

# SREB

## Getting Students Ready for College and Careers

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Education  
Board

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CHALLENGE TO LEAD SERIES

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This report is part of the *Challenge to Lead* education goals series, directed by Joan Lord. For more information, e-mail [joan.lord@sreb.org](mailto:joan.lord@sreb.org). *Goals for Education: Challenge to Lead* is available on the SREB Web site at [www.sreb.org](http://www.sreb.org). A full listing of goals, with the indicators for the goal on college readiness, is printed on the inside back cover.

## *A Message from the President of SREB*

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**G**etting *Students Ready for College and Careers* is an important companion to the SREB report *Getting Serious About High School Graduation*. Together, they make powerful statements to you as policy-makers and education leaders about the problems in high schools and what you can do to fix them.

*Getting Serious* details the decline in high school graduation rates in most SREB states over the last decade. *Getting Students Ready for College and Careers* goes a step further by describing how many of those who do graduate are not prepared to be successful in college and the workplace. Not only do states need more students to graduate from high school; they also need graduates who are ready for what lies ahead: more advanced learning and high expectations on the job.

### *More students need to take an essential core of courses to prepare for college and careers.*

Teachers, policy-makers and parents have long agreed that those bound for college should take an academically challenging curriculum. However, the latest research shows that the courses once prescribed only for students preparing for college are actually necessary for *all* students: English; mathematics courses including Algebra II; laboratory-based science; and social studies. *Getting Students Ready for College and Careers* also asserts that this essential core should include a fourth mathematics course in the senior year, which could be a course beyond Algebra II, a course on data analysis and statistics, or a course specifically focused on preparing students for college-level mathematics.

### *But students who complete this essential core to prepare them for college and careers may still not be ready.*

Research from ACT Inc. suggests that perhaps as many as four in five college freshmen are not ready for college in all of the key subjects. How can this be? Quite simply, states do not have college- and career-readiness standards built into high school curricula, instruction and statewide assessments.

This means that teachers are not always focused on college and career readiness. And it means that courses are not equally challenging from school to school, or even from classroom to classroom. Policy-makers should require *all* high schools and *all* high school teachers to focus intentionally on college and career readiness. Right now in many states, students are lucky if they are assigned a teacher who has the high expectations to push them to high levels of achievement. SREB states can't afford to leave college and career readiness to luck.

Higher education also must shoulder some of the burden to make college and career readiness a top priority for high schools and teachers. Higher education leaders and policy-makers within each state have not agreed on what it means to be ready, so high schools, teachers, parents and students are left without clear messages on what college readiness means.

- Job one is for high school and college faculties in each state to define and agree on these standards. The standards should spell out what it takes — particularly in writing, reading and mathematics — for high school students to succeed in college and careers.

- Then all public colleges statewide should adopt them.
- These standards should then become the basis for your state's high school curriculum and statewide assessments — and students should know by the junior year of high school if they are on track to meet them.
- For students who are not on track, the school should help them become ready during a rigorous and challenging senior year.

*Dual enrollment is growing fast and needs more attention from policy-makers.*

This report spotlights trends in dual enrollment programs, some of which are disturbing. The five-fold, 10-year increase in high school students across the nation who are taking college-level courses for both high school and college credit shows the rising popularity of the program. Dual enrollment has clearly grown beyond an opportunity for the most accelerated students and now is available to a much more diverse group of students, including those in career and technical programs. While there are likely some benefits of this change, the program needs more oversight from policy-makers.

Too few states have comprehensive policies about who is eligible for dual enrollment and at what standards the “college-level” courses will be taught. The program is being promoted as a potential savings for states and students and as a means to motivate students who might drop out of high school. However, student learning and college success will suffer if dual enrollment students are not ready for college-level courses, if the courses offered are not really college level, or if these courses displace other school-based, high-level English and mathematics courses. *Dual enrollment serves neither the state nor the students if these students are not really prepared to take college-level work.*

It is time to get serious about establishing standards and programs that help all students make a successful transition to college and careers. For your state, it all begins with clarifying specific standards for college and career readiness, so that postsecondary education can speak with one voice and all high school students within a state can receive the same signals.



David S. Spence  
President

# Getting Students Ready for College and Careers

*All recent high school graduates have solid academic preparation and are ready for postsecondary education and a career.*

SREB *Challenge to Lead* Goal

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**W**e all know that when students take rigorous courses in high school, they are better prepared for college and careers. Getting *all* high school students to take rigorous courses is, in fact, the best way to ensure that *all* students are prepared for college and careers.

But skeptics question whether this amount of preparation is essential for every student. SREB's *Challenge to Lead* Goals for Education take on these doubters by asserting that: "Our goal should be nothing less." They urge us to help all students complete high school ready for lifelong learning, including those most likely to drop out.

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*Getting all high school students to take rigorous courses is the best way to ensure that all students are prepared for college and careers.*

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Getting students ready begins with offering a core of essential courses — courses *all* students need, whether bound for a community college, university or the workplace. Further readiness means adding academic courses or a concentration of career and technical courses. Many students take both.

Student success, however, requires more than offering — or even requiring — these courses.

- Education leaders have to ensure that the courses are rigorous — with clear standards and outcomes for students. Many states use end-of-course and workplace exams to make sure that academic and career/technical courses meet standards and are equally rigorous statewide.
  - Teachers have to set high expectations and help students learn to think analytically.
  - And, students have to take their work seriously and try to meet their teachers' high expectations as well as state standards.
- Policy-makers can determine if high school graduates are prepared by focusing on two additional indicators:

- the percentages of high school students who take and succeed in high-level course work, such as Advanced Placement and high-quality dual enrollment; and
- the percentages of recent high school graduates who meet college-readiness standards, and the percentages who still need to take remedial courses in college.

Most students need four years of high school to get ready for college and careers. School leaders, teachers, students and parents need to reinvent the senior year to give students more of the opportunities they need to prepare. And, as they do so,

they need to work in partnership with colleges and employers so that senior year experiences are directly linked to college freshman expectations and workplace requirements.

If high percentages of students need remedial courses in college, it usually means that high school course content is not sufficiently aligned to college-readiness standards. It could mean that colleges are not speaking with a unified voice about what it takes for students to be ready for college. It could also mean that high school courses are not as rigorous or as focused on key standards as they should be to prepare students for college.

The *Challenge to Lead* goals make it clear that SREB states should increase scores on college admission examinations for all groups of students. And scores are increasing. But gaps continue to widen — largely because white students' scores are improving more than minority students' scores. There are notable exceptions, especially involving Hispanic students. These same gaps are evident in the results of high school end-of-course tests and high school graduation tests.



FIRST QUESTIONS:

*Do all students in your state complete an essential core of rigorous courses?*

*Do all students in your state complete additional courses to prepare for college and careers?*

*Do students succeed on end-of-course and college admission exams?*

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**C**hallenge to Lead calls for states to set ambitious requirements for high school graduation. The requirements should include:

- courses in language arts, mathematics, science and social studies — a core of courses that has traditionally been prescribed only for those going to college;

You will know that your state is making progress in getting students ready for college and careers when you can answer “yes” to these questions:

- Do *all* students in your state complete an essential core of rigorous courses?
  - Do all students in your state complete additional courses to prepare for college and careers?
  - Do students succeed on end-of-course and college admission exams?
- Are achievement gaps closing among groups of students on college admission and end-of-course exams?
- Are students in SREB states exceeding national averages in enrolling in and passing Advanced Placement courses and International Baccalaureate courses? And are enrollments in high-quality dual enrollment programs increasing?
- Are the percentages of recent high school graduates who need remedial courses when entering college approaching zero?

- high standards in these — and all — courses; and
- either additional academic courses or a concentration of courses in a career field for every student.

## ■ Taking the essential core matters

The reality in today's workplace is that all students need a strong core curriculum. It is just as important for those hoping to enter well-paying, high-growth career fields right after high school as it is for those bound for college.

Research by the American Diploma Project has confirmed that *all* graduates need “analytic and reasoning skills” — skills that are developed in high-level courses.

ACT Inc. and the College Board have both recommended that students take four years of English and three or four years of mathematics, science and social studies. Both recommend that all students take the essential mathematics core of Algebra I, Algebra II and geometry, and they suggest that students take an additional advanced mathematics course.

SREB's *High Schools That Work* program recommends a core curriculum to prepare career students for well-paying jobs and for postsecondary study. The curriculum parallels the traditional college-prep core advocated by ACT and the College Board, but it strongly recommends a fourth year of mathematics. The fourth mathematics course should be one that is beyond Algebra II, a course such as statistics and data analysis, or one designed to prepare seniors for college mathematics. *HSTW* points to the fourth course as an important bridge to college and careers. Taking this type of course means not only that students won't lose mathematics skills in the senior year, but that they also will have opportunities to strengthen them.

High school graduation requirements in most SREB states already include the same number of courses in English, social studies and science as these recommendations. They also include at least three years of mathematics. (See Appendix.)

No SREB state specifies that all students take Algebra I, Algebra II and geometry. While some states require students on college-preparatory diploma pathways to take most of the recommended courses, many have set requirements on other diploma pathways that allow students to graduate without geometry and Algebra II. Only two of the five SREB states with career/technical diploma paths require or plan to require more advanced mathematics than Algebra I for students seeking these diplomas. (See Table 1.)

North Carolina is a good example of different requirements for different pathways. It requires students to complete three mathematics courses, regardless of their diploma paths. Students seeking the career-prep diploma must take Algebra I. Students seeking the college tech-prep or college/university-prep diplomas must begin their mathematics sequence with Algebra I and go on to take geometry and Algebra II. Starting with ninth-graders in 2002, students must complete four mathematics courses to earn the college/university-prep diploma, but this requirement does not apply to those in the college tech-prep or career-prep paths.

The *essential core* for all students includes:

- four years of English;
- four years of mathematics: Algebra I, Algebra II and geometry; plus: one course beyond Algebra II, such as statistics and data analysis, or one designed to prepare seniors for college mathematics;
- three years of science; and
- three years of social studies.

