<table>
<thead>
<tr>
<th>Unit</th>
<th>Topic</th>
<th>Pages</th>
</tr>
</thead>
</table>
| 3.01 | **Should school be a place for debate?**  
controversy | justify | perspective | bias | debate | 1–6 |
| 3.02 | **Should our use of paper or plastic be regulated?**  
strategy | research | cite | phase | data | 7–12 |
| 3.03 | **Is an extended school day the right choice for U.S. students?**  
extend | radical | crucial | attain | initiative | 13–18 |
| 3.04 | **Should adoption information be kept from children?**  
adopt | consent | tension | ensure | duration | 19–24 |
| 3.05 | **Should secret wiretapping be legal?**  
wiretapping | source | suspicious | patriot | eliminate | 25–30 |
| 3.06 | **When should the U.S. send troops to other countries?**  
diminish | regime | displace | stable | estimate | 31–36 |
| 3.07 | **Should the government impose a mandatory year of service?**  
voluntary | literacy | impose | allocate | rigid | 37–42 |
| 3.08 | **Should the government regulate genetic testing?**  
genetic | conception | range | circumstance | regulate | 43–48 |
| 3.09 | **Should the U.S. have tighter regulations on genetically modified food?**  
modify | DNA | undernourished | consequence | extract | 49–54 |
| 3.10 | **Should people continue to eat meat?**  
symbolic | export | domestic | efficient | integrate | 55–60 |
| 3.11 | **Do the benefits of renting a pet outweigh the potential harm it can cause the animals?**  
whereas | capable | ongoing | compatible | notion | 61–66 |
| 3.12 | **Should single-gender education be an option for everyone?**  
gender | conduct | adapt | comprise | paradigm | 67–72 |
The original Word Generation program (WordGen Weekly) is a supplementary curricular resource that offers a series of discussable dilemmas designed to promote students’ academic language and argumentation skills. WordGen Weekly creates the opportunity for students to become familiar with current issues and persistent dilemmas, while acquiring skills prioritized in the 21st century learning standards. The program is unique in its cross-disciplinary design, giving teachers of ELA, science, social studies, and math the chance to collaborate on the shared goal of helping students use academic language to articulate their thinking. Series (or individual units) can be used school-wide in grades 6–8.

So much more than a vocabulary program!

WordGen Weekly:
▶ Builds the reasoning and argumentation skills that are necessary for learning in all content areas.
▶ Builds reading comprehension and content-area literacy by providing students with motivating text, opportunities for discussion and debate, and weekly writing.
▶ Sets students on a path to college and career readiness by providing multiple perspectives on complex problems, and requiring that students sift through evidence that supports or contradicts particular perspectives.

Support for Word Generation provided by the Carnegie Corporation of New York, the William and Flora Hewlett Foundation, the Noyce Foundation, the Spencer Foundation, the Leon Lowenstein Foundation, and the Institute of Education Sciences, U.S. Department of Education through grant numbers R305A090555 and R305F100026.
In room 207, Mr. Smith is teaching his students about the civil rights movement. He asks the students questions with a partner.

Resources on establishing norms are available on the WordGen website.

*wordgen.serpmedia.org*

Discussion questions accompany each launch passage and check students’ understanding of the passage while tapping into their beliefs about the week’s topic.

**Instructional Considerations:**

✓ Model fluent reading of the passage by having the teacher or a fluent reader read the passage while the class follows along.

✓ Model reading and thinking strategies in context. Encourage the use of highlighters or sticky notes to annotate the text.

**Launch This Week’s Issue**
(Usually led by ELA teacher)

1. Introduce the topic of the week, providing students the opportunity to discuss their perspectives with a partner.

2. Read or have volunteers read the passage aloud, stopping to discuss the passage. Examples of questions for classroom discussion are noted on the launch passage of each unit.

**Teaching tip:** Many WordGen Weekly topics are highly controversial. It is important to establish discussion norms to hold students accountable for respectful, equitable, and productive discussions.

**Resources on establishing norms are available on the WordGen website.**

3. Discuss the various positions presented in the passage. Encourage students to begin developing a claim, an arguable statement about the topic.

**Teaching tip:** Explain to students that the lessons present information that can be used to argue both for and against particular claims. Also, each day’s lesson adds a bit more information, so it is important to participate in all the activities.

**Questions for Classroom Discussion:**

- From the description of debates in this passage, what do you think classroom debates look and sound like?
- What arguments does the passage present that debating in school is a bad idea? A good idea?
- Does this passage justify both sides of the controversy? Or do you believe this is a biased account of the controversy of debating in schools?
- Why do you think the passage began with two short stories about two different classrooms?
- Have you ever participated in a debate? What do you think makes a good debate? What can make debates difficult?
**Instructional Considerations:**

✓ Make word learning fun! Recognize students who use the focus words during and outside of class time.

✓ Encourage students to acknowledge the focus words throughout their daily discussions.

✓ Creatively display the focus words on a word wall. Display the current words on an active word wall and retire the previously used words to a designated location in the room where students can reference previously taught words throughout the year.

✓ Encourage experimentation with the words and use mistakes as teachable moments.
3. Facilitate a class discussion using the discussion question at the end of the lesson.

**Instructional Considerations:**
- If the math problems are out of reach for your students, discuss and solve Option 1 as a class or in groups. Problems can also be used to demonstrate the proper use of problem solving strategies.
- The lesson is designed to take 15–20 minutes; however, class discussions can prolong the lessons. Some teachers use timers to streamline instructional procedures and routines in WordGen Weekly classrooms.
- The discussion questions at the end of the lesson provide a format for connecting the math activity to the topic, explicitly using the focus words, and tapping into students' beliefs.
- Encourage students to use the focus words in the discussion and use mistakes as teachable moments.
**Think Scientifically**  
(Usually led by science teacher)

1. **Review the focus words.**

   **Teaching tip:** Ask students to think about and explain how the focus words can be used in a science classroom.

2. **Read and discuss the Think Scientifically passage, allowing students to interpret the data and draw conclusions.**

   **Teaching tip:** Students may work in pairs or groups to encourage discussion about the lesson.

3. **Facilitate a class discussion using the discussion question at the end of the lesson.**

**Ms. Lexie Kahn and Mr. Paul E. Seemy are two science teachers who work together. Being science teachers, they encourage their students to be curious and ask a lot of questions. Some of their students like to ask questions about national controversies. Others ask questions about experiences that have made them wonder about something. Ms. Kahn and Mr. Seemy themselves often have different perspectives, and they like to debate each other. They try not to let personal biases get in the way of exchanging ideas, so they use evidence to justify their opinions. Both teachers believe that debating develops intelligence just as physical exercise develops muscles. They think that you become smarter by working through challenging problems. Some of their students agree with this, but others do not. The doubtful students seem to believe that people have a fixed amount of intelligence that stays the same no matter what.**

Mr. Seemy's student Joon found this topic very interesting, so he decided to survey the students at his school.

Joon wants to find out: What mindset have middle school students developed about whether or not intelligence grows?

**Procedure:**
1. Distribute surveys to all students at school.
2. Ask students to place completed surveys in a box in the library labeled “completed surveys.”
3. Tally the survey results.

**Data:**

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What do the data from Joon's survey tell you? How would you answer Joon’s survey? Why?

Answers will vary.

Sixth graders are more likely to have a fixed mindset (62%), whereas seventh graders (47% fixed) and eighth graders (51% fixed) are split fairly evenly.

Do you think that Joon’s survey provides enough information to determine a student’s mindset? Why or why not?

Answers will vary.

Stanford University professor Dr. Carol Dweck reports from her research that people with a “growth mindset” live less stressful and more successful lives. Discuss this idea with your class.

**Answers will vary.**

**Opportunities for discussion and writing encourage scientific thinking while exploring the weekly topic.**

**Instructional Considerations:**

✓ The lesson is designed to take 15–20 minutes; however, class discussions can prolong the lessons. Some teachers use timers to streamline instructional procedures and routines in WordGen Weekly classrooms.

✓ Encourage students to make connections between the weekly topic and the data in the science experiment.

✓ Encourage students to use the focus words in the discussion and use mistakes as teachable moments.
Debates in WordGen Weekly are planned classroom activities in which particular claims are discussed, and students plan together to present and defend their claim. The purpose is not winning or losing the debate; the purpose is to develop students' abilities to think through a set of claims or arguments in order to deepen their understanding and enhance their ability to learn.

Many teachers create debate organizers or provide chart paper for students to write their arguments. This can serve as a pre-writing activity for the “take a stand” essay the next day.

Discussion norms should be established early on to encourage student engagement and to make the class environment a safe place to discuss freely and to debate ideas. Some teachers have students participate in setting norms. At a minimum, discussion norms should establish expectations for respectful disagreement and establish practices that allow all students to participate. Post norms in the classroom as a reminder.

During the debate, encourage students to share, clarify, and expand their thoughts using academically productive talk, and to listen and respond to the ideas of others.
Instructional Considerations:

✓ The writing assignments can change throughout the year based on the needs of your students. Teachers have used WordGen Weekly writing assignments as quick-writes, free-writes, information pieces, letters, and argumentative writing pieces. The main goal of the writing assignment is for students to make a claim and justify that claim with evidence from the text using academic language.

A rubric for argumentative writing can be found on the WordGen website.
More resources available online! wordgen.serpmmedia.org

› Download Center for Students
   Students can access individual units for free (no registration necessary).

› Download Center for Teachers (simple registration required)
   Teachers can access student materials and teacher editions for free. Both color and grayscale PDFs available.

› Teacher Resources
   □ Focus word vocabulary cards
   □ Information about academic language and vocabulary instruction
   □ Vocabulary assessments
   □ Activities to develop discussion and debate in the classroom
   □ Rubrics for discussion, debate, and argumentative writing
   □ Professional learning opportunities
   □ Interviews with the developers of the program
   □ Videos of Word Generation classrooms
   □ Topic lists
   □ Focus word lists

Much more!
In room 207, Mr. Smith is teaching his students about the civil rights movement. He asks the students questions such as, “Who were the freedom riders?” or “What year was the Montgomery bus boycott?” It is easy for students to find the answers in their textbooks. Mr. Smith tells the students whether they are right or wrong. On Friday, they will have a quiz about these facts.

In room 209, Ms. Miles is also teaching about the civil rights movement. She asks her students, “Is peaceful protest the best way to make things change for the better?” The students have a debate. Some think Martin Luther King Jr. was right to tell protesters to avoid violence. Others believe that sometimes violence is necessary when people will not listen to reason. They ask Ms. Miles for the right answer, but she says there is no right answer.

Some people believe that kids in school should only learn about facts. These people think students should get information from their textbooks or teachers and memorize it. That way, some argue, all students will learn the same things and they will all be able to do well on tests.

Other people think debates can be hard because there are no right answers. Sometimes everybody learns different things from a debate. This makes it hard for teachers to give a test to find out what students have learned. Debates also take a lot of time. Teachers who have debates may not be able to cover as many topics in class. Then, students may not learn all of the facts in the textbook.

However, debates may help students understand why the facts they learn in school are important. We live in a democracy, where everyone needs to know how to form and justify opinions in order to work together to make decisions. Young people will not always have a teacher or a textbook to give the right answers, so students need to learn to think for themselves. Each person has a unique perspective defined by his or her knowledge, experience, and attitudes. Even teachers and textbook authors have their own perspectives. Through a classroom debate, students hear their classmates’ opinions. Students justify their opinions with evidence from texts and from their own experiences. Sometimes, hearing from classmates who disagree with them makes students learn about their own biases and understand a problem in a new way. Hearing classmates’ perspectives during a debate can help students understand the complexity of many important issues. Whether it is better to have teachers teach from the text or to have students engage in debates is a continuing controversy in education.

What do you think? Should students learn only facts in school? Or should debates be an important part of their education?

Questions for Classroom Discussion:

- From the description of debates in this passage, what do you think classroom debates look and sound like?
- What arguments does the passage present that debating in school is a bad idea? A good idea?
- Does this passage justify both sides of the controversy? Or do you believe this is a biased account of the controversy of debating in schools?
- Why do you think the passage began with two short stories about two different classrooms?
- Have you ever participated in a debate? What do you think makes a good debate? What can make debates difficult?
USE THE FOCUS WORDS  *and alternate parts of speech

debate (noun) a discussion of a problem where different sides are presented

Sample Sentence: In Ms. Miles’ classroom, students had a debate about whether junk food should be sold in schools.

