

Join the national conversation!



Word Generation - Unit 1.01

## Focus Words

analyze | factor | function | interpret | structure

## Weekly Passage

Why do we go to school? Some people think the primary goal of education is giving knowledge to students. They feel there is specific information that all kids should know. For instance, they want kids to know what happened in the Revolutionary War and how the food chain works. Others interpret the main role of school as one of preparing students to earn a living. They are most concerned about students learning particular skills, such as reading, writing, and arithmetic.

Some argue that schools should introduce a set of shared values, including liberty and justice. They believe this will help students understand the structure of our democratic government. For example, they feel it is important for students to understand that while each of the three branches of government has a different function, the three work together to make sure we all enjoy certain freedoms and live by the same rules.

Some think schools should teach students to critically analyze what they see, hear, and read. They want students to be able to think

carefully about different perspectives, to respect and challenge other viewpoints, and to form their own opinions about issues that affect them. Although many people say that they want kids to be able to think for themselves, students do not always have the freedom to do so in the classroom.

What do you think the function of school is? What do you consider the most important factors in providing a good education? Which ingredients are essential in your recipe for a good school?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ What are two different interpretations of the purpose of school?
- ▶ Which function of school do you think is the most important? Why?
- ▶ What is an example of a learning activity that teaches students to analyze something?
- ▶ What are some of the structures that help schools fulfill their function?
- ▶ What are some of the factors that teachers should consider when preparing a lesson for their students?

# Unit 1.01

## What is the purpose of school? Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/Suffixes	
analyze	(v.) – to examine; study	analyzes analyzing analyzed	analysis	reanalyze analyzable analyzer analytic	analytical analytically analyst
factor	(n.) – something that influences the result of something else	factors (pl.) factor (v.) factors factoring factored		factorial	fact factory
function	(n.) – purpose; role; use	functions (pl.) function (v.) functions functioning functioned		dysfunctional functional functionally functor	
interpret	(v.) – to understand or explain something's meaning	interprets interpreting interpreted		reinterpret interpretable interpretation interpreter interpretative	
structure	(n.) – way that parts of something relate to each other and work together	structures (pl.) structure (v.) structures structuring structured		restructure structural	construct destruct instruct

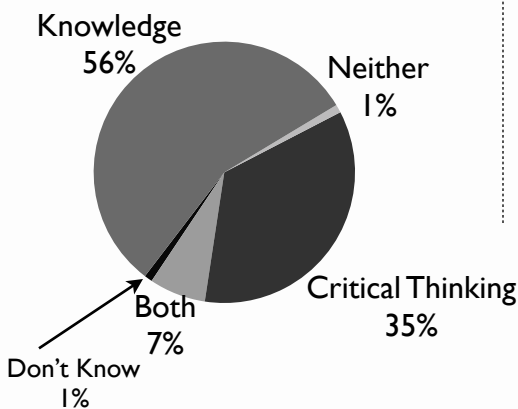
# What is the purpose of school?

## Problem of the Week

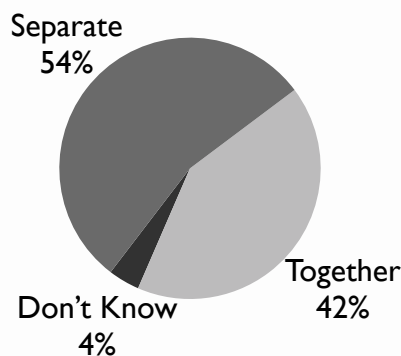


How do Americans view their public schools? **Analyze** the three graphs below. The information comes from a telephone survey taken in 1999.

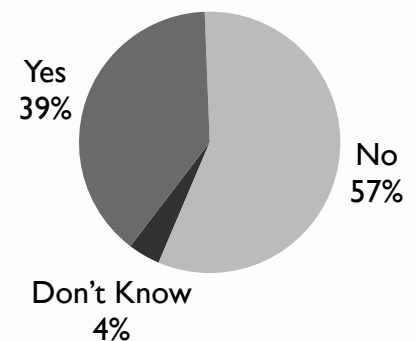
What is the proper **function** of American schools? Should they focus on giving students knowledge, or should they focus on teaching students to think critically?



What is the best class **structure** for elementary schools? Should top students, average students, and struggling students have separate classes, or should different ability levels be taught together?



Should standardized test scores be a **factor** in determining the level of funding a school receives?



**Option 1:** Which of the following is the best **interpretation** of the data shown in these three graphs?

- A) Americans disagree or are divided on major educational issues.
- B) Americans agree on major educational issues.
- C) Americans want all students to be equally well educated.
- D) Americans are disappointed with today's schools.

**Option 2:** Answer Option 1. Then determine:

What is the probability that a person responded YES to both questions: "Schools should focus on giving students knowledge," AND "Yes" to the question about making standardized test scores a factor in school funding?

Answer: The probability is  $.56 \times .39 = .2184$ , or a 21.84% chance

**Math Discussion Question:** Many teachers believe that classrooms **function** more effectively when students are actively involved. In social studies, students might present an **analysis** of U.S. foreign policy and our relationship to other countries. In Spanish class, students might **interpret** and act out a play written by a Colombian author. Students prepare and present, while the teacher acts as a guide. Is this kind of **structure** realistic for a math class? Or, when you're learning how to multiply or **factor** numbers, is having a teacher give knowledge by explaining the facts the best option?

# What is the purpose of school?

## Debating the Issue



### I. Get ready...

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

**A** The primary function of school is to prepare students for the work force. Therefore, knowing what jobs students expect to have is an important factor in determining what they need to know and to be able to do.

**B** The primary function of school is to teach students how to think for themselves. Therefore, they should spend time in class learning how to learn, analyzing different perspectives, and defending their own positions.

**C** The primary function of school is to prepare students for democratic citizenship. Therefore, students should learn how to actively participate in the structures of society and government that help to ensure life, liberty, and the pursuit of happiness.

**D** The primary function of school is to make sure that all students have specific knowledge about history, science, literature, and mathematics. Therefore, students should spend more time learning accepted facts than making their own interpretations.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes.

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# GO!

Be a strong participant by using phrases like these.

*I believe that...*

*I agree with you because. . .*

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

*Can you show me evidence in the text that supports what you said?*

#### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.



## Unit 1.01

# What is the purpose of school?

### Science Activity

Professor Kahn's 12-year-old daughter goes to a Montessori middle school. Montessori schools have a unique **structure**. Students choose what to learn. The teacher's **function** is to observe students as they work. Professor Kahn chose this school for her daughter because students there seemed happy. Happiness, Professor Kahn knows, is an important **factor** in school success.

But now that her daughter is getting older, Professor Kahn is beginning to worry. Do Montessori students really learn as much as traditional students?

#### Question:

How will 12-year-old Montessori students compare with 12-year-olds from a more traditional classroom, like Professor Kahn's?

#### Hypothesis:

The students from Professor Kahn's traditional classroom will score at least 5 points higher on a math test than the Montessori students.

#### Materials:

- ▶ 30 12-year-old Montessori students
- ▶ 30 12-year-old students from Professor Kahn's class
- ▶ Math test



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

#### TEACHER

With extra time, teachers can emphasize the difference between steps 4 and 5 of the procedure: analyzing the data and interpreting the data.

Analyzing the data means examining or studying it. A person analyzing the data would notice that the average score for traditional students was .2 points higher than the average score for Montessori students, and that the sample size was 30 of each kind of student.

Interpreting the data means thinking about what it means. A reasonable interpretation would be that this very small difference in average test scores suggests the two groups of students are equally knowledgeable about the material on the test.

#### Real Research

-These two articles talk about a study of Montessori and non-Montessori 12-year-olds that was published in 2006 in Science magazine. The study found that both groups scored equally well on math and reading tests, but that the Montessori students had better social skills and behavior. One critic of the study noted that no sweeping conclusions could be drawn because the study was so small (around 60 total subjects).

Bazon, E. (2007, May 19). The cult of the pink tower: Montessori turns 100 – what the hell is it? Slate. Retrieved on November 6, 2009 from

<http://www.slate.com/id/2166489/>

Boyles, S. (2006). Do Montessori schools have an edge? WebMD. Retrieved on November 6, 2009 from

<http://www.cbsnews.com/stories/2006/09/28/health/webmd/main2050676.shtml>

**Procedure:**

1. Give the math test to all 60 students.
2. **Analyze** the test results. How can you describe the data?
3. **Interpret** the data. What does it mean?

**Data:**

	Average Test Score (out of 100)
Montessori Students	82.7
Traditional Students	82.9

**Conclusion:**

Is the hypothesis supported or not by the data?

Not supported

What evidence supports your conclusion?

The two groups of students had about the same average test score.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

What is the purpose of school?

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

### Focus Words

analyze | factor | function | interpret | structure

#### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

##### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

##### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

##### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]

Join the national conversation!

# WHERE ARE THE WOMEN IN MATH AND SCIENCE?

Word Generation - Unit 1.02

## Focus Words

context | indicate | variable | create | benefit

## Weekly Passage

The former president of Harvard University upset many people when he explained why he thought there were fewer women than men in math and science jobs. He suggested that women may have less natural talent in these areas. He also argued that women spend more time with their families and fewer hours at their jobs than men do.

Why are women who enter careers in science and math more likely to leave than men? Many people argue that ability and family commitment have nothing to do with it. They think that the educational context in which students learn math and science plays an important role. For example, women in science, math, and engineering programs reported on a survey that their professors favored male students and preferred men's learning styles. Other studies show that in a typical science or math classroom, teachers call on male students more often.

Research indicates that men also respond to questions more confidently, quickly, and aggressively. Women say that, if called on at all, they are interrupted more often than men. Might social conditions like these create a context that

drives women away from careers in the math and science fields? Some think that the most important variable affecting math performance is expectations. Both girls and boys benefit from teachers who believe in their math abilities and expect them to do well.

Why do you think there are more male scientists and engineers than female? Should something be done to promote gender equality in these fields? If so, what?

### TEACHER

#### Reading Comprehension/Discussion Questions:

- ▶ What reasons did the president of Harvard University indicate as possible explanations why there are fewer women in math and science jobs? How did people react?
- ▶ What sometimes happens in the context of math and science classrooms to encourage boys and discourage girls?
- ▶ How might parent and teacher expectations benefit both girls and boys in math and science classes?
- ▶ What are some of the variables that might affect whether or not girls pursue careers in science?

## Unit 1.02

# Where are the women in math and science?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
benefit	(v.) - to gain, to be helped	benefits benefiting benefited benefit (n.)		beneficial unbeneficial beneficent benefactor	
context	(n.) - situation; environment	contexts (pl.)		contextual contextualize recontextualize decontextualize	text
create	(v.) - to make; to build	creates creating created		creation recreate creator creative creativity	
indicate	(v.) - to show; to demonstrate	indicates indicating indicated		indicative indication index indican indicatory contraindicate	predicate
variable	(n.) - factor, quality that changes or varies	variables (pl.)	vary	invariably variable (adj.) variability variably	variant variation variety invariant

# Where are the women in math and science?

## Problem of the Week



**Option 1:** Different students learn better in different educational **contexts**. One **variable** that affects the educational context is a teacher's gender. Some studies say female students **benefit** from having female teachers. However, in middle schools and high schools, many math and science teachers are male. In colleges, many math and science departments are made up of mostly male professors. For example, only 2 of the 26 senior professors in the Harvard University math department are women.

**Part 1:** What fraction of Harvard's senior math professors are women? **Indicate** your answer below.

A)  $\frac{3}{13}$

B)  $\frac{2}{13}$

C)  $\frac{1}{13}$

D)  $\frac{3}{26}$

**Part 2:** There are many fractions equal to the fraction you chose in Option 1. **Create** a list of these fractions. Could a larger department with many more professors have an equal fraction of women?

Answer: Yes

**Option 2:** If math and science departments hire more female teachers, will these traditionally male **contexts** become more supportive of female students? Or are the **benefits** unclear? This is a complicated question about social relationships in education. Mathematically, we know that the percentage of women in any group depends partly on the number of women, and partly on the number of men. For example, a math department with two women and two men would be 50% female, while a math department with two women and eight men would be 20% female.

**Create** an algebraic equation that **indicates** the relationship between the number of women in a group, the number of men in the group, and the percentage of women in the group. Use the following three **variables**: Let  $w$  = the number of women in a group,  $m$  = the number of men in the group, and  $p$  = the percentage of women in the group.

Answer: 
$$\frac{w}{w + m} = p$$

**Math Discussion Question:** Lawrence Summers, the former president of Harvard University, suggested that math and science ability is partly determined by natural talent. A few studies have **indicated** that, while most men and women have equal math and science talent, men are more **variable** – they are more likely to be very bad or very good in these areas. Summers said he suspected that, based on natural talent, the top scientists and mathematicians would always be men. Later, he said his remarks were taken out of **context**. He said he supported the **creation** of special **benefits** to encourage women in math and science. He was just, he said, posing good scientific questions. What do you think about these remarks? Is it okay for a university president to suggest that most of the best scientists and mathematicians will always be men? Why or why not?



# Where are the women in math and science?

**Debating the Issue:** Why are there fewer women than men in these fields?



## 1. Get ready...

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

**A** The most important variable affecting whether someone goes into a career in math or science is interest, and boys are generally more interested in these subjects than girls.

**B** There are fewer women than men in math and science careers because girls do not have the benefit of high expectations and encouragement from teachers that boys have.

**C** The way girls are treated in math and science classes helps to create a context that discourages girls from pursuing scientific careers.

**D** There are fewer women than men in science and engineering careers because the way these subjects are taught does not highlight how using math can benefit people, which is something that girls often indicate is important to them.

**E** \_\_\_\_\_  
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\_\_\_\_\_

## 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

\_\_\_\_\_  
\_\_\_\_\_

Be a strong participant by using phrases like these.