Table 1

### Current Mathematics Courses Required for High School Graduation in SREB States

Diploma			Mathematics Requirements				
			(Least Advanced)		(Most Advanced)		
	Number of Courses Required	Number of Courses Required After Algebra I	Includes Algebra I	Includes Algebra I and Geometry	Begins with Algebra I	Includes Algebra I, Geometry and Algebra II	
	<b>Recommended Core<sup>1</sup></b>	<b>4</b>	<b>2+</b>	✓	✓	✓	✓
Alabama	Standard	4	1	✓	✓		
	Advanced Academic	4	2	✓	✓		✓
Arkansas	College-Prep	3	2	✓	✓	✓ <sup>2</sup>	
Delaware	Standard	3	0				
Florida	Standard	3	0	✓			
	Career-Prep (3-year)	3	0	✓			
	College-Prep (3-year)	3	2	✓	✓	✓	
Georgia	Technology/Career-Prep	3	0	✓			
	College-Prep	4	2	✓	✓	✓	✓
Kentucky	Standard	3	1 <sup>3</sup>	✓	✓		
Louisiana	Standard	3	1	✓	✓ <sup>4</sup>		
Maryland	Standard	3	1	✓	✓		
Mississippi	Standard	3 <sup>5</sup>	1	✓	✓ <sup>6</sup>		
North Carolina	Career-Prep	3	0	✓			
	College Tech-Prep	3	2	✓	✓	✓	✓
	College/University-Prep	3 <sup>7</sup>	2	✓	✓	✓	✓
Oklahoma	Standard	3	2	✓	✓	✓	
South Carolina	Tech-Prep	4	2	✓	✓	✓	
	College-Prep	4	2	✓	✓	✓	
Tennessee	Tech-Prep	3	0	✓ <sup>8</sup>			
	University-Prep	3	2	✓	✓	✓	✓
Texas	Minimum <sup>9</sup>	3	1	✓	✓		
	Recommended	3	2	✓	✓	✓	✓
	Distinguished	3	2	✓	✓	✓	✓
Virginia	Standard	3	2	✓	✓	✓	
	Advanced	4	3	✓	✓	✓	✓
West Virginia	Standard	3 <sup>10</sup>	1	✓	✓ <sup>11</sup>		

Note: Equivalent courses may stand in for those listed. For example, in Louisiana, Integrated Math I and II are equivalent to Algebra I.

<sup>1</sup> ACT, the College Board and *High Schools That Work* recommend similar mathematics requirements. They advocate that all students take Algebra I, geometry and Algebra II and suggest that students take at least one course beyond Algebra II.

<sup>2</sup> Arkansas requires Algebra I and geometry, plus one higher-level course.

<sup>3</sup> Beginning with ninth-graders in 2008, Kentucky will require students to take mathematics each year of high school and earn credits in Algebra I, II and geometry. In individual cases, courses may be substituted.

<sup>4</sup> Louisiana's curriculum specifies that a limit of two mathematics courses considered "entry level" may be applied toward the diploma. Examples include Algebra I, Integrated Math I and Applied Math I.

<sup>5</sup> Mississippi requires one additional unit of mathematics (for a total of four), beginning with ninth-graders entering in Fall 2005. Pre-algebra and Algebra I taken in the eighth grade may apply toward this additional requirement.

<sup>6</sup> Mississippi's curriculum requires Algebra I, plus at least one higher-level course.

<sup>7</sup> Beginning in Fall 2002, ninth-graders must complete four units of mathematics. The additional unit must be beyond Algebra II.

<sup>8</sup> Beginning with ninth-graders entering in Fall 2004, Tennessee requires three units of math, including Algebra I and one higher-level course.

<sup>9</sup> A student must have written consent from a counselor and a parent to graduate using Texas' minimum requirements.

<sup>10</sup> Beginning with ninth-graders entering in Fall 2006, West Virginia will require four units of mathematics.

<sup>11</sup> West Virginia requires Algebra I, plus one higher-level course.

Sources: State departments of education; compiled by SREB staff, February 2006.

■ **Taking the essential core increases achievement**

Students who take the core hold the advantage on both the ACT and SAT tests in every SREB state.

ACT reports average scores by state for seniors who completed the minimum, 13-course recommended core. In 2005 in ACT-dominant SREB states, 58 percent of those who took the test reported that they took the ACT-recommended

core. The state with the highest percentage taking the core was Louisiana at 71 percent. (See Table 2.)

*Students who take the core hold the advantage on both the ACT and SAT tests in every SREB state.*

Table 2

Scores are Higher for Seniors Who Took a College Admission Exam and Completed the Recommended Core Curriculum, 2005					
	Percent Taking the Exam	Percent Taking the Exam and Completing Core <sup>1</sup>	Average Scores		Difference in Score: Completed Core vs. Did Not Complete
			Those Who Completed Core	Those Who Did Not Complete Core	
<b>ACT-Dominant States</b>					
United States	40	56	21.9	19.5	2.4
Alabama	77	64	21.0	18.4	2.6
Arkansas	76	70	21.1	17.7	3.4
Kentucky	76	60	21.1	19.1	2.0
Louisiana	85	71	20.5	17.6	2.9
Mississippi	94	51	20.0	17.2	2.8
Oklahoma	69	56	21.6	18.8	2.8
Tennessee	92	61	21.2	19.1	2.1
West Virginia	65	28 <sup>2</sup>	21.8	19.9	1.9
<b>SAT-Dominant States</b>					
United States	49	76	1068	925	143
Delaware	74	74	1049	916	133
Florida	65	70	1042	906	136
Georgia	75	71	1039	906	133
Maryland	71	78	1074	902	172
North Carolina	74	69	1055	929	126
South Carolina	64	74	1027	913	114
Texas	54	75	1037	891	146
Virginia	73	86	1062	893	169

<sup>1</sup> The ACT core is defined as four years of English and three years each of mathematics, science and social studies. The SAT does not report scores of students who completed its recommended curriculum; the percentages and scores reported here are for students who completed 18 or more units of academic work.

<sup>2</sup> West Virginia's ninth- and 10th-grade integrated science courses are college prep, but many students fail to report them as such. West Virginia's ACT score profile therefore underreports students who complete a college-prep curriculum.

Sources: ACT Inc. and the College Board.

The College Board also reports the percentage of students who completed a core of 18 or more academic courses. In 2005 in SAT-dominant SREB states, 74 percent of those who took the test reported that they took the core. The state with the highest percentage of students taking the core was Virginia at 86 percent.

Nationwide, students who took the core scored higher than students who did not: 2.4 points on the ACT and 143 points on the SAT. In ACT-dominant SREB states, average scores for these students were higher by 1.9 to 3.4 points, and in SAT-dominant SREB states, by 114 to 172 points.

Research conducted by *High Schools That Work* shows the same pattern for the approximately 30,000 career/technical seniors who took the biennial *HSTW* assessment in SREB states in 2004. Students who completed all of the English, mathematics and science courses in the *HSTW*-recommended core scored higher than students who did not. (See Table 3.) Additionally, those who completed just the courses in English (comprising courses with significant reading and writing components) scored 15 points higher in reading than students who did not. Those who completed the mathematics courses scored 24 points higher in math, and those who completed the science courses scored 20 points higher in science.

## ■ Rigor within courses is essential, too

It is not enough to increase the number of courses that students must take or even to specify the course titles. To be most effective, courses should be aligned with college- and career-readiness standards. But until recently, there was little consensus about how high the standards should be set for the essential core. Higher education and K-12 leaders in most states have not defined jointly what it really means for students to be ready for college and careers and have not communicated this clearly to teachers, students and parents. Defining and communicating these standards is just the first step. Education leaders should use these standards as both the foundation of the high school curriculum and the beginning point of the college curriculum, and they should assess whether students meet these standards.

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*Higher education and K-12 leaders in most states have not defined jointly what it really means for students to be ready for college and careers.*

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Table 3

### Career/Technical Seniors Scored Higher on the *HSTW* Assessment if They Completed the Recommended Core, SREB States, 2004

Percent		Average Scores					
		Reading		Mathematics		Science	
Core	Less than Core	Core	Less than Core	Core	Less than Core	Core	Less than Core
22	78	291	271	315	291	309	283

*HSTW* Performance Goal: Reading, 279; Mathematics, 297; Science, 299. Math and science goals are aligned with the NAEP Basic level, and the reading goal approaches the NAEP Proficient level.

Note: Career/technical students completed at least one sequence of four career/technical courses. The assessment was referenced to the National Assessment of Educational Progress and reports scores on a scale of 0 to 500.

Source: *HSTW* Assessment.

Many SREB states already use end-of-course exams to measure achievement on state course standards and to ensure that high school courses

are equally rigorous statewide. Some of these exams could also measure college and career readiness. (See Box 1.)

**Box 1**

**End-of-Course Exams Can Help Improve Course Rigor**

One strategy that many SREB states use to promote instructional rigor in key courses is end-of-course exams. These statewide, standardized final exams are tied to state standards, and exams in courses such as Algebra II and English could be tied to a state’s college-readiness standards once they are defined.

End-of course exams are administered to students as they complete key courses like Algebra I, biology or American history. Ten SREB states — Arkansas, Georgia, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia and West Virginia — use this type of exam in some or all essential core courses.

End-of-course exams are used as a part of school accountability systems in nine SREB states — to assess the effectiveness of schools. But in some states, they are also used in course grading, and in some they even affect high school graduation. In most of the states, the result counts as part of the student’s grade or is reported on the student’s transcript.

Why is this important? Students are more motivated to score well if the exams affect them directly. Scores tend to be higher when students have more at stake. But these distinctions do not account for all of the differences in pass rates. Each state has its own standards for these courses and designs its own exams — or in some cases, adopts existing ones.