Turn and Talk: Can you think of a debate that caused you to change your mind? What was it about?

*debate (verb) to argue about an issue; to consider different options in order to make a decision

Sample Sentence: Cecelia debated whether to drive or take the bus to the concert.

Turn and Talk: Have you ever debated cutting your hair short or growing it long? What was your decision?

controversy (noun) major disagreement or dispute among many people

Sample Sentence: The biggest controversy in the sixth grade last year was whether or not students would be required to wear school uniforms.

Turn and Talk: Why is there so much controversy surrounding school uniforms?

perspective (noun) point of view, way of looking at things

Sample Sentence: All of my friends have a unique perspective about which teacher is the best.

Turn and Talk: What’s your perspective on whether or not people should be able to keep wild animals as pets?

justify (verb) to defend, explain, or show to be right

Sample Sentence: Carl justified his decision to punch Roger by explaining that Roger punched him first.

Turn and Talk: Do you think people are justified in using violence after others use violence against them first?

bias (noun) the belief that some people or ideas are better than others, prejudice

Sample Sentence: Jonas’ bias against school uniforms comes from his experience in a very strict private school.

Turn and Talk: Do you expect history books to have bias? Why or why not?

*bias (verb) to strongly influence someone for or against something

Sample Sentence: Raphael didn’t want to bias his friends against the band, so he decided not to mention that they don’t write any of their songs.

Turn and Talk: Does hearing about musicians’ bad behavior bias you against their music? Explain.
DO THE MATH

Option 1: In the Urban Debate League, students from city schools debate controversial issues. A skillful debater can justify more than one perspective. For example, a debater might start by arguing that her school should have a dress code. Then, she can change positions and argue that her school should not have a dress code. The debater puts personal biases aside.

A total of 56 students participated in the Urban Debate League championships. They were:

- 10 ninth graders
- 14 tenth graders
- 20 eleventh graders
- 12 twelfth graders

What percentage of the students were in tenth grade?

A. 14%
B. 25%
C. 55%
D. 75%

Option 2: Urban Debaters debate controversial issues in teams of two. In each debate, a team either argues from an affirmative or negative perspective. Teams must be affirmative in some debates, and negative in others. Even if a debater is biased toward one opinion, she must skillfully argue both sides. Judges choose the winning team based on how well team members justify each perspective.

In a debate round, each of the 4 debaters talks 3 times: an 8-minute speech, a 5-minute response, and a 6-minute question period. Gabriel is organizing a school debate. He wants to know how many whole debate rounds can happen in 4 hours if everybody uses all their time. Write an inequality that would help him figure this out. You can let \( r \) = the number of debate rounds.

\[ r(4(8 \text{ minutes} + 5 \text{ minutes} + 6 \text{ minutes})) \leq 240 \text{ minutes}, \text{ or } 76r \leq 240 \]

Discussion Question: High school debaters tend to get good grades and go to college. Some people say this justifies using debate in the classroom. Others have a different, controversial perspective. They say that kids join debate teams because they are already smart and motivated. They say debate won’t help regular kids. What do you think?
Ms. Lexie Kahn and Mr. Paul E. Seemy are two science teachers who work together. Being science teachers, they encourage their students to be curious and ask a lot of questions. Some of their students like to ask questions about national controversies. Others ask questions about experiences that have made them wonder about something.

Ms. Kahn and Mr. Seemy themselves often have different perspectives, and they like to debate each other. They try not to let personal biases get in the way of exchanging ideas, so they use evidence to justify their opinions.

Both teachers believe that debating develops intelligence just as physical exercise develops muscles. They think that you become smarter by working through challenging problems. Some of their students agree with this, but others do not. The doubtful students seem to believe that people have a fixed amount of intelligence that stays the same no matter what.

Mr. Seemy’s student Joon found this topic very interesting, so he decided to survey the students at his school.

Joon wants to find out:
What mindset have middle school students developed about whether or not intelligence grows?

**Procedure:**
1. Distribute surveys to all students at school.
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What do the data from Joon’s survey tell you?

- Sixth graders are more likely to have a fixed mindset (62%), whereas seventh graders (47% fixed) and eighth graders (51% fixed) are split fairly evenly.

Do you think that Joon’s survey provides enough information to determine a student’s mindset? Why or why not?

Answers will vary.

How would you answer Joon’s survey? Why?

Answers will vary.

Stanford University professor Dr. Carol Dweck reports from her research that people with a “growth mindset” live less stressful and more successful lives. Discuss this idea with your class.
SHOULD SCHOOL BE A PLACE FOR DEBATE?

DEBATE THE ISSUE
Pick one of these positions (or create your own).

A  Debates are necessary for learning.

OR

B  Debates do not belong in school.

OR

CREATE YOUR OWN

Jot down a few notes on how to support your position during a discussion or debate.

Be a strong participant by using phrases like these:

"Can you show me evidence in the text that..."

"I believe that..."

"You make a good point, but have you considered..."

"I agree with you, but..."
TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

controversy | justify | perspective | bias | debate
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“Paper or plastic?” asks a grocery clerk in Des Moines. You no longer hear that question in San Francisco. In 2007, the San Francisco Board of Supervisors banned grocery stores from using plastic bags to bag groceries. Groceries are now put in paper bags or bags that customers bring from home. Since then, numerous other cities around the world have phased out the distribution of plastic bags by banning their use. Some say that the city government has overstepped its bounds. They feel the city took action that it should not have taken.

Supporters say banning plastic bags is a good strategy. They cite research that says plastic bags are bad for the environment. Our country uses 30–100 billion plastic bags per year, and the bags are piling up in landfills. Most plastic is not biodegradable, and plastic bags will stay in the landfills for hundreds of years. Plastic bags also litter the streets. Some drift out to sea and kill turtles and other sea creatures. Plastic bags are made from petroleum, or oil, a costly resource. People who support the ban say that our earth is being polluted and its resources are being wasted. These people argue that we need government intervention to protect the earth and its resources.

Opponents state that city governments have no authority to ban plastic bags. They argue that storeowners are doing their part to help the environment. Some storeowners are phasing in recycling strategies, such as placing recycling bins for the plastic bags in their stores. People against the ban also point out that plastic bags do not pose any immediate danger. They claim that there are no data that prove that paper is better. After all, we chop down trees to make paper bags. In addition, paper bags weigh more than plastic bags, so it costs more to transport them from the factory to the store. They are not as strong as plastic, so we use more of them. Finally, people against the ban argue that private industry pays for the bags, not the taxpayers, so private industry should decide. What is your opinion? Should city governments ban plastic bags or should the grocery stores decide?

Questions for Classroom Discussion:
- What law did the San Francisco Board of Supervisors pass?
- Plastic is made from petroleum. How does this fact support an argument against using plastic bags?
- Why do some people think it’s important to use biodegradable items?
- What are some reasons people support the bag law?
- What are some reasons people oppose the bag law?
USE THE FOCUS WORDS *and alternate parts of speech

cite (verb) to refer to as an example or as proof

Sample Sentence: My principal cited alarming statistics about what happens to people who are bullied and who do the bullying.

* Turn and Talk: Why is it important to cite evidence when you are making an important argument?

research (noun) systematically collected information; systematic investigation into a subject

Sample Sentence: Greg examines online research before buying new items like skateboards and video games.

* Turn and Talk: When conducting research online, how can you tell if the information is true or not?

research (verb) to collect and analyze information about a subject

Sample Sentence: In researching the North and South Pole, Gayle learned that the polarities have reversed several times in the last million years.

* Turn and Talk: Think of some animals that you might see in an African safari. Of these animals, which would you most like to research?

data (noun) facts, information, statistics

Sample Sentence: Before changing the cafeteria lunch menu, the school collected data about the kinds of food that students like.

* Turn and Talk: Imagine you had to plan a class party. What kind of data would you collect to make sure that everyone had a good time?

phase (verb) to do gradually in steps according to a plan

Sample Sentence: Many countries have started phasing out the use of traditional light bulbs and are replacing them with new, energy-efficient bulbs.

* Turn and Talk: How might a person phase in a good exercise routine?

*phase (noun) a step in a process; a short period of time

Sample Sentence: The first phase of Juan Camilo’s exercise plan included doing twenty sit-ups and push-ups each morning. In the second phase, he would increase the number to thirty.

* Turn and Talk: Eden’s mother dismissed her poor behavior by saying, “She’s going through a phase.” What do you think she meant by that?

strategy (noun) a systematic plan or method

Sample Sentence: Changing your passwords frequently is a good strategy to stay safe online.

* Turn and Talk: With your partner, think of a strategy that you could use to convince your teacher to have a class party.
DO THE MATH

Option 1: The Washington Post wrote an article about cities that are phasing out plastic shopping bags and switching to paper bags. The people in these cities think that this strategy will help the environment. However, the article cites data that might make them change their minds. Researchers discovered that 2,511 BTUs* of energy are used to make a paper bag and just 594 to make a plastic bag. Therefore, the article recommends that a better strategy to save energy is for shoppers to bring reusable bags from home.

How much more energy is spent making a paper bag than making a plastic bag?

   A. 2,000 BTUs
   B. 817 BTUs
   C. 1,918 BTUs
   D. 1,917 BTUs

Option 2: Taylor is making her weekly trip to the grocery store. Despite the research on the benefits of reusable bags, she still uses paper and plastic. She bags her own groceries in two phases using a special strategy: meats and cheeses in plastic bags, fruits and vegetables in paper.

Write an equation that shows the relationship between the number of paper and plastic bags Taylor uses and the total number of BTUs it took to make those bags. Use the data cited in Option 1. Let \( p \) = the number of paper bags, \( c \) = the number of plastic bags, and \( b \) = the total number of BTUs.

\[ b = 594c + 2,511p \]

Discussion Question: Researchers have pointed out problems with using paper bags as well as plastic bags. The data cited above illustrate one of those problems: Making bags takes energy. To protect the environment, some cities passed laws to phase out plastic bags. Was this the best strategy? Can you think of a better one?

* BTU (British Thermal Unit) is a standard measurement for heat energy.
Mr. Seemy and his class were talking about the plastic and paper bags that most people get from the grocery store each time they go. Chantel cited her reason for using paper bags instead of plastic. “Most plastic bags take at least a hundred years to break down and be absorbed by the earth.”

“Interesting point, Chantel,” responded Mr. Seemy, “but I just read about a new kind of plastic made from corn that is supposed to break down more quickly. It’s biodegradable.”

“Switching to corn plastic could be a strategy to help with the problem of too much trash in landfills,” said Chantel. “I think we should phase out regular plastic bags.”

“Not so fast, Chantel,” said Mr. Seemy. “You shouldn’t make a claim just because your teacher mentioned an article. Let’s do some research to find out more. Maybe someone in our class can help by doing an experiment and collecting some data.”

Chantel volunteered with her friend Angelo to create an experiment that buried bags in dirt.

**Question:** Do paper bags, regular plastic bags, and biodegradable plastic bags break down at different rates?

**Hypothesis:** Paper bags and biodegradable plastic bags will break down faster than regular plastic bags.

**Materials:**
- Samples of each bag material
- Work gloves
- Scale
- Shovel
- Labels to stick in dirt
- Small plot of land

**Procedure:**
1. Cut out a portion of a paper bag with a mass of 2,000 milligrams (2 grams). Do the same with regular plastic and with biodegradable plastic.
2. Bury them close to each other and label each spot.
3. Every two weeks, dig up each sample and measure the mass. Then rebury each sample.

<table>
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<tr>
<th></th>
<th>Paper</th>
<th>Regular Plastic</th>
<th>Biodegradable Plastic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Starting mass</strong></td>
<td>2,000mg</td>
<td>2,000mg</td>
<td>2,000mg</td>
</tr>
<tr>
<td><strong>After 2 weeks</strong></td>
<td>1,568mg (moist)</td>
<td>2,500mg (couldn’t get all the dirt off)</td>
<td>1,792mg</td>
</tr>
<tr>
<td><strong>After 4 weeks</strong></td>
<td>600mg (difficult to find all pieces)</td>
<td>1,968mg</td>
<td>928mg</td>
</tr>
<tr>
<td><strong>After 6 weeks</strong></td>
<td>can’t get good measurement - traces of paper only</td>
<td>1,984mg</td>
<td>328mg</td>
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Do Chantel and Angelo’s data tell you anything that relates to their hypothesis?

The data suggest that their hypothesis is correct.

