MS. W'S CLASS- **MENTOR** **ROOM 19**

STUDENT: **MG--** SCHOOL WORK FOR THE WEEK OF 3/16/2020

	MON	TUES	WED	THURS	FRI
ELA					
GEOMETRY					
AMERICAN HISTORY					
BIOLOGY					
EMPLOYABILITY					

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Vitamin D

Vitamin D has been called the new "wonder vitamin." Doctors are learning more and more about its role in good health and the prevention of diseases. Unfortunately, though, most teens don't get enough.

Why Do I Need It?

Vitamin D plays a part in the bone-building process by helping the body to absorb calcium. If someone doesn't get enough, it could affect the body's ability to build and maintain strong bones and teeth.

It's not just about bones, though. Vitamin D is needed for a healthy immune system — helping the body to fight off infections and prevent the development of autoimmune diseases like rheumatoid arthritis. Research done in adults suggests that getting enough vitamin D may help lower the chances of developing heart disease, certain cancers, and other serious diseases like diabetes.

Why Don't People Get Enough?

There are several reasons why people don't get enough vitamin D:

- **Less exposure to UV rays.** Vitamin D is sometimes called the "sunshine" vitamin. When the sun's ultraviolet rays penetrate bare skin, it sets off a process in the body that produces vitamin D. As many of us spend more and more time on computers and game consoles, we're not outdoors as much as we once were. And, when we do spend time in the sun, more of us are making the wise decision to use sunscreen to block the UV rays that cause sun damage and cancer. Where we live makes a difference, too: If you live in northern U.S. and Canada, it's possible you're not getting the UV exposure required for your body to make enough vitamin D.
- **Dark skin.** The melanin (the pigment that gives skin its color) in darker skin protects against sun damage, but it can also block the sun needed to produce vitamin D.
- **Certain health conditions.** Some health conditions, like cystic fibrosis or inflammatory bowel disease, affect how well the body absorbs nutrients, including vitamin D. And because vitamin D is a fat-soluble vitamin that gets stored in the body's fat cells, obesity increases a person's risk for vitamin D deficiency.
- **Lower consumption of D-rich foods.** Experts recommend eating vitamin D-rich foods as the best way to get enough vitamin D. But many of the best foods — like fatty fish and oil — are not the most popular. These days, most milk is "fortified" with added vitamin D. But many teens aren't drinking enough milk to get the recommended daily amount.

Why Not Just Get More Sun?

Sun exposure can lead to serious problems, like skin cancer. There's just not enough evidence yet that getting vitamin D from exposing bare skin to the sun is worth the risk. You may see advice that it's OK to get unprotected sun exposure at certain times, but there's no way to say for sure whether that advice is safe for you. It depends on a combination of things, including body size, skin color, geographic location, season, whether it's cloudy or sunny out, and how much sun protection you use.

How Much Vitamin D Do I Need?

The Institute of Medicine (IOM) recommends that teens get 600 IU (international units) of vitamin D per day. Ask your doctor if you should take a daily multivitamin or vitamin D-only preparation that contains the 600 IU of vitamin D you need.

You may need even more than 600 IU if you have darker skin, live in areas with limited sunshine, have a condition that affects how well your body absorbs nutrients, or if tests show you have low vitamin D levels. Check with your doctor before taking higher doses, though. Vitamin D is a fat-soluble vitamin, meaning it gets stored in the body. In rare cases extremely large doses could build up to dangerous levels.

The IOM recommends an upper limit — the highest daily intake that is likely to pose no risk — of 4,000 IU of vitamin D per day for teens. Most people who eat foods rich in vitamin D, who get normal sun exposure, and who take a 600 IU supplement will not get toxic buildup of vitamin D in their bodies. Problems with vitamin D toxicity

happen when people take supplements with megadoses of the vitamin or lots of different supplements containing the vitamin.

As always, your doctor is the best advisor of what works for you!

Getting More Vitamin D Into Your Diet

As with all vitamins, it's best to get our D through the foods we eat. The best sources of vitamin D are:

- fatty fishes and fish oils, such as salmon, mackerel, and cod liver oil
- egg yolks
- vitamin D-fortified milk and other dairy products

Lots of other foods are fortified with vitamin D, including orange juice, soy milk, cereals, and bread. Read the nutrition facts label to see how much vitamin D is in each serving.

Reviewed by: Mary L. Gavin, MD
Date reviewed: February 2014

Name _____

Vitamin D Question Sheet

1. How much vitamin D should a teen get a day?

2. How does vitamin D help the body?

3. What are the reasons people don't get enough Vitamin D?

4. If we get the proper amount of Vitamin D, what type of disease will it help lower our chances of contracting?

5. How can you get more Vitamin D into your diet?

6. What type of foods are fortified with Vitamin D?

Biology

Day 7

WEEK 1

Day 2

Vitamins and Minerals

Breakfast cereals advertise that they're packed with vitamins and minerals. Sports drinks claim they can rev up your flagging energy with a jolt of vitamins or minerals (sorry, but even powerful vitamins and minerals can't act that fast!). You know vitamins and minerals are good for you. But which ones does your body really need? And is it possible to get too much of a good thing?

What Are Vitamins and Minerals?

Vitamins and minerals make people's bodies work properly. Although you get vitamins and minerals from the foods you eat every day, some foods have more vitamins and minerals than others.

Vitamins fall into two categories: fat soluble and water soluble. The **fat-soluble** vitamins — A, D, E, and K — dissolve in fat and can be stored in your body. The **water-soluble** vitamins — C and the B-complex vitamins (such as vitamins B6, B12, niacin, riboflavin, and folate) — need to dissolve in water before your body can absorb them. Because of this, your body can't store these vitamins. Any vitamin C or B that your body doesn't use as it passes through your system is lost (mostly when you pee). So you need a fresh supply of these vitamins every day.

Whereas vitamins are organic substances (made by plants or animals), minerals are inorganic elements that come from the soil and water and are absorbed by plants or eaten by animals. Your body needs larger amounts of some minerals, such as calcium, to grow and stay healthy. Other minerals like chromium, copper, iodine, iron, selenium, and zinc are called **trace minerals** because you only need very small amounts of them each day.

What Do Vitamins and Minerals Do?

Vitamins and minerals boost the immune system, support normal growth and development, and help cells and organs do their jobs. For example, you've probably heard that carrots are good for your eyes. It's true! Carrots are full of substances called **carotenoids** that your body converts into vitamin A, which helps prevent eye problems.

Another vitamin, vitamin K, helps blood to clot (so cuts and scrapes stop bleeding quickly). You'll find vitamin K in green leafy vegetables, broccoli, and soybeans. And to have strong bones, you need to eat foods such as milk, yogurt, and green leafy vegetables, which are rich in the mineral calcium.

Fuel for Growth

People go through a lot of physical changes — including growth and puberty — during their teenage years. Eating right during this time is especially important because the body needs a variety of vitamins and minerals to grow, develop, and stay healthy.

Eating a variety of foods is the best way to get all the vitamins and minerals you need each day, as well as the right balance of carbohydrates, proteins, fats, and calories. Whole or unprocessed foods — like fresh fruits and vegetables, whole grains, low-fat dairy products, lean meats, fish, and poultry — are the best choices for providing the nutrients your body needs to stay healthy and grow properly.

It's OK to eat foods like potato chips and cookies once in a while, but you don't want to overdo high-calorie foods like these that offer little nutritionally.

To choose healthy foods, check food labels and pick items that are high in vitamins and minerals. For example, if you're choosing beverages, you'll find that a glass of milk is a good source of vitamin D and the minerals calcium, phosphorous, and potassium. A glass of soda, on the other hand, doesn't have any vitamins or minerals.

You can also satisfy your taste buds without sacrificing nutrition while eating out: Vegetable pizzas or fajitas, sandwiches with lean cuts of meat, fresh salads, and baked potatoes are just a few delicious, nutritious choices.

