results, and track progress for multiple student populations such as English language development (ELD) students in various levels, honors students, Title I students, and RSP (resource specialist program) students. There are commercial products available that can help teachers disaggregate and analyze data. However, these software packages still require time to enter the student information, test questions, and answers for each assessment. Some of these software packages require the additional purchase of a scanning system to read student response forms and provide data on student accuracy.

For effective test interpretation, professional learning community team members need to know:

- Where do the students' specific areas of strength and weakness lie? For example, how well have students learned both the concepts and the skills related to specific objectives?
- Do low scores reflect an overall deficiency in the program, or are they a result of students' problems with the concepts or skills in a single strand, such as geometry? On the other hand, is there a problem with the test question? Is it valid and reliable?
- Do low scores reflect a lack of conceptual understanding or difficulty applying conceptual understanding? For example, when the same concept is tested with a multiple-choice question and an open-response question, are students able to answer one correctly but not the other?
- Do low scores reflect a deficient curriculum or a mismatch between what the program teaches and what the test measures?
- Do low scores reflect deficient instruction or do the scores reflect a mismatch between an instructional approach (such as using manipulatives) and the test's methodology (such as fill-in-the-blank)?
- Have factors beyond the curriculum and instruction influenced the scores? Examples might be teachers' content knowledge, classroom climate, and students' reading readiness (and by extension, the language arts curriculum, and instruction).¹

Related Links

- [A Data-Driven Organization's Approach to Assessing The Quality of Program Delivery](#) (Outside Source), Technology Information for Administrative Leadership (TICAL).
- [Data Management Division](#), California Department of Education.
- [DataQuest](#), California Department of Education.
- [Lead data analysis](#), Recommendation 9—Leadership, TCSII.
- [Using Data: The Math's Not the Hard Part](#) (PDF; Outside Source), Craig D. Jerald, The Center for Comprehensive School Reform and Improvement, September 2006.

Previous

[Test preparation](#)

Next

[Test interpretation](#)

Footnote

¹Ron Pelfrey, [The Mathematics Program Improvement Review: A Comprehensive Evaluation Process for K-12 Schools](#) (Outside Source), , Alexandria, Virginia: Association for Supervision and Curriculum Development, 2006.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Test interpretation

[Common benchmark assessments](#) administered by teachers not only ensure fairness between different classrooms and teachers; they also provide timely consistent data for students and parents. Although teachers have no control over when state and national test results are available, they do have the ability—and the responsibility—to give students timely feedback on local common assessments. If results come within a few days of having taken an examination, students remember questions they had about the material. Reteaching and differentiated instruction can quickly ensure that learning progresses in a timely manner. If results come weeks later, the answer means little in terms of increased learning and instructional planning.

Test interpretation has several layers:

- Students and parents need help in interpreting the scores and any teacher comments they received. Rubrics help by showing students specific components of the work that they have mastered, as well as areas of learning that need to be developed.
- Teachers need to interpret both student and class wide results to inform instructional practices (who needs remediation; how well the class is progressing toward mastery of the standards; how effective instruction has been).
- Professional learning community team members interpret test data to learn how well the students have progressed in mastering the standards. By comparing class scores on an item-by-item basis, team members also learn where curriculum and instructional practices may be weak (if all classes scored poorly on an item). If one class scored consistently higher than other classes, the teacher of that class can share instructional techniques that helped the students master the material.
- Schoolwide teacher teams use test results to assess overall growth and areas needing improvement as they make plans for the next year.

Previous

[Data management](#)

Next

[Test celebrations](#)

[Back to Top](#)

[Print](#)



Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Search

Change Text Size: [A](#) [A](#) [A](#)

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Test celebrations

Effective developmentally responsive schools do not stop with testing; they also celebrate the results—large and small. Most young adolescents need encouragement and motivation to keep trying and stretching. However, it is important to consider school climate when designing celebrations. For example, effective schools do not segregate the **winners** (those whose scores increased) from the **losers** at events such as pizza parties for meeting test attendance targets or other celebration events. Similarly, effective schools use awards assemblies to recognize **A** students as well as students who achieved the **most gains for a month**, or other encouragements for attitude and perseverance. For example, each time students achieve new levels of proficiency on the CELDT or complete ten hours of community service, the school community as a whole or by team can celebrate success.

Related Links

- [Effort/motivation celebrations](#), Recommendation 5—Relationships, TCSII.
- [Celebrations—a culture based on caring and success](#), Recommendation 5—Relationships, TCSII.
- [Create a climate for learning](#), Recommendation 9—Leadership, TCSII.

Previous

[Test interpretation](#)

Next

[Intervention](#)

[Print](#)



Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Search

Change Text Size: **A** **A** **A**

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent Development

Practices In the Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Intervention

How to Respond When Students Experience Difficulty

Academic rigor increases dramatically in the middle grades, posing a challenge to students who are not performing well. Students struggle for many reasons: lack of motivation, absenteeism, learning disabilities, difficulties learning English as a second language, stressful family life, poverty, low expectations from adults, poorly trained teachers, ineffective elementary school instruction, disorganized schools, and lack of instructional resources.¹

Typically, teachers examine the following cognitive and noncognitive factors when a student is at risk for failing.