*I believe that...*

*I agree with you because. . .*

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

*Can you show me evidence in the text that supports what you said?*

### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.02

# Where are the women in math and science?

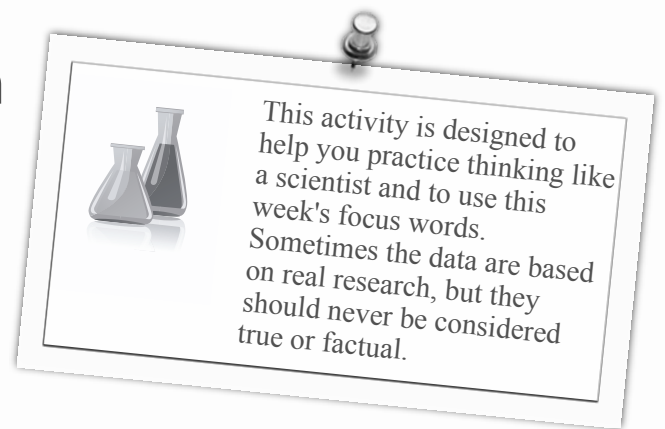
### Science Activity

Professor Kahn overhears the eighth grade English teacher in the hallway. "The boys in my class are such poor writers," she sighs. "Males are just worse than females at communicating their ideas."

"What?" Professor Kahn interrupts. "High expectations **benefit** students, but low expectations **create** a negative environment. No wonder your male students do poorly in that **context**!"

"But men are not as good at expressing themselves. It's a fact!" says the English teacher. "I just read the book *The Female Brain*. It **indicates** that women use 20,000 words a day, while men use only 7,000."

Professor Kahn wonders if this idea is right. The number of words that people use per day is a **variable** that she can measure by doing her own experiment.



#### Question:

Do women use more words per day than men?

#### Hypothesis:

Women and men use about the same number of words per day.

#### Materials:

- ▶ 100 females
- ▶ 100 males

#### TEACHER

##### Real Research

-This article, by linguist Mark Liberman, addresses *The Female Brain*'s claim that men use 7,000 words a day compared to women's 20,000. Liberman can find no evidence to support this claim. He notes that other authors have made similar (and similarly unsupported) claims about women talking far more than men to illustrate some perceived difference between the genders. Liberman says that there aren't any reliable studies on the difference between the number of words men and women use in a day, but that most studies of word volume show either that men and women use the same number of words, or that men use slightly more words than women. Liberman predicts that a careful study of the number of words people use in a day would show that the difference between men and women is very small.

Liberman, M. (2006, September 24). Sex on the brain. *The Boston Globe*. Retrieved on November 4, 2009 from

[http://www.boston.com/news/globe/ideas/articles/2006/09/24/sex\\_on\\_the\\_brain/](http://www.boston.com/news/globe/ideas/articles/2006/09/24/sex_on_the_brain/)

**Procedure:**

1. For one week, ask all 200 subjects to record themselves and then count the number of words they use each day.
2. Calculate the average number of words that males and females used per day.

**Data:**

	Average Number of Words Per Day
Males	12,700
Females	12,650

**Conclusion:**

Is the hypothesis supported or not by the data?

Supported

What evidence supports your conclusion?

The average number of words is about the same. (The difference of 50 words is less than 1% of the total number of words.)

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

Should there be more women in math and science? Why are there fewer women than men in these fields?

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

### Focus Words

context | indicate | variable | create | benefit

### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

#### Good Start

- ☐ Stated my own position
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#### Pretty Good

- ☐ Stated my own position clearly
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#### Exemplary

- ☐ Stated my own position clearly
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### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]

Join the national conversation!



Word Generation - Unit 1.03

## Focus Words

complexity | culture | element | resourceful | tradition

## Weekly Passage

Does America have its own culture? Many foods, customs, traditions, values, fashions, musical and artistic styles, and other aspects of everyday American life have origins in other cultures. Some people believe that the unique combination of elements from other cultures defines American culture. For example, celebrating Thanksgiving, playing jazz music, and wearing jeans are shared American traditions with roots in other cultures. Others argue that there is really no such thing as American culture. They observe that people from different cultural backgrounds often live in segregated communities in the U.S. with their own traditional meals, music, holidays, and other customs.

But do these separate groups have anything in common? Some say that Americans are typically materialistic. Are people in the U.S. more interested in spending money and buying things than in spending time with family and learning about their heritage? Is materialism – a desire to own more things – a shared American value? Other people view Americans as especially resourceful. Are people in the U.S.

better than others at making do, and improving their lives? Perhaps resourcefulness is why Americans are traditionally good at taking advantage of what different ethnic groups have to offer. Does the success of the American fast food industry indicate materialism or resourcefulness? Does Taco Bell represent American culture? What about baseball, hip-hop, Nintendo, or Hollywood? Is America a “melting pot” with its own unique flavor, or a “salad bowl” made up of lots of different tastes? Might it be the complexity of America’s cultural history that sets it apart from other nations? What do you think?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ What are some examples of traditions that are uniquely American?
- ▶ What are some elements of American culture that originate in other cultures?
- ▶ What are some values that might be considered typically American?
- ▶ Does culture divide people or bring them together?
- ▶ What makes American culture complex?

**Unit 1.03****What is an American?****Focus Word Chart**

<b>Word</b>	<b>Meaning</b>	<b>Forms</b>			<b>Related Words</b>
		<b>Inflectional</b>	<b>Basic Word Classes</b>	<b>Prefixes/ Suffixes</b>	
complexity	(n.) - having many interrelated parts; of a complicated nature	complexities (pl.)	complex (adj.) complex (n.)	complicate	multiplex
culture	(n.) - way of life; group of people who share a particular way of life	cultures (pl.) cultured (adj.)		monocultural bicultural culturally cultural	cult cultivate occult
element	(n.) - piece; part; component	elements (pl.)		elemental elementary	
resourceful	(adj.) - inventive; capable		resource	resources (pl.) resourcefully resourcefulness	
tradition	(n.) - a regular practice; custom that is repeated over time	traditions (pl.)		untraditional traditionalism traditional traditionally	



## Unit 1.03

# What is an American?

## Problem of the Week



Immigrants have built and shaped the United States. Through the years, these **resourceful** Americans endured many hardships, from discrimination to the Great Depression. They brought cultural **elements** like food, dress, and religious **traditions** from around the world. The **complexity** of our national **culture** reflects the great diversity of our people. Let's think about that diversity mathematically.

This table shows the top ancestries reported on the 2000 U.S. Census.

**Option 1:** According to the table, which of the following statements is true?

- A) Most Americans have German ancestry.
- B) More Americans reported having African-American ancestry than Irish ancestry.
- C) More Americans reported having Mexican ancestry than English ancestry.
- D) More Americans reported having German ancestry than any other ancestry.

Top Reported Ancestries, by Percentage of U.S. Population	
German	15.2%
Irish	10.8%
African-American	8.8%
English	8.7%
American	7.2%
Mexican	6.5%
Italian	5.6%
Polish	3.2%
French	3.0%
American Indian	2.8%

**Option 2:** According to the table, an American chosen at random is how much more likely to have German ancestry than Mexican ancestry? Round your answer to the nearest hundredth.

Answer: 2.34 times more likely

**Math Discussion Question:** Our national **culture** blends **elements** from many different cultural **traditions**, and yet Americans feel great pride in being American. The responses to the question about ancestry on the U.S. Census hint at the **complexity** of Americans' cultural identity. For example, 7% of Americans, or over 20 million **resourceful** citizens, said their ancestry is "American" although the question was worded to encourage a different answer. What does this mean? Is it possible to have American ancestry? Or do these people just have such strong feelings about the U.S. that they consider themselves "American," regardless of their real ancestry? What do you think?

# What is an American?

## Debating the Issue



# GO!

## I. Get ready...

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

**A** America has its own unique shared culture that is different from others. American culture includes traditions that originate in America (e.g., Thanksgiving) and are common among those who live in the U.S., regardless of their original heritage.

**B** America is a patchwork of different cultures. All elements of American culture can be traced to some other culture. There is nothing that is uniquely American, and there is no culture that is shared by all Americans.

**C** People have multiple cultures. Americans transform what is brought from other cultures into a unique American brand of values, customs, traditions, etc. that is shared across ethnic groups, while also practicing customs that are specific to certain social or ethnic subgroups.

**D** America does not have a single uniform culture. Each American develops an individual lifestyle that draws from many different cultures. There are American subcultures, such as hip-hop, that originate in America and can include people from different ethnic backgrounds.

**E** \_\_\_\_\_  
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 \_\_\_\_\_

## 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

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Be a strong participant by using phrases like these.

*I believe that...*

*I agree with you because. . .*

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

*Can you show me evidence in the text that supports what you said?*

### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.03

# What is an American?

## Science Activity

Professor Seemy's class is watching a video about chimpanzees. Scientists used to think that only humans had **culture**, or behaviors that make one social group different from another. After all, animals don't have language, clothes, or religious **traditions**, which are important **elements** of human culture. But chimps do pass on learned behaviors to their children, like using twigs to catch termites. These behaviors make one group of chimps different from another.

"Hey," Raquelle says. "If there's such a thing as chimp culture, is there such a thing as classroom culture?"

"Good question!" Professor Seemy says. Is there such a thing as classroom culture?

### Question:

Will two classrooms have different cultures?

### Hypothesis:

Students in the same classroom will develop and pass on unique behaviors – a classroom culture.

### Materials:

- ▶ Two classrooms with the same rules
- ▶ Observers



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

### TEACHER

#### Real Research

What is culture?

-The definition of culture changes with the context. Scientists who study animal culture believe it is a process by which learned behaviors are shared between members of a group and passed on to the next generation. They think they see evidence of culture when:

-a group of apes has a unique grooming technique

-a group of sperm whales has a unique singing style

-a group of macaques (monkeys) washes potatoes before eating them, while other macaque groups do not

-a group of macaques eats foods that other macaque groups will not eat

Small, M. (2001, April). Do animals have culture? Scientific American. Retrieved on November 10 from

<http://www.scientificamerican.com/article.cfm?id=do-animals-have-culture&page=2>

**Procedure:**

1. For one week, send observers to write down what happens in the two classrooms.
2. Analyze and interpret the observations.

**Data:**

Both rooms had the same rule for using the bathroom. Students were supposed to raise their hands. Sometimes, the teachers were so busy that a raised hand went unnoticed. In Classroom A, students waited until the teacher noticed them. However, the **resourceful** students in Classroom B had developed behavior with more **complexity**.

The Classroom B bathroom-going behavior had three separate **elements**. First, students waited with raised hands for about one minute. Second, they got up and told a friend where they were going. Third, they went quickly and quietly to the bathroom. A new student appeared one day. After watching the other students, she quickly adopted their bathroom-going procedure.

Situation	Classroom A	Classroom B
Going to the bathroom	Students raise hands	Students raise hands, tell a friend, and then leave quietly

**Conclusion:**

Is the hypothesis supported or not by the data?

Supported

What evidence supports your conclusion?

Observers found that students in one classroom had developed and passed on a unique behavior.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

What does it mean to be an American?

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

### Focus Words

complexity | culture | element | resourceful | tradition

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### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

#### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

#### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

#### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

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[illegible]

Join the national conversation!



Word Generation - Unit 1.04

## Focus Words

design | feature | impact | potential | transfer

## Weekly Passage

What makes you who you are? Both your genes and your experiences have an impact on your identity. Your genes contain information about your own unique design. They help determine many of your features, such as your eye color, your height, and which hand you use to write.

Scientists have invented a process called cloning that allows them to copy the genes of living things, or organisms. Scientists transfer some of an adult organism's genes to a new egg. After the transfer, a clone or copy of the original organism starts to develop. Researchers are using one type of cloning to study new treatments for diseases like cancer. They believe that cloning has the potential to help people with serious illnesses. Many farmers are cloning plants to produce crops featuring qualities that people like, such as juiciness in tomatoes. Some farmers are interested in cloning animals, too. For instance, they want to clone cattle that produce particularly tasty and tender beef.

In the future, scientists may be able to clone a person. This process could create identical twins born at different times. But is that a good idea? Many people worry about how cloning will impact our lives. What would happen if people could design other people? What if, for example, leaders could choose the features they wanted their soldiers to have and then make an army of clones? What if parents could clone their children? Should people be allowed to clone their pets? How might we take advantage of the benefits cloning offers while preventing potential problems?

### TEACHER

#### Reading Comprehension/Discussion Questions:

- ▶ What would happen if your genes were transferred to a new human egg?
- ▶ What are some potential benefits of cloning?
- ▶ What impact could cloning have on the food we eat?
- ▶ If you could design an army of clones, what features would they have?
- ▶ Potentially, what could go wrong if people were able to clone their pets?



## Unit 1.04

# Cloning: Threat or opportunity?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
design	(n.) - plan; blueprint	designs designed designing design (v.)		designer redesign designate designation	signature resign consign
feature	(n.) - quality, trait, characteristic	features (pl.) featured featuring features feature (v.)		featureless	
impact	(v.) - to affect or influence	impacts impacted impacting impact (n.)		impactful	
potential	(n.) - possibility			potentially potential (adj.) potentiate potent potency impotent	
transfer	(v.) - to move something from one place to another	transfers transferred transferring transfer (n.)		transferral transferrable transferability	infer refer confer defer

## Unit 1.04

# Cloning: Threat or opportunity?

## Problem of the Week

Cloning an organism means **transferring** its genes to a new egg, and allowing a copy to develop with the same **design** as the original.

Scientists are already cloning cows for the beef industry. They choose cows with especially tender meat, or other desirable **features**. There are many other **potential** applications of cloning.

Should we clone endangered species? Many people need new organs to survive. Are human clones the answer? Despite the potential for good, many people worry about the **impact** of this new technology on our society.