Six SREB states — Arkansas, Maryland, Mississippi, North Carolina, Tennessee and Virginia — have tested Algebra I students long enough to see a trend. Initial pass rates have increased in these states. This trend is important because Algebra I is the basis for higher-level mathematics and science courses.

**Pass Rates on End-of-Course Exams in Participating SREB States, 2001 to 2004**

	Effect on Students	Algebra I			
		2001	2002	2003	2004
Arkansas	None	20%	37%	44%	53%
Georgia	Factored into course grades	—	—	—	60
Maryland	Reported on student transcripts	—	52	53	59
Mississippi	Required for graduation	—	79	82	91
North Carolina	Factored into course grades	76	79	79	80
Oklahoma	Reported on student transcripts	—	—	22	30
South Carolina	Factored into course grades	—	—	—	79
Tennessee	Required for graduation	—	77	75	81
Virginia	Required for graduation	74	78	78	80

Sources: State departments of education; compiled by SREB, 2005.

### *National efforts to define college readiness*

**The American Diploma Project and *High Schools That Work*:** Two current efforts to improve high schools have documented insufficient instructional rigor as a key problem. The American Diploma Project concluded that few “states have effective mechanisms for ensuring that [high school] course content reflects the knowledge and skills required for success in college and work.”

*High Schools That Work* has found repeatedly that courses with the same title are not the same from high school to high school, or even classroom to classroom. They differ in how often teachers require students to think analytically, how challenging assignments are, and how high teacher expectations are for student work.

In 2001, the American Diploma Project invited five states, including Kentucky and Texas, to help determine the appropriate level of rigor for key high school courses and to provide guidance to teachers for achieving it.

Thus far, the project has developed course benchmarks and guidance for English and mathematics. Eleven SREB states — Alabama, Arkansas, Delaware, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, North Carolina and Texas — have committed to aligning their high school standards with American Diploma Project

benchmarks, curriculum and assessments. (See Box 2.)

**21st Century Skills:** In recent years, a number of organizations identified gaps between the knowledge and skills required in the modern workplace and what most students learn in school. These organizations formed a partnership to define and promote “21st century skills.” Many of these skills are similar to those identified as critical by the American Diploma Project, such as problem solving, critical thinking and research in core subjects.

The Partnership for 21st Century Skills is focused on promoting the development of these skills in conjunction with information and communication technology skills — both as *integral parts* of all courses. It advocates that students should learn to use tools such as computers, the Internet and audio/video technologies to access, manage, integrate and evaluate information; draw conclusions; and communicate effectively. A variety of software technology tools can help students develop these skills in core courses and deepen learning through word-processing programs, Internet search engines, e-mail, spreadsheets, time and project management software, and online courses. All are fundamental to the 21st-century workplace, but not yet in place in most of the lessons, assignments and assessments used in schools.

#### Box 2

### Sample Benchmarks for English and Mathematics Courses Developed by the American Diploma Project

#### English Benchmark Strands

Language, Communication, Writing, Research, Logic, Informational Text, Media and Literature

*For example, specific reading lists were developed to define the quality and complexity of reading expected of all high school graduates.*

#### Mathematics Benchmark Strands

Number Sense and Numerical Operations; Algebra; Geometry; Data Interpretation, Statistics and Probability

*For example, sample problems were embedded within the benchmarks themselves to illustrate the quality and complexity of the corresponding mathematics benchmark.*

## ■ Requiring the essential core is not enough

ACT's report *Crisis at the Core* underscores the point that taking the essential core courses is important, but the report also shows that taking the essential core does not necessarily ensure college success. To identify other benchmarks of college readiness, ACT researchers studied the relationship between scores on the four ACT subtests (English, mathematics, science and reading) and grades earned in college. They defined readiness as having a 75 percent chance of earning a grade of C or better and a 50 percent chance of earning a grade of A or B in two- and four-year colleges.

The analysis revealed a clear correlation between the score on each subtest and later success in a related college course. It identified a college-readiness benchmark in English as a subscore of 18; in mathematics, as a subscore of 22; in science, as a subscore of 24; and in social studies, as a score of 21 on the reading subtest.

Only 22 percent of all students tested on the ACT in 2004 met the English, mathematics and science benchmark scores. While 68 percent met the benchmark in English, only 40 percent met it in mathematics, and 26 percent in science. In 2005, these scores remained stable, and 51 percent of students met the benchmark in reading established that year. (See Table 4.)

These benchmarks create predictors of college readiness for ACT-dominant SREB states. More important, they reveal that the actual gap in college readiness for all recent high school graduates is much larger than previously thought. The gap goes beyond the one in four students who historically need remedial courses when they enter college. As many as four in five college freshmen may not be ready to be successful in college, especially in science.

ACT research went further to study whether other courses, such as high school calculus or physics, improved students' chances for success in college. The research showed that subscores improved in all four areas for students who took higher-level courses.

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*Four in five college freshmen may not be ready for college.*

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Students who took four years of mathematics, starting with Algebra I, scored higher than those who took three years. Those who took trigonometry achieved the math benchmark of 22. Those who took calculus exceeded it by nearly 3 points. The results were similar for students who took advanced science courses, although even those who took physics fell about 2 points short of reaching the science benchmark of 24.

Table 4

ACT Benchmarks for Readiness, 2004			
ACT Subject-Area Tests	Benchmark Scores on Subject-Area Tests <sup>1</sup>	College Course	Percent Meeting Benchmark
English	18	English	68
Mathematics	22	College Algebra	40
Science	24	Biology	26
Reading	21	Social Studies	51 <sup>2</sup>

<sup>1</sup> Score that indicates a student has a 75 percent chance of earning a grade of C or better and a 50 percent chance of earning a grade of A or B in the related college course.

<sup>2</sup> Reading/social studies data are from 2005.

Source: ACT Inc.

Table 5

### College-Prep Curriculum Requirements Beyond the Core in SREB States

	State's College-Prep High School Diploma (or Standard Diploma in States Without a College-Prep Diploma)	Selected Additional Units Required			Fourth Unit	
		Speech	Foreign Language	Fine Arts	Social Studies	Science
Alabama	Advanced Academic		2	0.5	✓	✓
Arkansas	College-Prep	0.5		0.5		
Delaware	Standard					
Florida	College-Prep		2			
Georgia	College-Prep		2	12		
	College-Prep with Distinction <sup>1</sup>		2	12		
Kentucky	Standard			1		
Louisiana	Standard					
Maryland	Standard		23	1		
Mississippi	Standard			1		
North Carolina	College/University-Prep		2			
Oklahoma	Standard			2		
South Carolina	College-Prep		1			
Tennessee	University-Prep		2	1		
Texas	Distinguished	0.5	3	1	✓	
Virginia	Advanced Studies		3	1	✓	✓
West Virginia	Standard <sup>4</sup>			1		

“Speech” includes public-speaking courses.

<sup>1</sup> Students must also complete two additional core academic units.

<sup>2</sup> Students must complete one unit of arts, technology or foreign language.

<sup>3</sup> Students must complete two units in foreign language or advanced technology.

<sup>4</sup> Beginning with the graduating class of 2008, students must complete four units of social studies. Academically advanced students must complete a professional pathway comprising one additional unit of mathematics beyond Algebra I, one of science, and two in the same foreign language.

Sources: State departments of education; compiled by SREB staff, 2005.

**ACT concluded that the essential core is no longer a “ticket to success in college,” and it recommends that students take more — and higher-level — courses in high school.**

In fact, some SREB states do require courses beyond the essential core for students preparing for postsecondary programs. (See Table 5.)

- Three SREB states — Alabama, Texas and Virginia — require at least four additional academic courses in fine arts, foreign language, social studies and science for students seeking a college-preparatory diploma.

- Nine SREB states specify that students earning their most advanced diploma must take foreign language courses.

#### *All students need courses beyond the core*

*Challenge to Lead* makes it clear that all students — not just those seeking college-prep diplomas — need courses beyond the core in order to be ready for college and careers. Students need to complete courses in a broad career field or take additional academic courses. States that have adopted a default curriculum

should ensure that students who opt out are required to complete a career concentration in addition to the minimum high school graduation requirements.

Half of SREB states require career courses for high school students beyond the core. These states have, in effect, eliminated the “general track” that permitted students to graduate from high school without being prepared for either college or careers.

Four states — Arkansas, Delaware, Maryland and West Virginia — require all students to complete a concentration of courses in a career field. Students can choose courses in both career and academic subjects for their concentration, depending on their plans. These states offer a single diploma pathway for all students, but they build flexibility into their requirements to meet the needs of those going to college, technical programs or work right from high school. Four other

SREB states — Florida, Georgia, North Carolina and Tennessee — require career/technical students to take at least three career-preparatory courses. (See Table 6.)

In fact, the five SREB states that eliminated the “general track” in the mid-1990s made the greatest gains on college admission tests between 1996 and 2005.

States should go further to promote rigorous instruction in both academic course and career/technical courses. State leaders in Kentucky believe that rigorous career/technical courses — ones that integrate academic skills and industry-developed end-of-program exams — have improved the academic achievement of career/technical students. Since the courses were redesigned, Kentucky’s career/technical students have improved more than other students on the state accountability test. (See Figure 1.)