Student difficulties	Recommendation/section that addresses the interventions needed
<p>1. Cognitive interventions:</p> <ul style="list-style-type: none"> Academic difficulties (typically in mathematics and English language arts) 	<p>Instruction, Assessment, and Interventions</p> <ul style="list-style-type: none"> Interventions for mathematics Interventions in English language arts Interventions for bilingual students Response to Instruction and Intervention (RTI2)
<p>2. Noncognitive interventions:</p> <ul style="list-style-type: none"> Attendance problems Behavior problems 	<p>Safety, Resilience, and Health</p> <ul style="list-style-type: none"> Attendance, tardiness, truancy, and the School Attendance Review Board (SARB) Resilience—Strengthening Protection Factors and Developmental Assets

A teacher can use the results of assessments and classroom observation to determine which intervention to use. Some students may need to be referred to a student success team (SST—sometimes called Student Study Team) or specialist for intervention placement.² Because assessment of student performance on English language arts and mathematics content dramatically affect each school's AYP, these two subjects have become the focus for most cognitive interventions used with struggling students. To address the master scheduling changes needed for providing interventions, link to the section.

Effective middle schools place the best teachers in intervention classes. Struggling learners benefit from placement with passionate, enthusiastic, highly skilled, and energetic teachers

who love both the students and the subject matter.³

Effective schools also avoid tracking. Needing intensive interventions in one content area, such as English language arts, does not necessarily indicate that the student will need intervention in another such as in mathematics.

Proponents of youth development and resilience stress that quality remediation offers a **challenge plus support** message. It says to the student, "We have high expectations that you will master this material, and we will help you do it." The interventions include firm guidance with clear boundaries

Dr. Rick DuFour talks about his experiences at Stevenson High School in Illinois, to illustrate how schools can do **whatever it takes** to help all students succeed:

- At three weeks, teachers refer students who show below-satisfactory progress on the common assessments to tutoring and counseling. At this point, the interventions are optional.
- At six weeks, students who are not progressing satisfactorily must sign a contract with parents and teachers for attending tutoring and completing all homework which is no longer optional.
- At 12 weeks, students are assigned to **guided** study hall where tutors and study hall directors allow no excuses for incomplete work. They have all textbooks available if students forget the texts and have a list of all assignments so students cannot forget what they need to complete. Pencils, references and other support materials are also provided.⁴

The Academic Achievement Award Program identifies and recognizes Title I schools with demonstrated success in significantly closing the achievement gap between high- and low-performing students.

Related Links

- [Academic Achievement Award Program](#), California Department of Education.
- [High-impact schools](#), Recommendation 1—Rigor, TCSII.
- [Schedule implications](#), Recommendation 3—Time, TCSII.
- [Stevenson High School](#), (Outside Source).
- [Student success team](#), California Department of Education.
- [Title I, Part A-Accountability](#), California Department of Education.

Previous

[Test celebrations](#)

Next

[Response to instruction and intervention RTI²](#)

Footnotes

¹Marge Scherer, "[Helping Struggling Students: The Silent Strugglers](#)", (Outside Source) *Educational Leadership*, Vol. 63, No. 5 (February 2006), 7.

²[Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 6.06MB; 386pp.). Sacramento: California Department of Education, 2007, 226.

³[Gaining Traction. Gaining Ground: How Some High Schools Accelerate Learning for Struggling Students](#) (PDF; Outside Source). Washington, D.C.: The Education Trust, 2005, 37.

⁴Dr. Rick DuFour, "Professional Learning Communities." Cyber conference presentation to the Curriculum and Instruction Steering Committee of the California County Superintendents Educational Services Association, March 2006.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations
for Success](#)
[Recommendations
in Action](#)
[Standards and
Testing](#)
[Stakeholder
Organizations](#)
[References and
Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent
Development](#)
[Practices In the
Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Response to Instruction and Intervention (RTI²)

Response to Instruction and Intervention (RTI²) is a general education approach to closing the achievement gap. RTI² methods build on the successful Response to Intervention (RTI) model that was offered as an option for schools under the [Building the Legacy: Idea 2004 reauthorization of the Individuals with Disabilities Education Act \(IDEA\)](#) (Outside Source). RTI and the now-expanded RTI² are based on over 17 years of practice that has refined continuous progress monitoring as a strategy for keeping students on a path toward success.

By focusing on culturally relevant, research-based instruction, continuous assessments of student learning, and increased parental involvement, RTI² aims to catch students before their educational problems grow and they need more intensive instruction.

A successful RTI² program integrates resources from general education, categorical programs, and special education into a comprehensive system of instruction and intervention that suits the needs of the students. Thus, the focus is on the individual student and what will best help him or her learn. Strong leadership and resources from the school, district, and community must be harnessed to make this an effective instructional method.

RTI is the practice of providing high-quality instruction and intervention matched to student needs by analyzing the learning rate over time to make important educational decisions. High-quality instruction is based on scientific research to produce high learning rates for most students. Learning rate refers to a student's growth in achievement or behavior competencies over time compared to peer growth.¹

In its simplest form, RTI is a strategy for moving all students from one step in learning the standards to the next. The RTI approach looks at both academic and behavioral achievement.

Tier 1: Universal interventions. RTI begins with preventive, proactive universal interventions in all subjects and for all students (80-90 percent of students). These interventions are all differentiated instructional strategies and supports that help students learn the material. The universal interventions tie closely to regular assessments that alert the teacher to problems in student learning. (These interventions would generally take place every four to six weeks.) Universal interventions correspond with California's [benchmark interventions](#).

Tier 2: Targeted group interventions. In the next phase, RTI proposes targeted group interventions (for example, a specific mathematics or reading intervention class) for some students who are at risk based on assessment data. The interventions are designed to be rapid and highly efficient. Targeted interventions correspond to California's [strategic interventions](#).