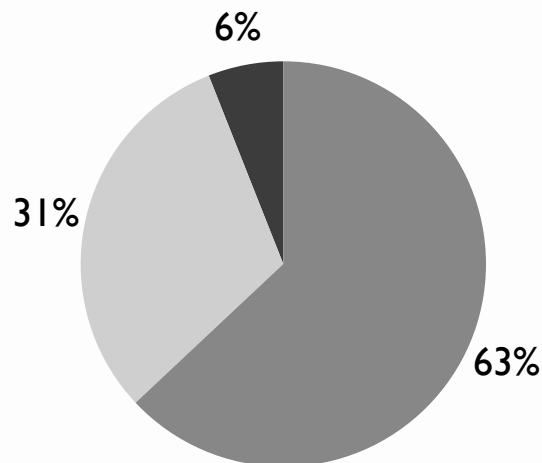


Here are the results of a 2010 Gallup poll that told how Americans felt about cloning.

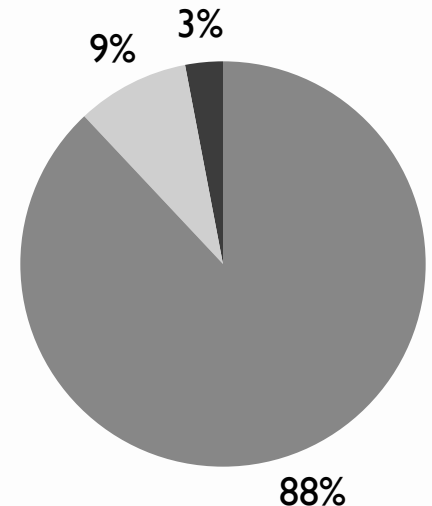
**Option 1:** Based on the graphs, which of the following statements is true?

- A) Most Americans think that cloning humans is morally okay.
- B) Most Americans believe that cloning humans is morally equivalent to (or the same as) cloning animals.
- C) Most Americans think that neither animals nor humans should be cloned.
- D) Most Americans think that cloning animals is morally okay.

Cloning Animals



Cloning Humans



**Option 2:** True or False: Based on the graphs, 25% of Americans believe that cloning animals is okay, but cloning people is not.

Answer: Actually, this is false. This would be true only if all of the people who disagree with animal cloning also disagree with human cloning. (Then,  $88\% - 63\% = 25\%$ ) This seems likely, but based on the information given it is at least POSSIBLE that some people find animal cloning morally wrong, but human cloning morally okay.

**Math Discussion Question:** Many people believe that each human being is uniquely **designed** by God. Our society is built on the idea that each human is a special creature with special responsibilities and rights. Are these ideas in danger? Are you a unique and special individual, or are you simply a collection of **features**, like hair color, height, and IQ? What **impact** would human cloning have on the idea of human rights? Would human rights **transfer** to human clones? Why do so many Americans think cloning is wrong? What are some **potential** problems with cloning humans?

# Cloning: Threat or opportunity?

## Debating the Issue



## 1. Get ready...

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

**A** Cloning of any kind should be forbidden.

**B** Cloning of plants should be allowed, but cloning of animals should be forbidden.

**C** Cloning of plants and farm animals should be allowed, but cloning of humans should be forbidden.

**D** Cloning should be allowed for research purposes related to treating disease (therapeutic cloning), but cloning of people (reproductive cloning) should not be allowed.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

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# GO!

Be a strong participant by using phrases like these.

*I believe that...*

*I agree with you because. . .*

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

*Can you show me evidence in the text that supports what you said?*

### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

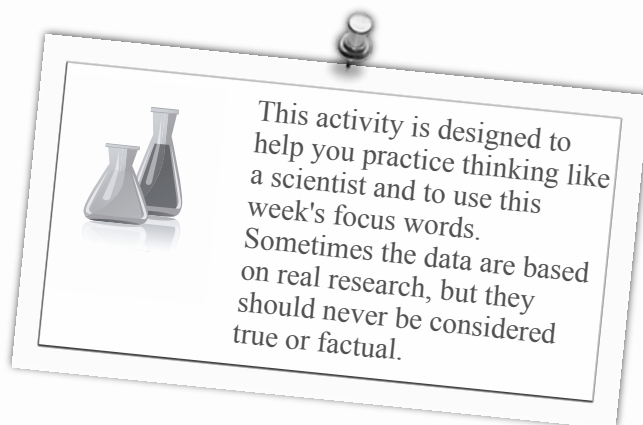
## Unit 1.04

# Cloning: Threat or opportunity?

### Science Activity

Professor Seemy just read a newspaper article about cloning expert Lou Hawthorne and his two cloned dogs. The dogs were both cloned from Missy, a dog who died in 2002. Hawthorne **transferred** Missy's DNA to eggs taken from other dogs. The two clones have similar **features** and exactly the same genetic **design**. Hawthorne thinks dog cloning has the **potential** to be a big business.

"This could have a huge **impact** on the relationship between people and pets," thinks Professor Seemy. "But will people buy cloned dogs?"



### Question:

Will people buy cloned dogs?

### Hypothesis:

Most people will say that they would not buy a cloned dog.

### Materials:

- ▶ 100 people

#### TEACHER

##### Real Research

-Students may wonder why the two clones have only similar features. Shouldn't their features be exactly the same? In fact, the two dogs don't look exactly the same. The article posits several reasons for this. The dogs were not cloned at the same time, so they may look different because of their age difference. Also, some features, like the direction that a dog's ears point and the curliness of its coat, have to do with collagen levels in utero, and so they can be different for dogs with the same genetic makeup.

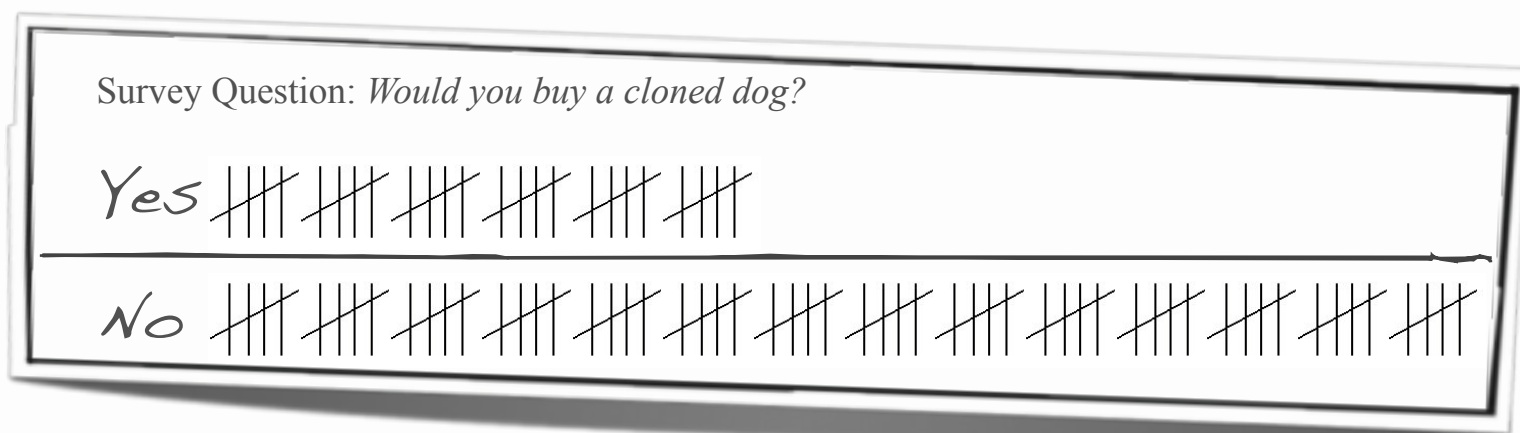
Konigsberg, E. (2008, December 31). Beloved pets everlasting. The New York Times. Retrieved on November 11 from

<http://www.nytimes.com/2009/01/01/garden/01clones.html?pagewanted=1>

### Procedure:

1. Ask 100 people if they would buy a cloned dog.
2. Tally results.

### Data:



### Conclusion:

Is the hypothesis supported or not by the data?

Supported

What evidence supports your conclusion?

Seventy people out of 100, or 70%, would not buy a cloned dog.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.

### Writing Prompt:

Should cloning be allowed?  
What impact might it have on  
people's lives?

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

## Focus Words

design | feature | impact | potential | transfer

**A tool to help you think about your own writing!**

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

## Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

## Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

## Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

## TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!

# DOES RAP MUSIC HAVE A NEGATIVE IMPACT ON YOUTH?

Word Generation - Unit 1.05

## Focus Words

considerable | contribute | demonstrate | sufficient | valid

## Weekly Passage

Some people believe that rap music has had considerable influence on children and teenagers, most of which has been negative. They claim that the lyrics are often violent and especially insulting to women. Thus, they say, rap has contributed to aggression among young people and to behavior that disrespects women.

But is that a valid claim? Supporters of rap music say the songs demonstrate a different face of American culture than the one we usually see on television or in newspapers. They think it's important for rappers' voices to be heard. Other people argue that some individuals who listen to rap were probably violent before ever hearing this type of music. Thus we can't blame rap for their violent actions. Still others say that rap is a form of creative expression – this generation's poetry. They point to rap artists who create positive images for today's youth.

However, some parents are worried about the messages conveyed by rap music and asked the music industry to label CDs with a warning. Many rap music fans consider this a form of

artistic censorship that has no place in a free society.

Do you think that listening to rap leads to aggression? Should we have rules to prevent rap artists from talking about violence, especially violence against women? What would be sufficient evidence, in your view, to support the claim that rap has a negative impact on youth?

### TEACHER

#### Reading Comprehension/Discussion Questions:

- ▶ Are people's concerns about the dangers of rap music valid?
- ▶ Do you think that rap music contributes to violent or aggressive behavior?
- ▶ What does rap music demonstrate about American culture?
- ▶ Do you think labeling CDs with a warning is sufficient to keep kids from hearing music that is disrespectful?
- ▶ Do you think rap music has had considerable influence on today's kids, either positive or negative?

## Unit 1.05

# Does rap music have a negative impact on youth?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
considerable	(adj.) - large; important		consider	considerably	considerate consideration
contribute	(v.) - to add (to); to offer	contributed contributed contributing		contributor contribution	distribute retribution
demonstrate	(v.) - to show; to display	demonstrates demonstrated demonstrating		demonstrator demonstrative demonstration demonstrable demonstrably	monster remonstrate
sufficient	(adj.) - enough; adequate		suffice	sufficiency sufficiently	deficient proficient
valid	(adj.) - convincing; defensible			validate validation validity validly invalid	valor

# Does rap music have a negative impact on youth?

## Problem of the Week

Does rap music **contribute** to violence? A **considerable** number of rap songs talk about hurting and killing people, especially women. However, this is not **sufficient** to show that rap itself is dangerous. Researchers have tried to **demonstrate** connections between rap music and aggressive behavior in many different studies. They try to establish **valid** conclusions by keeping many possibilities in mind. For example, even if rap listeners exhibit violent behavior, the music itself may not be the cause.



One study compared two groups: students who watched rap music videos for 14 or more hours each week, and students who rarely or never watched them. The students who watched the videos for at least 14 hours each week showed the following characteristics.

- ▶ They were three times more likely to hit a teacher
- ▶ They were over 2.5 times more likely to get arrested.

**Option 1:** Based on the information above, is the following conclusion valid or invalid?

Students who watched 14 or more hours of rap music videos each week were more likely to hit a teacher than to get arrested.

- A) The conclusion is valid.
- B) The conclusion is invalid.

**Teacher's Note:** The information given does not compare the likelihood of hitting a teacher to the likelihood of getting arrested. The high-frequency viewers were three times more likely than the low-frequency viewers to hit a teacher, but we aren't told what that frequency is, so we can't compare it to the likelihood of getting arrested.

**Option 2:** Manny watches 7 hours of rap music videos each week. Based on the information above, is the following conclusion valid or invalid?

Manny is 1.5 times more likely to hit a teacher than students who rarely or never watch rap music videos.

- A) The conclusion is valid.
- B) The conclusion is invalid.

**Teacher's Note:** The conclusion is invalid because we have no reason to believe that the relationship between watching rap music videos and hitting a teacher is linear. Here is an example of a linear relationship: Alex's father pays her \$2 for each book she reads. We know that each book brings \$2, and we could draw a straight line on a graph representing the relationship between books read and dollars received. In the real world, most relationships are not linear. For example, we know that eating healthy foods contributes to a healthy body and a long life, but we would not expect each fresh apple a person eats to add a certain measurable value to her quality of life or a predictable number of seconds to her life expectancy.

**Math Discussion Question:** What if researchers could **demonstrate** a

**valid** cause-and-effect relationship between rap music and violent behavior? For example, what if researchers could show that non-violent teens became violent after listening to rap? Would this be **sufficient** reason for us to ban certain songs or artists? The Constitution gives **considerable** protection to free speech. However, not all speech is protected. Words that endanger others (such as, in one famous example, yelling "Fire!" in a crowded theater) can be banned. What can you **contribute** to this debate? Where should we draw the line between free speech and public safety?

# Does rap music have a negative impact on youth?

## Debating the Issue



### 1. Get ready...

# GO!

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

Be a strong participant by using phrases like these.

**A** Rap songs that promote violence, especially violence against women, should not be sold to minors because they set a bad example.

*I believe that...*

**B** Freedom of speech is an important American right, so rap lyrics should never be censored, no matter what they say.

*I agree with you because. . .*

**C** Rap artists should take some responsibility for setting a good example for young people, and promoting violence does not set a good example, but it is ultimately their choice to write about whatever they want.

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

**D** Rap music is an important form of creative expression, and kids are smart enough to be critical of bad messages and make responsible decisions about how to behave toward each other.

*Can you show me evidence in the text that supports what you said?*

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.05

# Does rap music have a negative impact on youth?

## Science Activity

Professor Kahn and the principal, Miss Jackson, are talking about a group of eighth-grade boys. Their fighting has become a **considerable** problem.