Table 6

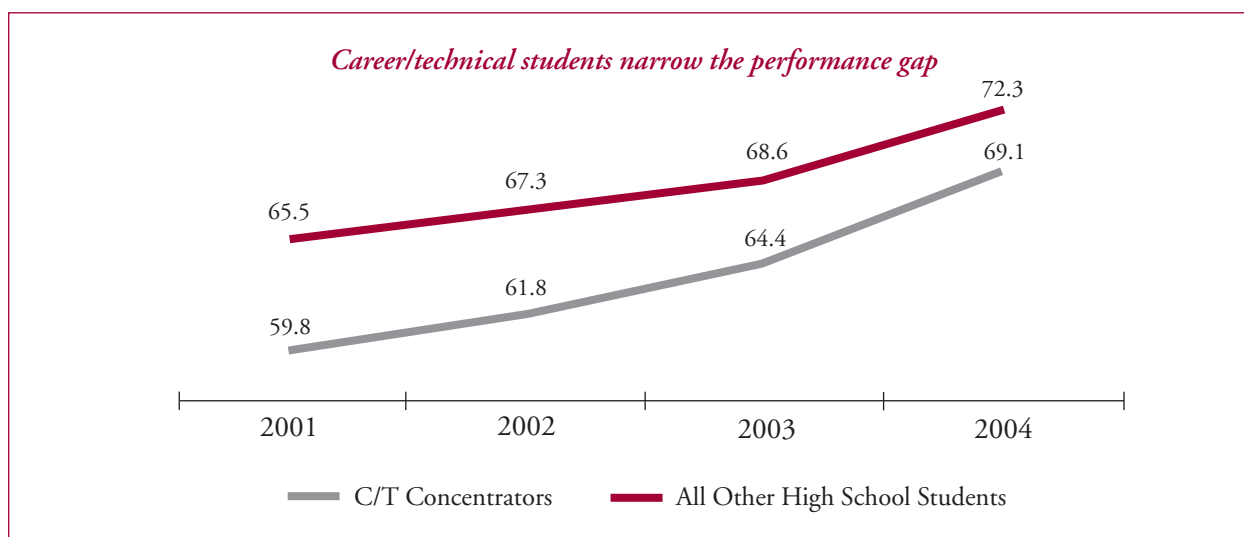
**Career Requirements Beyond the Core in SREB States**

	State’s Career-Oriented High School Diploma (or Standard Diploma in States Without a Career-Oriented Diploma)	Career Units Required
Alabama	Standard	0
Arkansas	College-Prep	6
Delaware	Diploma	3
Florida	Career-Prep	3 in one program or 5 in more than one
Georgia	Technology/Career-Prep	4
Kentucky	Standard	0
Louisiana	Standard	0
Maryland	Standard	4
Mississippi	Standard	0
North Carolina	Career- and College Tech-Prep	4
Oklahoma	Standard	0
South Carolina	Tech-Prep	1
Tennessee	Tech-Prep	4
Texas	Recommended	0
Virginia	Standard	0
West Virginia	Standard	4

Sources: State departments of education; compiled by SREB staff, 2005.

Figure 1

### Kentucky's High School Students Who Took a Career/Technical Concentration, Compared With Other High School Students, 2001 to 2004



Note: The academic index is a composite of seven subtests of Kentucky's Commonwealth Accountability Testing System: reading, writing, social studies, mathematics, science, arts and humanities, and practical living/vocational studies.

Source: Kentucky Department of Education.

Few states evaluate students' knowledge in courses beyond the core. Virginia, however, uses end-of-course exams for all courses. Virginia developed some exams and also adopted existing ones, including Advanced Placement and industry certification exams.

Other SREB states, including Arkansas, Kentucky, Mississippi, North Carolina, Oklahoma and West Virginia, use end-of-course exams in career/technical courses or when students complete career concentrations.

#### ■ SREB students are making progress on college admission tests

Students in nearly every SREB state scored higher on college admission tests in 2005 than in 1995. During that time, many SREB states increased the number of academic courses that students must take to graduate, likely contributing to score gains.

Students' scores in six of eight ACT-dominant SREB states went up faster than the national aver-

age over the period. Scores improved in seven of eight SAT-dominant states, with five increasing faster than the U.S. average. ACT scores for students nationally did not go up, but SAT scores rose nationally by 15 points.

No ACT-dominant SREB state topped the national average on the ACT in 2005. Only Virginia among SAT-dominant SREB states scored above the U.S. average. Maryland students fell just 2 points short.

Even though only one SREB state reached the national average, scores in 13 SREB states gained on it. Gains on the ACT in ACT-dominant states ranged from 0.1 point to 0.6 point. Gains on the SAT in SAT-dominant SREB states ranged from 2 points to 39 points.

The score increases are noteworthy because larger percentages of seniors took the exams in nearly all SREB states. Typically, scores drop when larger percentages of students take the tests. Growth in the percentages of seniors taking the test ranged from 3 percentage points to 20 percentage points. (See Table 7.)

Table 7

**College Admission Exam Scores, 1996 and 2005**  
*Average ACT and SAT Scores Increase for Most SREB States*

	Percent Tested on Dominant Exam		Average Scores		Change in Scores, 1996 to 2005
	1996	2005	1996	2005	
<b>ACT-Dominant States</b>					
United States	37	40	20.9	20.9	0.0
Alabama	65	77	20.1	20.2	<b>0.1</b>
Arkansas	65	76	20.2	20.3	<b>0.1</b>
Kentucky	66	76	20.1	20.4	<b>0.3</b>
Louisiana	70	85	19.4	19.8	<b>0.4</b>
Mississippi	74	94	18.8	18.7	-0.1
Oklahoma	66	69	20.5	20.4	-0.1
Tennessee	75	92	19.9	20.5	<b>0.6</b>
West Virginia	56	65	20.0	20.4	<b>0.4</b>
<b>SAT-Dominant States</b>					
United States	43	49	1013	1028	15
Delaware	68	74	1003	1005	2
Florida	51	65	994	996	2
Georgia	69	75	961	993	<b>32</b>
Maryland	64	71	1011	1026	15
North Carolina	62	74	976	1010	<b>34</b>
South Carolina	64	64	954	993	<b>39</b>
Texas	48	54	995	995	0
Virginia	67	73	1003	1030	<b>27</b>

Percentages in **bold** exceeded the national average score change.

Sources: ACT Inc. and the College Board.

*What can you and your state do to ensure that all students complete the courses they need in high school and succeed on end-of-course and college admission exams?*

- Require the essential core courses for all high school students — including Algebra I, Algebra II and geometry, plus an additional mathematics course in the senior year. Restrict other options.
- Require that all students take additional academic courses or a series of courses in a career field.
- Adopt college- and career-readiness benchmarks similar to those described by the American Diploma Project and align course standards and assessments to them.
- Use end-of-course exams — including industry-developed certification exams — to promote the rigor of all high school courses.

SECOND QUESTION:

*Are achievement gaps closing among groups of students on college admission and end-of-course exams?*

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Achievement gaps persist in spite of efforts to close them. The good news is that achievement on end-of-course exams and college admission tests generally is improving. But not at the same pace for all groups. And not fast enough for the students who need to make the most improvement.

■ **Gaps in scores on college admission tests among racial/ethnic groups are growing**

Students in all racial/ethnic groups — including white students — need to improve their college admission test scores. This improvement is especially critical for minority students, whose scores lag behind those of white students. In 2005, the average SAT score for white students in SREB states was 1062; for black students, 860; and for Hispanic students, 911. The average ACT score in 2005 for white students in the region was 21.3; for black students, 16.8; and for Hispanic students, 18.2.

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*Achievement gaps persist in spite of efforts to close them.*

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Scores for black students in SREB states and in the nation are improving slower than the scores of white students, both on the ACT and on the SAT. Hispanic students' scores, in contrast, are not improving. The average SAT score for white stu-

dents in SREB states increased by 20 points between 1996 and 2005; for black students, scores improved by 11 points; and for Hispanic students, scores declined by 6 points. The average ACT score for white students in SREB states improved by 0.3 point; for black students, scores remained constant; and Hispanic students' scores dropped 0.2 point.

- The difference in average ACT scores between white and black students in SREB states in 2005 was 4.6 points on the test's 36-point scale, up from 4.2 points in 1996.
- The difference between the ACT scores of white and Hispanic students in 2005 was 3.2 points, up from 2.5 points in 1996.
- The difference in average SAT scores between white and black students in 2005 was 202 on the test's scale of 400 to 1600 points, up from 193 points in 1996.
- The difference between the SAT scores of white and Hispanic students in 2005 was 151 points, up from 125 points in 1996.

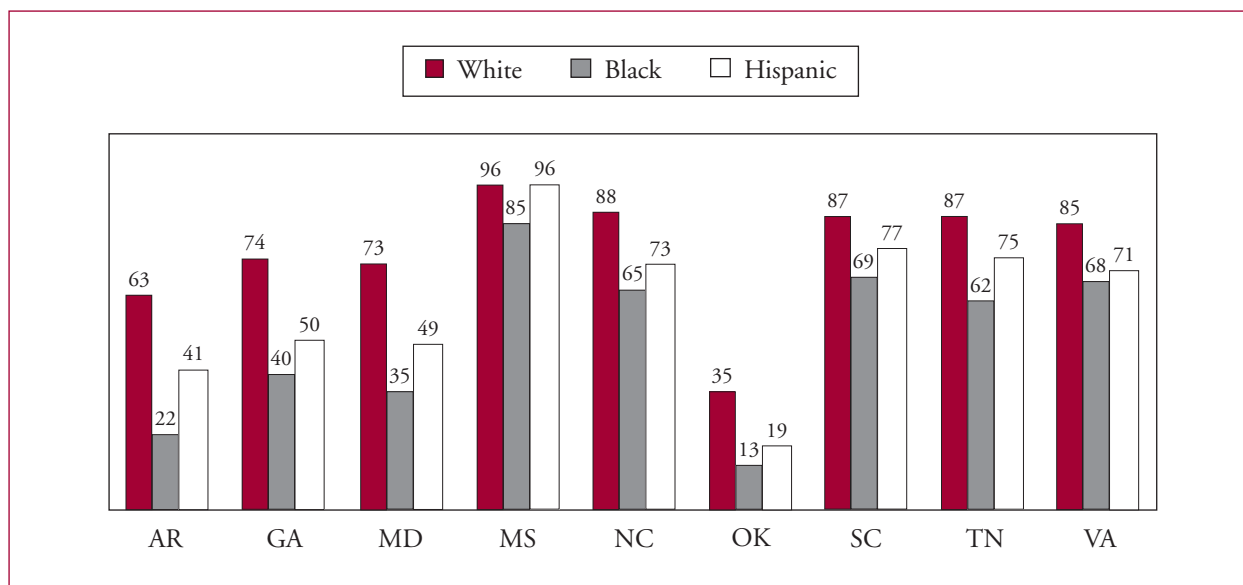
■ **The pattern of achievement is the same for end-of-course exams**

Achievement gaps between student performance and state standards — as measured by end-of-course exams — mirror those on college admission tests for all racial/ethnic groups. Too many students in all groups are not passing these tests, and minority students lag behind the performance of white students.