Tier 3: Intensive individual interventions. Anywhere from 1-5 percent of students will continue to experience learning difficulties even after the targeted group interventions. These students receive academic or behavioral [intensive interventions](#) that make use of high-intensity procedures.²



In the Spotlight

John Glenn Middle School of International Studies, Desert Sands Unified School District, a 2004 Schools to Watch™-Taking Center Stage Model School

The school uses an RSP (resource specialist program) co-teaching model at all three grade levels.

- [John Glenn DataQuest School Profile](#)
- [John Glenn Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: John Glenn Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

[Response to Intervention: Possibilities for Service Delivery at the Secondary School Level](#) (Outside Source), from The Center for Comprehensive School Reform and Improvement (June 2008), takes a look at the challenges and possibilities of implementing the Response to Intervention (RTI) model at the secondary level.

Related Links

- [A Promising Alternative for Identifying Students with Learning Disabilities](#), (Outside Source), WestEd.
- [Assisting Students Struggling with Mathematics: Response to Intervention \(Rti\) for Elementary and Middle Schools](#) (PDF; Outside Source), IES Practice Guide, What Works Clearinghouse, National Center for Education Evaluation and Regional Assistance, U.S. Department of Education.
- [Building the Legacy: IDEA 2004](#) (Outside Source), U.S. Department of Education.
- [Council for Exceptional Children: The Voice and Vision of Special Education](#) (Outside Source)
- [Intervention Central: Curriculum-Based Measurement Warehouse](#) (Outside Source)
- [National Center on Response to Intervention](#) (Outside Source)
- [National Center on Student Progress Monitoring](#) (Outside Source)
- [National Research Center on Learning Disabilities \(NRCLD\)](#) (Outside Source)
- [Proposed IDEA Regs Reformatted by Wrightslaw](#), (Outside Source), Wrightslaw.
- [Reauthorization of the IDEA 2004](#), California Department of Education.
- [Resources-Rtl²](#), California Department of Education.
- [Response to Instruction & Intervention](#), California Department of Education.
- [Response to Intervention \(RTI\) and special education](#), Recommendation 2—Instruction, Assessment, and Intervention, *TCSII*.
- [Response to Intervention—Special Education Research](#), (Outside Source), U.S. Department of Education.
- [RTI Action Network](#) (Outside Source)
- [Special Education](#), California Department of Education.
- [Special Education Resources](#), California Department of Education.
- [The Leadership Site Award Program](#), (Outside Source), CalSTAT: Technical Assistance and Training.

Previous

[Intervention](#)

Next

[Types of Accelerated Academic Interventions](#)

Footnotes

¹Batsche, G., and others, *Response to Intervention, Policy Considerations and Implementation* (Outside Source), Alexandria, Va.: National Association of State Directors of Special Education, Inc., 2005.

²W. David Tilly III, [Response to Intervention: An Overview—What Is It? Why Do It? Is It Worth It?](#), (PDF; Outside Source) *The Special EDge*, Vol. 19, No. 2, (Winter/Spring 2006), 1, 4-5.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Types of Accelerated Academic Interventions

The three types of interventions are benchmark, strategic, and intensive (refer to the next three sections). [Essential Program Components](#) (EPC) focuses primarily on students who need strategic and intensive interventions. EPC #8 has two parts:

- Part one covers interventions for English language arts.
- Part two covers interventions for mathematics.

Response to Intervention (RtI) provides another way to look at continuous progress monitoring and interventions to help all students achieve the standards. For more on RtI as an intervention strategy, refer to the previous section.

Previous

[Response to Instruction and Intervention](#)

Next

[Benchmark interventions—reinforcement](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Benchmark interventions—reinforcement

Benchmark or early interventions are for students who are satisfactorily achieving grade-level standards but on occasion may require additional assistance and support for specific standards and concepts.¹ These students benefit from ancillary materials, tutoring, software assistance, additional time with the teacher, and differentiated instruction. Addressing the students' instructional needs early, before they become critical, prevents students from falling behind. According to the [Reading/Language Arts Framework for California Public Schools Kindergarten through Grade Twelve](#) (PDF; 6.06MB; 386pp.) , appropriate benchmark interventions include reteaching a concept in a different way, providing additional learning time, and additional practice.²

Previous

[Types of Accelerated Academic Interventions](#)

Next

[Strategic interventions—reteaching](#)

Footnotes

¹Lesson and course pacing schedule (K-8) and master schedule flexibility for sufficient numbers of intervention courses — [Essential Program Component](#), California Department of Education Web site.

²[Reading/Language Arts Framework for California Public Schools—Kindergarten through Grade Twelve](#) (PDF; 6.06MB; 386pp.). Sacramento: California Department of Education, 2007, 227.

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Strategic interventions—reteaching

Strategic interventions are for students who may be one or two standard deviations below the mean according to the results of standardized testing or for those students who are a year below grade level. Often the regular classroom teacher can address specific learning difficulties, but regular progress monitoring is needed to keep track of the student's learning difficulties. Students usually participate in a grade-level program with additional support. Some students may need an additional class period or a before- or after-school program to master difficult content. Tutoring and small-group work may also be effective.