“It’s the music they listen to!” grumbles Miss Jackson. “Kids who listen to rap get in more fights.”

Is this true? Professor Kahn decides to find out.

### Question:

Do students who listen to rap get in more fights?

### Hypothesis:

Students who listen to rap get in more fights than students who don’t listen to rap.

### Materials:

- ▶ 100 students

### Procedure:

1. Ask students what kind of music they listen to.
2. For one year, record how many fights these students get involved in.
3. Calculate the average number of fights for rap listeners and non-rap listeners.



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

### TEACHER

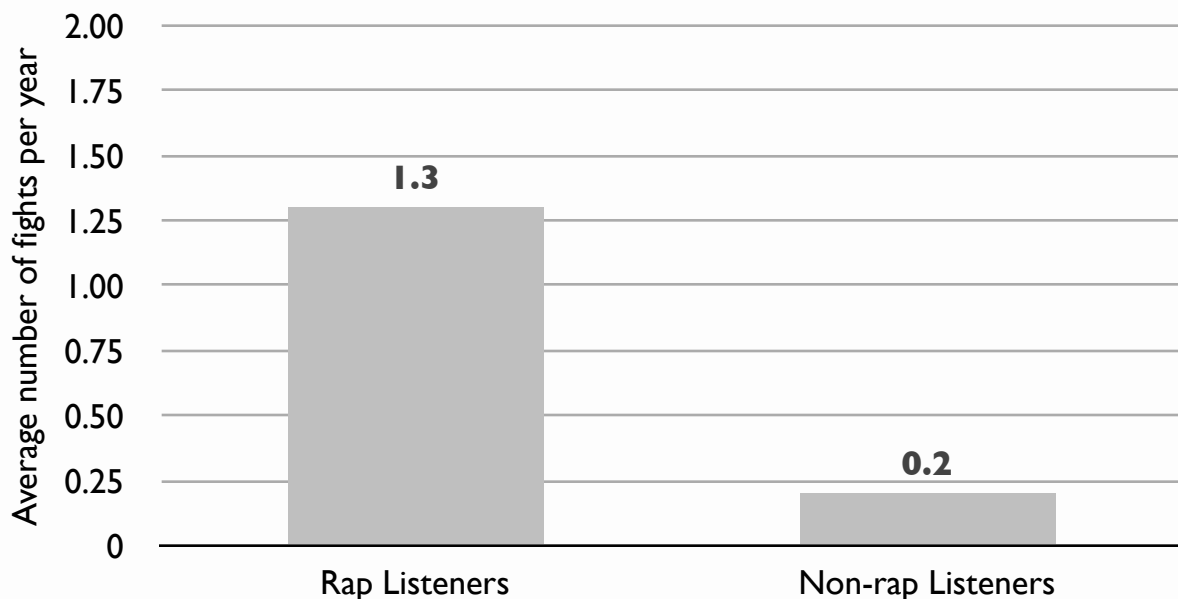
#### Real Research

-This study of young people from the ages of 15 to 25 found that listening to rap was “significantly and positively associated with alcohol use, problematic alcohol use, illicit-drug use, and aggressive behaviors when all other variables were controlled.”

Chen, M.J. et. al. (2006). Music, substance use, and aggression. *Journal of Studies on Alcohol*, 67(3), 373-381. Retrieved on November 10 from <http://www.pire.org/detail2.asp?core=38198&cms=294>

#### More on Correlation vs. Causation

In the Analysis, Professor Kahn addresses the fallacy that correlation implies causation. Sometimes, of course, a correlation does reflect causation. (For example, people who smoke are more likely to get lung cancer. And, indeed, smoking causes lung cancer.) Just not always. In one real-life example, women taking hormone replacement therapy (HRT) had a lower-than-average incidence of heart disease. Based on this correlation, doctors suspected that HRT helped prevent heart disease. Closer study revealed that the women taking HRT tended to be from a higher socioeconomic group and tended to eat better and exercise more than women who weren’t taking HRT. It was these factors, not the HRT, that were keeping their hearts healthy. In fact, once researchers controlled for variables like diet and exercise, they found that HRT-takers had a higher-than-average incidence of heart disease.

**Data:****Analysis:**

“I knew it,” says Principal Jackson. “Rap makes kids violent.”

Professor Kahn disagrees. “That is not a **valid** conclusion,” she says. “Kids who listen to rap music may get in more fights, but that’s not **sufficient** evidence to **demonstrate** that rap music causes fighting. It may not **contribute** to fighting at all.”

“What do you mean?” Miss Jackson asks.

“Just because two things are correlated, or happen together, doesn’t mean that one thing causes the other,” says Professor Kahn. “For example, people that live in New Orleans tend to eat gumbo. They also tend to like the New Orleans Saints football team. If we did a study, I bet we’d find that gumbo eaters are more likely to like the Saints than non-gumbo eaters. But eating gumbo doesn’t cause people to like the Saints.”

Principal Jackson is quiet. Then she says, “I see what you mean. We need to do more research on rap and violence before we draw conclusions.”

**Conclusion:**

Is the hypothesis supported or not by the data?

While there is a correlation here, this cannot be interpreted as causation. (See teacher notes.)

What evidence supports your conclusion?

On average, rap listeners get in 1.1 more fights per year than non-rap listeners.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

Does rap music have a negative impact on youth?

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

### Focus Words

considerable | contribute | demonstrate | sufficient | valid

#### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

##### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

##### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

##### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!

# ANIMAL TESTING: IS IT NECESSARY?

Word Generation - Unit 1.06

## Focus Words

rely | react | alternative | justify | proportion

## Weekly Passage

Animals are used in research by scientists seeking cures for disease. They are also used by pharmaceutical and cosmetic companies to test drugs, makeup, lotions, soaps, and shampoos. Why do we rely on animals to test our products for safety? Because animals share many genes and organs with humans, scientists say that using them advances knowledge and protects humans from potentially harmful effects of new products.

If animal testing is designed to protect humans, then why do so many people react negatively to it? Today, more and more people will not buy products tested on animals because they consider animal testing cruel and unnecessary. Companies that use alternative methods of testing products are advertising to people who don't mind buying shampoo or laundry detergent that is a bit more expensive in order to avoid products tested on animals.

Medical researchers say that only a small proportion of animals are used in painful or dangerous tests. Animal rights defenders say even one is too many.

Is it okay to test drugs or makeup on animals? Do humans have more rights than animals? Is animal testing justified because it helps humans?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ Who relies on animal testing, and for what purposes?
- ▶ How do scientists justify using animals to test products for humans?
- ▶ Why do some people react negatively to the practice of animal testing?
- ▶ What proportion of products that you use do you think might be tested on animals?
- ▶ What might be some alternatives to testing products on animals?

## Unit 1.06

# Animal testing: Is it necessary?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
rely	(v.) - to depend on	relies relied relying		reliable reliably reliant reliance	
react	(v.) - to respond	reacts reacted reacting	act	reaction reactive reactivity reactionary reactor	enact actor
alternative	(adj.) - other, different		alternate (v.)	alternatively alternate (n.) alternative (n.)	alter alteration
justify	(v.) - to show or prove to be right	justifies justified justifying	just	justifiable justifiably justification	justice adjust
proportion	(n.) - fraction; quantity; compared amounts	proportions proportioned proportioning	portion	proportionate proportional disproportionate	

## Unit 1.06

# Animal testing: Is it necessary?

### Problem of the Week



Many different groups, from makeup companies to cancer research labs, use animal testing. Some look for **alternatives** to animal tests.

Others try to **justify** their work, saying that animal testing saves money and human lives. It is difficult to find **reliable** statistics about how many animals are used for testing in the U.S. each year. One estimate is 21 million animals.

Some people **react** differently to animal testing depending on what kind of animal is being used.

Using dogs, for example, may seem worse than using rats. A large **proportion** of test animals are rats, mice, and other rodents. Some organizations have estimated that 90% of research animals in the U.S. are rodents.

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**Option 1:** According to the estimates given above, how many of the 21 million test animals are rodents?

- A) 17,800,000
- B) 18,000,000
- C) 18,500,000
- D) 18,900,000**

**Option 2:** The Humane Society estimates that 3.5 million cats and dogs are euthanized, or killed, each year due to overpopulation. According to the US Department of Agriculture, about 100,000 cats and dogs were used for animal testing in 2005.

Based on the information above, fill in the blank:

About \_\_\_\_ times as many dogs and cats are euthanized due to overpopulation as are used for animal testing each year. (Hint: to solve the problem quickly, use exponents.)

Answer: 35 ( $3.5 \text{ million} / 100,000$ , or  $3.5 \times 10^6 / 1 \times 10^5$ )

Math Discussion Question: When researchers estimated that 21 million animals are used for testing in the U.S. each year, they were not counting invertebrate animals, like shrimp, fish, worms, and flies. Some people say invertebrates aren't really animals. They think that although invertebrates can **react** to stimuli (a shrimp, for example, will move away from an electric shock), they cannot feel pain. Invertebrates make up a much larger **proportion** of test animals than even rats and mice. They are not covered by the rules that help protect vertebrates like cats, rats, and chimps. Is this unequal treatment **justified**? Many of us have a gut feeling that a rabbit is worth more than a fruit fly. We kill bugs, but when a pet dies, we cry. Can we **rely** on these feelings to help us make fair decisions about animal testing? Or should we develop an **alternative** system that treats all animals the same?

# Animal testing: Is it necessary? Debating the Issue

## I. Get ready...

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

**A** Animal testing should be allowed for all drugs, makeup, lotions, soaps and shampoos. Because animals and humans share so many genes, this is the best way for scientists to predict the reactions that humans will have to these substances, and thereby prevent large numbers of people from becoming sick.

**B** Animal testing should never be allowed. It is cruel to cause pain to innocent animals, and if scientists were not allowed to do it, they would rely on other ways to test drugs and cosmetics.

**C** Animal testing should only be allowed for important drugs that could be used to treat serious diseases in humans. The pain that animals experience is justifiable if it saves human lives. Makeup, lotions, soaps, and shampoos should not be tested on animals because they do not benefit human health.

**D** Animal testing that causes animals a lot of pain should never be allowed because the benefits to humans do not justify this. Animal testing should be permitted only in circumstances where the animals will not be seriously hurt.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

\_\_\_\_\_  
\_\_\_\_\_



Be a strong participant by using phrases like these.

*I believe that...*

*I agree with you because. . .*

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

*Can you show me evidence in the text that supports what you said?*

### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.06

# Animal testing: Is it necessary?

## Science Activity

For years, cosmetics companies have **relied** on animal testing to make sure products are safe. In Draize testing, makeup is applied directly to the eyes of a living rabbit. The rabbits are observed, and then killed. When Professor Seemy's students hear about these painful tests, some **react** with horror.

"How can companies **justify** torturing rabbits to sell makeup?" Shawn asks. "I've heard about some **alternatives**, like testing on artificial human skin."

"That's not a good alternative," argues Marcelina. "Testing on a piece of fake skin can't give the same results as testing on a live animal."

Is Marcelina right? Professor Seemy decides to find out.



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

### Question:

Will testing lipstick on artificial skin give the same results as Draize testing?

### Hypothesis:

Testing lipstick on artificial skin will give the same results as Draize testing.

### Materials:

- ▶ 5 kinds of lipstick that have been tested using the Draize method
- ▶ results from those 5 Draize tests
- ▶ 5 artificial skin samples
- ▶ Sterile lab
- ▶ Chemical MTT (a yellow chemical that turns blue when it is touching living tissue.)

### TEACHER

#### Real Research

-The European Union banned animal testing for cosmetics, effective in March of 2009. This New York Times article talks about the push to develop artificial human skin in response to the ban. (The article was written in 2007, as companies were preparing to meet the deadline.) To make artificial skin, researchers culture human cells harvested during plastic surgery. The steps outlined in the procedure are based on actual tests (chemical MTT is real).

Carvajal, D. (2007, November 20). A new science, at first blush. The New York Times

Retrieved on November 13, 2009 from

[http://www.nytimes.com/2007/11/20/business/worldbusiness/20cosmetics.html?pagewanted=1&\\_r=1&sq=epiderm&st=cse&scp=1](http://www.nytimes.com/2007/11/20/business/worldbusiness/20cosmetics.html?pagewanted=1&_r=1&sq=epiderm&st=cse&scp=1)

-This is a video advertisement for EpiDerm, a brand of artificial human skin meant to replace Draize testing. It explains the composition of EpiDerm and shows a real scientist using it for testing, describing the process step-by-step.

<http://www.mattek.com/pages/abstracts/528>

### Procedure:

1. Cover each skin sample with a different kind of lipstick.
2. Cover each skin sample with chemical MTT.
3. By looking at the color of the chemical MTT, calculate the **proportion** of each skin sample that is still alive.
4. Call a chemical "safe" if more than 50% of the skin sample is still alive. Call a chemical "unsafe" if less than 50% of the sample is still alive.
5. Compare the results with Draize test results.

### Data:

Lipstick Type	Draize Results		Artificial Skin Results	
<b>A</b>	<input checked="" type="checkbox"/> safe	<input type="checkbox"/> unsafe	<input checked="" type="checkbox"/> safe	<input type="checkbox"/> unsafe
<b>B</b>	<input checked="" type="checkbox"/> safe	<input type="checkbox"/> unsafe	<input checked="" type="checkbox"/> safe	<input type="checkbox"/> unsafe
<b>C</b>	<input type="checkbox"/> safe	<input checked="" type="checkbox"/> unsafe	<input type="checkbox"/> safe	<input checked="" type="checkbox"/> unsafe
<b>D</b>	<input type="checkbox"/> safe	<input checked="" type="checkbox"/> unsafe	<input type="checkbox"/> safe	<input checked="" type="checkbox"/> unsafe
<b>E</b>	<input checked="" type="checkbox"/> safe	<input type="checkbox"/> unsafe	<input checked="" type="checkbox"/> safe	<input type="checkbox"/> unsafe

### Conclusion:

Is the hypothesis supported or not by the data?