If you're a vegetarian, you'll need to plan carefully for a diet that offers the vitamins and minerals found primarily in meats. The best sources for the minerals zinc and iron are meats, fish, and poultry. However, you can get zinc and iron in dried beans, seeds, nuts, and leafy green vegetables like kale.

Vitamin B12, which is important for manufacturing red blood cells, is not found in plant foods. If you don't eat meat, you can find vitamin B12 in eggs, milk and other dairy foods, and fortified breakfast cereals. Vegans (vegetarians

who eat no animal products at all, including dairy products) may need to take vitamin supplements.

If you're thinking about becoming a vegetarian, talk to your doctor or a dietitian about how to plan a healthy, balanced diet.

Common Concerns

Lots of teens wonder if they should take vitamin or mineral supplements. If your diet includes a wide variety of foods, including whole-grain products, fresh fruits and vegetables, dairy products, nuts, seeds, eggs, and meats, then you are probably getting the vitamins and minerals your body needs.

But if you're skipping meals, dieting, or if you're concerned that you're not eating enough items from a particular category, such as vegetables or dairy products, then talk to your doctor or to a dietitian. These professionals can help you create an eating plan that includes the nutrients your body needs.

Check with your doctor before taking vitamin or mineral supplements. Some people think that if something is good for you, then the more you take in, the healthier you'll be. But that's not necessarily true when it comes to vitamins and minerals. For example, fat-soluble vitamins or minerals, which the body stores and excretes more slowly, can build up in your system to levels where they could cause problems.

There are hundreds of supplements on the market and of course their manufacturers want you to purchase them. Beware of unproven claims about the benefits of taking more than recommended amounts of any vitamin or mineral. A healthy teen usually doesn't need supplements if he or she is eating a well-rounded diet.

Your best bet for getting the vitamins and minerals you need is to eat a wide variety of healthy foods and skip the vitamin pills, drinks, and other supplements. You'll feel better overall and won't run the risk of overdoing your vitamin and mineral intake.

Reviewed by: Mary L. Gavin, MD
Date reviewed: July 2014

Name _____

Vitamins and Minerals Questions Sheet

1. What are the fat-soluble vitamins?

2. Why is vitamin B12 important for the body?

3. When, or should you take vitamin supplements?

4. Which vitamin aids in blood clotting and why?

5. What are the water-soluble vitamins and how do they help the body?

6. What foods help you receive the type and amount of vitamins you need each day?

D10 Week 1 ~~Day 6~~
Day 3, 4, 5 - Any Make-up Work

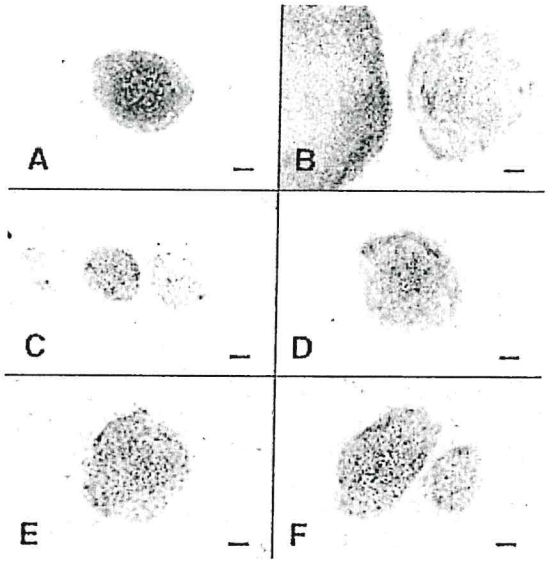
From Stem Cell to Any Cell

Emily Sohn **Oct. 19, 2005**

For maybe a day, about 9 months before you were born, you were just one cell. Then you were two identical cells. Then you were four. Then eight.

Since then, you've grown into a complicated organism with many trillions of cells grouped into specialized tissues and organs. The cells in your brain do the thinking. The cells in your heart pump blood. The cells in your tongue let you taste food. And so on.

In recent years, scientists have made an amazing discovery. Even though most cells have specific jobs, some primitive cells—called stem cells—exist in everyone's body. Stem cells are unspecialized cells that can develop into nearly any type of body cell.



These images show human embryonic stem cell colonies, as grown in 1998 by researchers at the University of Wisconsin–Madison, in different stages of development.
© Science

Embryos—babies in the earliest stages of growth before they are born—have stem cells. Certain tissues in adults also contain stem cells, although the range of cells into which they can develop is limited.

In 1998, scientists at the University of Wisconsin–Madison figured out how to collect human embryonic stem cells and make them grow. Since then, researchers have learned to mix stem cells with combinations of proteins called growth factors to make the cells grow into different types of cells. Now, the search is on for ways to use stem cells to treat injuries and cure diseases.

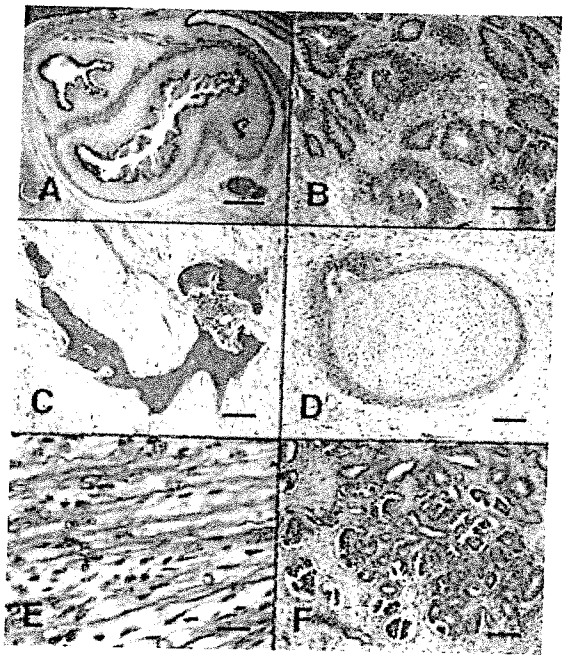
For example, stem cells could be extracted, turned into new bone cells, and then injected into weak or broken bones. Or, they could become nerve cells that could heal spinal cord injuries, skin cells that could replace badly burnt skin, or brain cells that could help people who have suffered brain damage. The possibilities are endless.

"At this point, the ability to create all the different cells in the body has been pretty much proven to be real," says Gary Friedman. He's director of the Center for Regenerative Medicine in Morristown, N.J. "All the focus now is on getting new cells to behave the way we want them to and to go where we want them to go."

Living better

Treating heart disease is one promising area of research. In dishes in the laboratory, scientists have already turned stem cells into heart cells, which gather into a group and throb in synch with one another, just like cells do in your heart.

At the University of Texas Health Science Center in Houston, researchers are now taking stem cells from a patient's own body and injecting them into the heart to rebuild heart tissue and combat heart disease.



Human embryonic stem cells can turn into a variety of different cell types, including (A) gut, (B) neural cells, (C) bone marrow cells, (D) cartilage, (E) muscle, and (F) kidney cells.
© Science

Elsewhere, scientists are working to battle spinal cord injuries, diabetes, cancer, and more. But stem cells can't cure all our ills. Some health problems are proving harder to treat this way than others.

Hearts, nerves, and livers are simple, Friedman says. Kidneys and lungs, on the other hand, are organs are tougher to repair. In kidneys, for example, stem cells have to not only specialize but also move into appropriate positions.

The goal of stem cell research is to help people live better, Friedman says.

"If kids are looking at their grandparents, maybe they see somebody who can't walk well or somebody who is partly paralyzed because of a stroke," he says.