Even if paper bags biodegrade quickly, it doesn’t necessarily mean that they are the best choice for the environment. Why do you think these issues are so complex? Do you think scientists can help?

Samples should have equal mass to be easier to compare. Mass measures how much matter is in an item, while size measures dimensions (length, width, etc.). Densities would vary so they would not be the same size.
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A

☐ City governments should be able to ban plastic bags.

OR

B

☐ City governments should not be able to ban plastic bags.

OR

CREATE YOUR OWN

☐

Jot down a few notes on how to support your position during a discussion or debate.

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Be a strong participant by using phrases like these:

“Can you show me evidence in the text that...”

“I believe that...”

“You make a good point, but have you considered...”

“I agree with you, but...”
SHOULD OUR USE OF PAPER OR PLASTIC BE REGULATED?

TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

cite | research | data | phase | strategy

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Marisa Green knew sixth grade was not going to be easy. On the first day of class, Principal Hedges told the students of a radical change to their schedule. The school day was going to be extended until 5:00 p.m. Students would even have to attend classes on some Saturdays.

Principal Hedges explained that other countries such as Germany, Singapore, and Japan have up to 280 days in a school year. Most American students attend school only 180 days per year. Test scores suggest that 180 days may not be enough. In 2012, fifteen-year-olds from the U.S. scored lower on an international math test than students in 33 other developed countries. Principal Hedges said U.S. schools need to improve if Americans want to compete in the global economy.

The late Senator Edward “Ted” Kennedy also supported extending the school day. He proposed an initiative that was tested in Massachusetts. Schools that were part of this initiative added about two extra hours to every school day. In some schools, students spent the extra time on Mondays through Thursdays focusing on academics. They used the extra time on Fridays for enrichment activities, such as art or music. People who support an extended school day believe it is crucial for students who need extra time to attain grade-level reading and math skills.

Some people think extending the school day is insufficient to improve student performance. They argue that just adding hours will not make a difference in student achievement in reading, math, and science. They point out that teachers will need more time to prepare lessons for the extended day. Teachers may need more materials for the lessons as well. Also, extended days do not guarantee that the teachers who are hired will be well-qualified for the subjects they must teach. For example, some schools don’t have enough math teachers. In those schools, English teachers may have to teach material they have not been trained to teach. Many people argue that we need to focus on improving school quality, rather than just extending the day.

What is your opinion? Should schools extend the school day to improve students’ attainment of crucial academic skills?

Questions for Classroom Discussion:
• Why do some people want to extend the school day?
• Why do some people think extending the school day is not enough?
• Do you think extending the school day would be a radical change for the educational system? Explain your reasons.
• What are some of the components that are crucial to the success of an extended school day?
• What might an extended school day be like at your school?
USE THE FOCUS WORDS

extend (verb) to stretch out; to make longer

Sample Sentence: You can extend your goldfish’s life by keeping its water clean.

Turn and Talk: What are some steps you could take to extend a plant’s life?

radical (adjective) extreme

Sample Sentence: The 1990s rap group Kris Kross had a radical style: They wore their clothes backwards!

Turn and Talk: How would you feel if your teacher had a radical hairstyle, like an unusual color or a Mohawk?

crucial (adjective) very important, essential

Sample Sentence: Reading and writing are crucial skills for doing well in school.

Turn and Talk: Is owning a cell phone crucial to having a good social life?

attain (verb) to achieve or reach a goal

Sample Sentence: It took a year of hard work as class president for Vicky to attain the admiration and respect of her classmates.

Turn and Talk: What are some goals that you would like to attain by the time you graduate from high school?

initiative (noun) a plan to solve a problem

Sample Sentence: The late Senator Ted Kennedy proposed an initiative that included extending the school day.

Turn and Talk: Propose an initiative to improve the health of middle school students.
DO THE MATH

Option 1: Senator Ted Kennedy thought it was crucial for Massachusetts schools to improve. He thought it would take radical change to attain that goal. He started an initiative to extend the school day.

Most American students now go to school for 180 six-hour days. How many total hours is this?

A. 1,080
B. 680
C. 6,080
D. 186

Option 2: Senator Kennedy’s initiative proposed extending the school day by 30%—a radical increase. If each 6-hour school day were extended according to Senator Kennedy’s plan, each day would be how many hours?

A 6-hour school day extended by 30% would be 7.8 hours.

There are alternative ways to attain the goal of extending school time by 30%. For example, schools could add days to the school year instead of changing the length of each individual school day. If the 180-day school year were extended according to this plan, each year would be how many days?

A 180-day school year extended by 30% would be 234 days.

Discussion Question: Which would be a more radical change: more hours each school day, or more days each school year? Which kind of initiative would win more support from parents? Which one would do a better job of helping students attain academic excellence? Some students think it’s crucial to have a long summer vacation. Do you agree?
Principal Tim Wernentin at Rock Island High School in Illinois noticed that middle school students coming to his high school were not prepared to succeed in ninth grade. Many of his freshmen were not able to attain passing grades in crucial areas such as math and language arts. He considered extending the school day for all ninth graders, but that idea seemed too radical. Instead, he created an initiative for his incoming students called “Rock Solid.”

For the Rock Solid program, Principal Wernentin decided to offer students moving up from middle school an option to get started at Rock Island High before all the tenth, eleventh, and twelfth graders arrived. Ninth graders got the whole school to themselves during the last few weeks of summer. So instead of extending the school day, he extended a special welcome! During the Rock Solid session, ninth graders got tours of the school, met with the teachers they would have, and received free tutoring sessions for any academic areas they struggled with.

In order to plan a program like Rock Solid effectively, you must identify the problems and think about solutions in a detailed way.

**Step One:** Think silently for a minute about what was difficult for you when you moved up to middle school from elementary school.

Write it down here: _______________________________________________________________________

**Step Two:** Get into groups of four. Share what you wrote. Ask other students in your group if you need to clarify anything for them.

**Step Three:** As a group, select one problem that you think might be solved by a program like Rock Solid.

Write it down here: _______________________________________________________________________

Discuss the following questions as a group, and then write down your responses individually.

- **What would be your approach for addressing the problem?**
  - **Answers will vary.**
  - _______________________________________________________________________

- **Do you think that elementary school students entering middle school would like your idea?**
  - **Answers will vary.**
  - _______________________________________________________________________

- **How would you be able to tell if your approach was effective?**
  - **Answers will vary.**
  - _______________________________________________________________________
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A  ☐ The school day in the United States should not be extended.

OR

B  ☐ The school day in the United States should be extended.

OR

CREATE YOUR OWN

☐ ___________________________________________________
☐ ___________________________________________________
☐ ___________________________________________________
☐ ___________________________________________________
☐ ___________________________________________________

Jot down a few notes on how to support your position during a discussion or debate.

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Be a strong participant by using phrases like these:

- Can you show me evidence in the text that...
- You make a good point, but have you considered...
- I believe that...
- I agree with you, but...
- I agree with you, but...
TAKING A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

extend | radical | crucial | attain | initiative

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Programme for International Student Assessment: [https://en.wikipedia.org/wiki/Programme_for_International_Student_Assessment#2012](https://en.wikipedia.org/wiki/Programme_for_International_Student_Assessment#2012)

Twelve-year-old Phelan was adopted as a baby. He loves his adoptive parents, but he has questions they cannot answer. Will he be tall or short when he grows up? Do health problems like diabetes, high cholesterol, or cancer run in his biological family? He wishes he could ask his birth parents, but he is not allowed to know who they are.

Phelan’s situation is called a “closed” adoption. This means that the child and the adoptive parents have no contact with the birth family. Phelan’s birth records will be kept secret for the duration of his life. Sometimes, in other closed adoptions, the child’s birth records will become available once he or she turns 18.

People prefer closed adoptions for a variety of reasons. Sometimes, birth parents believe it will be too painful to see the child they gave up. In some cases, birth parents may not tell friends or family that they have had a baby. A closed adoption ensures that the child cannot appear someday and reveal the secret.

Sometimes adoptive parents are the ones who want adoptions to be closed. They might fear tension between the two families. They worry that the birth parents will disagree with the adoptive parents’ parenting decisions. They also worry that the birth parents may be involved with drugs or alcohol, or may disappoint the child.

Other people, however, believe that adoptions should be “open.” This means that the child can have contact with the birth parents. In many cases, the child and the birth parents exchange letters and photographs. Some adoptive parents choose open adoptions because they want to be straightforward with their child about the adoption. They want to be able to answer all the child’s questions. Some birth parents consent to open adoptions because they still want to be involved in the child’s life.

Should all adopted children like Phelan have the right to know their birth parents? Or should some parents be allowed to keep adoption information private?
USE THE FOCUS WORDS *and alternate parts of speech

**adopt** *(verb)* to take as one’s own

- *Sample Sentence:* Twelve-year-old Phelan was *adopted* from Ireland. He loves his adoptive parents, but he has questions they cannot answer.

- *Turn and Talk:* Why is it important to *adopt* a new attitude when faced with a difficult situation?

**ensure** *(verb)* to make sure that something happens; to make certain of something

- *Sample Sentence:* A closed adoption *ensures* that the child cannot appear someday and reveal the biological parents’ secret.

- *Turn and Talk:* How can you *ensure* that you will get accepted to a college or university?

**tension** *(noun)* a state of stress or unfriendliness between individuals or groups; a feeling of stress or strain

- *Sample Sentence:* Jamila’s adoptive parents worried about *tension* between the families after Jamila decided to contact her biological parents.

- *Turn and Talk:* What causes *tension* among groups of students at your school?

**consent** *(verb)* to agree to

- *Sample Sentence:* Some birth parents *consent* to open adoptions because they still want to be involved in the child’s life.

- *Turn and Talk:* What is an example of something to which you recently *consented*?

*consent** *(noun)* permission

- *Sample Sentence:* School field trips require parental *consent* before the child is allowed to go.

- *Turn and Talk:* If someone asked to use your picture in an advertisement, would you give your *consent*? Why or why not?

**duration** *(noun)* the length of time something exists or lasts

- *Sample Sentence:* In a closed adoption, birth records are kept secret for the *duration* of the child’s life.

- *Turn and Talk:* What can you do to get good grades for the *duration* of your middle school years?
DO THE MATH

**Option 1:** In the past, the secrecy surrounding closed adoptions was a source of great tension. Today, laws protect a child’s right to information. In some states, for example, adopted children must be given their birth family’s medical records. They do not need their birth parents’ consent. This helps ensure that adopted children have information about inherited conditions that can help them stay healthy for the duration of their lives.

If a parent has a disorder called Familial Hypercholesterolemia, or FH, there is a 50% chance that his or her child will also have FH. Angelina was adopted as a young child, and her birth mother has FH. What are the odds that Angelina will have FH?

A. 1/2  
B. 1/4  
C. 1/5  
D. 1/50

**Option 2:** Mr. and Mrs. Ruiz want to ensure that their family members have the best possible chances of staying healthy for the duration of their lives. Consequently, they think carefully about health risks. They adopted three siblings, and, at the time, did not consent to have them tested for Familial Hypercholesterolemia, or FH. Since then, they found out that their three children have one birth parent with FH. Now, tension is growing in the Ruiz house. Mr. Ruiz wants to have the children tested. Mrs. Ruiz wants to avoid an extra trip to the doctor.

If each child has a 50% chance of having FH, what are the odds that at least one of the three children has FH?

7/8 or .875. The probability that NONE of the children has FH is .5 x .5 x .5 = .125, so the probability that at least one of them has FH is 1 − .125 = .875. Since both outcomes are equally likely for each child, a tree diagram could also be used to find the answer.

**Discussion Question:** In most cases, no one can see your medical records without your consent. But some state laws ensure that adopted children have access to the medical records of the birth parents. The law resolved the conflict between the privacy rights of the parent and the information rights of the child, ruling in favor of the child. Why might people want their medical records to be private?
Mr. Seemy’s class is discussing closed and open adoptions. Imani thinks that adoption records should not be opened without the consent of the biological parents. “We should ensure privacy for biological parents who don’t want to be contacted,” she says.

Raul disagrees. “It is unfair to keep children who were adopted from knowing their biological parents for the duration of their lives. Plus, not knowing if they have risks for genetic diseases can create tension for adopted children.”

Mr. Seemy comments, “Excellent! Raul and Imani identified a conflict that exists between a right to privacy and a right to know the truth. But I wonder if we are making an assumption here. Do all children who were adopted want to find their biological parents? How could we go about researching this?”