For further details about the gaps in SAT and ACT scores in SREB states, see the upcoming companion to this report, *Achievement Gaps on College Admission Tests*, which will be available at [www.sreb.org](http://www.sreb.org).

Figure 2

## Percentages of Groups of Students Passing Algebra I End-of-Course Exams, 2004



Source: State departments of education.

For instance, in 2004, nine SREB states administered end-of-course exams in Algebra I. In these states, white students generally passed the tests at higher percentages than black or Hispanic students. Only in Mississippi, a state with a small Hispanic population, did Hispanic students equal the pass rate of white students. The difference in the performances of white and Hispanic students in the other eight states ranged from 12 percentage points to 24 percentage points. The difference in the performances of white and black students ranged from 11 to 41 percentage points. (See Figure 2.)

### ■ Demographic changes increase the challenge to meet state standards

The performance of all groups of students is improving on state assessments, but demographic changes in some SREB states will make getting more minority students to meet state standards even more urgent. Students from minority

racial/ethnic groups are an increasing proportion of those who take state tests, yet they historically score lower than white students.

Some of these demographic changes are dramatic. SREB's *Fact Book on Higher Education 2005* calls the growth of Hispanic students "the overriding demographic trend." By 2018, it reports, Hispanic students will represent 29 percent of public high school graduates, up from 12 percent in 2002. White students will decrease to 45 percent, compared with 62 percent in 2002.

### Demographic Changes in Texas

*Percent of seniors taking the SAT*

	1996	2005
Asian	5%	6%
Black	11	12
Hispanic	16	19
White	58	52

Source: The College Board.

By 2018, 49 percent of high school graduates in SREB states will be black or Hispanic. These changes are already noticeable among the students who take college admission tests. The proportion of black students taking the dominant test in four SREB states — Alabama, Delaware, Louisiana and Mississippi — grew by at least 3 percentage points from 1996 to 2005. In all but one state, the proportion of Hispanic students taking the dominant college admission test increased. Arkansas, Oklahoma and Texas experienced the greatest increases.

**These changes in proportion signal the need for more state focus on the performance of**

**minority students. The groups of students that are growing are the very groups that are falling behind. States should do all they can to improve the performance of students from these groups, close achievement gaps and raise average state test scores.** Key strategies that states should consider include requiring the essential core curriculum for all students and emphasizing college- and career-readiness standards in all courses. *High Schools That Work* research suggests that minority students who take rigorous essential core courses — and receive academic support to help them succeed — perform on a level similar to that of white students.

### *What can you and your state do to close achievement gaps?*

Closing gaps is one of three key themes of the *Challenge to Lead* goals. Nearly every report in the *Challenge to Lead* series addresses progress SREB states have made and make suggestions for closing the gaps. Efforts must begin as early as preschool and continue at every educational level. These reports suggest that states should do the following:

- Hold schools accountable for the performance of all groups of students and make closing achievement gaps a priority in accountability systems.
- Conduct research to determine if all groups of students have access to rigorous courses with challenging assignments and ensure that these courses are available to all students.
- Include information on all groups of students in all reports on student performance so that resources can be directed to those who are behind.
- Provide support for or restructure low-performing schools, especially those with large minority populations.
- Give students the help they need to improve, including tutoring, summer programs, guidance and career counseling, and flexible and alternate scheduling that permits them to focus on key subjects.
- Assign high-quality teachers to low-performing schools.

THIRD QUESTION:

*Are high school students in your state taking and succeeding in higher-level courses?*

The *Challenge to Lead* goals single out Advanced Placement (AP), International Baccalaureate (IB) and dual enrollment courses as effective ways for students to take high-level courses and prepare for college and careers. Recent studies report that students who take courses like these are more successful in college — even those who do not score well enough to receive college credit.

*Challenge to Lead* calls for students to enroll and pass AP and IB courses at rates that exceed national averages. It also calls for dual enrollment programs to grow. Some SREB states lead the nation on this indicator. In all SREB states, more

students than ever are taking and succeeding in these courses.

■ **SREB states perform well in Advanced Placement programs**

In 2004, six SREB states exceeded the national average in the percentage of graduates who took at least one AP exam. Four of these — Florida, Maryland, North Carolina and Virginia — were in the top 10 nationally in the percentage of graduates who had taken at least one AP exam. (See Table 8.)

Table 8

Percent of Graduating Seniors Who Took and Passed <sup>1</sup> at Least One AP Exam, 2004		
	Percent Who Took at Least One AP Exam	Percent Who Scored 3 or Higher on at Least One AP Exam
United States	21	13
SREB median	18	10
Alabama	9	5
Arkansas	13	6
Delaware	20	11
Florida	<b>34</b>	<b>20</b>
Georgia	<b>22</b>	12
Kentucky	16	8
Louisiana	5	3
Maryland	<b>29</b>	<b>19</b>
Mississippi	7	3
North Carolina	<b>27</b>	<b>16</b>
Oklahoma	17	8
South Carolina	19	11
Tennessee	14	8
Texas	<b>23</b>	<b>13</b>
Virginia	<b>28</b>	<b>18</b>
West Virginia	13	6

Percentages in **bold** met or exceeded the national average. “SREB median” is the average of the two middle SREB states.

<sup>1</sup> Most colleges award credit to students who score 3 or higher on an AP exam.

Source: The College Board.

All SREB states — and, in fact, all states — showed increases in the percentage of graduating students who took AP exams from 2000 to 2004. The median increase in SREB states was 6 percent; state increases ranged from 1 percent to 11 percent.

Most colleges give credit to students who earn a score of 3 or higher on AP exams (considered “passing”). In 2004, five SREB states met or exceeded the national average in the percentage of graduating students who passed an AP exam. Four states — Florida, Maryland, North Carolina and Virginia — were in the top 10 nationally in the percentage of graduates who passed at least one exam.

All SREB states also had increases in the percentage of high school graduates who passed at least one AP exam. The SREB median increase was 3 percent, and individual state increases ranged from 1 percent to nearly 6 percent.

SREB states need to improve the participation of black students in AP programs, however. In all SREB states, black students were significantly underrepresented among students who took AP exams in 2004. In fact, black students’ underrepresentation was greater in SREB states than in the nation. Black students made up 10 percent of all students who took the exams in SREB states, although 25 percent of the school population was black. Nationally, 6 percent of students who took the AP exams were black, compared with 13 percent in the school population. In most SREB states, the percentage of Hispanic students in the school population was about the same as the percentage taking AP exams.

### ■ International Baccalaureate programs grow

SREB states lead the nation in offering another type of advanced course work: the IB program. The IB program is a comprehensive, two-year curriculum that includes six academic areas: language, second language, individuals and

societies, experimental sciences, mathematics and computer science, and the arts — as well as community service and an independent project. Students take subject exams and may receive an IB diploma if they score well on tests in each area. Students who do not earn IB diplomas may still receive college credit for individual IB courses.

Most colleges give credit to students who earn a score of 4 or higher on IB exams (considered “passing”). Unlike state and national AP data, which report percentages of success on the basis of *all graduates*, IB data report the percentages who pass on the basis of *all exams* taken. Five SREB states surpassed the national average in the percentages of IB exams taken that scored 4 or above. In the SREB region as a whole, the percentage that passed was 75, compared with 79 in the nation. (See Table 9.)

Table 9

#### Percent of IB Exams Passed With a Score of 4 or Above, 2005

United States	79
SREB median	75
Alabama	74
Arkansas	55
Delaware	88
Florida	85
Georgia	72
Kentucky	76
Louisiana	67
Maryland	75
Mississippi	34
North Carolina	73
Oklahoma	74
South Carolina	77
Tennessee	62
Texas	79
Virginia	79
West Virginia	84

Percentages in **bold** met or exceeded the national average.  
Source: International Baccalaureate North America.

The IB program has grown in both SREB states and across the country. In 1997, there were 170 high schools offering the IB curriculum in the nation; 47 percent of those were in SREB states. In 2005, there were 479 high schools offering the IB program, 45 percent of those in SREB states.

For further details about AP and IB in SREB states, see the upcoming companion to this report, *Progress in Advanced Placement and International Baccalaureate in SREB States*, which will be available at [www.sreb.org](http://www.sreb.org).

### ■ Participation in dual enrollment programs is rising

Studies estimate that the number of students in the nation participating in dual enrollment surged between 1993 and 2003 — from about 100,000 to 500,000. (See Figure 3.) This fivefold increase parallels the nearly threefold increase in students taking AP exams at the same time. Like those in AP courses, dual enrollment students can

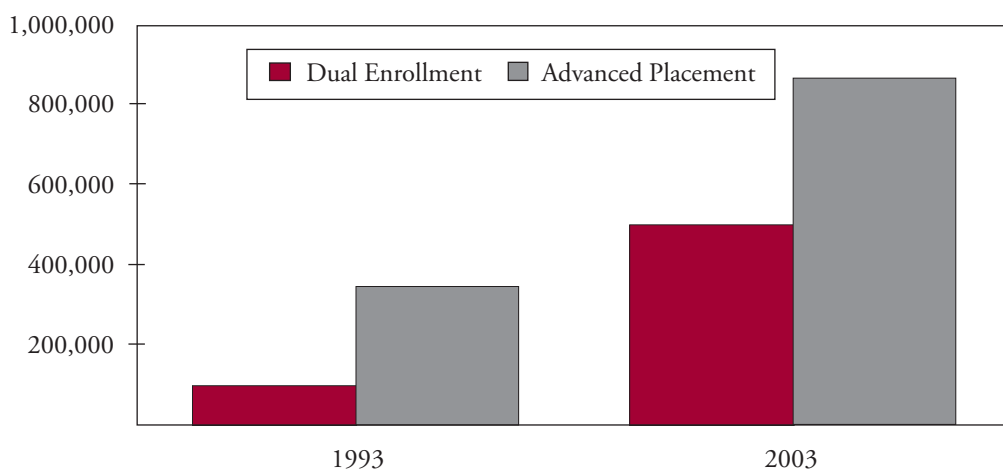
earn both high school credit *and* transferable college credit. In the case of dual enrollment, they are able to take college-level course work through a school's affiliation with a postsecondary institution.

