Measuring College and Career Readiness

The Class of 2009
College and career readiness is the new measure of educational excellence at the K–12 level. In an increasingly complex, diverse, and technology-driven world, simply earning a high school diploma is no longer enough. High school graduates must be prepared to succeed at the next level — whether they choose to attend college or begin a career. The goal of high school should be clear: to prepare graduates for life after high school by teaching them the skills and knowledge that are essential to college and workforce training readiness.

Despite encouraging progress, too many American students are not prepared for 21st-century opportunities.

ACT, a mission-driven nonprofit organization, is helping national, state, and local leaders respond to this challenge. In the process, we are committed to sharing our expertise with policymakers and practitioners.

Working together, we envision a day soon when every American student will benefit from these six policy recommendations, put forth in ACT’s report Making the Dream a Reality, which have shown to be critical for college and career success.

- Fewer — but essential — high school standards that are valued by colleges and employers;
- Common academic expectations recognizing the reality that students need a comparable level of knowledge and skills, whether they’re going to college or work;
- Clear and consistent messages about what level of performance is “good enough” to demonstrate college and career readiness;
- A rigorous curriculum that guarantees both the right number and the right kinds of courses taught by well-qualified teachers;
- An early monitoring and intervention system that ensures younger students are on target to be ready for college and career; and
- A longitudinal data system that helps students stay on target by monitoring their performance from the early years through college.
ACT’s College Readiness Benchmarks

The minimum ACT® test scores that indicate whether high school graduates are likely ready for entry-level college coursework are:

- English = 18
- Mathematics = 22
- Reading = 21
- Science = 24

These Benchmarks reflect the level of preparation needed for students to have at least a 50 percent chance of achieving a grade of B or higher, or at least a 75 percent chance of a grade of C or higher, in entry-level, credit-bearing college English Composition, Algebra, Social Science, and Biology courses. (The maximum ACT score is 36.)

The results shown in this report reflect students’ performance on ACT’s College Readiness Benchmarks, which may or may not be equal to your state’s college readiness indicators. If you would like assistance, ACT is available to help establish or review your state-set indicators.

Kansas at a Glance: The Class of 2009

- 23,147 high school graduates took the ACT.
- 74 percent of graduates took the ACT.
- 17,345 10th grade students took PLAN®.
- 8,055 8th grade students took EXPLORE®.
- ACT is committed to college readiness for all, especially Title I students.
- ACT is committed to supporting the American Recovery and Reinvestment Act (ARRA).

State of college readiness in Kansas

Percentage of 2009 ACT-tested graduates meeting College Readiness Benchmarks

Average ACT scores, 2009

<table>
<thead>
<tr>
<th></th>
<th>Composite</th>
<th>English</th>
<th>Math</th>
<th>Reading</th>
<th>Science</th>
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<tr>
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<td>48</td>
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<tr>
<td>Nation — all four</td>
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<td>60</td>
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<table>
<thead>
<tr>
<th></th>
<th>All four Benchmarks</th>
<th>Science</th>
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</thead>
<tbody>
<tr>
<td>Kansas</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Nation — all four</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Kansas at a Glance: The Class of 2009 (cont.)

Five-year trends show the extent to which student performance has changed and whether more students in your state are getting the access and opportunity they need.

**Trends in student performance in Kansas**

*ACT Composite scores, 2005–09*

![Graph showing ACT Composite scores from 2005 to 2009 for Kansas and the nation.](image)

**Level of participation in Kansas**

*Percentage of ACT test-takers by race/ethnicity, 2005–09*

![Bar chart showing percentage of ACT test-takers by race/ethnicity from 2005 to 2009 for Kansas.](image)
Kansas at a Glance: The Class of 2009 (cont.)

- ACT is working with pre-collegiate programs, grades 7-12.
- ACT is sharing college and career readiness data between secondary and postsecondary institutions.
- ACT is helping state education agencies on issues of high school/college readiness.
- ACT continues to support the data needs of the Board of Regents and the state’s flagship universities.
- COMPASS continues to be the placement tool for all universities in the state and ACT continues to provide professional development and technical assistance for its use.
Key Questions

This annual report from ACT provides a snapshot of the ACT-tested graduates in the class of 2009, focusing on their readiness for college and careers.