Raul and Imani found out that, in England, over 70,000 adopted children have requested information about their biological parents after turning 18, when it became legal for them to do so. At first, Raul and Imani thought it had to be over half because it’s such a large number, but that’s not true. With a little more research and some careful calculations, they were able to make the graph above to share with the class.

**Question:** How common is it for adopted children to search for their biological parents?

**Data Source:** Records from adoption agencies in England (where adoption records are open).

**Procedure:**

1. From the records, figure out the total number of children who were adopted.
2. From the records, figure out the number of children who were adopted who have asked at least once to see information about their biological parents.
3. Calculate the percentage of children who were adopted who have asked about their biological parents.

Raul and Imani do not have a title for their graph yet. Can you help them? They want people to know the following when reading their graph:

1. The information is from England.
2. The data used is from 1975 to 2008.
3. The graph is about requests made by adopted children after they turned 18.
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A
- [ ] All adoptions should be open.

OR

B
- [ ] All adoptions should be closed.

OR

C
- [ ] Closed adoptions should be opened once the child turns 18.

OR

CREATE YOUR OWN
- [ ] __________________________________________
- [ ] __________________________________________
- [ ] __________________________________________
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- [ ] __________________________________________

Jot down a few notes on how to support your position during a discussion or debate.

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Be a strong participant by using phrases like these:

- “Can you show me evidence in the text that...”
- “I believe that...”
- “You make a good point, but have you considered...”
- “I agree with you, but...”
SHOULD ADOPTION INFORMATION BE KEPT FROM CHILDREN?

TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

adopt | ensure | tension | consent | duration

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Whenever Alina talks to her cousins in Mexico, she wonders if someone from the government is listening in. She heard on the news that the government was wiretapping international phone calls. After the September 11th attacks, the government passed the USA Patriot Act, which allowed the National Security Agency (NSA) to tap phone calls, email accounts, and text messages of suspicious individuals under certain conditions. The Act required the NSA to ask judges for permission to access communications between people in the U.S.

But those in charge of protecting American security thought the limitations on surveillance of suspicious people were too strict. In 2006, a court secretly approved collecting, storing, and analyzing phone records from all the major phone companies. In fact, Verizon had to turn over all information on all phone calls in its system every day. With the growth of the internet, the records collected soon included much more than information about who was calling whom. Facebook, YouTube, Google, Skype, and other companies handed over their data to the NSA. Anything could be tapped and stored if there was a reasonable suspicion that a “non-U.S. person” had “foreign intelligence information.” Government officials argued that all the information collected came from sources that might reveal terrorist plans. Only a few members of the government knew, though, how much data was being collected, and from how many people!

That situation changed in 2013, when a British newspaper reported that the NSA collected phone records from millions of customers every day. NSA contractor Edward Snowden was soon revealed as the source of this information. Snowden was opposed to the massive NSA surveillance, and felt it was his duty as a patriot to reveal its existence. That act led to widespread anger about the U.S. policy and a demand to eliminate government wiretapping.

Though many viewed Snowden as a traitor, his actions led to important changes. Many members of Congress and prominent judges have begun to take action against NSA surveillance programs. In addition, some major tech companies like Google have developed increased security and privacy measures. Meanwhile, Edward Snowden fled the U.S. to avoid arrest. He stated he was acting out of patriotism, but he has made himself an ex-patriot by accepting refuge in Russia. He may never be able to return to the U.S. without facing arrest.

What do you think? Was Snowden a patriot? Should wiretapping to help the government catch terrorists be legal? How much privacy are we willing to give up? Where do you stand? Remember, someone may be listening!

**Questions for Classroom Discussion:**
- What is wiretapping?
- Why do some people think secret wiretapping is a good idea?
- Why do some people oppose secret wiretapping?
- Do you think wiretapping is a good way to catch terrorists?
- Do you think Edward Snowden did the right thing by revealing the NSA’s surveillance efforts?
USE THE FOCUS WORDS *and alternate parts of speech

wiretapping (noun) the act of connecting to a telephone to listen in on conversations

→ **Sample Sentence:** Sometimes government officials use wiretapping to find out whether terrorists are planning attacks.

→ **Turn and Talk:** How can police use wiretapping to catch suspected criminals?

patriot (noun) a person who supports and defends his or her country

→ **Sample Sentence:** There is considerable controversy about whether whistleblowers like Edward Snowden are patriots or traitors.

→ **Turn and Talk:** What are some ways that you can be a patriot? Do you think people who expose crime inside government offices are patriots or troublemakers?

eliminate (verb) to get rid of, to remove

→ **Sample Sentence:** The virus smallpox was eliminated by vaccines.

→ **Turn and Talk:** If you were a scientist, what disease would you try to eliminate from the world?

suspicious (adjective) appearing dishonest or potentially dangerous

→ **Sample Sentence:** In 2001, the National Security Agency (NSA) began to pay attention to conversations between Americans and foreigners who the government thought were suspicious.

→ **Turn and Talk:** What words or phrases in a phone conversation, text, or email might seem suspicious to the police or the FBI?

source (noun) something or someone that supplies information; where something comes from; origin

→ **Sample Sentence:** The Protect America Act allowed officials to tap phone calls, email accounts, and text messages as sources of information.

→ **Turn and Talk:** What sources do detectives use to track down suspected criminals?

source (verb) to get from a specific person, place, or thing

→ **Sample Sentence:** Cocoa beans (used to make chocolate) are often sourced from African and South American countries.

→ **Turn and Talk:** Would you rather eat fruits and vegetables that are sourced from your state or a different state? Explain.

Wiretapping can also be used as a verb (“wiretap”)! The NSA has been wiretapping phones in the U.S. and abroad.
Do the Math

Option 1: After the September 11th attacks, the National Security Agency (NSA) began wiretapping American telephones and email messages in secret. Government officials decided it was important to keep watch over people who seemed suspicious. They said that secret wiretapping would help eliminate terrorist attacks. They suggested that true patriots would not object to giving up a bit of privacy in order to improve security. Despite this explanation, many Americans oppose secret wiretapping, saying that it is a violation of privacy.

According to a 2015 Washington Post-Pew Research center poll, 56% of Americans approve of the NSA secretly wiretapping millions of Americans in order to investigate terrorism. Which fraction is closest to 56%?

A. 1/4
B. 1/5
C. 1/2
D. 1/3

Option 2: In March of 2010 a judge ruled that wiretapping without a warrant was illegal. Before the trial, the U.S. Justice Department had requested that the case be thrown out of court. Despite this request, the judge heard the case and made his ruling on this section of the Patriot Act. He said that allowing the government to spy on suspicious people without warrants would eliminate an important limit on executive power. The judge wrote a 45-page opinion on the case.

Luka just wrote a 10-page paper on wiretapping. He used government documents as sources of information. His 10-page paper took him a total of 36 hours. If he worked at the same rate, how long would it take him to write a 45-page paper?

162 hours

Discussion Question: The judge mentioned in Option 2 above says the warrantless wiretapping program must be eliminated because it breaks a federal law made in 1978. In 1978, people suspected that spying on U.S. citizens would enable the government to become the source of too much power. Government officials must follow the rules, the judge said, despite the threat of terrorist attacks or other dangers. Do you agree with his decision? Or, in times of national trouble, should we allow the government to bend the rules?
THINK SCIENTIFICALLY

Students in Ms. Kahn’s class were reading an article about how many Americans are upset that the United States government could be reading their email or wiretapping their phones. However, there are other sources of threats to our privacy besides the government! Criminals sometimes try to steal money or learn personal information about people by guessing the passwords for their online accounts. Despite this danger, many unsuspicious internet users choose passwords that are very easy to guess. One study found that some of the most common passwords are “password,” “password1,” “123abc,” and “abc123”! Experts in online privacy have come up with ways to help eliminate the chance that a stranger could guess your password. The best passwords are longer than 12 characters, are not words you can find in the dictionary, and include some numbers and symbols.

“We should probably look at the passwords we use and make sure they are secure!” said Ryan after reading about this issue.

Eva wondered how many internet users had unsafe passwords. To find out, she did some research and found a report online that had data on 435,564 passwords cracked over the course of one year.

**Question:** How safe are the passwords chosen by internet users?

**Hypothesis:** Since safety is a concern, most people will create passwords with 10 or more characters.

**Procedure:**

1. Using the online report as a source, record the number of passwords with each given length.
2. Calculate the percentage of passwords with each length. Round to the nearest tenth of a percent.

<table>
<thead>
<tr>
<th>Password Length (Characters)</th>
<th>Number of Passwords</th>
<th>Percentage of Passwords</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 6</td>
<td>4,720</td>
<td>1.1%</td>
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<tr>
<td>7</td>
<td>17,853</td>
<td>4.1%</td>
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<tr>
<td>8</td>
<td>170,781</td>
<td>39.2%</td>
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<tr>
<td>9</td>
<td>97,686</td>
<td>22.4%</td>
</tr>
<tr>
<td>10</td>
<td>69,241</td>
<td>15.9%</td>
</tr>
<tr>
<td>11</td>
<td>37,113</td>
<td>8.5%</td>
</tr>
<tr>
<td>12</td>
<td>22,417</td>
<td>5.1%</td>
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<tr>
<td>13</td>
<td>8,091</td>
<td>1.9%</td>
</tr>
<tr>
<td>14</td>
<td>5,141</td>
<td>1.2%</td>
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<tr>
<td>15 to 26</td>
<td>2,521</td>
<td>0.6%</td>
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</tbody>
</table>

**Data Source:** 2015 Trustwave Global Security Report

Is Eva’s hypothesis supported by the data she found? How do you know?

Eva’s hypothesis is not supported by the data. 66.8% of the passwords contained fewer than 10 characters.

Which password length is the most common? Why do you think this is?

The most common password length is 8 characters. Answers will vary. It could be because the minimum character requirement is often 8 characters, or because it is hard to remember more than 8 characters.

The length of a password impacts how secure it is. For example, Trustwave reports that eight-character passwords can be easily cracked in one day, whereas 10-character passwords could take 19.5 months to decode. Do you think that the mixture of character types used (letters, symbols, and numbers) will also affect the time required to crack a password? If so, which do you think is more important for password security: length or character type?
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A

☑️ Secret **wiretapping** is necessary to protect our national security.

OR

☑️ Secret **wiretapping** is an unacceptable violation of personal privacy.

OR

☑️ Create your own

Jot down a few notes on how to support your position during a discussion or debate.

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Be a strong participant by using phrases like these:

"Can you show me evidence in the text that..."

"I believe that..."

"You make a good point, but have you considered..."

"I agree with you, but..."
TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

wiretapping | patriot | eliminate | suspicious | source

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2015 Trustwave Global Security Report:


This week’s issue: WHEN SHOULD THE U.S. SEND TROOPS TO OTHER COUNTRIES?

Americans think that this money should have been used for domestic issues, like improving American schools.

Other people think that the U.S. should consider military action when the safety of people from other countries is threatened by violent government actions. For example, during much of the time that Americans were fighting in Iraq, people in the Darfur region of Sudan were being murdered and forced to leave their villages by their government. Approximately 2.7 million people were displaced by these actions, resulting in nearly 300,000 deaths from disease and starvation. Many Americans thought that U.S. military action in Sudan could have diminished the suffering of the Sudanese people. They claim that there was no U.S. military action because this African country offered little economic benefit to America.

Less than a month after the September 11th attacks, the U.S. military began a war in Afghanistan. This country had provided a safe place for the terrorists to plan and organize their attack on the United States. Because nearly 3,000 people died as a result of 9/11, most people in the U.S. supported this war. They believed that military action was the only way to make sure that the terrorists could not plan more attacks against the U.S. As of June 2015, over 2,300 U.S. troops have died trying to make Afghanistan a stable country where terrorists can never plan another attack on the U.S.

In 2003, the United States also went to war in Iraq. Members of the U.S. government claimed that the Iraqi regime had weapons of mass destruction that could be used against Americans. Many people in the U.S. were not convinced that these weapons existed and did not support this war. Some people believed that the war in Iraq was more about protecting an oil supply to support the American economy. In the end, the weapons of mass destruction were never found and over 4,400 members of the U.S. military died fighting for this cause.

What do you think? When should the U.S. government send troops to another region of the world? Should we only get involved when our safety is threatened? Should we commit troops when our economic interests are threatened? Or should we engage in military action when the safety of others is threatened?