State-adopted reading/language arts instructional materials provide 30 minutes of additional instructional time designed to bring students up to grade level. The teacher determines the amount of additional instructional time needed and what intervention strategies to use. The teacher may provide additional instruction in background knowledge, prerequisite skills, and concepts, more opportunities for vocabulary development, and additional practice on concepts and skills taught in the lesson. In some cases, the teacher may preteach and reteach material in the lesson.¹

Previous

[Benchmark interventions—reinforcement](#)

Next

[Intensive interventions—teaching](#)

Footnote

¹[Curriculum Framework 2005](#). Sacramento: California Department of Education, 2006, 231, 236; [Reading/Language Arts Framework for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 6.06MB; 386pp.). Sacramento: California Department of Education, 2007, 227.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations
for Success](#)
[Recommendations
in Action](#)
[Standards and
Testing](#)
[Stakeholder
Organizations](#)
[References and
Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent
Development](#)
[Practices In the
Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Intensive interventions—teaching

Intensive interventions are designed for students who are two years or more below grade level. Intensive interventions require teaching material in a new way when it is clear that students did not learn the material through direct instruction or with reinforcement and supports. Intensive interventions usually require devoting an additional class period to intensive instruction in English language arts, English language development, or mathematics. In some cases, students need intensive instruction in multiple subjects. Special scheduling considerations allow these students access to accelerated learning. The intent of intensive intervention programs is to move the student to grade-level courses once he or she has mastered the foundational skills and concepts. For instance, if one year's growth takes 183 hours at one hour per day for 183 days, theoretically a student should be able to get three years' growth in one year if the instructional time is tripled.

There are two types of state-adopted intensive intervention programs in reading/language arts. The Intensive Intervention Programs in Reading/Language Arts are stand-alone, intensive, accelerated reading/language arts programs. These programs provide two and one-half hours to three hours of daily instruction designed to address the instructional needs of students in grades four through eight whose reading achievement is two or more years below grade level.

The Intensive Intervention Programs for English Learners (ELs) are stand-alone intensive reading/language arts programs. These programs provide two and one-half hours to three hours of daily instruction developed specifically for ELs in grades four through eight whose academic achievement is two or more years below grade level. These stand-alone reading/language arts intervention programs address literacy and language development. The materials are designed to provide intensive, accelerated, and extensive English language development that complements and supports reading/language arts instruction.

Appendix E of the [Mathematics Framework for California Public Schools Kindergarten Through Grade Twelve \(2005\)](#) (PDF; 3.19MB; 411pp.) outlines the components of effective mathematics intervention instructional materials. Charts in Appendix E list the subsets of mathematics standards that should be included in an intensive intervention program. The 2007 Mathematics Adoption calls for two types of instructional programs to meet the needs of intensive intervention students: Mathematics Intervention Program for Grades Four through Seven and Algebra Readiness. Until such instructional programs are adopted, teachers can use the information in Appendix E to focus their instruction on critical mathematics skills and concepts.

Intensive interventions can help accelerate student learning, but they need to be well planned, implemented, and monitored. If the students do not make progress based on assessment results, then educators need to reevaluate and modify the intervention plan and instructional strategies.

Related Links

- [State Board Adopted Instructional Materials](#), California Department of Education

[Previous](#)

[Strategic interventions—reteaching](#)

Next

[Schedule implications](#)

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Search

Change Text Size: [A](#) [A](#) [A](#)

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent Development

Practices In the Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Schedule implications

Interventions in the middle grades cannot ignore scheduling issues. Ensuring that students complete all required courses and still have time for elective courses takes a schoolwide effort. Courses should be scheduled in a way that meets students' instructional and developmental needs. For example, to address the issues of access and fairness, effective schools plan to include interventions during the school day. Failure for struggling students is not an option, and teachers do not allow students to avoid getting the help they need. By having intervention classes during the school day, teachers remove obstacles such as lack of transportation or commitment to family responsibilities after school.

Developmental responsiveness must be a characteristic of interventions in the middle grades. For more on developmental responsiveness, refer to Recommendation 4—Relevance and Recommendation 5—Relationships.

When scheduling interventions, leaders of professional learning communities in effective schools look at how to infuse art and other electives into intervention classes or as an elective that is available before or after school. As an example, some Schools To Watch—Taking Center Stage schools using block schedules allow students to sign up for a remediation class two days per week. For more on scheduling interventions, refer to the section in , Recommendation 3—Time for accelerated academic interventions.

Related Links

- [Recommendation 3—Time for accelerated academic interventions](#)
- [Recommendation 4—Relevance](#)
- [Recommendation 5—Relationships](#)

Previous

[Intensive interventions—teaching](#)

Next

[Before, during, and after-school programs](#)

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for Success

Recommendations
in Action

Standards and
Testing

Stakeholder
Organizations

References and
Resources



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Before, during, and after-school programs

According to a 2006 survey, four in ten teens (40.5 percent) do not attend after-school programs because they were not interested in what the programs offer. Cost and lack of transportation do not appear to deter many students. When the researchers asked students what factors would increase their interest in after-school activities, the overwhelming majority of teens said they would be interested in after-school programs that help them perform better in school (76.8 percent), develop leadership skills (76.4 percent), and teach them how to work with money and budgets (75.6 percent) and how to run a business (69.1 percent).¹

Before- and after-school program sometimes called 0 and X periods, ensure that students who take intensive intervention courses still have an opportunity to participate in electives. Currently there is nearly \$248 million available in [supplemental education services](#) funding for programs outside the school day.

Some of the resources on before- and after-school programs are noted below.

Related Links

- [21st Century Community Learning Centers](#), California Department of Education.
- [Afterschool Time: Choices, Challenges, and New Directions](#), (Outside Source), Education Development Center (EDC).
- [After School Education and Safety Program](#), California Department of Education.
- [Exploring Quality Standards for Middle School After School Programs: What We Know and What We Need to Know](#), (PDF; Outside Source), Harvard Family Research Project (HFRP) and the National Institute on Out-of-School Time.
- [List Resources by Grade Range \(Middle School\)](#), (Outside Source) Science After School, The National Center for Quality Afterschool.
- [Supplemental Educational Services](#), California Department of Education.
- [Time for Achievement Afterschool and Out-of-School Time](#), (PDF; Outside Source), Southwest Educational Development Laboratory Newsletter, May 2006, Vol. XVIII, No.1.