ACT offers this report as a service to inform policymakers and practitioners about selected indicators of effectiveness. It is not meant to be comprehensive but instead is designed to stimulate discussion, inquiry, and action.

In interpreting and using the results, keep in mind that the number and percentage of students who took the ACT in your state determine how representative these findings are.

The report is organized around six questions that are driving national efforts to strengthen K–12 education.

1. Are your students prepared for college and careers?
2. Do your standards reflect college and career readiness?
3. Are enough of your students taking core courses?
4. Are your core courses rigorous enough?
5. Are your younger students on track for college and careers?
6. Are you collecting the right data to keep students on track for college and careers?
Are your students prepared for college and careers?

In today’s more competitive and diverse world, earning a high school diploma alone is not enough. A more accurate measure of success is whether students are prepared for college and careers. ACT is at the forefront of a national movement to help states raise awareness of these higher expectations, expand opportunities for more students to take challenging courses, and in the process, ensure that they are ready to succeed after high school, whichever postsecondary path they choose.

This first section addresses the current level of college and career readiness in your state, while the remaining five sections address key steps that policymakers and educators can take to raise the levels.

More students need to be ready for college-level courses

Percentage of 2009 ACT-tested graduates meeting College Readiness Benchmarks

ACT’s College Readiness Benchmarks

ACT has developed its College Readiness Benchmarks to identify students who are likely prepared for entry-level college coursework.

The ACT Benchmarks (a minimum ACT test score of 18 in English, 22 in Mathematics, 21 in Reading, and 24 in Science) reflect the level of preparation needed for students to have at least a 50 percent chance of achieving a grade of B or higher, or at least a 75 percent chance of a grade of C or higher, in typical entry-level, credit-bearing college English Composition, Algebra, Social Science, and Biology courses. (The maximum ACT score is 36.)
Some student groups are more prepared than others for ...

Percentage of your 2009 ACT-tested graduates meeting College Readiness Benchmarks

### ... College English Composition

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<th>Group</th>
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<td>42%</td>
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<tr>
<td>American Indian/Alaska Native</td>
<td>78%</td>
</tr>
<tr>
<td>Caucasian American/White</td>
<td>71%</td>
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<tr>
<td>Hispanic</td>
<td>69%</td>
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<tr>
<td>Asian American/Pacific Islander</td>
<td>60%</td>
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<tr>
<td>Other/No response</td>
<td>53%</td>
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<tr>
<td>All students</td>
<td>74%</td>
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### ... College Algebra

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</tr>
</thead>
<tbody>
<tr>
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<td>17%</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>29%</td>
</tr>
<tr>
<td>Caucasian American/White</td>
<td>52%</td>
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<tr>
<td>Hispanic</td>
<td>31%</td>
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<tr>
<td>Asian American/Pacific Islander</td>
<td>58%</td>
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<tr>
<td>Other/No response</td>
<td>44%</td>
</tr>
<tr>
<td>All students</td>
<td>48%</td>
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Are your students prepared for college and careers? (cont.)

Some student groups are more prepared than others for …

Percentage of your 2009 ACT-tested graduates meeting College Readiness Benchmarks

... College Social Sciences

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<tr>
<th>Ethnicity</th>
<th>Percentage</th>
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<td>American Indian/Alaska Native</td>
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<td>Asian American/Pacific Islander</td>
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<td>56</td>
</tr>
<tr>
<td>All students</td>
<td>60</td>
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</tbody>
</table>

... College Biology

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American/Black</td>
<td>9</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>21</td>
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<tr>
<td>Caucasian American/White</td>
<td>36</td>
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<tr>
<td>Hispanic</td>
<td>17</td>
</tr>
<tr>
<td>Asian American/Pacific Islander</td>
<td>36</td>
</tr>
<tr>
<td>Other/No response</td>
<td>28</td>
</tr>
<tr>
<td>All students</td>
<td>33</td>
</tr>
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</table>
Are your students prepared for college and careers? (cont.)

Even more to the point from an economic development perspective, are students interested in and prepared for the projected high-growth jobs in your state?

Job openings and students’ interests don’t coincide

Percentage of projected annual job openings in your state requiring a two-year college degree or more and 2009 ACT-tested graduates interested in those jobs.

Many students who are interested in these careers fall short of ACT’s College Readiness Benchmarks, suggesting that they are not on the right path to take advantage of career opportunities in these high-growth fields.