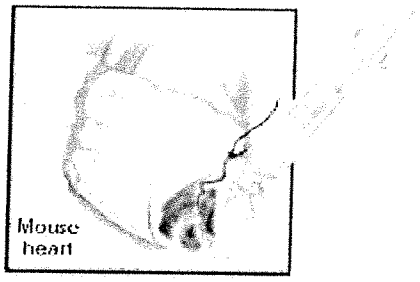
"If you could take an older person and give that person cells to regenerate heart muscle or part of the brain that died during a stroke, or inject cells into joints to take away arthritis, all of a sudden you're going to have a pretty vibrant person there," Friedman says.

"This will help society," he says. "People will be more functional instead of being in a weakened state and having to be cared for."

More than science

As promising as the research may seem, discussions about stem cells often involve more than just science. Ethics is also involved, along with politics and religion, especially when it comes to stem cells taken from embryos.

So far, embryonic stem cells appear to be more useful than stem cells that come from adults. Because an embryo's cells are still dividing and specializing anyway, its stem cells can still become almost anything. By the time we grow up, however, our stem cells have a more limited ability to diversify.



To repair heart muscle in a mouse, researchers inject adult stem cells into the muscle of the damaged wall of a mouse heart.
National Institutes of Health

The problem with embryonic stem cells, for some people, is that they originally come from destroyed embryos. Many scientists argue that stem cells are our best hope for curing a huge number of diseases. They also argue that fertility clinics end up with a surplus of embryos that are never born anyway.

Nevertheless, critics think its wrong to use cells from dead embryos. It's a very complicated issue that involves basic beliefs about when life begins, and these are the types of beliefs about which people tend to feel passionate.

Some recent research may help put an end to the debate, Friedman says.

A new technique called "somatic cell nuclear transfer" has given scientists the ability to create embryonic-like stem cells out of a person's own cells. This strategy is especially appealing to doctors, because it's always better to use a person's own cells for transplants and injections. Our bodies often reject cells that come from someone else, even if that someone else is an unborn embryo.

Scientists have also found embryonic-like stem cells in umbilical cord blood. About 100 million babies are born each year, and every one of them has an umbilical cord that connects it to its mother. If umbilical cords prove to be a reliable source, the supply of stem cells could be enormous and controversy-free.

All this may sound a bit confusing, but it's worth learning more. Stem cells are big news in medicine right now. "I don't think a day goes by when there aren't articles or something on the Web about it," Friedman says.

As you get older, you're bound to hear more and more about stem cells.

From Stem Cell to Any Cell

Question Sheet: From Stem Cell to Any Cell

Before reading:

1) In biology, what are cells? Why are they important?

During reading:

1) What are stem cells?

2) Where are they found?

3) What are three important uses for stem cells?

   X

   X

   X

4) Name two organs that are easy to repair using stem cells.

5) What are two organs that are difficult to repair using stem cells?

6) Why are embryonic stem cells more useful than other stem cells?

7) What makes the new technique called "somatic cell nuclear transfer" appealing to doctors?

8) How are scientists trying to get around ethical concerns about the use of embryonic stem cells in research and medicine?

OGT Coverage: PS.C.9.3.a, b, c, d, e, f, g

LESSON 10

Cultural Exchange

IT'S IMPORTANT:

- People from different cultures exchange cultural practices for a variety of reasons and in a variety of ways.
- Advances in communication and transportation have had an impact on globalization, cooperation and conflict, the environment, collective security, popular culture, political systems and religion.

The world has become smaller through mass communication and the ability to travel huge distances in a matter of hours. Because of this, the cultures of the world are more interconnected than ever before. Jet airplanes, high-speed trains, easy access to automobiles and advances in shipping practices have brought people from different cultures into ever closer contact. The Internet has connected us to a truly worldwide web of individuals. We come into contact with people who may share many of our interests, tastes and concerns, but who also have their own unique cultural practices. Cable and satellite television has allowed people from many different cultures to experience and exchange information about news, sports, art, language, education, politics, religion, the environment—and the list goes on.

In this lesson, you will learn how some of these technological advances have influenced the way people live, work and relate to each other.

Globalization

Globalization is a term that covers a lot in one word. It refers to the way the world's countries are increasingly interdependent on one another. This interdependence is largely economic. Goods, services and money flow across international borders as never before. Much of this flow is due to improvements in technology. As you will read in the following sections, transportation and communication improvements have been extremely important to the growth of globalization. Transportation technology carries things from place to place. Communication technology contributes to the flow of information across borders. When you can log onto the Internet to buy and download songs by a band from Sweden, that's globalization right in your own home. The flow of information also makes it possible for corporations to do business wherever and however they want. International investors can put their money to work anywhere, regardless of national borders.

In the industrial world, people have always moved to where the jobs are. This is still true to some extent today. However, in the global economy, jobs often move to where the people are. For example, American companies have moved some of their factories to Mexico or China, where people will work for less money. Even some high-tech jobs have been moved, or **outsourced**, to foreign countries. When you call a software company for technical support, you may be speaking to someone sitting in India. (This is another way in which communications improvements drive globalization.)

Critics of globalization say that it makes the world run by the rules of the richest countries. However, those who favor globalization say that participation in a global economy allows poorer countries their best chance to compete.

Quick Review 1: Globalization has changed the world economically and socially in the last 20 to 25 years. Which of the following statements best describes the changes brought about by globalization?

A. Globalization has given poorer countries an advantage over richer ones.

B. Globalization has led to the outsourcing of jobs from countries such as China to the United States.

C. Globalization has created a worldwide market for money, goods, services and information.

D. Globalization is responsible for the creation of the Internet as a method of delivering news and entertainment.

Transportation

Transportation improvements have made it possible for products to be manufactured far away from where they are used. Transportation has also affected the environment, leading to both conflict and cooperation between people and nations. From the steam engine to the jet engine, the process of globalization has been accelerated by advances in transportation.

TARIFFS, TRADE AND NAFTA

Countries used to place tariffs on imported goods. A **tariff** is a tax that raises the price of goods. When a tariff makes a foreign product more expensive, the same product made in the home country is more attractive to buy. In the 1990s, however, many of the world's countries lowered their tariffs or dropped them altogether. **Free trade** produces **open markets** in which all countries may participate on an equal basis. The **North American Free Trade Agreement (NAFTA)** between the United States, Canada and Mexico went into effect in 1994. NAFTA was intended to make North America into one big market, leading to lower prices for goods and higher profits for companies and countries, which in turn was supposed to lead to higher wages for workers. NAFTA has lived up to its promises in some ways, but not in others. Nevertheless, other NAFTA-style agreements are being proposed in other regions of the world. Free trade and open markets are important to the globalization of the economy.

The internal combustion engine

As you learned in Lesson 2, the steam engine changed industry, transportation and the environment all over the world in the 19th century. The average person, however, still walked to the market or rode a horse to the next town. Moving belongings from place to place required a horse-drawn cart. Steam engines were too large to drive wagons or small carts. They also needed a separate firebox to generate the heat to make steam.

The **internal combustion engine**, which produces power from fuel burned inside the engine itself, made the automobile possible. In turn, the automobile made it possible for the average person or family to go where they wanted, when they wanted. Workers no longer needed to live near factories or office buildings. They could move to any town within driving distance. Travel habits changed, too. Families drove instead of taking the train. Gas stations, restaurants and other tourist services sprouted along newly built highways.

One of the most serious effects of the automobile, however, has been environmental. Pollution caused by car and truck exhaust has made the air in places such as Los Angeles, California, and Mexico City, Mexico, dangerous to breathe. Road construction has destroyed sensitive wilderness. The commercial and residential development that follows road-building has destroyed even more.

Engines of war

In addition to its use in the automobile, the internal combustion engine was widely used for the first time during World War I. The use of trucks, planes and tanks changed the way war was waged. Motorized warfare increased the number of casualties and the destruction of property.

Use of vehicles in war also made quick surprise attacks much more likely. For example, the beginning of World War II would have been much different if Germany's troops had invaded Poland on horseback or on foot. Poland's army was well-trained. They would have known the Germans were coming. Instead, German planes and tanks took the war deep into Poland in just a few hours. Polish troops were defeated before they could mount a defense.