Researchers base estimates of enrollment on counts that states provide to the National Center for Education Statistics (NCES). Unfortunately, the counts are based on course enrollments, not head counts. While states reported 1.2 million enrollments in 2003, they counted each student who took multiple courses once *for each course* the student took.

“Southeastern states” — as defined by NCES — lag behind the rest of the nation in course enrollments. This group includes all SREB states except Delaware, Maryland, Oklahoma and Texas. NCES reports 194,000 dual enrollments for the “southeastern states,” compared with 1.2 million dual enrollments for the nation. These 12 states account for 17 percent of all dual enrollments in the nation, but 23 percent of students enrolled in K-12 are in these states.

Figure 3

#### Estimated Number of Students Enrolled in Dual Enrollment and AP Courses, United States, 1993 and 2003



Source: National Center for Education Statistics.

NCES does not provide individual state enrollment counts. Several SREB states, however, do include *head count* enrollment data in their annual enrollment reports, and a few more have reported it to the research organization Jobs for the Future. In each case, their programs are growing.

- In Georgia, dual enrollment students in the University System of Georgia increased from 1,391 to 2,882 from 1995 to 2004. From 2000 to 2003, dual enrollment grew in Georgia's technical colleges from 3,783 students to 8,544.
- In Oklahoma, the number of students participating in dual enrollment programs at two- and four-year institutions rose from 2,247 to 3,994 from 1998 to 2004.
- Florida reported that 34,762 high school students took college-credit-bearing courses in 2004, an increase of 20 percent from 1999.
- Virginia reported that 13,915 high school students participated in dual enrollment programs in 2004, a 4 percent increase from the previous year.

### *Dual enrollment programs serve a variety of purposes*

For many years, dual enrollment was seen as a way to challenge bright students in their junior and senior years. Many argued that it shortened their time to a college degree and reduced the college tuition their families (and the state) would have to fund. The growth of dual enrollment in recent years comes from a change in perspective. Some newer efforts at dual enrollment, including the Early College High School Initiative, are designed to improve high school graduation rates. Most of these efforts are more open to minority students and students from low-income families than ever before.

A recent study by Jobs for the Future confirmed the importance of making these courses open to more students. In Florida, students who

took one or more dual enrollment courses enrolled in postsecondary studies at higher rates than students who did not. For minority students, the findings were striking. Among black students, 70 percent of those taking dual enrollment courses went on to attend postsecondary institutions, compared with 45 percent who did not. Among Hispanic students, 69 percent of those taking dual enrollment courses attended postsecondary institutions, compared with 54 percent who did not.

In the same report, Jobs for the Future showed that college costs can decrease considerably for both students and states if students earn enough college credit in high school to complete an associate's degree within a year of high school graduation. According to SREB research, on average, students in SREB states could save \$1,680 in tuition and fees and over \$4,000 in additional costs associated with attending college. States could save around \$2,900, equal to the average annual appropriation per full-time student at two-year colleges in the SREB region.

In spite of these examples of success and potential savings, most national research on dual enrollment focuses on policy and program organization and not on measures of effectiveness. According to the U.S. Department of Education, "little rigorous research has been conducted on the effectiveness" of these programs. It is important, therefore, for states to identify performance indicators for their programs and to monitor these indicators regularly, including whether dual enrollment *actually* decreases the time-to-degree or reduces cost to the state.

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*"Little rigorous research has been conducted on the effectiveness" of dual enrollment programs.*

U.S. Department of Education

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### *SREB states' approaches to dual enrollment policies vary*

Policies that authorize and govern dual enrollment differ from state to state, although all states do recognize dual enrollment credit for meeting high school and college requirements. Some provide statewide oversight for them, and others leave governance to institutions. In its review of dual enrollment policies in 2001, the Education Commission of the States concluded that *statewide* policies, whether by state legislation or board policy, are more effective than *institutional* policies because they are usually more comprehensive and eliminate more barriers.

- Five SREB states — Arkansas, Florida, Georgia, Mississippi and North Carolina — have developed state statutes that authorize dual enrollment programs.
- In six SREB states — Alabama, Oklahoma, South Carolina, Tennessee, Texas and Virginia — state-level boards establish and govern these programs.
- Four SREB states — Delaware, Louisiana, Maryland and West Virginia — allow institutions to develop their own programs and policies.
- Kentucky has two separate policies: one statewide policy that governs the community college system, and one policy that allows four-year institutions to develop their own policies.

Regardless of the level at which governance and policy development take place, many of the policies do little more than authorize postsecondary institutions to collaborate voluntarily with high schools to offer dual enrollment courses. Only five states — Florida, Georgia, Mississippi, Oklahoma and Texas — stipulate eligibility requirements for students. A sixth state, Kentucky, specifies eligibility requirements for programs developed in conjunction with community colleges, but its four-year institutions are able to develop their own requirements. The Oklahoma State Regents for Higher Education and the State

Board of Career and Technology Education also authorized partnerships between high school technology centers and colleges to encourage and facilitate dual enrollment for career/technical students. Students must score a 19 on the ACT, a 15 on the PLAN assessment, or have a 2.5 GPA to be eligible to receive credit toward Associate of Applied Science degrees through these partnerships.

Why does this matter? NCES reports that even when institutions have eligibility requirements, they are often not comparable to their own standards of admission. Only 38 percent of U.S. institutions with academic eligibility standards for dual enrollment align these standards with their regular admission criteria. What can programs use as measures of readiness for dual enrollment courses? High school grade-point averages, placement test scores and/or college entrance-exam scores are typically used.

Just as with regular high school courses, it is critical that dual enrollment courses be consistently rigorous, especially because students will earn college credit for them. Yet, follow-up surveys of *High Schools that Work* students indicate that many students who are not on track to meet college admission standards are placed in dual enrollment courses. In fact, many appear to be headed for remedial studies when they attend college. While states have good reason to expand access to dual enrollment courses, these courses should be open only to students who are eligible for them, they should be taught to college standards, and they should be led by faculty who hold appropriate credentials.

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*Dual enrollment courses should be open only to students who are eligible for them, they should be taught to college standards, and they should be led by faculty who hold appropriate credentials.*

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### *Local approaches to Tech Prep vary also*

The federally funded Tech Prep program is a variation on dual enrollment programs. It is a planned sequence of career/technical courses that includes both high school- and postsecondary-level work, managed by a local consortium of high schools and colleges. Within these consortia, local leaders determine eligibility criteria and curriculum standards for programs. Tech Prep students take career/technical courses in high school and receive college credit for them after they enroll for postsecondary study. Tech Prep programs lead to associate's degrees or two-year certificates in fields such as engineering technology, industrial trades, agriculture, health or business. These programs also should promote competence in math, science and communication and lead to employment.

The growth of Tech Prep programs has led to increased participation in postsecondary-level work in high school among a more diverse group of students. It also has strengthened relationships between high schools and colleges.

But like dual enrollment, Tech Prep could improve from statewide oversight. These programs vary from one local consortium to another in most states. What can state policy-makers do?

- Require that students who want to take Tech Prep courses but who are not on track for college-level English and mathematics also take courses that will get them ready. Although regulations call for Tech Prep programs to promote competence in academic skills, few programs stipulate that students taking Tech Prep courses must also take essential core courses.
- Strengthen Tech Prep programs by giving students industry-developed certification exams after they complete a required sequence of courses in high school or college. This practice would mean that Tech Prep students could earn industry-recognized credentials that are valuable in the workplace, even if they do not intend to earn a college degree.

### *What can you and your state do to ensure that students take and succeed in advanced courses?*

- Monitor the access of students in all groups to AP and IB examinations and dual enrollment courses, and set targets for increasing the participation and performance of all groups of students, particularly minority students.
- Support all student efforts to take advanced courses and their related end-of-course exams.
- Set eligibility criteria for dual enrollment courses that are comparable to college admission standards.
- Assess the effectiveness of dual enrollment courses in preparing students for college, in shortening the time to degree and in reducing costs to the state.

FOURTH QUESTION:

*Are the percentages of high school graduates who need remedial courses when entering postsecondary institutions approaching zero?*

**C**hallenge to Lead sets the toughest goal of all for college remediation: No recent high school graduate entering any technical institute or college should need remedial courses.

The most recent national survey, published in 2003, shows that the same proportion of students — 28 percent — were enrolled in remedial courses in both 1995 and 2000. About 40 percent of two-year college students and 20 percent of four-year college students needed remedial courses. More students needed remediation in mathematics than in either reading or English. (See Table 10.)

More up-to-date and detailed information is difficult to get because many SREB states do not regularly analyze statewide enrollments in remedial programs. In those that do, the results are mixed, but no state is approaching zero. While Oklahoma has reduced the percentage of first-time students in remedial courses in two- and four-year colleges, some others have shown little change or increased the percentage. (See Box 3 on page 24.)

It is disturbing, but not surprising, that SREB states have not yet made progress toward the high mark set by this *Challenge to Lead* indicator.

■ **Make college readiness a high priority**

Decreasing the need for remedial education has not been a high priority for both K-12 and postsecondary education leaders. In order to improve the link between the high school senior year and the college freshman year, states need to develop a clear set of college-readiness standards. They also need better information about the students who need remedial courses in college than most now have.

When state leaders have clear standards and good information, they can set specific targets, track progress and hold students, parents and schools accountable for reducing the percentages of students who need remedial courses.