Supported

What evidence supports your conclusion?

For the five lipsticks tested, the Draize test and the artificial skin test gave the same results.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

Is animal testing justified?

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

### Focus Words

rely | react | alternative | justify | proportion

#### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

##### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

##### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

##### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!

# CENSORSHIP: WHO SHOULD DECIDE WHAT YOUNG PEOPLE READ?

Word Generation - Unit 1.07

## Focus Words

access | civil | despite | integrate | promote

## Weekly Passage

Each year, people try to keep certain books out of schools and libraries. They feel that students should not have access to literature about subjects they consider inappropriate for young readers. Many popular books have been challenged or banned in recent years. The list includes *To Kill a Mockingbird* by Harper Lee, *The Giver* by Lois Lowry, and *The Bluest Eye* by Toni Morrison. *Harry Potter* is even on the list.

Some people think that youth should be protected from difficult issues, such as racism or violence. They also think that books can give kids bad ideas. Other people suggest that youth are facing tough issues in their lives already. If those issues are integrated into meaningful stories, young people might find books helpful for understanding their own lives. For example, when a novel incorporates a problem such as racism, it can help kids dealing with prejudice to feel less alone. It might also help them to see how their actions can affect other people.

Librarians and teachers try to promote positive attitudes toward reading. They like to

see students fully engaged with relevant literature. Some librarians and teachers want censored books to be accessible to students because they are often interesting to read. Many American citizens argue that book banning and other types of censorship violate their civil rights.

Should students have the freedom to read anything they choose despite the possible risks?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ Should adults have the right prevent young readers from having access to books they consider inappropriate?
- ▶ Why do some people feel that having access to books dealing with tough issues can be helpful for students, despite the risks?
- ▶ Why do librarians and teachers think they can promote positive attitudes toward reading by making banned books accessible to students?
- ▶ What are some examples of novels that integrate issues of racism or violence into their plots?
- ▶ How is book censorship a civil rights issue?

## Unit 1.07

# Censorship: Who should decide what young people read?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
access	(n.) - opportunity to use; right to use	access (v.) accessing accesses		accessible accessibility accessibly accessory	concession recession procession
civil	(adj.) - involving citizens			civilize civility civilized civilian civilization	civic
despite	(prep.) - even with				spite spited despise despicable
integrate	(v.) - to make part of	integrates integrated integrating		integrative disintegrate	integral
promote	(v.) - to encourage	promotes promoted promoting		promotion	motive motion demote

## Unit 1.07

# Censorship: Who should decide what young people read?



## Problem of the Week

The American **Civil** Liberties Union (ACLU) **promotes** individual rights and liberties. The ACLU believes that defending civil liberties is always important, **despite** the fact that people strongly disagree about certain situations. In 1999, the ACLU sued the town of Wichita Falls, Texas for restricting **access** to two children's books. The books, *Daddy's Roommate* and *Heather has Two Mommies*, have gay and lesbian characters. Some citizens had signed a petition complaining about the books. Then, the books were moved to the adult section of the library.

At the time, the move was legal. The law in Wichita Falls said that if 300 people signed a petition, a children's book could be moved to the adult section. ACLU members said moving the book was just like hiding it. All children's books, they said, should be **integrated** into the children's section of the library.

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**Option 1:** The population of Wichita Falls is about 100,000. Which statement is true?

- A) 300 people is less than 1% of the population
- B) 300 people is about 3% of the population
- C) 300 people is more than a third of the population
- D) 300 people is about 5% of the population

**Option 2:** If 300 of 100,000 residents signed the petition against the two children's books, what is the probability that a resident chosen at random signed the petition?

Answer:  $3/1,000$ , or  $\approx .003$

**Math Discussion Question:** The **civil** code of Wichita Falls allowed a small percentage of the city's residents to control **access** to certain books. Some people said this was fair. They said that communities have a right to **promote** certain values, and that libraries should reflect these values. If a book offends people, it should be removed. Other people disagreed, saying that the library should **integrate** the views of all different groups, **despite** the fact that some groups might disagree with each other. Which view seems right to you?

# Censorship: Who should decide what young people read?

## Debating the Issue

### I. Get ready...

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

**A** Students should be free to read anything they want to because books that deal with tough issues can help young people cope with these things in their own lives. Youth can learn better ways to respond to drugs or racism or violence if they can read about characters facing those issues.

**B** Students should be free to read anything they want to because having access to censored books will promote reading. Censored books are often very interesting to read, and younger readers are more likely to become engaged in books that integrate issues relevant to their lives.

**C** Adults should carefully select appropriate books to keep students from being upset by books that deal with mature issues like drugs, racism, or violence. Young readers are not ready to handle these topics, so reading about such issues might make them depressed or frightened.

**D** Adults should carefully select appropriate books for students so kids will not learn about harmful ideas or behaviors. Reading a book with violent or racist characters might lead young students to think that violence and racism are okay.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

\_\_\_\_\_  
\_\_\_\_\_

# GO!



Be a strong participant by using phrases like these.

*In my experience . . .*

*that's similar to what I think too...*

*What makes you think that?*

*When I re-read the text, it reminded me...*

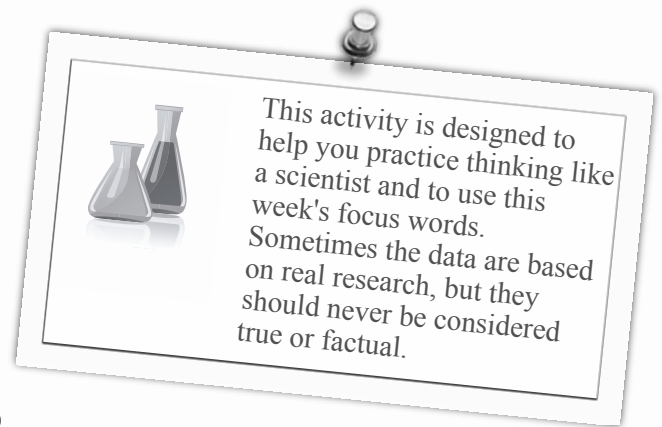
#### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.07

# Censorship: Who should decide what young people read?

## Science Activity



The principal, Miss Jackson, has banned the book, *Bless Me, Ultima* from the school library. Some students are protesting. “We should have **access** to this book,” says Trey. “Schools should **promote civil** liberties, not censorship.”

**Despite** the ban, Professor Kahn has begun seeing many of her students reading *Bless Me, Ultima* during study hall and at lunch. “Once I heard about the ban, I got curious,” Jackie explains. “I had to know what was in that book, so I checked it out from our county library!”

Professor Kahn becomes curious herself. Students who want to read the banned book can still access it for free at the public library, or buy it from a bookstore. Therefore, did banning the book in school really decrease the number of students who read it? Another nearby school is also going to ban the book *Bless Me, Ultima* from their library. Professor Kahn decides to **integrate** the banned book debate into her class by studying what happens at the other school.

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### Question:

Do fewer students read a book after it has been banned in their school library?

### Hypothesis:

Students can still get the banned book from other places. So, the number of students reading the book will stay the same even after it is banned.

### Materials:

Students from a school where a book is going to be banned.

**Procedure:**

1. For 5 weeks before the book *Bless Me, Ultima* is banned, keep track of how many students are reading it.
2. For 5 weeks after the book *Bless Me, Ultima* is banned, keep track of how many students are reading it.
3. Calculate the total number of students in each category.

**Data:**

Time	Number of Students Who are Reading the Book <i>Bless Me, Ultima</i>
Weeks 1 - 5: <i>Bless Me, Ultima</i> is not banned	26
Weeks 5 - 10: <i>Bless Me, Ultima</i> is banned	14

**Conclusion:**

Is the hypothesis supported or not by the data?

Not supported

What evidence supports your conclusion?

Fewer students (about half of the previous number) read the book after it was banned.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

Should students have the freedom to read anything they want? Who should decide what young people read?

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

### Focus Words

access | civil | despite | integrate | promote

#### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

##### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

##### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

##### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!



Word Generation - Unit 1.08

## Focus Words

attribute | cycle | hypothesis | project | statistics

## Weekly Passage

Global climate statistics suggest that the average temperature of the earth's surface is increasing. For example, the warmest ten years of the 20th century were between 1985 and 2000. Another statistic indicates that surface temperatures have risen by about 1°F since the late 1800s. Though this change may seem small, it has raised the ocean level by an estimated 4 to 8 inches. This is because more snow and ice are melting into the sea. Many scientists support the hypothesis that global warming is linked to heavier storms, floods, and other extreme weather. They attribute these changing environmental conditions to human activities like driving cars that use a lot of gas. Scientists believe that people contribute to global warming through burning fossil fuels (coal, oil, and natural gas). Such activities increase certain gases that trap the sun's energy inside the atmosphere and warm the earth. This is called the greenhouse effect.

Scientists say that the current warm period is not just part of the earth's natural

climate cycle. This trend does not fit the usual pattern of warm periods followed by cool periods. Scientists project that temperatures will keep rising if we continue to ignore the impact of our activities.

Should people be allowed to drive SUVs? Should companies be allowed to make them? Should the government invest in exploring other energy sources? Who is responsible for preventing future destruction?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ What are some statistics that show that the average temperature of the Earth's surface is increasing?
- ▶ To what do scientists attribute changes in environmental conditions?
- ▶ What hypothesis do scientists have about how people contribute to global warming?
- ▶ What do scientists project will happen in the future?
- ▶ What should be done to stop global warming?

## Unit 1.08

# Global warming: What should be done?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
attribute	(v.) - to assign; to attach; to associate	attributes attributed attributing attribute (n.)		attribution attributable attributor	tribute tributary
cycle	(n.) - repeated pattern	cycles (pl.) cycle (v.) cycling cycled		recycle cyclic cyclical bicycle tricycle	cyclone
hypothesis	(n.) - informed guess	hypotheses	thesis	hypothesize (v.) hypothesizes hypothesizing hypothesized	
project	(v.) - to predict; to estimate	projected projects projecting project (n.)		projection projectile	dejected inject eject adjective
statistics	(n.) - numerical information		statistic	statistical statistically statistician	status

# Global warming: What should be done?

## Problem of the Week



Scientists agree that global warming is a serious problem. They **attribute** rising temperatures to human activities such as driving cars, heating buildings, and cutting down forests. However, most Americans are not convinced. In 2010, only 50% of Americans agreed that global warming was caused by humans. An almost equal number, 46%, had a different **hypothesis**: they attributed higher temperatures to the earth's natural **cycle**.

Climate data helps us understand our climate and **project** what will happen to it in the future. The National Climatic Data Center began collecting climate data in 1880. Here are some **statistics**.

- ▶ The warmest years on record were 2010 and 2005, with a global temperature (land and ocean) of 58.12° Fahrenheit
- ▶ All 12 of the warmest years on record have occurred since 1997.
- ▶ The average global temperature for 1901–2000 was 57° Fahrenheit.
- ▶ The last time the yearly average was below 57° was 1976.

---

**Option 1:** Based on the statistics above, which of the following is true?

- A) Average yearly temperatures fell over the last two decades.
- B) Average yearly temperatures appear to be rising.**
- C) Each year, the average yearly temperature increases.
- D) The average yearly temperature varied widely throughout the 20<sup>th</sup> century.

**Option 2:** Scientists project that temperatures will rise by 5.4° Fahrenheit by the end of the 21<sup>st</sup> century. Based on the statistics above, would this increase be more or less dramatic than the one we saw during the 20<sup>th</sup> century? Explain.

**Answer:** This increase would be much more dramatic than the increase we saw during the 20<sup>th</sup> century. We know this because a temperature of 58.12°, the record high temperature, is only 1.12° higher than the 20<sup>th</sup> century average.

**Math Discussion Question:** Scientists around the world agree that global warming is a big problem. Climate **statistics** support the **hypothesis** that dangerously high temperatures are caused by humans. Experts **project** catastrophic flooding and famine if humans don't limit greenhouse gasses. Still, almost half of Americans believe that high temperatures are part of a natural climate **cycle**. To what do you **attribute** this gap between scientific evidence and people's beliefs? What would it take to convince Americans to take global warming seriously?

# Global warming: What should be done? Debating the Issue



## I. Get ready...

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

**A** Individual people should take responsibility for reversing the effects of global warming. It is not the government's fault that people drive SUVs and waste electricity. People should buy better cars and more efficient electrical appliances in order to slow down or stop global warming.

**B** The government should take responsibility for reversing the effects of global warming. Congress should pass laws making it illegal to drive SUVs and forcing companies to do everything they can to reduce greenhouse gas emissions. The government should also pay for research on alternative energy sources such as wind and solar power.

**C** Big companies should take responsibility for reversing the effects of global warming. They are the ones who are burning most of the fossil fuels and producing SUVs and other vehicles that harm the environment. Companies should develop alternate sources of energy and produce vehicles and appliances that do not contribute to greenhouse gasses.

**D** No one needs to take responsibility for global warming. Instead, we should be finding ways to adapt to the changes in our climate by preparing for big storms and moving houses and communities away from coastlines.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

\_\_\_\_\_  
\_\_\_\_\_

Be a strong participant by using phrases like these.