With the constant threat of sudden attack, the nations of the world entered an era of **collective security**. Collective security is a strategy under which a group of nations agree not to attack each other. They also agree to defend each other against an attack from one of the others. NATO (North Atlantic Treaty Organization) is an example of a collective security organization. The United Nations is another. With so many advances in military transportation and delivery systems over the past few decades, the role of collective security has become increasingly important for international cooperation and stability.

KEEP ON TRUCKIN'

Rudolf Diesel, a German engineer, wanted to make a heavy-duty engine that would allow small craftsmen to compete with large factories (which had huge steam engines). Diesel invented an internal-combustion engine that didn't need a spark to ignite the fuel (gasoline engines have spark plugs). Instead, his engine compressed air until it got so hot it burned the fuel. These engines used less fuel than gasoline engines, they could pull or lift much more weight than gasoline engines and the fuel was less expensive than gasoline.

Instead of changing the small shops of craftsmen, however, the **diesel engine** revolutionized large-scale transportation. Many trucks, railroad locomotives and ships (including submarines) still use diesel power.

Quick Review 2: The internal combustion engine affected transportation. Changes in transportation affected the way wars were fought. How did the internal combustion engine affect World War I?

A. It allowed attackers to move faster and permitted Germany to defeat Poland more easily.

B. More mobile weapons led to greater numbers of casualties and more property damage.

C. It improved the collective security of nations using motorized transportation.

D. Motorized transportation was less expensive than other forms of transportation.

The jet engine

One of the most influential advances for both the military and civilians was the invention of the **turbo-jet engine** in 1939. At first, the jet engine was used mostly in military fighter aircraft, but commercial airlines began jet-powered transatlantic service in 1958. Jets allowed many more people to travel to different continents and experience other cultures.

Jet engines also paved the way for rocket-powered space travel and the Cold War era "space race" between the United States and the Soviet Union. When the Soviet Union launched the world's first satellite, Sputnik I, into orbit around Earth in 1957, the United States worried about what kind of advantage this gave the Soviets over America. The United States feared that the Soviet Union might use satellites to spy on America, or even to deploy missiles. Because of these fears, the United States quickly responded by developing its own space program. The United States put the first man on the moon in 1969. The competition spawned by the jet engine was as much political as it was technological.

Since the end of the Cold War, however, the space race has been gradually replaced by increasing cooperation among nations that now share research and satellites.

SPACE TRAVEL AND POPULAR CULTURE

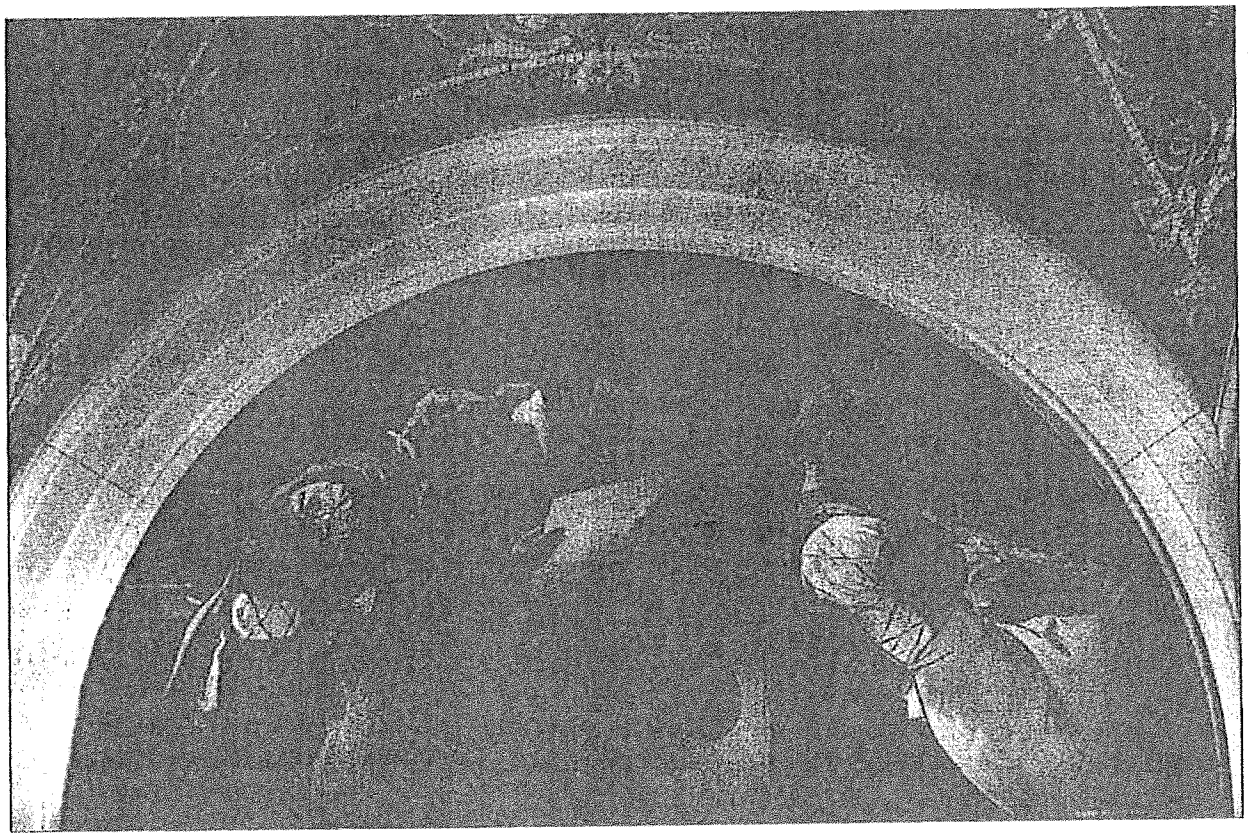
Space exploration fed the popular imagination and became a cultural symbol of the 1960s. Television and radio news often talked about space exploration, and advertisers used images and sounds of aliens and space suits to sell their products. Themes about space could be found in comic books, movies, music and television series. In Britain, the science fiction series *Dr. Who* became popular; in the United States, television viewers first watched *Star Trek* in 1966. Movies such as *Planet of the Apes* (1968) and *2001: A Space Odyssey* (1968) were huge box-office hits.

Quick Review 3: Imagine that a historian says, "The jet engine helped contribute to Cold War tensions between the United States and the Soviet Union." Explain why the historian's comment is correct.

From the Printing Press to the Internet

Johannes Gutenberg was a 15th-century German goldsmith and craftsman who spent more than 17 years, most of it in secret, inventing the printing press. Before Gutenberg, books were copied by hand for monasteries or for wealthy nobles. These handmade books were beautiful but expensive. They also often contained errors made by scribes (the men who did the actual copying). Around 1455, Gutenberg printed his three-volume Latin Bible. About 40 copies of this first modern book still exist.

Gutenberg did not set out to invent mass publishing, however. He wanted to find a more convenient way to produce books for the Church that kept the beauty of the older, handmade versions. (His Bible even looked like the work of a scribe.) Instead, he invented the printing process that would be used until the 20th century. It would help bring the written word to millions of people. By doing so, the printing press helped pave the way to the Renaissance, the Enlightenment and modern mass education.



Above: *Gutenberg's printing press used movable type, consisting of small pieces of metal each engraved with a letter. He greatly improved the speed and efficiency of the printing process by developing a system to mass-produce movable type.*

Quick Review 4: How did Gutenberg's press affect the course of history?