Preparation varies for careers in high-growth fields

Percentage of your 2009 ACT-tested graduates interested in high-growth careers meeting College Readiness Benchmarks, by subject.

Note: Missing bars indicate that an insufficient number of students in your state reported the career choice.
How Do Your State’s Standards Compare?

The majority of states have asked ACT to compare their standards to ACT’s College Readiness Standards.

A full list of ACT’s Standards are available at www.act.org/standard. The state comparisons are available at www.act.org/education/statematch.

If you haven’t had your standards matched, ACT would be pleased to conduct a comparison at your request.

ACT’s National Curriculum Survey®

ACT conducts a one-of-a-kind survey every 3–4 years of some 20,000 postsecondary and K–12 educators. The survey compares the knowledge and skills postsecondary institutions require of their entering students to what middle and high school teachers are teaching. States are using this information to align their standards and close expectation gaps.

Do your standards reflect college and career readiness?

Too often, high school students graduate to find out that what they learned in high school has not truly prepared them for their freshman courses in college or their first day on the job. States should adopt fewer — but essential — college- and career-readiness standards as their new high school graduation standards.

ACT’s research has identified essential standards — the ACT College Readiness Standards™ — that reflect a range of knowledge and skills. The Standards have been “backmapped” to K–8. And a third-party, independent international study has revealed a high degree of alignment and consistency between ACT’s College Readiness Standards and the national frameworks and standards of two high-performing countries, Singapore and Finland.

In addition, ACT has identified the minimum ACT scores in each subject area (ACT’s College Readiness Benchmarks) that indicate whether students are prepared for college and careers (see page 3). These Benchmarks are based on the actual performance of college students in typical entry-level, credit-bearing courses who have taken ACT’s assessments over the past few decades.

Although ACT’s College Readiness Standards reflect a broad range of skills, this report focuses on the skills and standards at the College Readiness Benchmark level. (To see a sample of the College Readiness Standards, see pages 18–19.)

ACT’s 2005–06 national curriculum survey shows that high school teachers in all content areas tend to rate far more content topics and skills as “important” or “very important” than do postsecondary instructors, who are more selective (see chart, categories 4 and 5). This finding is consistent with recent evaluations that show some states are requiring too many K–12 standards to be taught and measured and, in the process, sacrificing depth for breadth.
Core Curriculum

ACT defines the high school core curriculum as at least four years of English and at least three years each of mathematics, social studies, and natural sciences (4-3-3-3).

A sample core mathematics course sequence includes Algebra I, Algebra II, and Geometry. A sample core science course sequence includes Biology, Chemistry, and Physics. Many course options and sequences are possible, but the key is whether the courses are based on high standards that prepare students for success after high school.

ACT research validates that college students who take a core curriculum in high school are more likely to meet the College Readiness Benchmarks and, as a result, are more likely to:

- Persist to a second year at the same postsecondary institution
- Earn a B or higher in first-year college courses
- Earn a first-year college GPA of 2.5 or higher
- Progress toward a college degree
- Complete a college degree

Students who take a core curriculum, or more, perform better than students who do not

Average scores of your 2009 ACT-tested graduates who took a core curriculum and those who did not

<table>
<thead>
<tr>
<th>Category</th>
<th>Core</th>
<th>Noncore</th>
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<tbody>
<tr>
<td>All students</td>
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<td>19.5</td>
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<td>African American/Black</td>
<td>21.1</td>
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<td>20.1</td>
<td>16.1</td>
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<td>Caucasian American/White</td>
<td>20.1</td>
<td>17.8</td>
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<tr>
<td>Hispanic</td>
<td>17.4</td>
<td>17.4</td>
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<tr>
<td>Asian American/Pacific Islander</td>
<td>22.8</td>
<td>22.3</td>
</tr>
<tr>
<td>Other/No response</td>
<td>22.3</td>
<td>19.1</td>
</tr>
</tbody>
</table>

Are enough of your students taking core courses?

A growing number of states are raising their standards and, just as important, ensuring that their curriculum is aligned with these higher expectations. They are doing this to give more students access to the courses that ACT’s research shows better prepare them for college and careers — preparation that results in consistent positive impacts on student performance.
Are your core courses rigorous enough?