*In my experience . . .*

*that's similar to what I think too...*

*What makes you think that?*

*When I re-read the text, it reminded me...*

### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

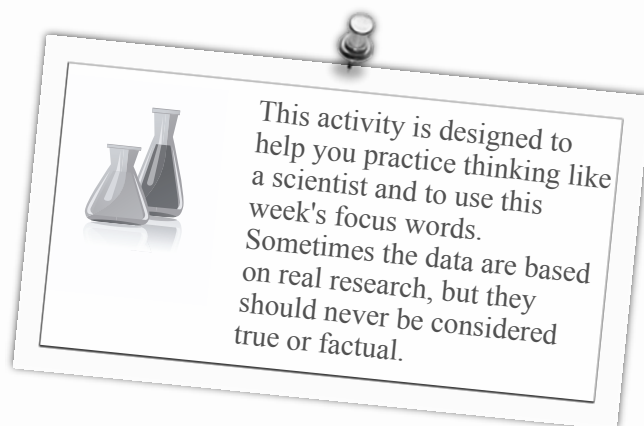
## Unit 1.08

# Global warming: What should be done? Science Activity

Professor Kahn's students know that scientists **attribute** global warming to human actions. They know that conserving resources helps fight the problem. Jordyn is reading some **statistics** out loud. "Turning off lights in empty rooms can cut energy use by 20%," she says.

"Wait," says Daniella. "I heard that lights need a big surge of energy to turn on. So if you're leaving a room for just a little while, the **cycle** of turning the light off and on again uses more electricity than just leaving the light on."

Is this true? Professor Kahn's class decides to find out.



### Question:

What saves more energy: always turning lights off in empty rooms, or only turning them off if they will stay off for an hour or more?

### Hypothesis:

The class **projects** that families who always turn lights off in empty rooms will save more energy.

### Materials:

- ▶ 200 families
- ▶ Electric bills

#### TEACHER

##### Real Research

-This Scientific American article states that even with power-saving fluorescent bulbs, the energy surge required for startup is equal to only a few seconds of regular use. It suggests turning lights and other electrical appliances off whenever they are not being used.

Matson, J. (2008, March 27). Does turning fluorescent lights off use more energy than leaving them on? Scientific American. Retrieved on November 6, 2009 from <http://www.scientificamerican.com/article.cfm?id=turn-fluorescent-lights-off-when-you-leave-room>

**Procedure:**

- 1. After one month of normal electricity use, get the electricity bills from all 200 families.
- 2. For the next month, ask 100 families to always turn lights off when they leave a room.
- 3. For the next month, ask 100 families to only turn lights off if the light will stay off for an hour or more.
- 4. After one month of the experiment, get the electricity bills from all 200 families again.
- 5. Calculate the average electricity bill for each group before and after the experiment.

**Data:**

	Families who always turned lights off when leaving a room	Families that turned lights off if they will stay off for an hour or more
	Average bill amount	Average bill amount
Month 1 (before experiment)	\$112.88	\$115.15
Month 2 (after experiment)	\$91.04	\$100.30

**Conclusion:**

Is the hypothesis supported or not by the data?

Supported

What evidence supports your conclusion?

Families that always turned lights off saved more more on their electricity bills than families that only turned lights off if they would stay off for an hour or more.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

What should be done to prevent global warming?

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

### Focus Words

attribute | cycle | hypothesis | project | statistics

#### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

##### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

##### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

##### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!



Word Generation - Unit 1.09

## Focus Words

adjustment | exposure | modify | monitor | transition

## Weekly Passage

Parents and their teenage children have always fought about the way young people dress. Some schools are taking on the battle by making rules about what students may wear. Many school officials want to reduce skin exposure and ban t-shirts with offensive language. They argue that this type of clothing can be distracting to other students. Some schools want to make even greater adjustments to their dress codes by requiring school uniforms. Many parents are in favor of this transition to stricter dress code policies. They think requiring uniforms reduces the pressure students feel to look like their peers. Some parents also believe that uniforms contribute to a more structured classroom environment and help students focus on their schoolwork instead of worrying about how they look.

Some teenagers don't want the dress code to be modified because they like to

express themselves through their clothing choices. They think it's not the school's business to monitor what they wear. Other students who have been teased and criticized for wearing the "wrong thing" think stricter dress codes are a good idea.

What's your opinion? Should your school have a stricter dress code? How could a dress code have an impact on a school's culture?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ Why do some school officials want to reduce skin exposure and offensive language on clothing?
- ▶ What are some reasons why parents might want a transition to stricter dress code policies such as requiring school uniforms?
- ▶ Why don't some teenagers want the school to monitor what they wear?
- ▶ Why do some kids think a strict dress code is a good idea?
- ▶ Does having a strict dress code promote a positive school culture?

## Unit 1.09

# School dress codes: Not strict enough?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
adjustment	(n.) - small change	adjustments	adjust (v.)	readjust adjusting adjusted adjusts adjustable	just justify
exposure	(n.) - uncovering; display	exposures	expose (v.)	exposing exposed exposes exposé expository exposition	depose impose
modify	(v.) - to make changes in	modifies modifying modified		modification modifier	
monitor	(v.) - to check; to keep track of	monitors monitoring monitored monitor (n.)			admonish premonition
transition	(n.) - change process	transitions		transition (v.) transitioned transitioning transitional transitive transient	transfer transit transform transcend transpose

## Unit 1.09

# School dress codes: Not strict enough? Problem of the Week



In the early 1990s, Long Beach Unified School District in California was in trouble. Students in its schools were violent. District-wide test scores were low. School officials thought about different ways to **modify** the schools. They wondered what kind of **adjustments** would work best to fix their district. In 1994 they began a **transition** to school uniforms. Test scores improved. Violence decreased. Within a few years, school crime had dropped by 80%.

The uniform policy at Long Beach Unified got a lot of media **exposure**. President Bill Clinton praised school uniforms in his 1996 State of the Union Address. Groups that **monitor** education also took notice. The Broad Foundation, for example, awarded the school \$2.14 million in prizes.

**Option 1:** In Long Beach, school crime fell by 80%. Which of the following means the same thing?

- A) School crime fell by four-fifths.
- B) School crime fell by three-quarters.
- C) School crime fell by two-thirds.
- D) School crime fell by half.

**Option 2:** Each year, the average American school spends approximately \$10,000 per student. How many students could the Broad Foundation's \$2.14 million prize fund for one year? (Hint: to solve this problem quickly, use exponents.)

Answer:  $2.14 \times 10^6 / 1 \times 10^4 = 2.14 \times 10^2$ , or 214 students

**Math Discussion Question:** The media **exposure** of school uniforms in Long Beach sparked a debate. Some researchers pointed out that requiring uniforms was not the only **adjustment** made by the district. The uniforms were just one part of a larger **transition**. When the district **modified** the dress code, it also began to improve school security and closely **monitor** school attendance, among other changes. Did the uniforms fix the schools? How could we find out?

# School dress codes: Not strict enough?

## Debating the Issue

### 1. Get ready...

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

**A** Schools should have rules against clothing that exposes too much skin or contains offensive language. This type of clothing is distracting to students and teachers and can be harmful to student learning.

**B** Schools should require students to wear uniforms so that kids will not feel pressure to buy expensive clothes in order to look like their peers. Uniforms would keep kids from being teased and criticized for wearing the “wrong thing.”

**C** Schools should require students to wear uniforms because this will create a more structured classroom environment. Students who are dressed well will behave better, and this will allow everyone to focus on school work.

**D** Schools should not monitor what students wear because students should be free to express themselves through their clothing. Choosing their own clothing lets students be individuals.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

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Be a strong participant by using phrases like these.

*In my experience . . .*

*that's similar to what I think too...*

*What makes you think that?*

*When I re-read the text, it reminded me...*

#### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.09

# School dress codes: Not strict enough? Science Activity

Jacob walks into class wearing a T-shirt with a logo for Marlboro cigarettes.

“Your shirt makes me think we should **modify** the dress code,” says Professor Kahn. “We **monitor** skin **exposure**, but what about exposure to dangerous advertising?”

“I disagree,” says Jacob. “Making **adjustments** to the dress code is a waste of time. I hate deciding what to wear! We should just have uniforms.”

“That’s a good idea,” says Anaya. “When kids wear uniforms, their test scores go up.”

Is Anaya right? Professor Kahn investigates.

### Question:

Do school uniforms improve students’ grades?

### Hypothesis:

Students' grades will improve after their school makes a **transition** to requiring uniforms.

### Materials:

- ▶ 100 students
- ▶ Report Cards



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

### TEACHER

#### Real Research

-In this article, researchers found that uniforms do not improve school attendance, student behavior, or test scores once other variables are screened off. The researchers acknowledge that some data sets make it seem like uniforms do make a difference. For example, Catholic school students tend to score higher on achievement tests than public school students, and Catholic school students are more likely to wear uniforms. However, when researchers looked more closely, they found no correlation between uniforms and achievement. (For example, within Catholic schools, they found that students who did not wear uniforms outscored students who did.)

Brunsma, D. et. al. (1998, September/October). Effects of student uniforms on attendance, behavior problems, substance use, and academic achievement. The Journal of Education Research. Retrieved on November 9, 2009 from <http://sociology.missouri.edu/New%20Website%20WWW/Faculty%20and%20Staff/Assets/David%20Brunsma/Examining%20the%20Effects%20of%20Students%20Uniforms%20on%20Attendance.pdf>

**Procedure:**

1. Find 100 students in a school without uniforms.
2. Record and average their grades.
3. Start requiring uniforms at that school.
4. After all students are wearing uniforms, wait one year.
5. Record and average the grades from the same 100 students.

**Data:**

	Before Uniforms	After Uniforms
Average Grade	C+ (78.3)	C+ (78.2)

**Conclusion:**

Is the hypothesis supported or not by the data?

Not supported

What evidence supports your conclusion?

In this fictional case, there is no increase in test scores after students start wearing uniforms. Please share elements of the real research with your students! They will find this topic very engaging. Also review correlation vs. causation (see Teacher Notes Unit 1.05)

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

Should there be stricter dress codes in schools?

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

### Focus Words

adjustment | exposure | modify | monitor | transition

#### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

##### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

##### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

##### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!

# STERIODS: SUBSTANCE ABUSE OR AN INNOCENT BOOST FOR ATHLETES?

Word Generation - Unit 1.10

## Focus Words

alter | compound | conflict | fundamental | substitute

## Weekly Passage

After his success in the 1990s, the great homerun king, Barry Bonds, came under pressure. His fans began questioning whether he had been using steroids throughout his baseball career. Bonds has denied using any illegal chemical compounds to improve his athletic performance. However, a teammate wrote a book saying that Bonds used steroids to get stronger and bigger. Now that steroids have been declared illegal, many athletes are substituting new types of drugs that are hard to detect using traditional testing methods.

In 2001, Bonds reached a new record for the number of home runs in a single season. But sports writers and fans felt conflicted about recognizing the record. Did Bonds deserve recognition if he achieved his record with the help of drugs?

Many sports fans think steroid use is wrong. They believe that showing good sportsmanship is a fundamental part of athletic success. Some baseball greats like Babe Ruth, Roger Maris, and Mickey Mantle reached their

home run records without drugs. If Bonds is eventually found guilty of steroid use, should his home run record be thrown out? Should the rules be altered to allow performance-enhancing drugs? What if athletes use vitamins to boost their health or pain relievers to help them play through injuries? Are some chemical compounds okay for athletes to use? How much chemical help is too much?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ Why do fans think Barry Bonds might have altered his body with chemical compounds to improve his athletic performance?
- ▶ Why are fans and sports writers conflicted about recognizing Barry Bonds' record for the number of home runs in a single season?
- ▶ Why do some athletes take steroids? Why are some of them now substituting new types of drugs?
- ▶ Should we focus on what an athlete achieves, or on how he achieves it? Is good sportsmanship a fundamental part of athletic success?
- ▶ If Bonds is guilty of steroid use, should his record be thrown out?

## Unit 1.10

# Steroids: Substance abuse or an innocent boost for athletes?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
alter	(v.) - to change	alters altering altered		alteration alterable inalterable	alternate
compound	(n.) - mixture	compounds (pl.) compound (v.) compounds compounded compounding		compoundable	component expound impound position postpone
conflicted	(adj.) – confused; undecided; having feelings that clash or conflict	conflict (n.) conflict (v.)		conflictual	afflict inflict
fundamental	(adj.) - central; essential		fundament	fundamentally	foundation
substitute	(v.) - to replace	substitutes substituted substituting substitute (n.) substitute (adj.)		substitutable substitution	constitute institute restitution destitute statue

## Unit 1.10

# Steroids: Substance abuse or an innocent boost for athletes?

## Problem of the Week

Barry Bonds holds Major League Baseball's record for career home runs. Many people have **conflicted** feelings about this fact. On one hand, Bonds is a great athlete and the record is a historic accomplishment. On the other hand, Bonds has been accused of using chemical **compounds** to illegally **alter** his body. This kind of chemical abuse goes against **fundamental** sports ideals, like sportsmanship and fair play. Before Bonds, Hank Aaron held the home run record. He was a role model to other athletes as well as one of the best players of all time. Some people think Barry Bonds is a poor **substitute** for Hank Aaron.



Here are the all-time, top five career home-run hitters:

Barry Bonds	762
Hank Aaron	755
Babe Ruth	714
Willie Mays	660
Ken Griffey, Jr.	630

**Option 1:** What percentage more home runs did Barry Bonds hit than Hank Aaron?

- A) 5% more
- B) 2% more
- C) 12% more
- D) less than 1% more

**Teacher's Note:**  $(762 - 755) / 755 \approx .00927 = .927\% = \text{less than } 1\%$

**Option 2:** A physicist at Tufts University estimated that steroids could help a person hit 50% more home runs. Let's assume he is right. If a player hit 762 home runs on steroids, how many home runs would he have hit without the 50% increase that steroids provide? (For example, we're assuming a person who hit 15 home runs on steroids would have hit just 10 home runs without steroids. Ten, increased by 50%, becomes 15.)

Answer: 508

**Math Discussion Question:** Steroids **alter** the body in a **fundamental** way, by increasing muscle mass. Are they responsible for baseball's recent record-breaking performances? The list of great players caught up in the **conflict** over steroids is growing. Batting greats Jose Conseco and Mark McGwire have both admitted to using illegal **compounds**. Should Major League Baseball try to **substitute** clean players for the ones who built their bulk with the help of steroids? Or should we accept that steroids were part of this era, and focus on the future?