Questions for Classroom Discussion:
- Why did most Americans support the war in Afghanistan?
- What resource does Iraq have that is important to the American economy?
- What would be an example of a threat to the safety of the American people?
- What reasons might someone give for sending troops overseas when there is no threat to the safety of Americans?
- Can you name a country whose citizens are being harmed by the actions of their own government today? Do you think the U.S. should send troops to help the people of this country?
USE THE FOCUS WORDS  *and alternate parts of speech

displace (verb) to force from one's home or homeland

- Sample Sentence: The destruction caused by Hurricane Sandy displaced more than 40,000 people.

- Turn and Talk: What services should governments provide to people who are displaced by natural disasters?

regime (noun) a government in power

- Sample Sentence: In 2003, members of the U.S. government claimed that the Iraqi regime had weapons of mass destruction.

- Turn and Talk: How can a powerful regime cause problems for its citizens?

diminish (verb) to make smaller; to become smaller

- Sample Sentence: Many Americans thought that U.S. military action in Sudan could have diminished the suffering of the Sudanese people.

- Turn and Talk: In your opinion, does student motivation diminish after elementary school?

stable (adjective) not easily changed

- Sample Sentence: As of June 2015, over 2,300 U.S. troops have died trying to make Afghanistan a stable country where terrorists can never plan another attack on the U.S.

- Turn and Talk: Think about your most stable friendship. Why has it lasted so long?

estimate (noun) a rough calculation

- Sample Sentence: According to one estimate, about 700,000 people attended the San Francisco Giants World Series parade.

- Turn and Talk: The U.S. population was 319,000,000 as of 2014. Does that seem like an exact number or an estimate? How do you know?

*estimate (verb) to roughly calculate the amount of something

- Sample Sentence: Samuel estimated that it would take him 20 minutes to bike to soccer practice.

- Turn and Talk: Estimate the amount of time it would take you to walk to school.
Option 1: At the beginning of the Iraq War in 2003, the administration of President George W. Bush estimated that it would cost 60 billion dollars to end Saddam Hussein's regime. In 2010, Iraq held its first democratic election as part of its effort to develop a stable government. Millions of Iraqi refugees who had been displaced by the war were still unable to return home. After several years of fighting, American support for the war had diminished. At that point, the war had already cost $1.1 trillion.

Which of the following shows 1.1 trillion written in standard form?

A. 1 trillion, one hundred million
B. 1,000,000,000 + 1,000,000
C. $1,100,000,000,000
D. $1,100,000,000,000

Option 2: According to some estimates, there are over 2 million internally displaced people, or IDPs, in Iraq. IDPs are people who have fled their homes, but stayed within their home countries. Another 2 million Iraqi refugees have sought stability in neighboring countries. Returning these people to their homes is one of many problems faced by the new Iraqi regime. As time goes on, the chances that these people will be able to resume their old lives diminishes. The population of Iraq is about 30 million. What percentage of the population has been displaced according to the estimates above?

Discussion Question: Who is responsible for displaced people? The regime of the home country? The regime of the country to which they flee? Hundreds of thousands of Iraqi refugees on the streets of Syrian and Jordanian cities are threatening the stability of these countries. (While it is difficult to count refugees, it is estimated that 1.2 million refugees fled to Syria, and around half a million fled to Jordan.) Resources in these host countries are diminishing. The U.S. has ended its operation in Iraq, but should we help these people return home?
Ms. Kahn and her class became interested in how U.S. soldiers are trained. The U.S. military is one of the most highly trained militaries in the world. An elite Army unit called Army Rangers conducts special missions, like helping to displace enemy regimes in Panama, Iraq, and Somalia. The Rangers’ nine-week intense training prepares them to lead a group of soldiers even while working in unstable, unpredictable, and physically challenging situations. They get an estimated 3.5 hours of sleep and eat two meals or less each day during training sessions.

Raj asks, “Wouldn’t lack of sleep and hunger cause slower reaction times?”

Ms. Kahn responds, “I doubt the intense training would diminish the quick-thinking skills of these elite members of the service. But we could test to see if our reaction times might be affected!”

Raj enjoys setting up experiments, so he set up an experiment that would help find an answer to his question.

**Question:** Does hunger affect reaction time?

**Hypothesis:** Students have better reaction times when they are not hungry.

**Materials:** 30 cm ruler.

**Procedure:**
1. Set up testing sessions with test subjects right before lunch and right after lunch.
2. Have the subjects hold their fingers and thumb at the zero mark of the ruler without actually touching it.
3. Let go of the ruler without warning and see how quickly they can catch it as it falls.
4. Record the centimeter mark where each subject caught the ruler.
5. Repeat same test after lunch.

Here are Raj’s data so far:

<table>
<thead>
<tr>
<th>Person tested</th>
<th>Alan</th>
<th>Bak</th>
<th>Cherise</th>
<th>Dava</th>
<th>Eldridge</th>
<th>Fernando</th>
<th>Gisela</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before lunch</td>
<td>5</td>
<td>17</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>After lunch</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>

Raj is a bit concerned about his experiment. He is wondering if it is fair. Here are his two main concerns:

1. He tested everybody only one time before lunch and one time after lunch.
2. People were already familiar with the reaction test when he tested them after lunch.

Have a class discussion about how seriously Raj should take his concerns. Do you have advice for Raj about a way he could improve his experiment?
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A  ❖  The United States should only take military action to protect its own safety and economic stability.

OR

B  ❖  The United States should also take military action when the human rights of people in other countries are being threatened.

OR

CREATE YOUR OWN

Jot down a few notes on how to support your position during a discussion or debate.

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Be a strong participant by using phrases like these:

"Can you show me evidence in the text that..."

"I believe that..."

"You make a good point, but have you considered..."

"I agree with you, but..."
Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

1. Displace | regime | diminish | stable | estimate

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The year is 2020. Omar has graduated from high school. He plans to go to college to become a teacher. However, he must wait. A new law requires that all young people allocate one year to community service after high school. Teens can help clean up parks, register voters, or build houses for the poor. Omar chooses to spend his year doing literacy tutoring in an after-school program, which will be good experience before he begins teaching.

Some people want to create a mandatory service program. John Edwards, who ran for president in 2008, gave a speech about this idea in May 2007. He said, “One of the things we ought to be thinking about is some level of mandatory service to our country, so that everybody in America, not just the poor kids who get sent to war, are serving this country.”

Some Americans dislike the notion of mandatory service because it limits individual freedom. They point out that a rigid requirement to spend time doing service could disrupt career or family plans. Some think that young people would get more out of going to college or entering a job-training program. In addition, some young people might need to earn money to help support their families. Others do support national service, but think that young people should be free to choose not to participate. For example, President Barack Obama wanted to develop national service programs. However, he believed participation should be voluntary.

People who do want youth service to be mandatory give several reasons. They say that mandatory youth service could be a tool for improving literacy rates and helping to protect the environment. It could help young people become better citizens, and some people predict that it would help reduce youth crime. People also point out that as young people plant trees or build homes, they would be learning valuable skills. Youth service might help them decide on a career or make contacts that could lead to a job.

We all enjoy freedoms and protections as Americans. Supporters suggest that it would only be fair to impose a requirement for each person to give back by serving the country. However, some say that our freedoms include the right not to serve. What do you think? Should you be required to serve your country after high school?

Questions for Classroom Discussion:
- In your own words, what message was John Edwards trying to send in his quote about mandatory service?
- How could mandatory service be “a tool for improving literacy rates and helping to protect the environment”?
- What are some of the freedoms and protections we enjoy as Americans?
- Why do some people want national service to remain voluntary instead of mandatory?
- If you had to spend a year serving your country, what would you choose to do?
USE THE FOCUS WORDS

voluntary (adjective) by one’s own choice; not forced

- **Sample Sentence:** President Barack Obama wanted to develop national service programs; however, he believed participation should be voluntary.

- **Turn and Talk:** Should community service be a voluntary or mandatory part of school? Explain.

literacy (noun) the ability to read and write

- **Sample Sentence:** Volunteers improve community literacy by teaching reading and writing in after-school programs.

- **Turn and Talk:** What part of literacy do you prefer: reading or writing? Explain.

impose (verb) to force somebody to accept

- **Sample Sentence:** Imposing a requirement for each person to serve the country, supporters suggest, would only be fair.

- **Turn and Talk:** What consequence does your teacher impose for submitting late work?

allocate (verb) to set apart for a specific purpose; to distribute

- **Sample Sentence:** A new law requires that all young people allocate one year to community service after high school.

- **Turn and Talk:** About how much time do you allocate to doing homework each night?

rigid (adjective) strict or unbending

- **Sample Sentence:** They point out that a rigid requirement to spend time doing service could disrupt career or family plans.

- **Turn and Talk:** Would you describe your school dress code as flexible or rigid? Explain your answer.
DO THE MATH

Option 1: Some people think the government should impose a rigid service requirement on young people. But many young people already allocate time to voluntary service.

Fifty-five percent of youth ages 12–18 volunteer. Suppose that 10% of these volunteers are literacy volunteers (people who help others learn to read and write). What percentage of youth ages 12–18 would be literacy volunteers?

A. 5.5%
B. 10%
C. 5%
D. .55%

Option 2: Youth perform voluntary service for many reasons. Sometimes, schools impose a service requirement. Many students argue that this kind of “voluntary” service isn’t voluntary at all! Some schools have rigid community service rules and require students to allocate a certain number of hours to service before they can graduate. Others require service as part of a class or a special project.

Yuriy is interested in how many students volunteer during school. He found the following statement online: “About 10.6 million youth, or 38% of the youth population, have performed service as part of a school activity.” If this statement is true, what is the total youth population?

About 27.9 million

Discussion Question: Should schools impose service requirements on their students? Is it okay for a teacher to allocate a few hours of class time to service for a special reason, like reading with kids as part of a unit on literacy, or cleaning up a park during a unit on pollution? What about a rigid requirement for all students, like 100 hours of service before graduation? Is it wrong to make “volunteering” mandatory?
THINK SCIENTIFICALLY

Students in Mr. Seemy’s class were talking about community service. The class was divided on the question of whether the government should impose a service requirement for all young people. Malik commented, “That seems kind of rigid to me. I think service should be voluntary.”

Halley responded, “I basically agree, but our school should allocate more time for volunteering. That way, students could really commit to projects. Right now I help at the library by tutoring little kids to build up their literacy skills, but I feel like I could do a better job if I could be there more.”

Mr. Seemy commented, “That’s great, Halley! Allocating more time for youth service could benefit our community as well as the volunteers.”

Halley questioned her teacher: “What are you talking about, Mr. Seemy? How can volunteering benefit the volunteers themselves?”

Mr. Seemy decided to share results from a survey conducted by DoSomething.org in 2012. “DoSomething.org is an organization that helps young people take action on things that they care about. They gave surveys on the relationship between happiness and voluntary service to over 4,000 young people, most of whom were in high school. Let me draw a graph for you on the whiteboard.”

Based on the data, what is the relationship between happiness and volunteering? Why do you think that is?

People who volunteer tend to have higher happiness ratings than people who do not volunteer. Reasoning will vary.

Why do you think some kinds of youth service correspond to higher levels of happiness than others? Do any of these differences surprise you?

How would you rate your own happiness? Can you think of a more accurate way to measure happiness?

Answers will vary.
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A
☐ The United States should impose a year of mandatory youth service.

OR

B
☐ The United States should not impose a year of mandatory youth service.

OR

CREATE YOUR OWN

☐ ___________________________

☐ ___________________________

☐ ___________________________

☐ ___________________________

Jot down a few notes on how to support your position during a discussion or debate.

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Be a strong participant by using phrases like these:

• Can you show me evidence in the text that...

• You make a good point, but have you considered...

• I believe that...

• I agree with you, but...
TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

voluntary | literacy | impose | allocate | rigid

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This week’s issue:
SHOULD THE GOVERNMENT REGULATE GENETIC TESTING?

For years, Michelle and Demarcus Kingston have dreamed of having one son and one daughter. Now that their first child, a son, is two years old, they want to ensure that their next child is a daughter. They do not want to leave the sex of their baby to chance. Current medical science allows them to choose the sex of their child before conception.

Scientists developed genetic screening to help families avoid having a child with fatal genetic disorders. Now, many families are using genetic screening to decide the number of boys and girls in their families. Scientists believe people will be able to screen for other traits within the next 10 to 20 years. In the future, parents may be able to determine a range of traits including their child’s height and eye color, whether or not the baby will have attention deficit disorder, and even the child’s personality type.