Previous

[Schedule Implications](#)

Next

[Tutoring and homework centers](#)

Footnote

¹["Lack of Interest" Reason Why Teens Don't Use After School Programs](#), (Outside Source), Junior Achievement, July 5, 2006.

[Back to Top](#)

[Print](#)

California Department of Education

1430 N Street

Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

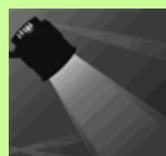
PDF of Contents

TCSII

Tutoring and homework centers

Library-media centers, YMCAs, faith-based organizations, and nearby public libraries or schools all provide potential sites for offering students homework help and early intervention tutoring. Before, during, and after-school tutoring centers help students complete take-home assignments, prepare for tests, or fix errors on returned assignments to improve learning. Effective homework and tutoring centers feature trained staff members who are capable of providing mathematics and English language arts learning support, as well as support for other subjects. Many homework centers recruit college or university student interns who volunteer as unpaid staff and earn academic credit. Other volunteers might include student peers, parents, or retirees. Bilingual volunteers are especially important in centers serving English learner students.

Supervisory staff members in effective tutoring and homework centers work closely with the teachers in the regular school program so they can use appropriate assessment data, assignments, or information on specific learning difficulties. Volunteers will be most successful when they can align tutoring and assistance to classroom expectations and individual student needs.



In the Spotlight

Alvarado Intermediate School, Rowland Unified School District, a 2004 Schools to Watch™-Taking Center Stage Model School

Despite budget cuts, Alvarado maintains an extensive after-school program that reinforces state standards, promotes social skills, and permits students to interact with teachers in a more informal setting. The unusually high attendance rates at all the after-school activities attest to Alvarado's responsiveness to the need for a student-centered, age-relevant focus and co-curricular activities that respond to the students' social needs.

- [Alvarado Intermediate DataQuest School Profile](#)
- [Alvarado Intermediate School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Alvarado Intermediate School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

Previous

[Before, during, and after-school programs](#)

Next

[After-school academies](#)

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Search

Change Text Size: [A](#) [A](#) [A](#)

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
Development

Practices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

After-school academies

High-performing after-school programs share the goal of helping all students achieve grade-level proficiency or above. Effective after-school programs provide the following essential elements:

- Coordination with the library/media center and computer lab hours to help reinforce learning in the core classes.
- Transportation arrangements so all students have access to the after-school offerings.
- Training so that staff members are prepared to help students with study skills, mathematics, English language arts, and other core subjects.
- Special education inclusion, materials, and trained staff.

In addition, national research has identified five characteristics of effective after-school programs. The study found that effective after-school programs offer relationships and engagement as well as a focus on academic help. The most effective programs:

- Offer a broad array of enrichment opportunities.
- Provide opportunities for skill building and mastery.
- Focus on intentional relationship building.
- Have an experienced manager who is supported by a trained and supervised staff.
- Receive administrative, fiscal, and professional-development support from the sponsoring organization.¹



In the Spotlight

Hilltop Middle School, Sweetwater Union High School District

Students who have not achieved intermediate proficiency on the California English Language Development Test (CELDT) by spring are enrolled in a 12-week after-school program to boost English language (EL) writing skills. The school staff used curriculum focusing on popular literature to help EL students gain language skills.

Reyburn Intermediate School, Clovis Unified School District

The After School Intervention class runs in six-week cycles and helps struggling students, including ELs and resource students, learn the skills they need to succeed in all of their academic classes. According to the teacher, struggling students need knowledge broken into chunks. Students take a test after each section and the teacher tracks daily and weekly progress. Results show that student scores in the after-school intervention grow after each lesson and test session.

- [Hilltop DataQuest School Profile](#)
- [Hilltop Middle School](#) (Outside Source)

- [Reyburn DataQuest School Profile](#)
- [Reyburn Intermediate School](#) (Outside Source)

The No Child Left Behind Act stipulates that, under certain circumstances, students should have access to [supplemental educational services](#) (SES), particularly additional academic instruction provided outside of the regular school day. SES, or free tutoring, is designed to increase the academic achievement of students attending schools in Program Improvement (PI) Years two through five. The SES must be high quality, research-based, and specifically designed to increase student academic achievement. Eligible students are all low-income students who attend Title I PI Years two through five schools.²

Related Links

- [21st Century Community Learning Centers](#), California Department of Education.
- [After-Hours Academic Programs in Middle Schools](#). (DOC; 27.5KB; 1p.), Document Library, TCSII.
- [After School Programs and Activities: 2005](#) (PDF; Outside Source). National Household Education Surveys Program of 2005, National Center for Education Statistics, U.S. Department of Education.
- [Professional Considerations After-Hours Academic and Enrichment Programs](#), Document Library, TCSII.
- [Program Description: After School Education and Safety \(ASES\)](#), California Department of Education.

Previous

[Tutoring and homework centers](#)

Next

[Saturday school](#)

Footnotes

¹Jennifer Birmingham and others, [Shared Features of High-Performing After-School Programs: A Follow-up to the Tasc Evaluation](#) (PDF; Outside Source), Washington, D.C.: Policy Studies Associates, Inc. Prepared for [The After-School Corporation](#) (Outside Source) and [Southwest Educational Development Laboratory](#) (Outside Source) with support from the U.S. Department of Education, November 2005, i, ii.