A. By making it easier for monks to print books, it kept books in the monasteries.

B. The printing press was condemned by the Roman Catholic Church and had little effect outside Germany.

C. The printing press helped preserve the art of making and copying books by hand.

D. Books became accessible to millions of readers, which helped to spread knowledge.

Communications advances

Today, we can see pictures and live video from distant parts of the world on our TV sets or computers. We take that for granted now, but it wasn't always true. In 1963, when President Kennedy was assassinated in Dallas, Texas, film of events in the city had to be flown from Texas to TV studios in New York for broadcast. There was no other way to send video from place to place—but that was already changing. The previous year, 1962, the first communications satellite, *Telstar I*, had been launched into orbit around Earth. It was the beginning of the **Information Age**, a time of great leaps in technology that would directly affect millions of people.

Satellite broadcasting of news, sports and entertainment continues to change the way people see the world. Informational borders that were once tightly controlled in some nations are bypassed by people who have access to cable or satellite television and the Internet. The news coverage of the fall of the Berlin Wall and the resulting fall of communism in the rest of Eastern Europe was watched live by much of the world. Many believe that this instantaneous global news actually helped end the Cold War by inspiring people in Eastern Europe with images of mass protest in neighboring countries. Similarly, the 1991 Persian Gulf War and the Iraq War that began in 2003 were seen live, while they were happening.

The technology that sends pictures into our homes is only part of the story. Having a way to see the pictures is also important. Until 1980, there was relatively little time devoted to news on TV. Stations broadcast short news programs, mostly in the morning and evening, along with regular entertainment shows. In 1980, the **Cable News Network** (CNN) went on the air broadcasting news 24 hours a day, seven days a week. It showed live pictures of the Berlin Wall falling. CNN reporters were on the air live from Baghdad during the first air attacks of the Gulf War in 1991. Other 24-hour news channels, MSNBC and **Fox News Channel**, both went on the air in 1996. When the Iraq War began in 2003, military leaders permitted TV, radio and print reporters to accompany soldiers on missions. Viewers, listeners and readers got a closer view of war than ever before in history.

Not only has improved mass communication lessened the isolation of developing nations, it has also increased cultural awareness. It has contributed to globalization by helping people exchange cultural practices and products. People can learn about life in other cultures simply by watching television programs or movies (or visiting websites) from around the world.

OGT Coverage: PS.C.9.3.a, b, c, d, e, f, g

TECHNOLOGY AND RELIGION

The invention of the printing press had a huge impact on religion, especially Christianity and Judaism. It allowed people to read for the first time the Christian Bible and the Jewish text of religious studies, the Zohar, on their own. The printing press also contributed to the Reformation, the religious movement that broke away from Roman Catholicism and established the Protestant churches.

In the 20th century, radio and television changed the way religious thought and beliefs were communicated. In the United States, **televangelism** helped spread conservative Protestant beliefs to increasingly larger audiences. Beginning in the 1950s with a traditional format of church services usually restricted to Sunday mornings, televangelism today has 24-hour cable broadcasting with a wide range of formats, including news, entertainment and religious talk shows.

With the popularization of the Internet, online religion has reached even larger audiences. One of the biggest impacts is the Internet's ability to present a wide diversity of religious beliefs and practices. Every major religion has a site on the World Wide Web. The reading of religious texts such as the Torah, the Qur'an and the Bible has been made even more accessible through the innovation of electronic texts. The Internet has also inspired new religious activities, such as online prayer rooms that provide virtual holy sites for millions of people.

The globalization of the Internet

Although there was an Internet before 1993, most users were computer scientists and programmers in government, military and academic computer labs. Other types of scientists used the Internet as well. They could send e-mail to colleagues and run programs on computers across the country or around the world. The Internet of the 1970s and 1980s was difficult to use. Users had to know information about the computers to which they wished to connect, how to establish that connection and how to send their information.

In 1991, **Tim Berners-Lee**, a programmer at CERN, the European Center for Nuclear Research in Geneva, Switzerland, wrote the first **World Wide Web** program. His program allowed hundreds of scientists working on the same project to look at pages of notes, papers and simple diagrams on their computers. The program, which Berners-Lee called a "**browser**," took care of connecting the scientist's computer to the computers where the pages were located. The browser also determined how to display the pages, no matter what program had been used to make them. These early pages had "links" to click on, just as web pages do today.

In 1993, graduate students at the University of Illinois released the first browser that looks like the ones we use today. At first, only university professors, students and others who used the Internet for research used the browser. Soon, however, museums, libraries, newspapers and other institutions that owned information made that information accessible through web browsers. Businesses soon followed, and by the late 1990s the Internet was a place for recreation, learning, buying and selling.

With increasingly sophisticated software and browsers, companies were able to learn a lot about their Internet customers. They could then tailor their goods, production and marketing to appeal to individual tastes. Consumers were able to compare products and prices while sitting at their desks. It took minutes to make a purchase that previously might have taken a day or two driving from store to store. Internet commerce is dominated by large companies. However, it is possible for someone using the web in India to purchase custom-built furniture from a cabinetmaker in Maine. In addition, companies can keep more up-to-date records regarding the manufacture and sale of products by using the Internet.

Businesses also use the Internet to make many tasks of business operation easier. Electronic communication has made it easier for people in business to communicate. Using the Internet, it is possible for people in India to "attend" a meeting with people at an office in the United States. This is another way in which the Internet makes the world seem smaller. It permits more efficient operation of business because people no longer need to be located in the same place to work together.

Computer technology also contributes to the dissolving of barriers between people and nations. E-mail and the World Wide Web give up-to-the-minute information and access to capital needed for some global business ventures. In addition, Internet chat rooms and bulletin boards can connect people half a world apart.

Quick Review 5: How does the Internet contribute to the globalization of business?

A. by making it easier to sell goods and send or receive information over long distances

B. by making it possible for people to read documents for themselves

C. by requiring complicated computer programs that only large businesses can afford to create

D. by requiring scientists to keep improving the Internet so more people can use it

OGT Practice

1. Collective security agreements between countries have become more important as transportation technology has improved. Why has improved transportation made these agreements more important? In your answer, explain how such agreements protect countries. Write your answer on the lines below. (2 points)

2. Which of the following events began the space race between the United States and the Soviet Union?

   A. the *Apollo 11* mission to the moon

   B. the launching of the satellite *Sputnik I*

   C. the beginning of the Cold War

   D. the release of the film *2001: A Space Odyssey*

3. The Internet was not widely used until the mid-1990s. However, its origins go back to the 1960s. Which group used the Internet the most during its earliest years?

   A. scientists

   B. school teachers

   C. businesspeople

   D. religious leaders

4. Communist governments in Eastern Europe rapidly fell during the late 1980s and early 1990s. Some historians claim that it couldn't have happened without the assistance of certain types of technology. Which of the following technological improvements is believed to have been a major factor in the fall of Communism in Eastern Europe?

   A. the Internet, because it permitted people in Communist countries to communicate and organize

   B. the printing press, because it made the spreading of knowledge easier than at any previous time in history

   C. satellite broadcasting, because it allowed people to see what was happening in other countries as it happened

   D. the internal combustion engine, because it gave people a way to escape from their Communist governments

5. In the early years of the Internet, American economist Paul Samuelson said, "Sooner or later the Internet will become profitable. It's an old story played before by canals, railroads and automobiles." Over the last 10 years, Samuelson's statement has proven true for many businesses around the world. Name and briefly explain two ways in which the Internet has contributed to the globalization of business. Write your answer on the lines below. (4 points)

WEEK 1

ELA

Writing Prompts.

The following are actual writing prompts from previous English State Tests. These writing prompts will help to prepare you for any English Standardized Tests. Answer each of the prompts in **two full paragraphs**. Be sure to restate the question and to fully explain your answer. Your answers do not have to be typed, they can be hand written.

Follow All Directions!

Day 1

Blizzard Bag 1

Many students today work while they are in school. While some people cite the heightened sense of responsibility and discipline it brings to students in their academies, others believe the hours spent working interfere with the time needed for studying and doing homework. Is it an advantage or disadvantage to have a job while you are in school?

Day 2

Blizzard Bag 2

Do you think athletes should be dismissed from a team for breaking the law? Why? Why not? Support your opinion from your observations or experiences.