Groups opposed to genetic screening think people are “playing God” when they use science to choose a baby’s traits. Science fiction authors have created worlds in which ongoing genetic testing is common. For example, in the movie Gattaca, people with less-than-perfect genes were denied good jobs and became a lower class of citizens called “Invalids.”

Many people fear having a baby will soon turn into a shopping trip, as parents create “designer babies” by choosing genes for eye and hair color, height, and IQ. Because genetic screening is very expensive, some people worry that it will widen the gap between rich and poor. The rich may have future access to genetic screening, but the poor may not.

Supporters of genetic testing say our world is changing and people should change with it. However, few doctors currently consent to using genetic testing to select for traits such as eye color or height. They use the procedure only under certain circumstances. For example, doctors can use genetic screening to help families prepare for a child with special needs.

However, experts warn that screenings may indicate that an unborn child is at risk for a disorder even though it is actually fine. This rare “false positive” result can be alarming and add stress to a pregnancy. Similarly, a “false negative” result assures parents that the fetus is not likely to be affected by a condition, even though it is actually at high risk.

Countries around the world are dealing with the issue differently. In France, genetic testing is only allowed to be performed by doctors for medical purposes. In the United States, the government does not regulate genetic testing; only doctors and their patients make decisions about genetic screening. Do you think the government should regulate genetic testing?

Questions for Classroom Discussion:
• What does the phrase “playing God” suggest?
• How can genetic screening help a family?
• In your opinion, what is the most controversial use of genetic screening?
• What do you think is the least controversial use of genetic screening?
• Do you think the U.S. should adopt regulations similar to those of France?
USE THE FOCUS WORDS *and alternate parts of speech

range (noun) the extent covered; variety

Sentence: The classroom walls show the range of vocabulary words that we've learned this year.

Talk: Do you listen to a wide or narrow range of music genres? Explain.

range (verb) to include everything between two points

Sentence: The number of students per class in American schools usually ranges from 10 to 40.

Talk: Would you enjoy living in a place where the average temperature ranges from 85°F to 95°F? Explain.

regulate (verb) to control with rules or laws

Sentence: In the United States, the government does not regulate genetic testing; only doctors and their patients make decisions about genetic screening.

Talk: How does your school regulate student behavior in the hallways?

circumstance (noun) a condition or fact that affects a situation or event

Sentence: Depending on their circumstances, parents make different choices about whether or not to proceed with genetic testing.

Talk: Describe the circumstances that led you to have an argument with a friend or parent.

conception (noun) beginning of a pregnancy; beginning of an idea

Sentence: After conception, a fetus can undergo genetic testing.

Talk: What are some important things for women to do after conception to make sure that their baby will be healthy?

genetic (adjective) relating to or involving genes

Sentence: Scientists developed genetic screening to help families avoid having a child with fatal genetic disorders.

Talk: Do you think genetic tests could be used to predict someone's personality? Explain.
DO THE MATH

Option 1: After conception, a fetus can undergo genetic testing. Doctors can test for a range of conditions, including Down syndrome. Parents in different circumstances make different choices about whether to test. In some countries, the government regulates genetic testing.

Maternal age is the leading risk factor for whether a child will be born with Down syndrome. According to the National Down Syndrome Society, an adult woman’s risk of having a child with Down syndrome ranges from about 0.05% at age 20 to 10% at age 49. For this reason, doctors often recommend that older pregnant women undergo genetic testing to find out if their fetus could have this condition.

Which of the following is equivalent to 0.05% – 10%?

A. \( \frac{1}{20} - \frac{1}{2} \)
B. \( \frac{1}{6} - \frac{1}{2} \)
C. 1% – 20%
D. \( \frac{1}{2000} - \frac{1}{10} \)

Option 2: A range of genetic tests can be done before conception, too. For example, some people who are thinking about having children get tested for a mutation in a gene known as the CFTR gene. This mutation can lead to cystic fibrosis, or CF. The CFTR gene helps regulate sweat, mucus, and digestive fluids. If one parent does NOT have the mutation, then the other parent does not need to get tested; in this circumstance, their children will not have CF. If each parent has one CFTR gene, each child they produce will have a 25% chance of having cystic fibrosis.

Mr. and Mrs. Stein both have one CFTR mutation. If they have two children, what are the chances that both children will develop CF?

1/16, .0625, or 6.25%

Discussion Question: Either before or after conception, many parents consider a range of possible genetic tests. Others decide not to do any testing. Some people’s decisions about these kinds of questions are regulated by their moral or religious beliefs. What circumstances might make people decide not to do genetic testing?
Ms. Kahn is teaching her science class about genetic testing. Her students have a range of opinions about whether or not genetic screening should be regulated by the government.

“I don’t think that pregnant women should have genetic tests for their babies,” says Shana. “It’s wrong to make choices about a baby’s future based on his or her genes.”

“I agree with you about a baby who is already conceived, Shana,” Colleen replies, “but some people might want to be tested even before they decide to have a child. Some genetic tests can tell adults if they are carriers for a fatal genetic disease like Spinal Muscular Atrophy. In the circumstance that both parents carry the gene, their child might have the disease when it is born. The parents might choose to adopt instead.”

Shana asks, “What does it mean to be a ‘carrier’ of the gene?”

“Maybe one of you can do some research to find out,” suggests Ms. Kahn.

Shana found this topic very interesting and decided to investigate this question. She found the following graphic to help her understand the way genes can move from generation to generation.

Does the graphic help you understand more about genetics? What does it tell you?

Answers will vary.

What questions do you still have about genetics?

Answers will vary.

Science can help us understand reasons for things, but deciding whether something is right or wrong can be much more complicated. Have a class discussion about why issues related to genetics are controversial.
### Should the Government Regulate Genetic Testing?

#### Debate the Issue

Pick one of these positions (or create your own).

<table>
<thead>
<tr>
<th>Option</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Genetic testing should be illegal under all circumstances.</td>
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<tr>
<td>OR</td>
<td>Genetic testing should only be allowed for medical purposes.</td>
</tr>
<tr>
<td>B</td>
<td>Genetic testing should be available for any purpose, such as selecting a baby’s sex.</td>
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<td>OR</td>
<td>Create your own</td>
</tr>
</tbody>
</table>

Jot down a few notes on how to support your position during a discussion or debate.

<table>
<thead>
<tr>
<th>Note 1</th>
<th>Note 2</th>
<th>Note 3</th>
<th>Note 4</th>
<th>Note 5</th>
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</thead>
<tbody>
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</tbody>
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Be a strong participant by using phrases like these:

- Can you show me evidence in the text that...
- You make a good point, but have you considered...
- I believe that...
- I agree with you, but...
Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

Before buying a snack, Alex checks the nutrition panel. He says that knowing the number of calories per portion helps him to make healthy choices. Nutrition panels are a relatively new feature on food packaging. In 1990, the U.S. government started requiring all food products to display information about sugar, fat, and other key ingredients. Now, about 90% of Americans want those labels expanded to show whether the food contains genetically modified (GM) ingredients.

Scientists genetically modify foods to make them tastier, healthier, or easier to grow. For example, to make “Bt corn,” scientists extract part of a bacteria’s DNA and insert it into corn DNA. Consequently, Bt corn produces a chemical that kills insects that try to eat it. Insects can destroy acres of crops and even cause starvation in some countries, but DNA modifications keep Bt corn safe from pests.

“Golden Rice” has been genetically modified to include vitamin A and iron, making it more nutritious than regular rice. GM foods like Golden Rice could help feed the 800 million undernourished people in the world.

Still, many are concerned that GM foods may not be safe to eat. They worry that consuming GM foods could have serious consequences, like causing allergies or cancer. They say that until long-term studies have proven GM foods safe, consumers should have the right to avoid them. For example, other advances in science—like adding lead to paint to make it shinier and last longer—were once celebrated, but later found to cause developmental problems in children. Over 60 countries require GM foods to be labeled, and most Americans think it is time that the U.S. does the same.

The Food and Drug Administration (FDA), a government agency that monitors food safety, insists that GM foods are similar to non-GM foods. The FDA says that no scientific evidence shows GM foods to be dangerous, so they don’t need to be labeled. Some people worry that these decisions are influenced by powerful businesses that produce GM foods. While waiting for the FDA to modify its position, many Americans are turning to their state governments to require GM labeling.

Genetically modified foods could help feed the hungry and help poor countries produce more food. But should we postpone enjoying the advantages of GM foods until we are absolutely sure they are safe? Should the U.S. government require GM foods to be labeled?
USE THE FOCUS WORDS *and alternate parts of speech

**consequence** *(noun)* a result or effect of something

\[\text{Sample Sentence: The consequences of eating genetically modified foods are unclear.}\]

\[\text{Turn and Talk: What is a negative consequence of winning the World Series, Super Bowl, or NBA championship?}\]

**undernourished** *(adjective)* without enough food for health or growth

\[\text{Sample Sentence: Genetically engineering food could help feed the 800 million undernourished people in the world.}\]

\[\text{Turn and Talk: What can people do to help undernourished members of their community?}\]

**extract** *(verb)* to remove

\[\text{Sample Sentence: Engineers extract a gene from one plant and put it into another plant’s DNA.}\]

\[\text{Turn and Talk: Why might a dentist have to extract a person’s tooth?}\]

**extract** *(noun)* a product made of the active ingredient of something

\[\text{Sample Sentence: Many cookie and cake recipes call for vanilla extract.}\]

\[\text{Turn and Talk: Would you rather use herbal extracts or medication to cure a headache? Explain.}\]

**modify** *(verb)* to make changes to, to alter

\[\text{Sample Sentence: Many of our favorite foods contain ingredients that have been genetically modified.}\]

\[\text{Turn and Talk: How can a person modify his behavior to make more friends?}\]

**DNA** *(noun)* an abbreviated name for deoxyribonucleic acid, the part of plants and animals that carries genetic information inside each cell

\[\text{Sample Sentence: Engineers extract a gene from one plant and put it into another plant’s DNA.}\]

\[\text{Turn and Talk: Do you think everyone should have to register his or her DNA with the government? Why or why not?}\]
Option 1: Soybeans are the second most common crop in the United States, but we don’t normally see soybeans in their natural form. Typically, oil and proteins are extracted from soybeans and then used as ingredients in food products for people or farm animals. HT (herbicide tolerant) crops have had their DNA modified to protect them from herbicides, or chemicals that kill plants. Unwanted plants near crops can hog water, sunlight, and nutrients, leaving crops undernourished as a consequence. Farmers that plant HT crops can spray herbicides on their farms, killing unwanted plants and leaving HT crops to grow unharmed.

During which period did the percentage of HT soybeans increase most dramatically?

B. 2000–2001
C. 2004–2005
D. 2011–2012

Option 2: About 80% of food sold in the U.S. contains ingredients that have had their DNA modified. For example, monoglycerides and diglycerides are common ingredients in processed foods that come from plant or animal sources. If you analyzed 45 food products from an American grocery store, how many products would you expect to contain GM ingredients?

36 products

Discussion Question: There are many possible consequences of modifying the DNA of our food. Simply extracting some DNA here and inserting it there could help feed millions of undernourished people. It could also result in the contamination of non-GM foods, as animals spread seeds from farm to farm. Who should decide whether GM foods are worth the risk? Scientists? Farmers? Politicians? Consumers? Why?
Every living thing has **DNA**. **DNA** has the genetic codes necessary for life. Scientists can **modify** the **DNA** of living things by **extracting** genes from one organism, such as a carrot, and inserting them into another living thing, such as a tomato. Scientists do this to combine the helpful traits of different plants. Foods that have been genetically engineered are called transgenic foods.

For example, rice is an important food for lots of people around the world, but it doesn’t include very many vitamins. On the other hand, daffodil flowers are full of vitamin A but are not good to eat. Mr. Seemy’s class read an article about a group of scientists who invented a transgenic rice called “Golden Rice” that included a daffodil’s gene for making vitamin A. The author of this article claimed that eating Golden Rice instead of regular rice would make people healthier by preventing them from being **undernourished**.

On a different day, Mr. Seemy assigned his class to read an article that was critical of transgenic foods. This skeptical author thought that producing more GM food could have unexpected and dangerous **consequences**.