²[Supplemental Educational Services](#), California Department of Education .

[Back to Top](#)

[Print](#)

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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent Development

Practices In the Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Saturday school

Historically, Saturday school has tended to be a disciplinary consequence for poor attendance or behavior. However, it has the potential to provide a valuable opportunity for students who need targeted interventions. To be effective in helping students reach grade-level proficiency, Saturday schools must have exceptional articulation with the Monday through Friday school teachers and meet the same conditions that were described under [tutoring and homework centers](#), and other before, during, and after-school programs that address academic needs.



In the Spotlight

Culver City Middle School, Culver City Unified School District, a 2003 Schools to Watch™-Taking Center Stage Model School

The Saturday Success Academy is for eighth graders who are getting a low grade on the quarterly report card. It involves two hours of required Saturday school that provides students with skills and encouragement. Two English language arts teachers join with one social studies teacher and one mathematics teacher to help students with homework. Typically, the class spends half the time on English language arts and half on mathematics.

- [Culver City DataQuest School Profile](#)
- [Culver City Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Culver City Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

Previous

[After-school academies](#)

Next

[Summer school options](#)

[Print](#)



Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Search

Change Text Size: A A A

Recommendations for Success	Recommendations in Action	Standards and Testing	Stakeholder Organizations	References and Resources
-----------------------------	---------------------------	-----------------------	---------------------------	--------------------------



Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent Development

Practices In the Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Summer school options

Even when teachers have been assessing progress and providing timely interventions throughout the school year, some middle school students will still need additional interventions. For example, students who score at Basic, Below Basic, and Far Below Basic levels on the California Standards Tests may have difficulty passing California High School Exit Exam without multiple avenues of support. For more information refer to performance levels in Recommendation 1—Rigor. Since CST results are not available before midsummer and because early remediation is critical, teachers must use ongoing progress monitoring to recommend summer school.

Research by the Urban Institute indicates that a quality summer school program that involves students and their parents/guardians can limit the typical drop in test scores of low-income children during the summer months. The study evaluated the effectiveness of a summer program designed to improve students' academic skills, parental involvement, academic self-perceptions, and social behaviors among low-income children and families. It found that a well-implemented summer learning program could improve reading test scores and increase the extent to which parents encourage their children to read during the subsequent school year.¹

Summer school programs need to be as rigorous as standards-based courses during the school year. Students need encouragement and support to know that summer school courses not only fulfill a requirement but also prepare them to succeed in later courses.

Related Links

- [Performance levels](#) Recommendation 1—Rigor

Previous

[Saturday school](#)

Next

[Retention options](#)

Footnote

¹Duncan Chaplin and Jeffrey Capizzano, [Impacts of a Summer Learning Program: A Random Assignment Study of Building Educated Leaders for Life \(BELL\)](#), (Outside Source) Washington, D.C.: The Urban Institute, August 2006.

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Retention options

Many researchers agree that repeating a grade is not an effective strategy for helping struggling students succeed. Students who are not at grade level by the end of eighth grade are more likely to drop out of high school.

Repeating a grade during middle school increased the probability of dropping out sevenfold. Eighty percent of those who repeated a class more than once were likely to drop out. Because these effects of grade retention were obtained over and beyond those accounted for by prior grades and disengagement, the authors concluded that standing out and not fitting in are especially detrimental during the middle school years. Hence, it seems that while low grades predict grade retention, the negative social consequences of being held back among 12–15 year olds further increases the risk of dropping out.¹

Because of the lack of scientific evidence supporting the academic benefits of retaining students, summer bridge programs with the local high school offer a viable alternative.

Related Links

- [Social promotion versus summer school and bridge programs](#), Recommendation 6—Transitions, TCSII.

Previous

[Summer school options](#)

Next

[Interventions for Bilingual Students](#)

Footnote

¹Jaana Juvonen, Vi-Nhuan Le, Tessa Kaganoff, Catherine Augustine, and Louay Constant, [Focus on the Wonder Years—Challenges Facing the American Middle School](#) (PDF; Outside Source). Santa Monica, California: Prepared by the Rand Corporation for the Edna McConnell Clark Foundation, 2004, 48.

[Print](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Interventions for Bilingual Students

Effective schools place English learner students in intensive [English language development \(ELD\)](#) classes based on levels of academic literacy. In the past, schools often placed English learner (EL) students in tracked or remedial classes rather than in intensive academic interventions designed to move them toward proficiency. Many of these EL students will not ask for help because they feel that the academic language in the class is hopelessly above their grasp. In addition, remedial teachers often lack specific skills in ELD.

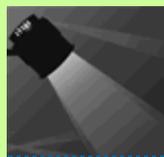
These students benefit from instruction using state-adopted Intensive Intervention Programs for EL students. These stand-alone programs provide two and one-half hours to three hours of daily instruction developed specifically for EL students in grades four through eight whose academic achievement is two or more years below grade level. These stand-alone reading/language arts intervention programs address literacy and language development. The California Department of Education designed the materials to provide intensive, accelerated, and extensive ELD that complements and supports reading/language arts instruction.