Day 3

Blizzard Bag 3

We live in a society of rapid and dramatic change. What are the greatest changes you have seen in the city (area) or country where you live?

Day 4 Edit - Final Copy

Name Day 5 Date English Class

Linking Past and Present Activity 15

Women in the Olympic Games

THEN

In the 1920s, controversy broiled in the United States over whether women should be allowed to participate in the Olympic games. Physical educators and physicians, both male and female, were opposed to female events.

Prominent male physical educator F.R. Rogers summed up the concerns of the day in his 1929 article "Olympics for Girls?" He said that pursuing one's full potential for girls meant "development of all those traits which are necessary to attract the most worthy fathers for their children, provide the most healthful physiques for child-bearing and build the most maternal emotional and social behavior patterns." He went on to say that extreme competition tended to "destroy girls' physical and psychic charm and adaptability for motherhood" and "develop wholly masculine physiques and behavior traits."

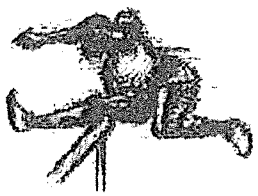
The International Olympic Committee (IOC) approved five women's track and field events for the 1928 games. After the 800-meter race, five competitors fell exhausted to the ground. While such displays occurred in men's races as well, many saw this as proof of the physical frailty of women. The *New York Times* reported that five of the "eleven wretched women" had "collapsed after reaching the tape." In 1929 a panicked IOC voted to drop women's track and field from the 1932 games. Although the IOC reversed its decision in 1930, allowing shorter races, the 800-meter was not reinstated until 1960.

NOW

In the 2000 Olympics, women competed in 22 track and field events, compared to 24 for men. In winning the heptathlon in 1988 and 1992, American Jackie Joyner-Kersee competed in seven events each time—two more than were even offered to women in 1928. One of the heptathlon's seven events is the 800-meter race, the longest women's race in 1928 at just under half a mile. Today women compete in many longer races, including the marathon—a grueling 26.2 miles.

More opportunities to compete at a high level have shown women athletes to be as mentally tough as their male counterparts. Access to weight training and better facilities has greatly increased performance, helping to dispel the stereotype of women as physically limited and in need of protection. In fact, the gap between male and female performance is narrowing. For example, the world record time for men in the 100-meter race is 9.79 seconds. Florence Griffith-Joyner, the female record holder, ran it in 10.49 seconds, less than three-fourths of a second slower.

Contrary to popular beliefs in the 1920s, exercise physiologists have established that physical activity does not harm women's reproductive functions. As today's fitness trend demonstrates, society's attitude toward women's physical activity is changing, viewing it as part of a healthy lifestyle.



CRITICAL THINKING

Directions: Answer the questions below on a separate sheet of paper.

1. **Identifying Main Ideas** What were the concerns in the 1920s over women's participation in the Olympics?
2. **Making Inferences** How might the reporting of the women's 800-meter race in 1928 have influenced public opinion of women's participation in the Olympics?
3. **Analyzing Information** What has contributed to the improved performance of today's top women athletes?

Blizzard
Bag #3
S History

Name _____ Date _____ Class _____

Reinforcing Skills Activity 16

Distinguishing Fact From Opinion

LEARNING THE SKILL

Facts can be proven by evidence such as records or historical sources. Opinions are based on people's differing values and beliefs. To help you identify facts and opinions, read or listen to the information carefully. Identify the facts. If a statement can be proven, it is factual. Identify opinions by looking for statements of beliefs, approval or disapproval, or superlatives such as *best* or *worst*.

PRACTICING THE SKILL

DIRECTIONS: Read the excerpt below about President Warren G. Harding. Then answer the questions that follow.

> Everyone who knows anything at all about American history believes that Warren G. Harding was our worst President–Harding, the affable fool from Marion, Ohio, who, after passing two utterly undistinguished terms as state senator and one as lieutenant governor, went to the U.S. Senate in 1914 and, having done little but get along with people, came out of the deadlocked 1920 Republican National Convention headed for the Presidency.
>
> His friend the politico Harry M. Daugherty had helped him get there, and in return Harding put him and his pals–the "Ohio Gang"–in a position where they could plunder the government while the trusting Harding pursued his vision of "normalcy." . . . Eventually the scandal broke, but Harding died suddenly (seventy-five years ago this August) at the end of a tour of the West in time to escape the worst of it.
>
> He has not escaped the judgment of history. In every poll–the most recent was conducted just last year–the twenty-ninth President comes at the very bottom.

1. List the facts stated in the passage. _____

2. List the opinions from the passage. _____

3. What is the purpose of this passage? _____

APPLYING THE SKILL

DIRECTIONS: Read an editorial in your local newspaper, and then answer the following questions on a separate sheet of paper.

1. List the facts stated in the editorial.
2. List the opinions from the editorial.
3. What is the purpose of the editorial?

Name _____ Date _____ Class _____

Critical Thinking Skills Activity 16 | Making Comparisons

LEARNING THE SKILL

When you *make comparisons*, you determine similarities and differences between ideas, events, or objects. Knowing how to make comparisons will help you choose among alternatives and understand historical change.

Use the following guidelines to help you make comparisons:

- Identify the items you want to compare.
- Determine common areas in which comparisons can be drawn, such as positions on an issue, reactions to an event, goals of certain groups, and so on.
- Look for similarities and differences within these areas.

PRACTICING THE SKILL

DIRECTIONS: Read the excerpt below about the state of the American automobile industry and Americans' changing perceptions of the auto in the mid-1920s. Then answer the questions that follow.

> . . . The Ford car had represented its creator's dream: a simple, durable machine that country people could use to get around and, more importantly, that they could afford (the Model T engine had been designed so that the owner could use it to run farm equipment when it wasn't propelling a car).
>
> GM [General Motors], in contrast, was interested in a different kind of consumer, a very modern consumer, one inspired not by practicality, but by speed, comfort, and styling. The company produced cars in different colors (the "T" had always been an unalterable black) and challenged customers to keep up with the times by changing models each year. While Ford stood steadfastly by his Model T, GM added new features to its cars: hydraulic brakes, chromium plating, six cylinders, and a lacquer finish. And the company convinced people to pay GM's higher prices by offering something that Ford considered immoral: the opportunity to purchase cars on installment [credit].

1. What is the topic of this excerpt?

_____

2. What similarities and differences can you find between Ford and GM automobiles in this excerpt?

_____

_____

_____

3. What similarities and differences can you find between Ford and GM customers in this excerpt?

_____

_____

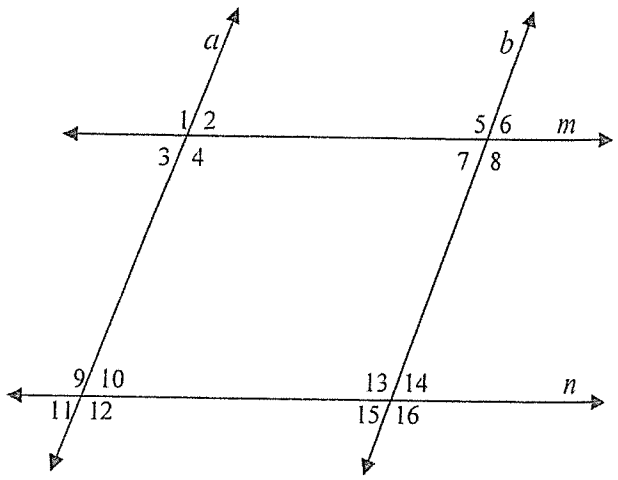
_____

Geometry- Parallel Lines

BLIZZARD BAG DAY ONE

Name Week 1

1. In the drawing $a \parallel b$ and $m \parallel n$.



a) Name one pair of same side interior angles.

b) What type of angles (as a pair) are $\angle 10$ and $\angle 14$?

c) Name one pair of alternate interior angles.