Mr. Seemy drew a T-chart on the whiteboard. He also passed out slips of paper with statements about Golden Rice.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Golden Rice can serve as a source of supplementary vitamin A.</td>
<td>• People might have allergic reactions to Golden Rice.</td>
</tr>
<tr>
<td>• Golden Rice is easy to grow in many places around the world.</td>
<td>• Golden Rice might have more vitamin A, but less of other important nutrients.</td>
</tr>
<tr>
<td>• Getting enough vitamin A reduces the risk of heart disease, specific cancers, and serious eye problems.</td>
<td></td>
</tr>
</tbody>
</table>

Here are the statements about Golden Rice. Can you and a partner sort them into the correct sections of the T-chart? One has already been done for you as an example.

- People might have allergic reactions to Golden Rice.
- Golden Rice can serve as a source of supplementary vitamin A.
- Golden Rice is easy to grow in many places around the world.
- Golden Rice might have more vitamin A, but less of other important nutrients.
- Getting enough vitamin A reduces the risk of heart disease, specific cancers, and serious eye problems.

**Do the benefits of Golden Rice outweigh the risks?**
SHOULD THE U.S. HAVE TIGHTER REGULATIONS ON GENETICALLY MODIFIED FOOD?

DEBATE THE ISSUE

Pick one of these positions (or create your own).

A

- The U.S. should have tighter regulations on food that has been genetically modified.

OR

B

- There is no need for extra regulations on food that has been genetically modified.

OR

CREATE YOUR OWN

Jot down a few notes on how to support your position during a discussion or debate.

- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________
- __________________________

Be a strong participant by using phrases like these:

- "Can you show me evidence in the text that..."
- "I believe that..."
- "You make a good point, but have you considered..."
- "I agree with you, but..."
TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

Adoption of genetically engineered crops in the United States, 1996-2015. USDA ERS. 

Golden Rice: http://www.goldenrice.org

http://www.npr.org/sections/thesalt/2013/03/07/173611461/in-a-grain-of-golden-rice-a-world-of-controversy-over-gmo-foods


http://blogs.scientificamerican.com/guest-blog/golden-rice-opponents-should-be-held-accountable-for-health-problems-linked-to-vitamin-a-deficiency/

http://www.fda.gov
Could the American tradition of eating meat be hurting the earth? Raising animals and transporting meat creates almost one-fifth of the earth’s greenhouse gases. This is more than the greenhouse gases produced by cars, trucks, trains, and airplanes combined. In addition, almost half of the water used in the U.S. goes to raising livestock.

Most of the beef produced domestically is eaten by Americans. However, exports are also increasing as more countries integrate meat into their daily diets. As a result, the meat industry is thriving. Reducing meat consumption could damage an important domestic industry, hurting the economy and taking away precious jobs.

Some people choose another option. “Flexitarians” are vegetarians who eat meat occasionally. Flexitarians believe that a diet should be mostly plant-based, but that meat and fish can be healthy and responsible choices if consumed in moderation.

With all of the benefits of vegetarianism, should people continue to eat meat? Are tradition and industry more important than the environment and health benefits?

After reading the book Charlotte’s Web, 10-year-old Alia made a big decision. She decided she would not eat meat anymore. She did not want animals to be killed for food. Her story is not unique. Lately many children are choosing to be vegetarian.

Vegetarians do not eat any beef, pork, chicken, fish, or other meats. Some vegetarians choose their meat-free diet for health reasons. Some choose this diet because of their concern for animals, and others because of their concern for the environment.

Meat consumption has been linked to health problems such as high cholesterol, high blood pressure, and increased rates of diabetes and heart disease. By replacing meat with beans and nuts, vegetarians eat a diet lower in saturated fat and higher in fiber than meat eaters.

Nonetheless, eating meat is an efficient way for people to get enough protein, iron, and vitamin B12, since it contains all of these nutrients. In contrast, vegetarians have to plan their meals carefully to get all their nutrients.

Some people say that meat doesn’t just taste good; it is also part of the American way of life. A roasted turkey is symbolic of Thanksgiving. Hamburgers and hot dogs are traditional foods for Fourth of July barbecues. Beef chili, barbecued ribs, and southern fried chicken are all classic American foods. For some Americans, eliminating meat would be like giving up an essential part of our culture and traditions.

Questions for Classroom Discussion:
- What is a vegetarian?
- Why do people choose to eat a vegetarian diet?
- Why do people choose to eat meat?
- What are some concerns about the meat industry?
- Do you think eliminating meat would mean giving up an essential part of American culture?
USE THE FOCUS WORDS *and alternate parts of speech

**export** *(noun)* a good or service sent to another country for sale

*Sample Sentence:* Exports are increasing as people around the world add more meat into their daily diets.

*Turn and Talk:* Why might having a lot of exports be good for a country’s economy?

*export** *(verb)* to send something to another country, especially for sale

*Sample Sentence:* China exports many goods that are sold around the world.

*Turn and Talk:* What kind of transportation is needed to export large machines to far-away countries? (Machines are the U.S.’s number one export.)

**symbolic** *(adjective)* representative of something else, such as an idea

*Sample Sentence:* A huge roasted turkey is symbolic of Thanksgiving.

*Turn and Talk:* What is one thing that is symbolic of your city?

**domestic** *(adjective)* made in, done in, or otherwise related to one’s own country

*Sample Sentence:* Reducing meat consumption could damage an important domestic industry.

*Turn and Talk:* Why do some people try to buy domestic rather than foreign products?

**integrate** *(verb)* to combine or unite into a whole

*Sample Sentence:* Residents of more and more countries are integrating meat into their daily diets.

*Turn and Talk:* Describe some challenges that immigrants might face when integrating into U.S. society.

**efficient** *(adjective)* productive without wasting time, energy, or resources; effective

*Sample Sentence:* Nonetheless, a vegetarian diet is not a very efficient way for people to get enough protein, iron, and vitamin B12.

*Turn and Talk:* Do you think that you are becoming more or less efficient at studying for tests?
DO THE MATH

Option 1: Many Americans believe that a healthy diet integrates meat. After all, meat is an efficient source of calories and protein. Meat can also be a powerful symbol. For many Americans, a thick steak represents success, and hot dogs represent summertime baseball.

For many farmers and ranchers, meat production is also a way to earn a living. The U.S. exports billions of pounds of meat a year in addition to the billions of pounds sold in the domestic market for consumption. This table from beefusa.org shows the number of pounds of meat eaten by the average American during five different years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Average meat consumption per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>200.4 lbs</td>
</tr>
<tr>
<td>1990</td>
<td>200.7 lbs</td>
</tr>
<tr>
<td>1995</td>
<td>207.7 lbs</td>
</tr>
<tr>
<td>2000</td>
<td>213.9 lbs</td>
</tr>
<tr>
<td>2005</td>
<td>220.2 lbs</td>
</tr>
</tbody>
</table>

How much more meat per year did the average American eat in 2005 than in 1985?

A. 0.2 pounds  
B. 0.8 pounds  
C. 19.2 pounds  
D. 19.8 pounds

Option 2: For vegetarians, meat can be symbolic of cruelty to animals. While eating meat is an efficient way to take in calories, most people get enough calories anyway. A vegetarian diet that integrates beans, nuts, and vitamin supplements can be just as healthy as a diet with meat. Domestically, about 3% of young people ages 8–18 are vegetarian.

If two young Americans ages 8–18 are selected at random, what are the chances that both of them are vegetarian?

\[0.03 \times 0.03 = 0.0009, \text{ or } 0.9\%\]

Discussion Question: The U.S. produces billions of pounds of meat each year: some for export, and some to be eaten domestically. According to beefusa.org, most Americans have a diet that integrates over half a pound of meat a day. What will happen if more Americans become vegetarian? Which people might lose money and which people might earn more money? In order to feed people efficiently, how should the food industry change?
THINK SCIENTIFICALLY
Sasha, a student in Ms. Kahn’s class, is vegetarian. “I can integrate all the nutrients I need into my diet without eating meat,” she says, “so why should any animals be harmed?”

Jamal is not vegetarian, but has decided to eat less meat. Jamal claims, “Raising livestock for food is not an efficient use of our resources. Over 50% of the corn and soybeans grown in the world are fed to animals instead of hungry people! The United States does not just export products to other countries; we export our ideas too. We should set a good example by trying to eat less meat.”

Anthony disagrees with the other students. “The way we eat is symbolic of being American!” he says. “Eating meat has always been an important tradition in this country.”

Sasha says, “I don’t think that’s right. I heard that Americans used to eat much less meat than they do today. That means there are so many more animals killed for food than there used to be.”

“No way!” said Anthony. “I’ll look it up.”

Anthony checked data from the U.S. Census and the Humane Society to investigate eating patterns in the U.S. over time.

**Question:** Has the number of animals killed for food per person in the United States gone up over time?

**Hypothesis:** The number of animals killed for food per person in the United States has stayed about the same from 1950 to 2000.

**Procedure:**
2. Record the total population of the United States for each year listed.
3. For each year listed, calculate how many farm animals were killed for food per person.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number of Farm Animals Killed for Food in One Year in the U.S.</th>
<th>Total United States Population</th>
<th>Number of Farm Animals Killed for Food in One Year, Per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>0.1 billion</td>
<td>152 million</td>
<td>less than 1 (about 0.7)</td>
</tr>
<tr>
<td>1960</td>
<td>1.8 billion</td>
<td>181 million</td>
<td>about 10</td>
</tr>
<tr>
<td>1970</td>
<td>3.2 billion</td>
<td>205 million</td>
<td>about 16</td>
</tr>
<tr>
<td>1980</td>
<td>4.5 billion</td>
<td>227 million</td>
<td>about 20</td>
</tr>
<tr>
<td>1990</td>
<td>6.4 billion</td>
<td>249 million</td>
<td>about 26</td>
</tr>
<tr>
<td>2000</td>
<td>8.9 billion</td>
<td>281 million</td>
<td>about 32</td>
</tr>
<tr>
<td>2010</td>
<td>9.2 billion</td>
<td>309 million</td>
<td>about 30</td>
</tr>
</tbody>
</table>

What would you predict the data to be this year? Do you have ideas about how you could find that data?

The number of farm animals killed annually for food per person in the U.S. dramatically increased from 1950–2000 and slightly declined from 2000–2010.
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A
☐ People should not eat meat.

OR

B
☐ People should include a limited amount of meat in their diets.

OR

C
☐ People should eat as much meat as they want.

OR

CREATE YOUR OWN

☐

Jot down a few notes on how to support your position during a discussion or debate.

______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________

Be a strong participant by using phrases like these:

"Can you show me evidence in the text that..."

"I believe that..."

"You make a good point, but have you considered..."

"I agree with you, but..."
Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

export | symbolic | domestic | integrate | efficient

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U.S. Census Bureau:
http://www.census.gov/popest/data/historical/index.html

Corliss, R. (2002, July 15). Should we all be vegetarians?
http://content.time.com/time/magazine/article/0,9171,361598,00.html


http://www.healthyeating.org/Healthy-Eating/All-Star-Foods/Meat-Beans.aspx
Davonte Reese wanted a dog, but his parents didn’t think he was capable of taking care of one. Then they heard about a company that rents pets. Davonte’s parents were glad the pet rental company gave them the chance to rent a Dalmatian for a day. Renting a Dalmatian helped them realize that Davonte was ready to own a dog. His parents then took Davonte to an animal shelter and adopted a mixed-breed dog named Lucky.

Some people say renting a dog should be illegal. They believe rental businesses are harmful to dogs. People who are against pet rentals give several reasons to support their position. To be happy, they say, a dog needs ongoing contact with one person. In addition, a dog likes to know its home. Dogs and people evolved together, so dogs depend on their human “family.” They have some social skills that are like those of humans. People domesticated dogs to be socially compatible and live with humans. Therefore, people have a special responsibility to ensure that dogs have stable homes, and each dog has a special right to a permanent home with ongoing companionship. Also, they say, who will want rental dogs when they are sick or old?

Marlena Cervantes disagrees with the notion that pet rental is bad for dogs. She has a pet rental business. She buys mostly purebred dogs and then rents them for a fee. A dog can spend time with a different family every day of the week. Whereas people who own dogs leave them home alone, Marlena says people who rent dogs give the animals lots of attention. Also, families like Davonte’s can use pet rentals to make an informed decision about whether to own a dog or not. Marlena’s business also creates jobs.

Some states may make it against the law to rent pets. If you were going to write to a member of your state assembly about this issue, what would you say? Should it be illegal to rent a pet?
USE THE FOCUS WORDS

**whereas (conjunction)** although, in contrast with the fact that

*Sample Sentence:* Whereas people who own dogs leave them home alone, Marlena says people who rent dogs give the animals lots of attention.