Taking the right kind of courses — rigorous courses — matters as much as, if not more than, taking the right number of courses. Students taking high-level mathematics and science courses beyond the core coursework are more prepared for college and careers than those taking only the core curriculum or less. Nationally, the percentage of students meeting or exceeding the ACT College Readiness Benchmarks in Mathematics and Science is higher for those students taking more than the core than for those students taking the core or less.

Students taking math courses beyond the core curriculum are more prepared than their peers

Percentage of your 2009 ACT-tested graduates meeting or exceeding College Readiness Benchmarks in Mathematics

- Less than core
  - Kansas: 9
  - Nation: 7
- Core
  - Kansas: 15
  - Nation: 12
- More than core
  - Kansas: 61
  - Nation: 55

States should consider strengthening their standards and assessments, providing targeted support to struggling students, and supporting teachers with quality professional development.

Rigor at Risk

ACT’s 2006 research (Rigor at Risk) found that under current conditions, students do not have a reasonable chance of becoming ready for college unless they take additional higher-level courses beyond the minimum core. And even when students take substantial numbers of additional courses, no more than three-fourths of them are ready for first-year college coursework. This suggests that the quality and intensity — in other words, the rigor — of the high school curriculum needs to be improved.

Reading Between the Lines

Only about half of our nation’s ACT-tested high school graduates are ready for college-level reading. What’s worse, more 8th and 10th grade students are on track to being ready for college-level reading than end up ready in 12th grade.

States should consider strengthening their standards and assessments, providing targeted support to struggling students, and supporting teachers with quality professional development.
Are your core courses rigorous enough? (cont.)

ACT research shows that rigor pays off. We analyzed close to 400 schools across the country that are offering rigorous core courses to all their students — and teaching them well — and found that their students are outpacing the national averages in college and career readiness across the board.

For example, students at these top-performing schools who took a rigorous Algebra II course (beyond Algebra I and Geometry) or a rigorous Chemistry course (beyond Biology) scored 17 and 16 percentage points higher, respectively, than all ACT-tested students who took the same courses in their high schools. These students also had greater success in college: Both college enrollment and retention were higher for students in these schools.

Teacher Quality Affects Course Rigor

Another important contributor to the rigor of the high school core curriculum is teacher quality, and teacher quality has a huge impact on high school students’ readiness for college. Schools need to determine whether they are assigning the right teachers to the right core courses — and to the students who need them most.

According to a recent study:  
- Students in high-poverty and high-minority schools are disproportionately assigned to new teachers.
- Teachers in high-poverty and high-minority secondary schools are more likely to be lacking a major — or even a minor — in the subjects they teach.

States need to strengthen professional development and examine instructional practices to make sure courses are focused on college-readiness preparation.

Students taking science courses beyond the core curriculum are more prepared than their peers

Percentage of your 2009 ACT-tested graduates meeting or exceeding College Readiness Benchmarks in Science

<table>
<thead>
<tr>
<th>Course Level</th>
<th>Less than core</th>
<th>Core</th>
<th>More than core</th>
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</thead>
<tbody>
<tr>
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<td>13</td>
<td>20</td>
<td>46</td>
</tr>
<tr>
<td>Nation</td>
<td>11</td>
<td>21</td>
<td>40</td>
</tr>
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</table>

- Kansas
- Nation
Are your younger students on track for college and careers?

High school is too late to learn if your students are on target for college and careers. We know from our research that younger students who take challenging curricula are much better prepared to graduate high school ready for college. Moreover, recent ACT research (The Forgotten Middle) found that, “Under current conditions, the level of academic achievement that students attain by 8th grade has a larger impact on their college and career readiness by the time they graduate from high school than anything that happens academically in high school.”

That’s why ACT is working closely with states to raise parent and student awareness about the importance of the middle grades, begin monitoring early to make sure younger students are on track for college and careers, and help teachers intervene in more timely ways.

Nationally, 10 percent of students met all four EXPLORE Benchmarks in 2008–09 and 19 percent met all four PLAN Benchmarks in 2008–09.

Early preparation is essential to college readiness and success

Percentage of your 8th and 10th graders on track to meet College Readiness Benchmarks, 2009
Are you collecting the right data to keep students on track for college and careers?