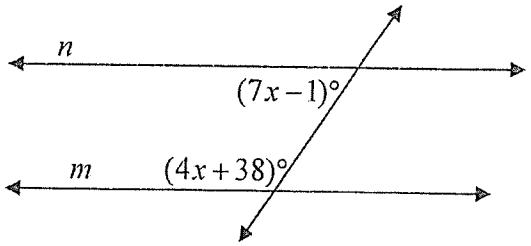
d) If $\angle 1 = 112°$, then $\angle 14 =$ ____

e) If $\angle 9 = 3x + 18$ and $\angle 10 = 5x - 14$ then find x. Show work for full credit.

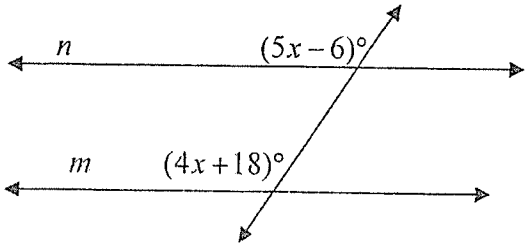
f) Use the value of x in part e to find the measure of $\angle 6$ and $\angle 10$. Show work.

2. Two parallel lines are cut by a transversal and alternate interior angles have measures $4x + 7$ and $7x - 5$. Find the value of x. Show all work for full credit.

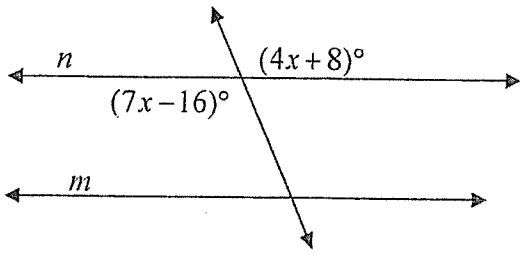
3. If $n \parallel m$, then find the value of x. Show all work for full credit.



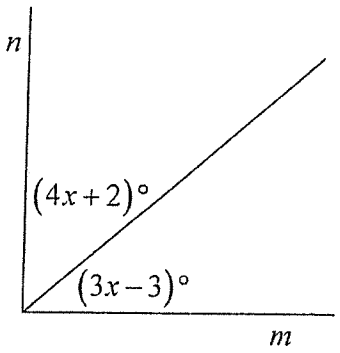
4. If $n \parallel m$, then find the value of x. Show all work for full credit.



5. If $n \parallel m$, then find the value of x. Show all work for full credit.



6. If $n \perp m$, then find the value of x. Show all work for full credit.



7. Correctly fill in the blank with the word *always*, *sometimes* or *never*.

   a) Perpendicular lines _____ intersect at right angles.

   b) Parallel planes _____ intersect in a line.

   c) Two skew lines _____ intersect.

   d) Two lines parallel to the same line _____ intersect.

8. List **all** of the things that you have learned about parallel lines.

Geometry- Circles

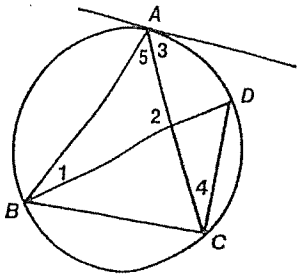
BLIZZARD BAG DAY TWO

Name _____

Angles and Segments

Complete the following.

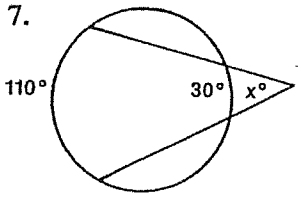
1. If $m\overset{\frown}{AB} = 150$ and $m\overset{\frown}{CD} = 110$, then $m\angle 2 =$ _____.
2. If $m\angle 4 = 50$, then $m\angle 1 =$ _____.
3. If $m\overset{\frown}{AB} = 100$ and $m\overset{\frown}{BC} = 120$, then $m\angle 3 =$ _____.
4. If $\overline{AB} \cong \overline{AC}$ and $m\overset{\frown}{AB} = 150$, then $m\angle 5 =$ _____.
5. If $m\angle 2 = 75$ and $m\overset{\frown}{DC} = 55$, then $m\overset{\frown}{AB} =$ _____.
6. If $\overline{DB}$ is a diameter, then $m\angle BCD =$ _____.



Exs. 1–6

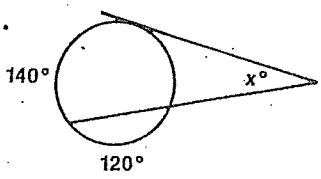
Find the value of x in each of the following circles.

7.



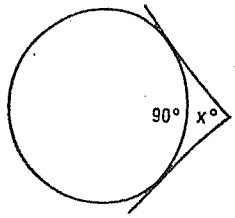
$x =$ _____

8.



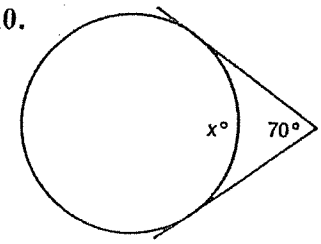
$x =$ _____

9.



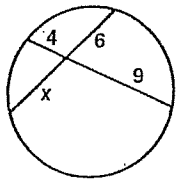
$x =$ _____

10.



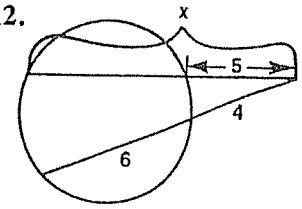
$x =$ _____

11.



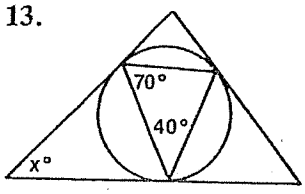
$x =$ _____

12.



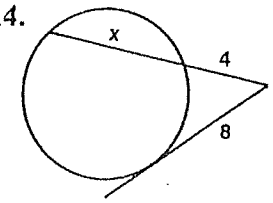
$x =$ _____

13.



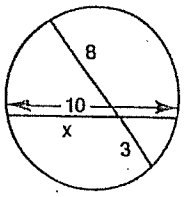
$x =$ _____

14.



$x =$ _____

15.



$x =$ _____,

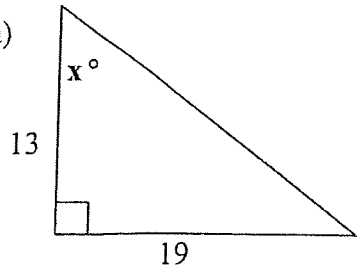
or $x =$ _____

BLIZZARD BAG DAY THREE

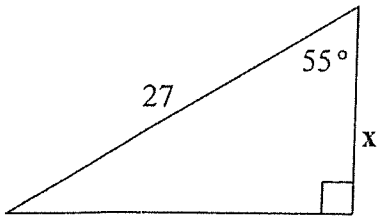
Geometry – Right Triangles **Name** _____

1. Use trigonometry to find the value of **x**. Round lengths to the nearest tenth and angles to the nearest degree. Show all work for full credit.

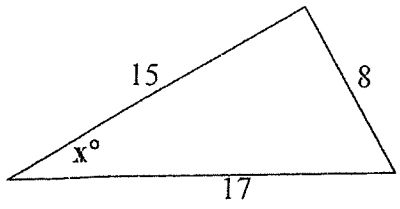
a)



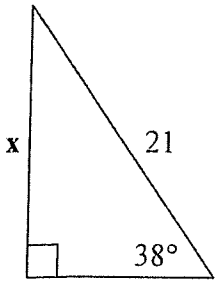
b)



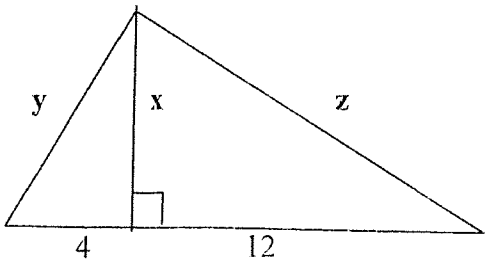
c)



d)



2. Find the value of **x**, **y** and **z** using the ideas about geometric mean. Your answer will be a simplified radical expression. Show all work for full credit.