*States need to develop a clear set of college-readiness standards and to collect better information about students who need remediation.*

Table 10

Percent of First-Time Freshmen in the United States Enrolled in Remedial Courses in Public Institutions, By Subject Area and Institutional Type, 1995 and 2000								
	At Least One Course		English		Mathematics		Reading	
	1995	2000	1995	2000	1995	2000	1995	2000
Two-Year Colleges	40	42	24	23	32	35	19	20
Four-Year Colleges	21	20	11	9	17	16	8	6
All Public Institutions	28	28	16	14	22	22	12	11

Source: National Center for Education Statistics.

### Examples of Trends in Remedial Enrollments

- In **Oklahoma**, the percentage of first-time freshmen enrolled in remedial courses in two- and four-year colleges *declined* by 3 percentage points from 1997 to 2004.
- In **Texas**, the percentage of first-time students enrolled in remedial courses in community and technical colleges — where 82 percent of publicly supported remedial course work is taught — *increased* by 4 percentage points between 1999 and 2002.
- In **Arkansas**, the percentages of students in remedial English and reading in two-year colleges *declined* from 2003 to 2005, but the percentages in remedial mathematics *increased* somewhat. At four-year colleges, percentages *declined* in all three subjects.
- **Virginia's** remedial student enrollment in community colleges *remained constant* from 1997 to 2002.

#### *Define and use clear college-readiness standards*

Current placement standards for remedial programs vary from institution to institution within states, and in most states the standards are low. In fact, most college placement standards are significantly lower than the ACT benchmarks, which identify a single set of readiness standards by setting modest goals for student performance in college courses. According to ACT research, we now know that many more students than just those who take remedial courses are not ready for college. (See “Requiring the essential core is not enough” on page 9.)

The college-readiness problem is perhaps twice as large as the current remedial program statistics suggest. Many more college freshmen need extra help to be successful. But most states don't have a way to measure their student readiness because they have not defined a statewide set of readiness standards separate from admission requirements and have not developed common assessments that indicate whether high school students are ready for college.

Setting and implementing these standards are huge challenges. In fact, the percentages of students required to take remedial courses in college may actually go up as new, higher college-

readiness standards are introduced statewide. Increasing the percentage of students who are ready for college and reducing the need for college remediation calls for states to develop new policies. Requiring the essential core and additional courses (such as AP, dual enrollment and senior-year math) for college-bound students will help. But ensuring that these courses prepare students for postsecondary work is critical.

For college-readiness expectations to be meaningful, they should be based on a common understanding of the specific skills and knowledge that students need when they begin college-level study — and the proficiency levels at which students need to have mastered them. High school and college faculty should set these college-readiness standards together, based on finely tuned, shared views of what high school students can achieve and what it takes to be successful in college. These standards should become the basis for high school instruction and evaluations of student work. State assessments should test them.

Many SREB states are addressing these needs by making college-readiness standards the foundation for courses in the essential core. States are approaching this direct, standards-based work by considering similar actions that include:

- high school and college faculty developing joint statements of college-readiness standards, including necessary levels of performance;
- state postsecondary institutions adopting a common set of minimum standards for English and mathematics that signify readiness for college courses;
- K-12 leaders aligning the high school curriculum with the college-readiness standards and ensuring they are emphasized statewide in instruction; and
- statewide high school assessments being revised to measure students' mastery of college-readiness standards no later than the 11th grade.

When states use such standards and assessments, then students, parents and school leaders know before the senior year if students are not on track for success in college; students also have time to catch up. States should also consider using end-of-course tests in English III and Algebra II — courses commonly taken in the 11th grade — to measure college readiness. With early signals about college readiness, the senior year can be used more effectively to get students ready.

States should look at the high school senior year and the college freshman year as a bridge, with both the high school and college assisting students in making the transition. Many education leaders believe the high school senior year for many students has deteriorated into what some of them call a “wasteland.” They despair that too many seniors, who have few graduation requirements remaining, are simply marking time to graduation and do not look ahead to college expectations. At the same time, education leaders worry that far too many college freshmen are not ready and need remedial courses.

**How ready most students are for college is linked to whether they used the senior year to complete the essential core and take advanced courses.** Maryland's report on its college-prep

curriculum illustrates the importance of taking the right courses in high school to prepare for college. Lower percentages of students who completed this curriculum needed remedial courses in college. In 2003, 28 percent of Maryland students at two- and four-year institutions who completed the core needed remediation in mathematics, compared with 40 percent of students who took less than the core. In English, 18 percent of students taking the core needed remediation, compared with 22 percent of students who took less than the core.

For seniors who are not ready for college, new approaches may help them make a smooth transition from high school to college. For example, they may not be ready to take calculus — or even pre-calculus — in high school, but they would likely benefit from an intensive senior mathematics course that builds the skills they need to be successful in college algebra. North Carolina has recently implemented such a course. Similarly, students who are not on track for college may benefit more from a course that focuses on reading from contemporary literature and composition than they would from the traditional senior English literature survey. SREB's *High Schools that Work* has helped pilot such a course in three states.

SREB states have begun to use technology in high school to ensure that more students are prepared for college and careers. Web-based guidance systems, like the [www.CFNC.org](http://www.CFNC.org) Web site in North Carolina, have made it easier to provide students and parents with information about what courses they need to take and what colleges will require of them. Online high school courses can provide broader access, especially for students in some schools where qualified teachers in some subjects are not available. Other states have developed online courses that help students catch up or retake essential courses so they can be prepared for college. Kentucky and Maryland are leaders in using technology to deliver these types of courses.

### *Track progress in college readiness*

States need good information about who is ready for college, what skills they need to develop and what kinds of instruction help them. SREB has long advocated that states should collect data regularly and publish reports on their remedial programs. In fact, every state needs an annual report on remedial education that both displays and analyzes data from several years. Current state reports vary considerably. A few provide detailed statistical information and analyses of trends over several years. But in too many cases, important information and analyses are not provided. Information is sometimes buried in reports on enrollment or state appropriations — requiring policy-makers to find what they need in multiple state documents. To be effective, the reports should contain enough detail to track the progress of important groups of students. It also helps when these reports can track student performance back to students' high schools and then be reported to school officials.

SREB long ago identified the indicators about remedial programs that states should report. (See *Reducing Remedial Education: What Progress are States Making?*, for example, at [www.sreb.org](http://www.sreb.org).) These indicators include counts of students enrolled in remedial programs; percentages of recent high school graduates enrolled in these programs; percentages of students who completed the high school college-preparatory core and still needed remediation; percentages who needed remediation in reading, English and mathematics; and the subsequent performance of students who took remedial courses in regular college courses. States should report these data for students who

attend two- and four-year colleges and for racial/ethnic and gender groups.

Reports in SREB states generally include fewer than half of these indicators. Only a few states — including Georgia, Maryland and Oklahoma — report on the need for remediation by students who completed a college-prep curriculum and those who did not, a key indicator of the effectiveness of the state's college-prep curriculum. In addition, two important accountability indicators — performance in subsequent courses and progress toward earning a certificate or degree — are missing from almost all reports. Why are these indicators important? Without knowing whether key high school courses helped students prepare for college and whether remedial courses helped students pass freshman courses, how will states and institutions know what is working?

High-quality reports on remedial programs should go beyond merely counting participants to help policy-makers address critical policy issues by asking questions such as:

- Does taking the right courses in high school make a difference in increasing the percentage of students meeting college-readiness standards and in reducing the need for remedial education in your state?
- Has your state eliminated gaps in preparation for black and Hispanic students, and are remedial programs in your state closing any gaps that remain?
- Is remedial instruction in English, mathematics and reading effective?
- What types of postsecondary institutions in your state are best serving the needs of students who need remedial education?

## *What can you and your state do to reduce remedial rates of recent high school graduates?*

- **Define clear college-readiness standards.**
  - Form a partnership of higher education and K-12 leaders to define a set of minimum college- and career-readiness standards in English and mathematics and the necessary levels of performance.
  - Urge all postsecondary institutions to adopt the set of minimum college-readiness standards.
- **Incorporate college- and career-readiness standards into high school curricula and assessments.**
  - Revise high school course standards to include college-readiness standards.
  - Use assessments of the standards in the 11th grade to determine whether students are on track for college and career readiness, and provide extra help in the senior year for those who are not.
  - Develop new course options, such as senior mathematics, that help all students who are preparing for college to make a successful transition.
  - Provide specific guidance for all students so that they take the right courses to prepare for college and careers, and consider developing a Web-based portal to help them.
  - Use online learning to provide broader access to college-preparatory courses and to help students catch up and retake courses as needed.
- **Track progress in college readiness.**
  - Collect and report information on college readiness and remedial programs that is adequate to measure success and make policy decisions.
  - Develop feedback reports for high schools that detail the performance of their former students and require that these reports be used as a part of school planning.
  - Set targets for reducing rates of remediation for recent high school graduates and hold students, parents and schools accountable for making progress in meeting the targets.

## *What can you and your state do to prepare all high school graduates for college and careers?*

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### ■ Strengthen Curriculum

- Require the essential core courses for all high school students. Restrict other options.
- Require that all students take additional academic courses or a series of courses in a career field.
- Adopt college- and career-readiness benchmarks and align course standards and assessments to them.
- Use end-of-course exams to promote the rigor of all high school courses.

### ■ Close Achievement Gaps

- Hold schools accountable for the performance of all groups of students and make closing achievement gaps a priority in accountability systems.
- Conduct research to determine if all groups of students have access to rigorous courses.
- Include information on all groups of students in all reports on student performance so that resources can be directed to those who are behind.
- Provide support for or restructure low-performing schools, especially those with large minority populations.
- Give students the academic support they need to improve.
- Assign high-quality teachers to low-performing schools.