*Turn and Talk:* How is middle school different from elementary school? (Try: In elementary school, ______, whereas in middle school, ______.)

**capable (adjective)** able to do or accomplish something

*Sample Sentence:* Davonte Reese wanted a dog, but his parents didn’t think he was capable of taking care of one.

*Turn and Talk:* What is one thing that people say you are capable of? Do you agree or disagree with them?

**ongoing (adjective)** continuing without interruption

*Sample Sentence:* Each dog has a special right to a permanent home with ongoing companionship.

*Turn and Talk:* What is an ongoing argument or debate that you have with your friends?

**compatible (adjective)** able to exist together well

*Sample Sentence:* People domesticated dogs to be socially compatible and live with humans.

*Turn and Talk:* What are some qualities of the people with whom you are most compatible?

**notion (noun)** idea or belief

*Sample Sentence:* Marlena Davis disagrees with the notion that pet rental is bad for dogs.

*Turn and Talk:* Do you agree with the notion that world peace is possible?
DO THE MATH

Even though the notion of putting unwanted pets to sleep is a sad one, millions of dogs and cats are put to sleep in shelters each year. People disagree about whether pet rental can help save these animals. Some people say that rescuing a shelter pet is better than renting, whereas others say pet rental keeps pets from going to the shelter in the first place. Pet renters can return a pet if it is incompatible with the renter’s lifestyle, or if the renter is incapable of giving the pet ongoing care. This way, the unwanted pet goes back to the store instead of the shelter.

**Option 1:** About three million pets are put to sleep in U.S. shelters each year. Which of the following shows three million written in standard form?

A. 3,000  
B. 300,000  
C. $3,000,000$  
D. 3,000,000,000

**Option 2:** Cyprian loves dogs, but he knows that he is too busy to take care of a full-time pet. He tries renting a dog and finds that pet rental is compatible with his lifestyle. He recommends the same pet rental business to three of his friends, who try it a week later. They enjoy the experience, and each gets three of their own friends to try it the next week. At this rate, how many customers will the pet rental service have gained within 8 weeks of Cyprian’s recommendation?

$3^8 = 6,561$ people will try the pet rental service.

Discussion Question: Pets are incapable of defending their rights. Whereas people have many rights, pets have very few. Do pets have the right not to be put to sleep? The right to be spayed or neutered? The right to ongoing care? Does the notion of pets’ rights make sense, or are rights something that only people have? If pets have rights, are those rights compatible with pet rental?
Many people argue that families that rent pets don’t have enough experience with pet needs and behaviors. Others think it is common knowledge that dogs are happy when they wag their tails and afraid when they lower their bodies and look down. Ms. Kahn’s student Shatara agreed with this notion. She shared, “Our poodle, Toots, wags his tail whenever we take him for a walk around the neighborhood, whereas Rusty, our sheepdog, cowers and is never happy about going for walks. My mom says that Rusty’s fear of city noises has been an ongoing problem since Rusty was a puppy.”

Ms. Kahn chimed in, “My family’s dog, Rex, is compatible with urban life, but he is afraid of new people inside our apartment. He’ll actually hide when we have guests.”

This got Shatara thinking about observing the behaviors of dogs. She sketched different ways that dogs held their bodies as she observed them. She was curious about how much she could infer from the posture of dogs. Examine Shatara’s sketches to see if there is enough information for you to make an inference. If so, write it down.

<table>
<thead>
<tr>
<th>Possible Dog Feeling</th>
<th>Inference Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>box checked</td>
<td></td>
</tr>
</tbody>
</table>

Example: I think that sketch #1 shows a neutral/relaxed posture because the ears and tail are drooping down instead of pointing up.

Your Inference: __________________________

Answers will vary.

Your Inference: __________________________

Your Inference: __________________________

Your Inference: __________________________

Your Inference: __________________________

Some people might say that sketching is not a very scientific way for Shatara to take notes about her observations. What do you think?
DEBATE THE ISSUE

Pick one of these positions (or create your own).

A

Renting a pet should be against the law.

OR

Renting a pet should be allowed.

OR

CREATE YOUR OWN

Jot down a few notes on how to support your position during a discussion or debate.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Be a strong participant by using phrases like these:

- Can you show me evidence in the text that...
- You make a good point, but have you considered...
- I believe that...
- I agree with you, but...
TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

whereas  |  capable  |  ongoing  |  compatible  |  notion

_______________________________________________________________________________________________
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Jenny lives with her mother, grandmother, and little sister. She is a junior at an all-girls high school where she is an excellent student. Jenny has applied to the University of New Mexico. She is concerned about living in a co-ed dorm. She has not spent much time interacting with boys her own age. Has Jenny’s high school experience prepared her for the real world?

For years, many private schools have separated boys and girls. Today, single-gender education can also be offered in public schools, making it available to students who cannot afford to go to private schools.

Supporters of the single-gender paradigm in education say that boys and girls learn better in separate settings. Some research has shown that single-gender education improves learning. Supporters say that in coeducational settings, the pressure to impress the opposite sex distracts both genders from their studies. Students focus on looking attractive or acting cool instead of concentrating on schoolwork. Some students hesitate to participate in class because they worry about what students of the opposite sex will think.

Teachers of single-gender classes report that both genders pay attention and participate more when separated. Teachers can plan activities specifically to address boys’ and girls’ needs, such as adding movement and competition to lessons for boys and creating collaborative lessons for girls. The learning environment can also be tailored; classrooms for girls are often kept warmer and quieter than those for boys. Having only one gender present can weaken stereotypes about boys being better at math and girls being better at literacy.

However, opponents say that single-gender schools actually reinforce gender stereotypes. In reality, some girls prefer competition, and some boys are collaborative learners. Some studies show that teachers interact with students differently in single-gender classrooms. Teachers might assign less reading to boys and easier math to girls. Opponents think it is better to work on improving student achievement without separating boys from girls.

Many people also point out that schools are supposed to prepare students for the future. Men and women comprise the workforce. If boys and girls grow up without working together, they may have trouble adapting to mixed-gender situations. For students to succeed as adults, they must learn how to conduct themselves around the opposite sex. What do you think? Do the academic advantages of single-gender education outweigh the social learning opportunities provided in regular schools?

Questions for Classroom Discussion:
- In this passage, why is Jenny worried about living in a co-ed dorm in college?
- What are some advantages of single-gender education for boys? For girls?
- What are some disadvantages of single-gender education for boys? For girls?
- How could going to a single-gender school make it difficult for boys or girls to adapt to situations with both genders?
- Would you like to attend certain classes with all girls or all boys? Which classes? Why?

More information for teachers: Before 1972, many schools offered separate classes for boys and girls. Girls attended home economics classes where they learned to cook, sew, and clean. Boys went to workshop classes where they learned how to fix and build things. Many people argued that students were getting an unequal education if they did not have equal choices. In 1972, Title IX made it illegal for any federally funded school to offer classes to only one gender and not the other. However, in 2006, the Bush Administration gave public schools the choice to try single-gender education.
USE THE FOCUS WORDS *and alternate parts of speech

gender (noun) social category related to sexual identity

Sample Sentence: A new law has made single-gender education available to students who cannot afford to go to private schools.

Turn and Talk: Discuss a time when you were not allowed to participate in an activity because of your gender.

comprise (verb) to make up; to form

Sample Sentence: Men and women comprise the workforce.

Turn and Talk: Do you think it’s important that a school be comprised of an equal number of boys and girls?

adapt (verb) to change to fit a new situation

Sample Sentence: If boys and girls grow up without the experience of working together, they may have trouble adapting to mixed-gender situations.

Turn and Talk: Why might students have a hard time adapting to middle school?

conduct (verb) to behave in a particular manner; to plan and carry out

Sample Sentence: To prepare students to succeed as adults, they must learn how to conduct themselves around the opposite sex.

Turn and Talk: Do you think it is dishonest to conduct yourself one way in front of some friends and differently in front of other friends?

*conduct (noun) behavior

Sample Sentence: The guide discussed appropriate conduct before allowing the class to enter the museum.

Turn and Talk: How does your conduct change when you are in a classroom versus when you are at the shopping mall?

paradigm (noun) a model or example; a framework

Sample Sentence: Supporters of the single-gender paradigm in education say that boys and girls learn better in separate settings.

Turn and Talk: What are some rules that you would include in your personal paradigm for success?
DO THE MATH

Option 1: American schools must adapt to a competitive world. Schools are looking for ways to boost achievement and improve student conduct. Schools or classes comprised of just one gender might help reach these goals. More public schools are considering the single-gender paradigm. In 1995, there were just 2 single-gender public schools. By 2011, there were 116.

Which of the following best describes what happened to the number of single-gender public schools?

A. the number doubled  
B. the number decreased by one-third  
C. the number increased dramatically  
D. the number increased by 300%

Option 2: Dr. Leonard Sax has championed the single-gender paradigm. He claims that classes comprised of only girls or only boys allows teachers to adapt each class to boys’ or girls’ different needs. Researchers have conducted studies that have found that males prefer lower temperatures than females when wearing bathing suits. In regular clothing, Dr. Sax thinks males will prefer a temperature of 69°, and females will prefer a temperature of 76°.

Assume Dr. Sax is right. Let \( f \) = the preferred temperature for females. Let \( m \) = the preferred temperature for males. Write an algebraic expression that shows the relationship between the two variables.

\[ f = m + 7 \ OR \ m = f - 7 \ OR \ f - m = 7 \]

http://www.nytimes.com/2008/03/02/magazine/02sex3-t.html?_r=1&scp=1&sq=weil%20single%20gender&st=cse&oref=slogin

Discussion Question: Will conducting studies on gender differences help us do a better job of educating students? Should schools adapt to students, or should students adapt to school? Which paradigm seems right to you? Why?
Ms. Kahn gave her students many assignments to complete as groups. She wondered whether group work was an effective teaching paradigm. Every year, she asked her students to work in groups to design a bridge with toothpicks. This year, her class decided to conduct an experiment to see if groups built better bridges than individuals. They divided the class into two conditions, so that some students worked in groups and some worked individually. Then they rated each bridge on how long it took to build and how much weight it held. Ms. Kahn agreed that if students worked better in groups than alone, they would adapt their class plans to include more group activities.

Ms. Kahn’s student Tanya worked with Ms. Kahn to investigate whether working in groups helped with problem solving.

**Question:** Is group work an effective way to solve challenging problems?

**Hypothesis:** The students who work in groups will build stronger bridges.

**Materials:**
- Toothpicks
- Glue
- Timers

**Procedure:**
1. Begin with a class of 15 students. Divide the students into two groups of 5 students each and 5 students working alone. Students in groups decide on their roles.
2. Monitor the amount of time the students spend building the bridges.
3. When the bridges are complete, measure how much weight the bridge can hold before it breaks.

Do the data give you information about the effectiveness of group work?

<table>
<thead>
<tr>
<th>Hours to complete the bridge</th>
<th>Mass held by bridge</th>
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<tr>
<td>Working as Groups</td>
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<td>A</td>
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<tr>
<td>B</td>
<td>18</td>
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<tr>
<td>Working as Individuals</td>
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In general, the groups built stronger bridges. However, they spent more time constructing the bridges than the individuals.

Could you change this experiment to compare gender groups instead of groups and individuals? How?

Let’s speculate that one gender learns better in single-gender classrooms and the other does not. If this were the case, do you think it would be fair to let people choose?

The experiment could be changed to compare gender groups. For example, Group A could be five female students, Group B could be five male students, and the last set of five students could be a co-ed Group C.
DEBATE THE ISSUE
Pick one of these positions (or create your own).

A  □  Public schools should all be co-ed.

OR

B  □  Public schools should offer co-ed and single-gender options.

OR

C  □  Public schools should provide single-gender education only.

OR

CREATE YOUR OWN
______________________________
______________________________
______________________________
______________________________

Jot down a few notes on how to support your position during a discussion or debate.

______________________________
______________________________
______________________________
______________________________

Be a strong participant by using phrases like these:

"Can you show me evidence in the text that..."

"You make a good point, but have you considered..."

"I believe that..."

"I agree with you, but..."
TAKE A STAND

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

gender | comprise | adapt | conduct | paradigm

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National Association for Single Sex Public Education: http://www.singlesexschools.org


**FOCUS WORDS**

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**Word Generation | Series 3 | Part A**