[Title III](#) of the No Child Left Behind Act of 2001 provides federal financial support to state and local educational agencies for two programs:

- [Title III Language Instruction for LEP Students](#) (LEP is the term used in federal law ; in California the term is English learner or EL.)
- [Title III Immigrant Students](#)

According to Title I regulations, state educational agencies (SEAs), local educational agencies (LEAs), and schools are required to hold limited English-proficient students to the same academic content and achievement standards established for all children. Additionally, EL students must meet annual English language development objectives (Title I, Section 1111[b][1], and Title III, Section 3122[a][1]). For more on accountability, refer to Recommendation 11—Accountability.

Some interventions for English learners are used successfully in the following schools:



In the Spotlight

Kennedy Middle School, El Centro Elementary School District, a 2005 Schools to Watch™_Taking Center Stage Model School

Because of a large EL population, the school focus is on language development. During sixth period, all students meet in language ability groupings and rotate to a class taught at their level. Both an extended day program and rotating block schedule help to provide the needed classes, and teachers convey the expectation that struggling students stay after school.

Robert A. Millikan Middle School (PDF; Outside Source) and Performing Arts

Magnet, Los Angeles Unified School District, a 2005 Schools to Watch™-Taking Center Stage Model School

The learning center for EL students includes a resource teacher and aides who offer focused interventions. In addition, the school hired outside specialists to create an intervention class during homeroom/nutrition.

- [Kennedy DataQuest School Profile](#)
- [Kennedy Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Kennedy Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

- [Robert A. Millikan DataQuest School Profile](#)
- [Robert A. Millikan Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Robert A. Millikan Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

Related Links

- [Recommendation 11—Accountability](#), TCSII.
- [State Board Adopted Instructional Materials](#), California Department of Education.

Previous

[Retention options](#)

Next

[Interventions in English Language Arts](#)

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

Recommendations
for SuccessRecommendations
in ActionStandards and
TestingStakeholder
OrganizationsReferences and
Resources

Recommendation 2: Instruction, Assessment, and Intervention

Contents

Adolescent
DevelopmentPractices In the
Spotlight

Professional Learning

Videos

Evidence Checklist

Initiatives Crosswalk

Targeted Resources

PDF of Contents

TCSII

Interventions in English Language Arts

The state's [Essential Program Component \(EPC\)](#) #8 for school improvement has two parts:

- Part one covers interventions for English language arts (ELA). It calls for schools or school districts to provide (a) State Board of Education (SBE) adopted intervention programs, offered as a separate, extended period class, for all students requiring intensive intervention in ELA (i.e., those who are unable to demonstrate proficiency in sixth-grade standards); and (b) appropriate instructional strategies for those students requiring strategic intervention (i.e., students who are at or above the sixth-grade reading/language arts standards but who would probably be unable to pass the ELA portion of the California High School Exit Examination (CAHSEE).
- Part two covers interventions for mathematics.¹ Please refer to next section in this chapter for more about [interventions for mathematics](#).

The effectiveness of the ELA intervention program depends on how well instruction matches what students are missing, such as how to analyze sounds, knowledge of phonics rules or syllable types, and strategies for applying what they know. The goal is to **accelerate** student learning so that they reach grade level.

A study on adolescent learners found that the most effective reading intervention programs have the following components:

- Adequate training for all teachers who teach the programs.
- Teacher coaching and ongoing classroom support.
- Knowledgeable leaders able to monitor and support instruction.
- Appropriate student placement and scheduling with student-teacher ratios and time blocks that adhere to program guidelines.
- Appropriate progress monitoring and diagnostic assessments.
- Regular time to analyze student assessment data and plan immediate interventions to address both student needs and teacher support needs.²

Although individual situations differ, researchers point to some specific reasons for persistent reading difficulties which is a problem that hampers students in all other academic areas.

- Many middle grades students were once assigned as younger students to remedial reading programs that focused on skills worksheets at the expense of purposeful, strategic reading experiences.
- Students who do not read well lose motivation. As a result, they read less and consequently do not get any better at reading.
- Grade-level school textbooks alone cannot help the most inexperienced readers. Struggling readers might actually choose to read more if they had access to readable, high-interest texts.
- To make progress, many students need continued instruction in reading beyond the elementary grades. Unfortunately, as they progress into middle and high school, the amount of instruction and support for reading and writing actually decreases.³

Data from the [National Assessment of Educational Progress](#) (Outside Source), billed as the nation's report card, show that the typical thirteen-year-old could read no better in the 2003-

04 school year than the student's counterpart five years earlier. California's eighth-grade scores improved in all measures, but they did not match national averages.⁴

Technology applications for ELA interventions. Teachers can use reading remediation programs including interactive online readers, television captioning, spelling programs, and tape recorders for students to read along while hearing the words spoken. Technology standards are embedded in the [English-Language Arts Content Standards for California Public Schools Kindergarten Through Grade Twelve](#) (PDF; 548.44KB; 92pp) and in the [California Career Technical Education Model Curriculum Standards Grades Seven Through Twelve](#) (PDF; 2.13MB; 441pp.).

Related Links

- [2009 Distinguished Middle and High Schools](#), California Department of Education
- [Effective Instruction for Adolescent Struggling Readers: A Practice Brief](#) (PDF; Outside Source), Center on Instruction.
- [Literacy](#), (Outside Source), WestEd.
- [Reading/Language Arts/ELD Publishers List](#), (California State Board Adopted), California Department of Education.
- [Signature Practices](#) (Outside Source), Closing the Achievement Gap: Achieving Success for All Students, WestEd.

Previous

[Interventions for Bilingual Students](#)

Next

[Interventions in Mathematics](#)

Footnotes

¹Lesson and course pacing schedule (K-8) and master schedule flexibility for sufficient numbers of intervention courses, [Essential Program Component #8](#), California Department of Education Web site.