### ■ Promote Advanced Courses

- Monitor the demographics and performance of students in all groups taking advanced courses, and set targets for increasing participation and performance for all groups of students.
- Support all student efforts to take advanced courses.
- Set eligibility criteria for dual enrollment courses that are comparable to college admission standards.
- Assess the effectiveness of dual enrollment courses.

### ■ Eliminate the Need for Remediation

- Form a partnership of higher education and K-12 leaders to define a set of minimum college- and career-readiness standards in English and mathematics and the necessary levels of performance.
- Urge all postsecondary institutions to adopt this same set of minimum college-readiness standards.
- Use assessments of the standards in the 11th grade to determine whether students are on track for college and career readiness, and provide extra help in the senior year for those who are not.
- Develop new course options, such as senior mathematics, that help all students who are preparing for college to make a successful transition.

## ■ Eliminate the Need for Remediation (continued)

- Provide specific guidance for all students so that they take the right courses to prepare for college and careers.
- Consider developing a Web-based portal that helps students prepare for college and careers.
- Use online learning to provide broader access to college-preparatory courses and to help students catch up and retake courses as needed.
- Collect and report information on college readiness and remedial programs that is adequate to measure success and make policy decisions.
- Develop feedback reports for high schools that detail the performance of their former students and require that these reports be used as a part of school planning.
- Set targets for reducing rates of remediation for recent high school graduates and hold students, parents and schools accountable for making progress in meeting the targets.

## Appendix

### Core Courses Required for High School Graduation in SREB States

	Diploma	Number of Required Units				Total Units
		English	Social Studies	Mathematics	Science	
<i>Recommended High School Curricula</i>						
ACT	Core	4	3	3 <sup>1</sup>	3	NA
SAT	Core	4	3	3 <sup>1</sup>	3	NA
<i>High Schools That Work</i>	Core	4	3	4	3	NA
<i>High School Diploma Requirements</i>						
Alabama	Standard	4	4	4	4	24
	Advanced Academic	4	4	4	4	24
Arkansas	College-Prep	4	3	3	3	21
Delaware	Standard	4	3	3	3	22
Florida	Standard	4	3	3	3 (2 Lab)	24
	Career-Prep (3-year)	4	3	3	3 (2 Lab)	18
	College-Prep (3-year)	4	3	3	3 (2 Lab)	18
Georgia	Technology/Career-Prep	4	3	3	3 (Lab)	22
	College-Prep	4	3	4	3 (Lab)	22
Kentucky	Standard	4	3	3	3	22
Louisiana	Standard	4	3	3	3	23
Maryland	Standard	4	3	3	3 (Lab)	21
Mississippi	Standard	4	3	3 <sup>2</sup>	3	20
North Carolina	Career-Prep	4	3	3	3	20
	College Tech-Prep	4	3	3	3	20
	College/University-Prep	4	3	3 <sup>3</sup>	3	20
Oklahoma	Standard	4	3	3	3	23
South Carolina	Tech-Prep	4	3	4	3	24
	College-Prep	4	3	4	3	24
Tennessee	Tech-Prep	4	3	3	3	20
	University-Prep	4	3	3	3	20
Texas	Minimum <sup>4</sup>	4	3	2	2	22
	Recommended	4	4	3	3	24
	Distinguished	4	4	3	3	24
Virginia	Standard	4	3	3	3 (Lab)	22
	Advanced	4	4	4	4 (Lab)	24
West Virginia	Standard	4	3 <sup>5</sup>	3 <sup>5</sup>	3	24

“NA” indicates not applicable.

“Lab” indicates that the state requirements specify that the science courses be laboratory-based.

The table does not include requirements for students with disabilities.

<sup>1</sup> “3+” indicates that these organizations advocate that all students must have three years of mathematics: Algebra I, II and geometry; they also recommend that students have at least one year of mathematics beyond Algebra II.

<sup>2</sup> Ninth-graders entering in Fall 2005 must complete four mathematics courses, which may include pre-algebra and Algebra I courses taken in eighth grade.

<sup>3</sup> Ninth-graders entering in Fall 2002 must complete four units of mathematics. The additional unit must be above Algebra II.

<sup>4</sup> Students must have written consent from their counselor and a parent in order to graduate using Texas’ Minimum High School Program requirements.

<sup>5</sup> Ninth-graders entering in 2004 must complete four units of social studies; ninth-graders entering in 2006 must complete four units of mathematics.

Sources: State departments of education; compiled by SREB staff, 2005.

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*The following reports may be found on the SREB Web site at [www.sreb.org](http://www.sreb.org).*

### **Challenge to Lead Education Goals Series**

*Getting Serious About High School Graduation, 2005.*

This report documents that graduation rates are low — especially for minority students and males — and that rates have declined since the 1980s. Additionally, too few young adults who need them receive alternative credentials, such as the GED. The report explains how graduation rates are calculated and offers promising practices for increasing them by improving accountability systems, focusing on the ninth grade, reforming high schools and developing media campaigns to promote graduation.

*Focusing on Student Performance Through Accountability, 2005.*

SREB states face new challenges as they adapt to the requirements of the federal *No Child Left Behind Act of 2001*. This report reviews SREB states' progress in implementing their accountability systems and in improving student performance in all groups. The report documents that many states may not be improving performance at adequate rates to meet the legislation's 2014 deadline. It discusses Title 1 and non-Title 1 schools and includes state profiles of performance data for each state compared with NCLB targets.

*Investing Wisely in Adult Learning is Key to State Prosperity, 2005.*

This report documents the benefits of providing more education for adults who did not complete high school and the urgency of increasing the number of high school dropouts who pursue further education. It focuses on three key indicators of progress: enrollments in Adult Basic Education, GED completion and enrollments of students who earned the GED credential in postsecondary education. Some SREB states have made strides in developing policies and programs for adult learners, and the report profiles their efforts and results. The report offers some promising practices for addressing the adult learning challenge facing SREB states.

*Building a Foundation for Success by Getting Every Child Ready for School, 2005.*

This report reviews SREB states' progress in getting young children prepared to start first grade ready to learn. SREB states have a long history in this endeavor, particularly in addressing the needs of young children from low-income families. The report documents that this group of children is increasing, profiles SREB states' efforts to meet standards set for high-quality preschool programs and shows how SREB states assess school readiness. The report also addresses health and social services that are available in SREB states to children at risk of not being ready for school.

*Creating College Opportunity for All: Prepared Students and Affordable Colleges, 2005.*

SREB's *Challenge to Lead* goals call on states to ensure that many more youth — particularly from minority groups and low-income families — prepare for, enroll in and graduate from college. This means that college must be affordable for these students. This report examines the current affordability gap and what steps could make college a possibility for more young people. It focuses on the need for state-funded financial assistance and ways that states can help prepare a new generation of residents for the future.

*Getting the Mission Right in the Middle Grades, 2004.*

This report documents SREB states' progress in getting middle grades students ready for high school. The analyses are based on scores and standards of state achievement tests and on results from the National Assessment of Educational Progress. The report also describes promising practices for preparing middle grades students for high school, based on technology applications that have been implemented in SREB states and on the work of SREB's *Making Middle Grades Work*.

*Mastering Reading and Mathematics in the Early Grades, 2004.*

This report documents SREB states' progress in getting early grades students ready for the middle grades. The analyses are based on scores and standards for state achievement tests and on results from the National Assessment of Educational Progress. The report also outlines how federal funds for reading programs are distributed to districts and schools, what states are requiring of students who do not meet state standards at the end of third or fourth grade, and what retention and promotion policies states have developed for students who do not meet standards.

*Progress Being Made in Getting a Quality Leader in Every School, 2004.*

This report documents SREB states' progress in redesigning the preparation and development of school principals. The analyses are based on information collected in interviews with state agency personnel on six key indicators. The report also outlines actions that states can take to make progress on each indicator, describes promising practices being implemented by some states and identifies challenges states face in creating new policies that can drive more effective programs and practices.

*Resolve and Resources to Get a Qualified Teacher in Every Classroom, 2004.*

Every student deserves qualified teachers, but states do not have enough qualified teachers for every subject in every school. This report documents SREB states' progress toward getting a qualified teacher in every classroom. It highlights the essential policies that SREB states should resolve to develop and to support with adequate resources.



# *Challenge to Lead* Goals for Education

1. All children are ready for the first grade.
2. Achievement in the early grades for all groups of students exceeds national averages and performance gaps are closed.
3. Achievement in the middle grades for all groups of students exceeds national averages and performance gaps are closed.
4. All young adults have a high school diploma — or, if not, pass the GED tests.
5. *All recent high school graduates have solid academic preparation and are ready for post-secondary education and a career.*
  - *All students complete a core of college-preparatory courses (in language arts, mathematics, science and social studies), pass end-of-course tests, and:*
    - *Successfully complete additional academic courses, end-of-course tests and college admission examinations.*
    - or*
    - *Successfully complete a series of career and technical courses and pass end-of-program and workplace examinations.*
  - *Achievement gaps are closed among groups of students as measured by state assessments, end-of-course tests and college admission examinations.*
  - *Percentages of recent high school graduates who need remedial courses when entering technical institutes, community colleges, and four-year colleges and universities are reduced to zero.*
  - *All groups of students have enrollment and “passing” rates that exceed national averages in Advanced Placement and International Baccalaureate courses. Dual enrollment programs increase.*
6. Adults who are not high school graduates participate in literacy and job-skills training and further education.
7. The percentage of adults who earn postsecondary degrees or technical certificates exceeds national averages.
8. Every school has higher student performance and meets state academic standards for all students each year.
9. Every school has leadership that results in improved student performance — and leadership begins with an effective school principal.
10. Every student is taught by qualified teachers.
11. The quality of colleges and universities is regularly assessed and funding is targeted to quality, efficiency and state needs.
12. The state places a high priority on an education *system* of schools, colleges and universities that is accountable.

The Southern Regional Education Board has established these Goals for Education. They are built on the groundbreaking education goals SREB adopted in 1988 and on a decade-long effort to promote actions and measure progress. The new goals raise further the sights of the 16 SREB states and challenge them to lead the nation.