If states are serious about ensuring that more of their students are prepared for college and careers in the 21st century, they must establish longitudinal P–20 data systems — closely monitoring student performance at every stage of the learning pipeline, from preschool through the elementary, middle, and high school grades and all the way through college and into the workforce.

That’s why ACT supports the Data Quality Campaign (DQC), a national, collaborative effort to improve the collection, availability, and use of high-quality education data to boost student achievement. DQC has identified 10 essential elements for building a longitudinal data system. It is also working with states to ensure that all policymakers, educators, parents, and others have access to this information and know how to use it (www.dataqualitycampaign.org).

**Kansas has 6 of the 10 essential data elements**

1. Statewide student identifier (48 states have this element)
2. Student-level enrollment data (49 states)
3. Student-level test data (48 states)
4. Information on untested students (41 states)
5. Statewide teacher identifier with a teacher-student match (21 states)
6. Student-level course completion (transcript) data (17 states)
7. Student-level SAT, ACT, and AP exam data (29 states)
8. Student-level graduation and dropout data (50 states)
9. Ability to match student-level P–12 and higher education data (28 states)
10. State data audit system (45 states)
Notes and Next Steps

- Please visit www.act.org/crr/2009 for additional information, interactive charts, and a listing of other state and national data.

- There is significant need for college and career readiness professional development workshops in the state of Kansas. This year, ACT will provide service workshops for this need on September 28, 29, 30, and October 1, at Kansas Wesleyan University in Salina, MidAmerica Nazarene University in Olathe, Wichita State University in Wichita, and Fort Hays State University in Fort Hays, respectively. These workshops will facilitate the sharing of data and ideas to improve college and career readiness for all students. For additional information, go to www.act.org/ccrw.

- To further meet professional development needs, the Kansas ACT State Organization will sponsor their annual conference in April 2010. For more information, go to www.act.org/west/kansas in November.

- ACT has several programs that assist postsecondary institutions with early outreach to better prepare secondary students for postsecondary success. These programs can assist Kansas initiatives such as those funded through ARRA, Title I.

- ACT Research Finding One: Students who meet the EXPLORE and PLAN College Readiness Benchmarks have a very high chance of meeting the College Readiness Benchmarks for the ACT and of being ready for entry-level college courses by the time they graduate from high school.

- ACT Research Finding Two: 85 percent of students who meet both the EXPLORE and PLAN Mathematics Benchmarks are likely to be prepared for college algebra by the time they graduate from high school.

- ACT Research Finding Three: 82 percent of students who meet both the EXPLORE and PLAN Science Benchmarks are likely to be prepared for college biology by the time they graduate from high school.

- The Forgotten Middle research found that 1) improvement in 8th grade academic achievement and being on target for college and career readiness in 8th grade are more beneficial than any high school-level academic enhancement, 2) improving middle school students’ achievement by just two score points on EXPLORE in each subject area would have a cascading effect over the succeeding levels of education, and 3) the 13-point increase in the percentage of high school graduates ready for college-level mathematics should later produce about 25,000 additional degree completers at two- and four-year colleges (and about 25,000 few college dropouts) each year in the United States.
Resources: ACT’s College Readiness Standards

**English (ACT College Readiness Benchmark score = 18)**

- **Topic Development in Terms of Purpose and Focus**
  - Identify the basic purpose or role of a specified phrase or sentence
  - Delete a clause or sentence because it is obviously irrelevant to the essay

- **Organization, Unity, and Coherence**
  - Select the most logical place to add a sentence in a paragraph

- **Word Choice in Terms of Style, Tone, Clarity, and Economy**
  - Delete obviously synonymous and wordy material in a sentence
  - Revise expressions that deviate from the style of an essay

- **Sentence Structure and Formation**
  - Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences
  - Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

- **Conventions of Usage**
  - Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement and which preposition to use in simple contexts
  - Recognize and use the appropriate word in frequently confused pairs such as “there” and “their,” “past” and “passed,” and “led” and “lead”

- **Conventions of Punctuation**
  - Provide appropriate punctuation in straightforward situations (e.g., items in a series)
  - Delete commas that disturb the sentence flow (e.g., between modifier and modified element)

**Mathematics (ACT College Readiness Benchmark score = 22)**

- **Basic Operations and Applications**
  - Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average