²Linda J. Diamond, "[Triage for Struggling Adolescent Readers](#)", (Outside Source), *The School Administrator*, April 2006.

³Gay Ivey and Douglas Fisher, *Creating Literacy-Rich Schools for Adolescents*, Alexandria, Va.: Association for Supervision and Curriculum Development, 2006.

⁴History of NAEP Participation and Performance, [State Profiles](#), (Outside Source), IES, National Center for Education Statistics.

[Back to Top](#)

[Print](#)

California Department of Education
1430 N Street
Sacramento, CA 95814

[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)



Search

Change Text Size: [A](#) [A](#) [A](#)

Ensuring Success and Closing the Achievement Gap for All of California's Middle Grades Students

[Recommendations for Success](#)
[Recommendations in Action](#)
[Standards and Testing](#)
[Stakeholder Organizations](#)
[References and Resources](#)


Recommendation 2: Instruction, Assessment, and Intervention

[Contents](#)
[Adolescent Development](#)
[Practices In the Spotlight](#)
[Professional Learning](#)
[Videos](#)
[Evidence Checklist](#)
[Initiatives Crosswalk](#)
[Targeted Resources](#)
[PDF of Contents](#)
[TCSII](#)

Interventions for Mathematics

Appendix E of the [Mathematics Framework for California Public Schools Kindergarten through Grade Twelve \(2005\)](#) (PDF; 3.19MB; 411pp.) outlines the components of effective mathematics intervention instructional materials. Charts in Appendix E list the subsets of mathematics standards that should be included in an intensive intervention program. The mathematics adoption calls for two types of instructional programs to meet the needs of struggling students:

- Mathematics intervention for grades four through seven
- Algebra readiness

The programs are not intended to be full-year or full-course programs but to move students efficiently to grade-level instruction.¹ Teachers can use the information in the [State Board Adopted Instructional Materials](#) to focus their instruction on critical mathematics skills and concepts.

Shadow mathematics is a common type of intervention in the middle grades. The shadow mathematics concept provides preview and review structure, often taught by a team, so students constantly reinforce what they are learning and tie it to new concepts. The shadow mathematics class generally follows a regular mathematics class. The shadow mathematics teacher reviews what students learned in the previous mathematics class and previews what students will learn the following day. The teacher devotes the rest of the period to reinforcing basic mathematics skills that students missed on the common assessments or in homework. Shadow mathematics teachers need special training, so they can teach concepts in a new way if students did not understand the first time.

Some solutions to middle grades mathematics offerings are reported below.



In the Spotlight

Gaspar De Portola Middle School, San Diego Unified School District, a 2006 Schools to Watch™-Taking Center Stage Model School

The principal **sold** targeted students on taking an academic support class in either English Language Arts or mathematics, as an elective, by saying “I’m investing in you. You need this to be successful, and we’ve chosen you because you could do it. If you don’t want to, there’s the door.” The support class runs much like an Advancement Via Individual Determination (AVID) elective.

Kennedy Middle School, El Centro Elementary School District, a 2005 Schools to Watch™-Taking Center Stage Model School

Since a majority of the students who attend the school are English learners (ELs), most classes include ELs support and learning interventions.

Rancho Milpitas Middle School, Milpitas Unified School District, a 2005 Schools to Watch™-Taking Center Stage Model School, and a 2005 California Distinguished School

The school's MIND program provides a nonlinguistic representation of algebra that includes two days of computer tutorials and three days of direct instruction. The program helps non-English speakers learn without depending on language to gain mathematics concepts.

Richard Henry Dana Middle School, Wiseburn Elementary School District, a 2006 Schools to Watch™-Taking Center Stage Model School

Middle Mathematics allows self-paced instruction through an online mathematics tutorial that includes an accountability component.

Rio Norte Junior High School, William S. Hart Union High School District

Mathematics tutors from the nearby high school help students with homework and tutoring on concepts they missed on common benchmark assessments.

- [De Portola DataQuest School Profile](#)
- [De Portola Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Gaspar De Portola Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)
- [AVID](#)

- [Kennedy DataQuest School Profile](#)
- [Kennedy Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Kennedy Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

- [Rancho Milpitas DataQuest School Profile](#)
- [Rancho Milpitas Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Rancho Milpitas Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)
- [California Distinguished Schools Program](#)

- [Richard Henry Dana DataQuest School Profile](#)
- [Richard Henry Dana Middle School](#) (Outside Source)
- [Schools to Watch™-Taking Center Stage—Model School Visitor's Guide: Richard Henry Dana Middle School](#) (PDF; Outside Source)
- [Schools to Watch™-Taking Center Stage](#)

- [Rio Norte DataQuest School Profile](#)
- [Rio Norte Junior High School](#) (Outside Source)

Related Links

- [Appendix E Mathematics Intervention and Algebra Readiness Instructional Materials](#) (PDF; 649KB; 36pp.), Mathematics Framework for California Public Schools, Kindergarten through Grade Twelve (2005): Appendix E, California Department of Education.
- [Critical Issue: Remembering the Child: On Equity and Inclusion in Mathematics and Science Classrooms](#), North Central Regional Educational Laboratory, Learning Point Associates.

Previous

[Interventions in English Language Arts](#)

Footnotes

¹ [Criteria for Evaluating Mathematics Instructional Materials](#) (PDF; 96.5KB; 12pp.). California Department of Education.

[Back to Top](#)

[Print](#)

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[Site Map](#) | [TCSII Home](#) | [Middle Grades Home](#) | [CDE Home](#) | [Contact Us](#) | [Web Policy](#)