# Steroids: Substance abuse or an innocent boost for athletes?

## Debating the Issue



### 1. Get ready...

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

**A** An athlete's records should be thrown out if he uses any chemical compounds to help him play the game, even pain relievers.

**B** Athletes should be allowed to use pain relievers if necessary, but should not be allowed to use any drugs that will give them an advantage over other players.

**C** Athletes should be allowed to use steroids and other compounds to improve their performance, as long as they are honest about what they have taken.

**D** An athlete's records should not be thrown out if he uses steroids, because what is important is what he accomplished, not how he did it.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# GO!

Be a strong participant by using phrases like these.

*In my experience . . .*

*that's similar to what I think too...*

*What makes you think that?*

*When I re-read the text, it reminded me...*

### 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

\_\_\_\_\_  
\_\_\_\_\_

#### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.10

# Steroids: Substance abuse or an innocent boost for athletes?

### Science Activity

Tufts University physicist Roger Tobin is interested in the **conflict** over illegal **compounds** used by some major league baseball players. Steroids and similar, **substitute** chemicals **alter** the body in a **fundamental** way. They help athletes increase muscle mass. But what does this mean for baseball players? Will players on steroids hit more home runs?

Tobin says yes. Steroids can increase muscle mass over 10%. Tobin found that a 10% muscle mass increase could help a player hit 50% more home runs.

Major League Baseball began testing for steroids in 2003. Players who are caught using steroids are fined, suspended without pay, or banned from the major league. If baseball players before 2003 had help from steroids to hit home runs, then home run records should be higher before 2003 and lower after 2003.

### Question:

Did the yearly home run record decrease after 2003?

### Hypothesis:

The average yearly home run record during the 5 years before 2003 will be higher than the average yearly home run record during the 5 years after 2003.

### Materials:

- ▶ Major League Baseball statistics



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

### TEACHER

-Our hypothesis is a narrow one. We certainly have not answered the fundamental questions at the heart of the steroids debate: How have steroids changed the game? Who is using steroids?

-Some sports experts wonder if athletes are outsmarting steroid tests by taking substitute compounds. For example, world-class sprinter Marion Jones gave up sports after admitting that she took tetrahydrogestrinone (also known as THG, or The Clear). The effects of THG are similar to anabolic steroids, but some athletes like Jones took THG because they thought it was undetectable.

-This press release from Tufts University explains the reasoning behind Tobin's conclusion. He found that a 10% muscle mass increase (a reasonable gain for a person taking steroids) could help a batter swing 5% faster, which would increase the speed of the ball by 4%. Applying this extra speed to each hit would result in 50% more home runs – a dramatic increase.

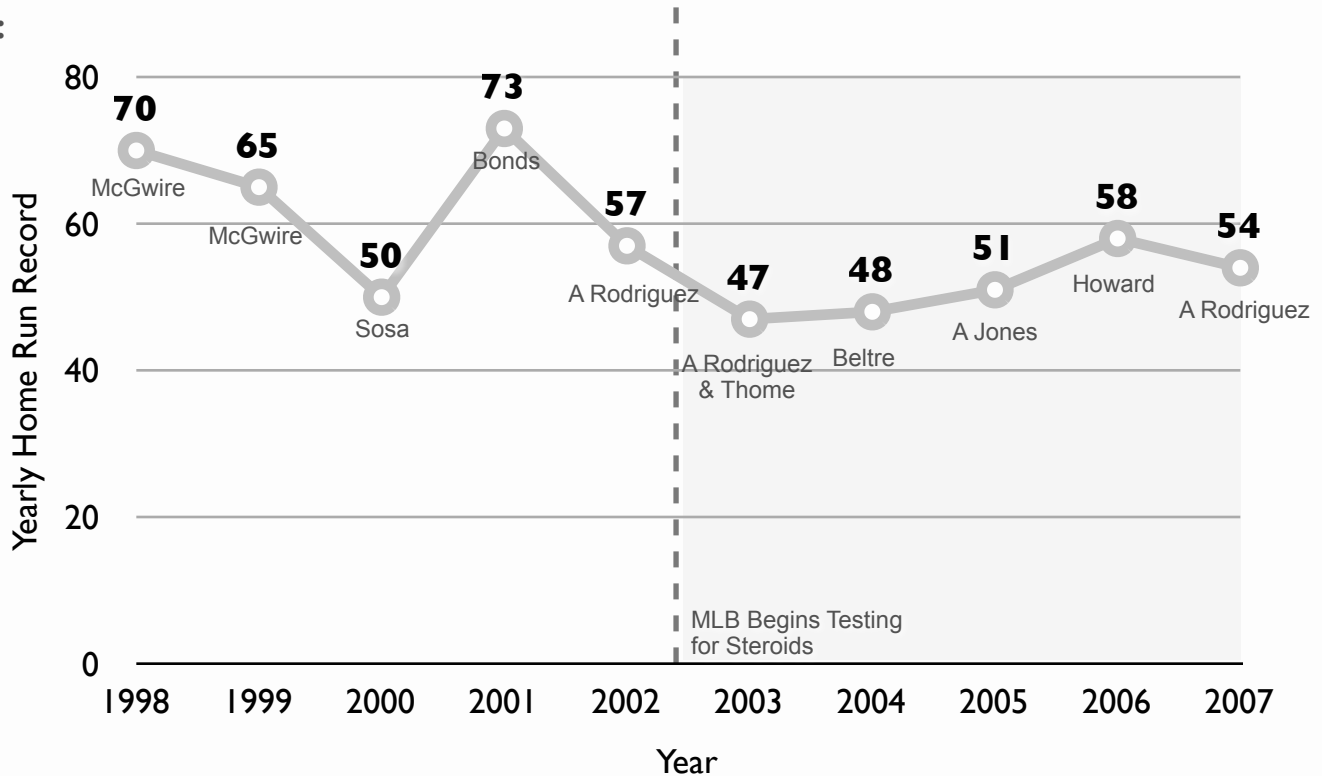
Tufts University E-News. (2007, September 24). Study: steroids can power home runs. Retrieved on November 19, 2009 from

<http://enews.tufts.edu/stories/89/2007/09/24/StudySteroidsCanPowerHomeRuns>

## Procedure:

1. Calculate the average home run record from 1998 to 2002, before steroid testing began.
2. Calculate the average home run record from 2003 to 2007.
3. Compare the two averages.

## Data:



## Conclusion:

Is the hypothesis supported or not by the data?

Supported

What evidence supports your conclusion?

Average for 1998 – 2002: 63

Average for 2003 – 2007: 51.6

The average yearly home run record dropped almost 20% in the five years following the start of steroid testing.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

Should an athlete's records be thrown out if he or she is guilty of steroid use?

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

### Focus Words

alter | compound | conflict | fundamental | substitute

### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

#### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

#### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

#### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!



## Focus Words

diversity | enhance | migration | presume | reveal

## Weekly Passage

Mummies are very old dead human bodies that still have flesh on their bones. Some cultures have a tradition of making mummies when people die. For example, ancient Egyptians preserved the bodies of dead kings and queens because they thought this would ensure a good afterlife.

In recent years, mummies that were created naturally have been discovered all over the world. One found in the Alps appears to have been accidentally frozen in a glacier. He is known as the Iceman and is presumed by scientists to be over 5000 years old!

We can learn a lot about human history from studying mummies. They can reveal clues about what people ate, the tools they made, what they wore, and how they lived and died. They can also help to enhance archaeologists' understanding of human migration patterns. Scientific tests have provided information about where the Iceman might have traveled in his lifetime.

There is a diversity of perspectives about what to do with mummies when they are encountered. Should they be removed and examined, or should they be left where they are? Some think a mummy should stay in the country where it was first identified. Others believe it should go to the museum or university best equipped to study and protect it. Still others believe that removing a mummy from its burial place dishonors the dead.

What do you think?

### TEACHER

#### Reading Comprehension/Discussion Questions:

- ▶ What is a mummy?
- ▶ Why did the ancient Egyptians make mummies when people died?
- ▶ What can we learn from studying mummies?
- ▶ Who is the Iceman?
- ▶ What should be done with mummies when they are found?

## Unit 1.1.1

# Mummies: Who owns the dead?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
diversity	(n.) - variety; range	diversities	diverse	diversify	diverge divergent
enhance	(v.) - to improve	enhances enhancing enhanced		enhancement	
migration	(n.) – movement	migrations migrate (v.) migrates migrating migrated		migrant migratory immigrate emigrate	
presume	(v.) - to suppose; to guess	presumes presuming presumed		presumption presumably presumptuous presumptive	resume consume assume
reveal	(v.) - to uncover; to show	reveals revealing revealed		revealer revelatory revelation	veil

## Unit 1.11

# Mummies: Who owns the dead?

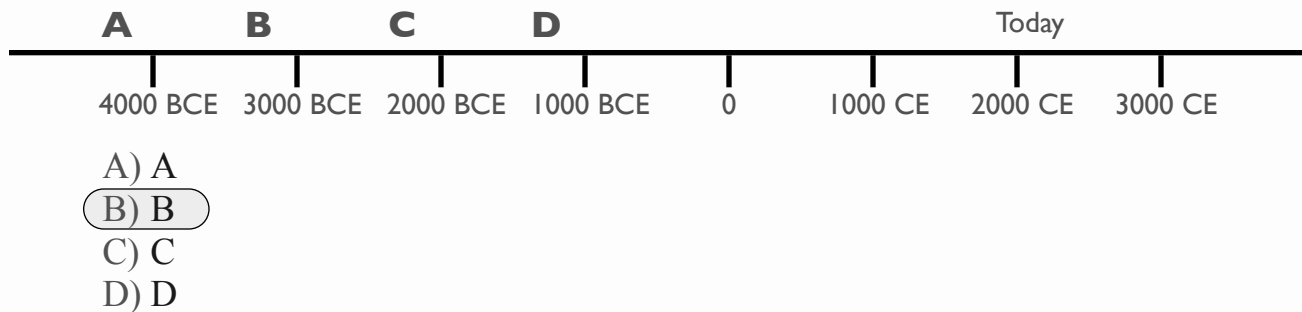
### Problem of the Week



When hikers first found the Iceman, they **presumed** that the body was fresh. Subsequent scientific study **revealed** that he had died over 5,000 years earlier.

Studies of the Iceman's body and clothing have **enhanced** our idea of what life was like long ago. Researchers learned about the **diversity** of his diet. Inside his stomach they found meat, grain, roots, and fruit. Researchers who study human **migration** were particularly interested in the Iceman's shoes. His shoes were sturdy and good for walking.

**Option 1:** The Iceman died about 5,300 years ago. Which letter represents the time frame of his death?



**Option 2:** Evidence from the Iceman's teeth and bones suggest that he spent his life in a region that measures 37 miles across. An average person can walk at a rate of 3.5 miles per hour. How long would it take to walk from one end of the Iceman's domain to the other?

**Answer:** about 10.57 hours, or about 10 hours 34 minutes

**Math Discussion Question:** When a modern person dies, we **presume** that the family has rights to the body. Many families want bodies disposed of quickly and respectfully. Although some people offer their bodies for scientific study, it is illegal to use a person's body in this way without their consent. When an ancient mummy is discovered, we think about the body very differently. We know that studying ancient remains may **reveal** new information that will **enhance** scientific knowledge. Ancient mummies may tell us new things about the **diversity** of human experience: where and how people **migrated**, what they ate, and how they lived. Is treating ancient mummies as scientific objects a form of disrespect? Or is the value to science more important? Or, could we say that scientific study itself is a way of respecting our ancient ancestors?

# Mummies: Who owns the dead?

## Debating the Issue



## 1. Get ready...

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

**A**

Mummies should be left where they are.  
Moving them dishonors the dead.

**B**

Mummies should be moved to a  
university where scientists can study  
what they reveal about the past.

**C**

Mummies should be moved to a museum  
where people can come to see them and  
enhance their knowledge about the past.

**D**

Mummies can be moved as long as they do  
not leave the country in which they are  
found.

**E**

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# GO!

Be a strong participant by using phrases like these.

*In my experience . . .*

*that's similar to what I think too...*

*What makes you think that?*

*When I re-read the  
text, it reminded me...*

## 2. Get set...

Be ready to provide evidence to back up your position  
during your class discussion or debate. Jot down a few  
quick notes:

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### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.11

# Mummies: Who owns the dead?

## Science Activity

Professor Kahn is spending her summer in Germany studying ancient Egyptian mummies. Her research team hopes to **enhance** what we know about a deadly disease: leishmaniasis (pronounced leash-man-eye-a-sis).

Scientists think leishmaniasis first appeared in ancient Nubia. In history, **migration** and trade have helped spread disease. When people moved, their diseases came with them. When people met to trade, they shared parasites and germs. Where there was **diversity** in terms of people, there was also **diversity** in terms of disease.

Egypt often traded with Nubia during the Middle Kingdom period (2050 – 1650 BC). Four of the Egyptian mummies Professor Kahn is studying are from this period. If the Nubians had leishmaniasis, then they could have given the disease to the Egyptians. The scientists **presume** these mummies will **reveal** evidence of leishmaniasis. Are they right?



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

### Question:

Did the Middle Kingdom mummies have leishmaniasis?

### Hypothesis:

Tests will **reveal** that all four Middle Kingdom mummies had leishmaniasis.

### Materials:

- ▶ Bone samples from the Middle Kingdom mummies
- ▶ DNA testing equipment

### TEACHER

-Nubia was located in modern-day Sudan and southern Egypt.

-Leishmaniasis is caused by protozoan parasites and spread by the bite of sand flies. It causes painful skin sores and kills half a million people each year. It is found in tropical and sub-tropical climates, both in the Americas and across Africa and Asia. Some U.S. troops stationed in the Middle East have contracted leishmaniasis.