- **Probability, Statistics, and Data Analysis**
  - Calculate the missing data value, given the average and all data values but one
  - Translate from one representation of data to another (e.g., a bar graph to a circle graph)
  - Determine the probability of a simple event
  - Exhibit knowledge of simple counting techniques

- **Numbers: Concepts and Properties**
  - Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

- **Expressions, Equations, and Inequalities**
  - Evaluate algebraic expressions by substituting integers for unknown quantities
  - Add and subtract simple algebraic expressions
  - Solve routine first-degree equations
  - Perform straightforward word-to-symbol translations
  - Multiply two binomials

- **Graphical Representations**
  - Locate points in the coordinate plane
  - Comprehend the concept of length on the number line
  - Exhibit knowledge of slope

- **Properties of Plane Figures**
  - Find the measure of an angle using properties of parallel lines
  - Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)

- **Measurement**
  - Compute the area and perimeter of triangles and rectangles in simple problems
  - Use geometric formulas when all necessary information is given

- **Functions**
  - Evaluate quadratic functions, expressed in function notation, at integer values

ACT’s College Readiness Standards are detailed, research-based descriptions of the skills and knowledge associated with what students are likely to know and to be able to do based on their performance on the ACT. Standards are provided for different score ranges. This table provides a sample of the Standards covering the knowledge and skills students need to receive College Readiness Benchmark scores in English, Mathematics, Reading, and Science. For a complete list of the Standards, go to www.act.org/standard/pdf/CRS.pdf.
**Reading (ACT College Readiness Benchmark score = 21)**

**Main Ideas and Author’s Approach**
- Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives
- Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages

**Supporting Details**
- Locate important details in uncomplicated passages
- Make simple inferences about how details are used in passages

**Sequential, Comparative, and Cause-Effect Relationships**
- Order simple sequences of events in uncomplicated literary narratives
- Identify clear relationships between people, ideas, and so on in uncomplicated passages
- Identify clear cause-effect relationships in uncomplicated passages

**Meanings of Words**
- Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages

**Generalizations and Conclusions**
- Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages
- Draw simple generalizations and conclusions using details that support the main points of more challenging passages

**Science (ACT College Readiness Benchmark score = 24)**

**Interpretation of Data**
- Compare or combine data from two or more simple data presentations (e.g., categorize data from a table using a scale from another table)
- Compare or combine data from a complex data presentation
- Interpolate between data points in a table or graph
- Determine how the value of one variable changes as the value of another variable changes in a complex data presentation
- Identify and/or use a simple (e.g., linear) mathematical relationship between data
- Analyze given information when presented with new, simple information

**Scientific Investigation**
- Understand the methods and tools used in a complex experiment
- Understand a complex experimental design
- Predict the results of an additional trial or measurement in an experiment
- Determine the experimental conditions that would produce specified results

**Evaluation of Models, Inferences, and Experimental Results**
- Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models
- Determine whether given information supports or contradicts a simple hypothesis or conclusion and why
- Identify strengths and weaknesses in one or more models
- Identify similarities and differences between models
- Determine which model(s) is(are) supported or weakened by new information
- Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
This table provides a compiled list of the state averages and percentages of graduates who took the test in 2009. In providing this table, ACT is not advocating ranking the various states’ educational systems. In most states, students who take the ACT are self-selected and do not represent the state’s entire student population.

Further, the percentages of students who take the ACT vary significantly from state to state, as do the backgrounds and characteristics of those students. Many factors — among them, motivation, the desire to learn, parental support, the quality of teaching received, socioeconomic status, and extracurricular experiences — contribute to individual and group student achievement. However, ACT research has shown a core college-preparatory program to be a significant precondition to success both on the ACT and in postsecondary studies. (ACT defines a core college-preparatory program as four years of English and three or more years each of mathematics [starting with Algebra I], science, and social studies courses.)

### Resources: 2009 ACT State Averages and Percentages of Graduates Tested

<table>
<thead>
<tr>
<th>State</th>
<th>Percentage of graduates tested</th>
<th>Average Composite score</th>
<th>Average English score</th>
<th>Average Math score</th>
<th>Average Reading score</th>
<th>Average Science score</th>
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### Measuring College and Career Readiness: The Class of 2009

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<th>State</th>
<th>Percentage of graduates tested</th>
<th>Average Composite score</th>
<th>Average English score</th>
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Ready for College and Ready for Work: Same or Different?

