These draft test specifications and sample items and other materials are just that — drafts. As such, they will systematically evolve over time. These sample items are meant to illustrate the shifts in the redesigned SAT® and are not a full reflection of what will be tested. Actual items used on the exam are going through extensive reviews and pretesting to help ensure that they are clear and fair, and that they measure what is intended. The test specifications as well as the research foundation defining what is measured on the test will continue to be refined based on ongoing research.
Analysis in Science and in History/Social Studies

When students take the redesigned SAT®, they are asked to apply their reading, writing, language, and math skills to answer questions in science and history/social studies contexts. These skills are the same ones people use every day in their jobs and in their lives when they read and analyze information (both text and data) about recent discoveries, political developments, global events, and health and environmental issues.

In the Evidence-Based Reading and Writing section and the Math section of the redesigned SAT, students will encounter challenging texts and informational graphics that pertain to issues and topics in science and history/social studies. Questions will ask students to perform such tasks as reading and comprehending these texts, revising such texts to be consistent with data presented in graphics, synthesizing information presented through text and informational graphics, and solving problems that are based in contexts from these disciplines. The work of the redesigned SAT will engage teachers in science and history/social studies disciplines and reflect the work students are doing in those classrooms.

The following brief Reading excerpt and the sample Reading and Math questions help illustrate two important ways in which students are asked to demonstrate skill in working with science and history/social studies issues, topics, and contexts on the redesigned SAT.

In the Reading example below, students must closely examine a graph associated with a history/social studies passage on road congestion and then determine which of four claims is accurate based on data in that graph. (See also the complete passage at the end of this document for the full context in which this skill is measured.)
READING EXAMPLE

The Most Congested Cities in 2011
Yearly Hours of Delay per Automobile Commuter

Adapted from Adam Werbach, “The American Commuter Spends 38 Hours a Year Stuck in Traffic.” ©2013 by The Atlantic.

Which claim about traffic congestion is supported by the graph?

A) New York City commuters spend less time annually delayed by traffic congestion than the average for very large cities.
B) Los Angeles commuters are delayed more hours annually by traffic congestion than are commuters in Washington, D.C.
C) Commuters in Washington, D.C., face greater delays annually due to traffic congestion than do commuters in New York City.
D) Commuters in Detroit spend more time delayed annually by traffic congestion than do commuters in Houston, Atlanta, and Chicago.

The best answer here is choice C, as the only one of the four claims supported by the graph is that automobile commuters in Washington, D.C., face greater delays annually than do automobile commuters in New York City. Higher bars on the graph represent longer annual commute delays than do lower bars; moreover, the number of hours of annual commute delay generally decreases as one moves from left to right on the graph. The bar for Washington, D.C., is higher than and to the left of that for New York City, meaning that D.C. commuters experience greater amounts of delay each year. Note that while graph-reading skill is assessed in this question, computational skill is not; students need only make relative comparisons of bar heights and locations to answer the question correctly.
Many science and history/social studies texts that students will read in college, career, and life will make important, sometimes extensive use of data presented in tables, graphs, charts, and the like. It is important, even critical, then, that the redesigned SAT assess students’ skill in working with and analyzing informational graphics as part of the Evidence-Based Reading and Writing section as well as in the Math section.

In the Math example below, students must closely analyze the graph associated with a science experiment to determine the area of each petri dish covered by bacteria at the start of the experiment and during the first hour afterward.

**MATH EXAMPLE**

A researcher places two colonies of bacteria into two petri dishes that each have area 10 square centimeters. After the initial placement of the bacteria \( t = 0 \), the researcher measures and records the area covered by the bacteria in each dish every ten minutes. The data for each dish were fit by a smooth curve, as shown above, where each curve represents the area of a dish covered by bacteria as a function of time, in hours. Which of the following is a correct statement about the data above?

A) At time \( t = 0 \), both dishes are 100% covered by bacteria.
B) At time \( t = 0 \), bacteria covers 10% of Dish 1 and 20% of Dish 2.
C) At time \( t = 0 \), Dish 2 is covered with 50% more bacteria than Dish 1.
D) For the first hour, the area covered in Dish 2 is increasing at a higher average rate than the area covered in Dish 1.
Choice B is the correct answer. Each petri dish has an area of 10 square centimeters, and so at time $t = 0$, Dish 1 is 10% covered ($\frac{1}{10}$) and Dish 2 is 20% covered ($\frac{2}{10}$). Thus the statement in B is true.
Below is the complete passage associated with the first question in this document, providing the full context in which the skill is measured.

This passage is adapted from Richard Florida, The Great Reset. ©2010 by Richard Florida.

In today’s idea-driven economy, the cost of time is what really matters. With the constant pressure to innovate, it makes little sense to waste countless collective hours commuting. So, the most efficient and productive regions are those in which people are thinking and working—not sitting in traffic.

The auto-dependent transportation system has reached its limit in most major cities and megaregions. Commuting by car is among the least efficient of all our activities—not to mention among the least enjoyable, according to detailed research by the Nobel Prize–winning economist Daniel Kahneman and his colleagues. Though one might think that the economic crisis beginning in 2007 would have reduced traffic (high unemployment means fewer workers traveling to and from work), the opposite has been true. Average commutes have lengthened, and congestion has gotten worse, if anything. The average commute rose in 2008 to 25.5 minutes, “erasing years of decreases to stand at the level of 2000, as people had to leave home earlier in the morning to pick up friends for their ride to work or to catch a bus or subway train,” according to the U.S. Census Bureau, which collects the figures. And those are average figures. Commutes are far longer in the big West Coast cities of Los Angeles and San Francisco and the East Coast cities of New York, Philadelphia, Baltimore, and Washington, D.C. In many of these cities, gridlock has become the norm, not just at rush hour but all day, every day.

The costs are astounding. In Los Angeles, congestion eats up more than 485 million working hours a year; that’s seventy hours, or nearly two weeks, of full-time work per commuter. In D.C., the time cost of congestion is sixty-two hours per worker per year. In New York it’s forty-four hours. Average it out, and the time cost across America’s thirteen biggest city-regions is fifty-one hours per worker per year. Across the country, commuting wastes 4.2 billion hours of work time annually—nearly a full workweek for every commuter. The overall cost to the U.S. economy is nearly $90 billion when lost productivity and wasted fuel are taken into account. At the Martin Prosperity Institute, we calculate that every minute shaved off America’s commuting time is worth $19.5 billion in value added to the economy. The numbers add up fast: five minutes is worth $97.7 billion; ten minutes, $195 billion; fifteen minutes, $292 billion.

It’s ironic that so many people still believe the main remedy for traffic congestion is to build more roads and highways, which of course only makes the problem worse. New roads generate higher levels of “induced traffic,” that is, new roads just invite drivers to drive more and lure people who take mass transit back to their cars. Eventually, we end up with more clogged roads rather than a long-term improvement in traffic flow.

The coming decades will likely see more intense clustering of jobs, innovation, and productivity in a smaller number of bigger cities and city-regions. Some regions could end up bloated beyond the capacity of their infrastructure, while others struggle, their promise stymied by inadequate human or other resources.

Adapted from Adam Werbach, “The American Commuter Spends 38 Hours a Year Stuck in Traffic.” ©2013 by The Atlantic.