### Real Research

-The real research on which this experiment was based was done by a team led by Albert Zink of Ludwig-Maximilians University in Munich. They tested 91 mummies from ancient Egypt and 70 from ancient Nubia by testing bone samples for mitochondrial DNA of the parasite that carries leishmaniasis. They found this DNA in nine of the Nubian mummies and four of the Egyptian mummies. All four of the Egyptian mummies were from the Middle Kingdom period, when trade ties between Nubia and Egypt were strong.

-Biello, D. (2006, October 6). Mummy DNA reveals birth of ancient scourge. Scientific American. Retrieved on November 17, 2009 from <http://www.scientificamerican.com/article.cfm?id=mummy-dna-reveals-birth-o>

**Procedure:**

1. Remove samples from the bones of the 4 mummies.
2. Test the samples for leishmaniasis.

**Data:**

Four Mummies from the Middle Kingdom period (2050 – 1650 BC)	Does the Mummy have Leishmaniasis?
Mummy 1	yes
Mummy 2	yes
Mummy 3	yes
Mummy 4	yes

**Conclusion:**

Is the hypothesis supported or not by the data?

Supported

What evidence supports your conclusion?

All four mummies from the Middle Kingdom period showed evidence of leishmaniasis.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

What should be done with  
mummies when they are found?  
Why?

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

### Focus Words

diversity | enhance | migration | presume | reveal

#### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

##### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

##### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

##### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

#### TEACHER

Ask students to write a response in which they argue a position on the weekly topic.

Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

[illegible]



Join the national conversation!



Word Generation - Unit 1.12

## Focus Words

acknowledge | incidence | incorporate | initiative | transport

## Weekly Passage

Many young people now acknowledge that eating too much junk food is not good for their health. They realize that soda, chips, and candy have little nutritional value. They know that these foods have too much sugar, salt, fat and refined starches. Yet they continue to eat junk food regularly.

Many also admit that they do not incorporate enough exercise into their daily routines. There is a higher incidence of type 2 diabetes among youth in recent years. This has been linked to rising obesity rates. Diabetes is a disease in which either the body's insulin levels are too low or the body does not respond to the insulin level that is present. The digestive system breaks down food to make glucose, which provides the body's energy. Insulin is an important hormone that helps the body utilize glucose. Insulin is needed to transport glucose to muscles and other tissues of the body.

Despite the link between diabetes and weight, some think that schools should keep selling soda and snacks. They argue that

students should have a choice about what they eat. Selling snacks also generates money for schools. Other people think that schools make junk food too accessible. They believe that schools should cooperate with health professionals on initiatives aimed at changing kids' eating and fitness habits. For example, schools could fill snack machines with more nutritious foods.

Should schools sell the snacks students want, or do they have a responsibility to promote healthy habits?

### TEACHER

Reading Comprehension/Discussion Questions:

- ▶ What are some reasons students acknowledge that eating too much junk food is bad for their health?
- ▶ What is diabetes? Why has there been a higher incidence of this disease among young people in recent years?
- ▶ Why do some kids think schools should continue to sell junk food?
- ▶ Why do some people support initiatives aimed at helping kids eat healthier foods in school?
- ▶ Should schools sell junk food to kids?

## Unit 1.12

# Junk food: Should schools sell it?

## Focus Word Chart

Word	Meaning	Forms			Related Words
		Inflectional	Basic Word Classes	Prefixes/ Suffixes	
acknowledge	(v.) - to recognize; to accept	acknowledges acknowledging acknowledged	know	acknowledgement	knowledge
incidence	(n.) - occurrence	incidences (pl.)		coincidence incidental incidentally incident coincide	
incorporate	(v.) – to include	incorporates incorporating incorporated	corpus	incorporation incorporative corporate corporation	corporeal
initiatives	(n.) - new plans or strategies	initiative (sing.)	initiate	initiation	initial initially
transport	(v.) - to carry	transports transporting transported transport (n.)		transportable transportation	portable deport deport import comportment

# Junk food: Should schools sell it?

## Problem of the Week

As the **incidence** of Type 2 diabetes climbs, researchers are doing more and more studies on good nutrition. Food companies try to **incorporate** findings from these studies so that consumers will continue to buy their products.

Frito-Lay is a company that makes Doritos, Cheetos, and other snack foods. These snacks are tasty, cheap, and easy to **transport**. Frito-Lay **acknowledges** that many of its foods are high in fat and sodium. Over the years, it has sponsored different **initiatives** to make its food healthier. One fat-cutting initiative led the company to develop Baked Lay's potato chips.

Here is some nutritional information about Baked Lay's chips, Classic Lay's chips, and a fresh apple.

	Lay's Classic Potato Chips	Lay's Baked Potato Chips	Apple
<b>Serving Size</b>	1 oz.	1 oz.	1
<b>Calories</b>	150	120	116
<b>Fat</b>	10 g	2 g	0 g
<b>Sodium</b>	180 mg	180 mg	2 mg

**Option 1:** The American Heart Association recommends that Americans eat a maximum of 1500 mg of sodium each day. What percentage of a person's daily sodium intake is in one bag of Lay's Baked Potato Chips?

- A) 6%
- B) 8%
- C) 10%
- D) 12%

**Option 2:** A large apple weighs about 8 ounces. There are 16 ounces in a pound. Based on this information, how many pounds of apples would you have to eat to equal the sodium in one serving of Baked Lay's?

Answer: 45 pounds

**Teacher's Note:**  $180 \text{ mg} / 2 \text{ mg} = 90$ , so a person would have to eat 90 apples to equal the sodium of one bag of chips. Assuming the apple weighs 8 oz, and 2 apples = 1 pound, this would be 45 pounds of apples.

**Math Discussion Question:** People like bagged snacks because they are cheap, easy to store, and easy to **transport**. However, the high **incidence** of illnesses caused by unhealthy diets has become a national worry. Many different health **initiatives** call for kids to snack on fresh fruits and vegetables. Schools **acknowledge** that fresh fruits and vegetables are healthy, but they are expensive. How could your school encourage all students to eat fresh fruit each day? **Incorporate** what you know about day-to-day life in the classroom and the lunchroom. What would work best for your school?

# Junk food: Should schools sell it?

## Debating the Issue



### 1. Get ready...

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

**A** Schools should not sell junk food to kids or allow it on campus at all. The increase of the incidence of obesity and diabetes in kids is a major health problem.

**B** Schools should sell junk food to kids. They should acknowledge that junk food is what kids like best and allow students to make their own choices about what to eat.

**C** Schools should sell junk food to kids, but also incorporate healthy alternatives into the menu. They should also teach kids about nutrition.

**D** Schools should sell junk food to kids on special occasions or allow students to bring it in themselves sometimes. Junk food should be a treat and not an everyday thing.

**E** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# GO!

Be a strong participant by using phrases like these.

*In my experience . . .*

*that's similar to what I think too...*

*What makes you think that?*

*When I re-read the text, it reminded me...*

### 2. Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

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#### TEACHER

Whatever the debate format, ask students to use academically productive talk when arguing their positions. In particular, students should provide reasons and evidence to back up their assertions. It may be helpful to read these sample positions to illustrate some possibilities, but students should be encouraged to take their own positions about the issue at hand.

## Unit 1.12

# Junk food: Should schools sell it?

### Science Activity

Shobi has started a school-wide **initiative** to get rid of snack machines. “Obesity is a big problem,” says Shobi. “Snack machines send the wrong message.” Ms. Hamrah, the basketball coach, **acknowledges** the high **incidence** of obesity. But she disagrees with Shobi’s **initiative**.

“We need the snack machines,” says Ms. Hamrah. “They help us pay for equipment and busses. How will we buy uniforms and **transport** athletes? Besides,” she continues, “the best way to lose weight is to work out. If kids exercised enough, we wouldn’t have to worry about snacks!”

Is Ms. Hamrah right? Is exercise the best way to lose weight?

#### Question:

Does exercise really cause significant weight loss?

#### Hypothesis:

If subjects **incorporate** an hour of exercise into their schedules 5 times a week, they will lose an average of at least 10 pounds.

#### Materials:

- ▶ 8 overweight subjects
- ▶ Supervising doctors
- ▶ Exercise equipment
- ▶ Scales



This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

#### TEACHER

##### Real Research

-In the real study on which this experiment was based, 58 overweight or obese men and women completed a 12-week exercise program. Like in the WG experiment, they exercised for 5 one-hour sessions each week. The subjects achieved an average weight loss of just over 7 pounds, and some subjects lost much less. The researchers who completed the study, which is published online, make the point that the subjects achieved other health benefits, like increased aerobic capacity, decreased blood pressure, and improved mood. They suggest that exercise should be presented as a means of improving overall health, and not primarily as a means of weight control.

King, N. et. al. (2009, September 29). Beneficial effects of exercise: shifting the focus from body weight to other markers of health. British Journal of Sports Medicine. Retrieved on November 6, 2009 from

<http://bjsm.bmj.com/cgi/content/abstract/bjism.2009.065557v1>

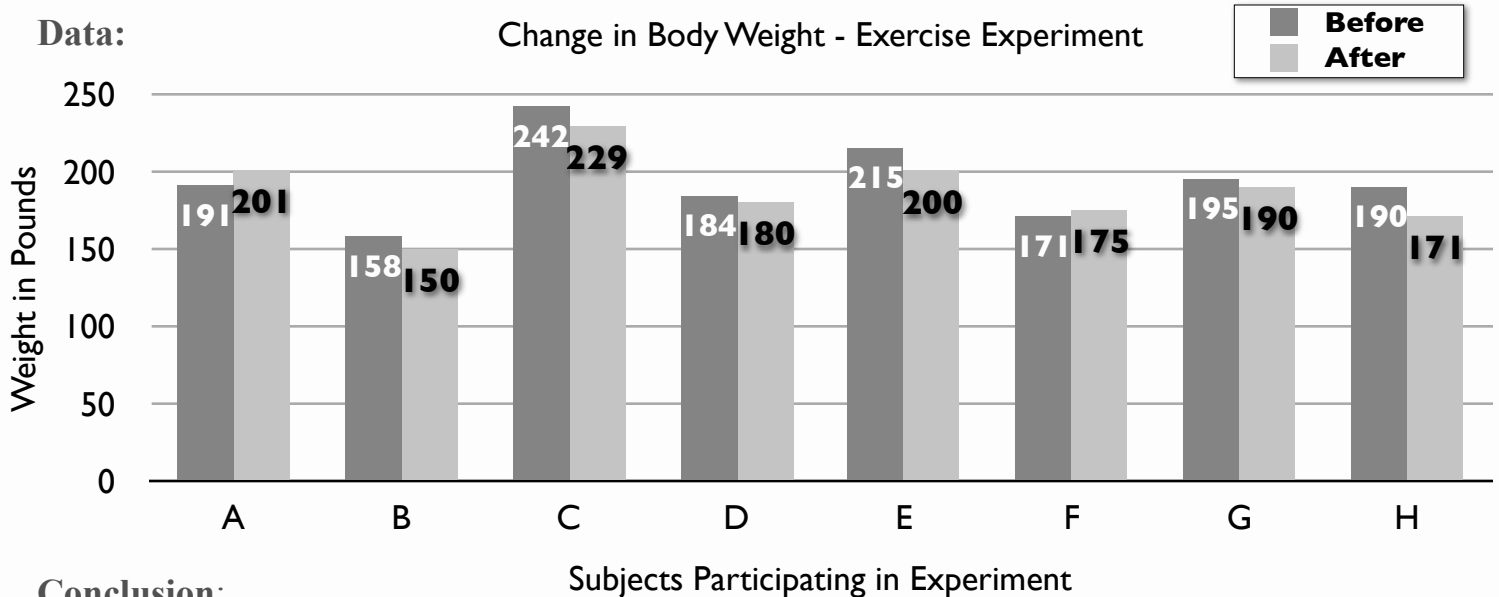
-This article cites several studies, included the study mentioned above, that all suggest exercise alone is not the best method for reducing body weight. However, it also makes the point that exercise appears to be helpful for keeping weight off as well as for general health and well-being.

Reynolds, G. (2009, November 4). Phys Ed: Why doesn't exercise lead to weight loss? The New York Times. Retrieved on November 6, 2009 from

<http://well.blogs.nytimes.com/2009/11/04/phys-ed-why-doesnt-exercise-lead-to-weight-loss/?em>

### Procedure:

1. Weigh all 8 subjects.
2. Have subjects incorporate 5 one-hour exercise sessions into each week for 3 months.
3. Weigh all 8 subjects at the end of the 3 months.



Is the hypothesis supported or not by the data?

Not supported

What evidence supports your conclusion?

The average weight loss was only 6.25 pounds.

How would you make this a better experiment?

Encourage students to consider sample size, number of trials, control of variables, whether the procedure is a true measure of the question, whether the experiment can be repeated by other scientists, data collection and recording systems, and other potential explanations for the outcome. Students should understand that these simple experiments represent the beginning of an exploration, not the end. If time permits, have students suggest how the experiment could be strengthened, emphasizing the use of the target words in the discussion.



## Writing Prompt:

Should schools sell junk food to kids? Why or why not?

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

### Focus Words

acknowledge | incidence | incorporate |  
initiative | transport

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TEACHER
Ask students to write a response in which they argue a position on the weekly topic.
Put the writing prompt on the overhead projector (or the board) so that everyone can see it. Remind students to refer to the word lists in their Word Generation notebooks as needed.

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### A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

#### Good Start

- ☐ Stated my own position
- ☐ Included 1 focus word

#### Pretty Good

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1-2 focus words

#### Exemplary

- ☐ Stated my own position clearly
- ☐ Included 1-2 arguments
- ☐ Included 1 counterargument
- ☐ Used 2-5 focus words

[illegible]