Results of a new ACT study provide empirical evidence that, whether planning students need to be educated to a comparable level of readiness in reading and college-level courses without remediation and to enter workforce training mathematics. Graduates need this level of readiness if they are to succeed in postsecondary education and the workforce. Only then—whether they are among the two-thirds who enter college directly after graduation or those who enter career advancement less—will they be ready for entry-level jobs that require less than a bachelor’s degree.

We reached this conclusion by:

• The study results convey an important message to U.S. high school educators—preparing for both coursework and increased college readiness.

Although the contexts within which these expectations are taught and assessed differ, whether for college or workforce entry, the academic skills that will give high school students the foundation of academic skills they need for success no matter which path they choose after high school are the same or different. ACT research suggests that the full rigor of preparation for high school graduate from high school is so small that it raises questions not just about the prospect that these students can eventually be ready for college but also about whether they are even ready for high school. Available at www.act.org/research/policymakers/pdf/ReadinessBrief.pdf.

Rigor at Risk, May 2007

It has become increasingly apparent that although taking the right number of courses in high school is better than not, it is no longer enough to guarantee that students will graduate ready for life after high school. This report identifies the large gap between secondary and postsecondary education in the United States and focuses on successful strategies for eliminating that gap. Available at www.act.org/research/policymakers/pdf/rigor_report.pdf.

National Curriculum Survey, April 2007

A one-of-a-kind nationwide survey that collects a wealth of information about what middle school, secondary, and postsecondary educators believe entering college students should know and be able to do to be ready for college-level work. Available at www.act.org/research/policymakers/pdf/NationalCurriculumSurvey2006.pdf.

Ready for College and Ready for Work: Same or Different? May 2006

High school students who plan to enter workforce training programs after they graduate need academic skills similar to those of college-bound students. ACT research suggests that the math and reading skills needed to be ready for success in workforce training programs are comparable to those needed for success in the first year of college. Available at www.act.org/research/policymakers/pdf/ReadinessBrief.pdf.

Reading Between the Lines, March 2006

Too many high school students are graduating without the reading skills they will need. This report shows that the clearest differentiator in reading between students who are college ready and students who are not is the ability to comprehend complex texts. Available at www.act.org/research/policymakers/pdf/reading_report.pdf.

On Course for Success, February 2005

The study defines the specific rigorous academic skills that need to be taught in English, math, and science courses for high school graduates to be ready for college and work. The report provides detailed descriptions of courses that prepare students for college English, math, and science coursework. Available at www.act.org/research/policymakers/pdf/success_report.pdf.

Crisis at the Core: Preparing All Students for College and Work, October 2004

This policy report clearly shows the relationship between the rigor of high school coursework and increased college readiness. Available at www.act.org/research/policymakers/pdf/crisis_report.pdf.
Results of a new ACT study provide empirical evidence that, whether planning to enter college or workforce training programs after graduation, high school students need to be educated to a comparable level of readiness in reading and college-level courses without remediation and to enter workforce training programs ready to learn job-specific skills. We reached this conclusion by:

- Identifying the level of reading and mathematics skills students need to be ready for entry-level jobs that require less than a bachelor’s degree, although the contexts within which these expectations are taught and assessed may differ, the level of expectation for all students must be the same. Anything less will not give high school graduates the foundation of academic skills they may need to pay a wage sufficient to support a family, and offer the potential for career advancement.

- Measuring College and Career Readiness: The Class of 2009
- Reading Between the Lines, March 2006
- On Course for Success, February 2005
- Crisis at the Core: Preparing All Students for College and Work, October 2004

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Endnotes

1. State long-term occupational projections for 2004-2014 (based on job growth and job replacement) provided by Kansas Department of Labor, Labor Market Information Services. Career interests and achievement results based on 2009 ACT-tested Kansas students (n = 15,490) with valid career information and subject scores. Example occupations of the state’s high-growth career fields are Education (secondary teachers, administrators, etc.); Management (convention planners, hotel/restaurant managers, etc.); Health Care (nurses, occupational therapists, etc.); Marketing/Sales (insurance agents, buyers, etc.); Community Services (social workers, school counselors, etc.).

2. Ibid.


4. ACT (2006). Reading Between the Lines. Iowa City, IA.


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