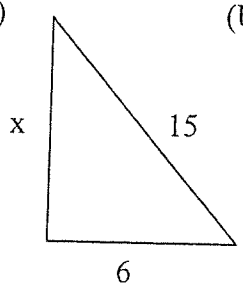
3. Write as a simplified radical expression. Show all steps for full credit.

a) $\sqrt{\frac{18}{7}}$

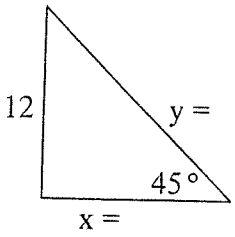
b) $\frac{5\sqrt{8}}{\sqrt{10}}$

4. Find the missing value(s). Show work for part a. Part b through e use either 45-45-90 or 30-60-90 and **do not** show work. All answers will be simplified radical expressions.

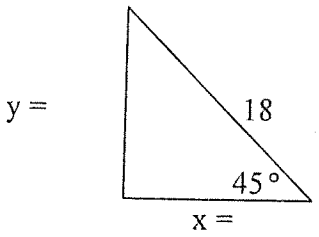
a) (Use the Pythagorean Theorem)



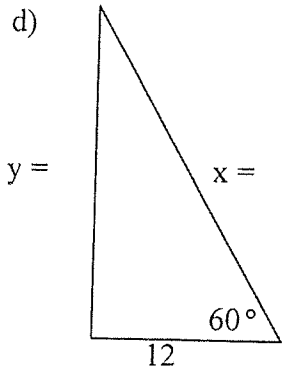
b)



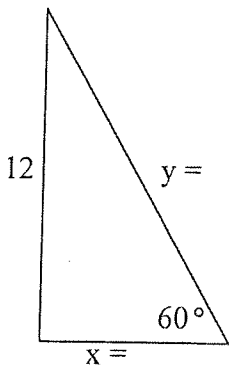
c)



d)



e)



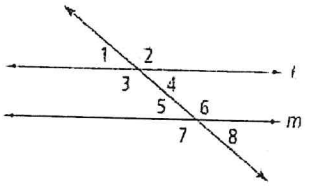
5. If the tan $\angle A = 5/12$, find the sine and cosine ratios of $\angle A$. Write answers as fractions. Show work for full credit. (It might help to draw a sketch)

Day 4

Geometry Blizzard Bag

Multiple Choice

Use the diagram for Exercises 1 and 2. Line ℓ is parallel to line m.



1. Which best describes $\angle 1$ and $\angle 5$?

   (A) alternate interior angles

   (B) alternate exterior angles

   (C) corresponding angles

   (D) same-side exterior angles

2. Which best describes $\angle 6$ and $\angle 7$?

   (F) vertical angles

   (G) corresponding angles

   (H) alternate exterior angles

   (I) linear pair

3. Two of what geometric figure are joined at a vertex to form an angle?

   (F) points (G) planes (H) rays (I) lines

4. **Given:** $\overline{AC}$ bisects $\overline{BD}$.

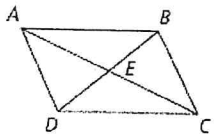
   What additional information do you need to prove that quadrilateral $ABCD$ is a parallelogram?

   (F) $\overline{AC} \perp \overline{BD}$

   (G) $\overline{BD}$ bisects $\overline{AC}$.

   (H) $\overline{BC} \perp \overline{DC}$

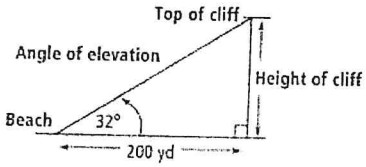
   (I) $\overline{BE} \cong \overline{DE}$



5. The angle of elevation from the surface of the beach to the top of the cliff is 32°. About how tall is the cliff?

   (A) 106 yd (C) 170 yd

   (B) 125 yd (D) 320 yd



6. **Given:** M is the midpoint of $\overline{AD}$.

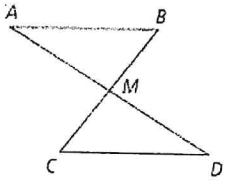
   What additional information do you need to prove $\triangle AMB \cong \triangle DMC$?

   (F) $\overline{AB} \parallel \overline{CD}$

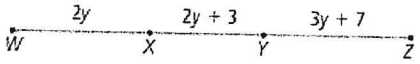
   (G) $\angle A \cong \angle B$

   (H) $\overline{AM} \cong \overline{DM}$

   (I) $\angle B \cong \angle D$



7. If $WZ = 80$, what is the value of y?



   (A) 8 (B) 9 (C) 10 (D) 11

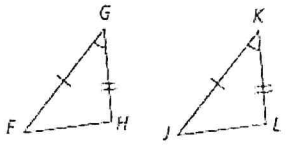
8. If $\triangle ABC \cong \triangle DEF$, which is a correct congruence statement?

   (F) $\angle B \cong \angle D$ (G) $\overline{AB} \cong \overline{EF}$ (H) $\overline{CA} \cong \overline{FD}$ (I) $\angle A \cong \angle C$

9. Which can be used to justify stating that $\triangle FGH \cong \triangle JKL$?

   (A) ASA (C) SSS

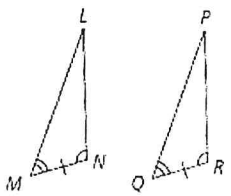
   (B) SAS (D) AAS



10. Which postulate can be used to justify stating that $\triangle LMN \cong \triangle PQR$?

    (F) ASA (H) SSS

    (G) SAS (I) AAS



Day 5

TWO-STEP WORD PROBLEMS

1. There are 25 miniature chocolate bars in a bag. There are 20 bags in a carton. Damon needs to order 10,000 miniature chocolate bars. How many cartons will he need to order?

2. LeAnn needs 2,400 boxes for her business. The boxes she needs come in bundles of 50 that weigh 45 pounds per bundle. What will be the total weight of the 2,400 boxes she needs?

3. Seth uses 20 nails to make a birdhouse. He wants to make 60 birdhouses to sell at the county fair. There are 30 nails in a box. How many boxes will he need?

4. There are 12 computer disks in a box. There are 10 boxes in a carton. John ordered 16 cartons. How many disks is he getting?

5. The Do-Nut Factory packs 13 doughnuts in each baker's dozen box. They also sell cartons of doughnuts which have 6 baker's dozen boxes. Duncan needs to feed 780 people. Assuming each person eats only 1 doughnut, how many cartons will he need to buy from the Do-Nut Factory?

6. Brittany has 2 dogs, a Saint Bernard and a Golden Retriever. The Saint Bernard eats twice as much as the Golden Retriever. The retriever eats 5 pounds of food in 6 days. How many pounds of food do the two dogs eat in 30 days?

7. Each of the 4 engines on a jet uses 500 gallons of fuel per hour. How many gallons of fuel are needed for a 5 hour flight with enough extra fuel for an additional 2 hours as a safety precaution?

8. The Farmer's Dairy has 1620 pounds of butter to package. They are packaging the butter in five-pound tubs to distribute to restaurants. If they put 12 tubs in a case, how many cases of butter can they fill?

9. Tom has 155 head of cattle. Each animal eats 8 pounds of grain per day. How many pounds of grain does Tom need to feed his cattle for 10 days?

10. When you grind 3 cups of grain, you get 5 cups of flour. How many cups of grain must you grind to get 40 cups of flour?

TI..., OF TRAVEL

EXAMPLE: Katrina drove 384 miles at an average of 64 miles per hour. How many hours did she travel?

Solution: Divide the number of miles by the miles per hour. $\frac{384 \text{ miles}}{64 \text{ miles/hour}} = 6 \text{ hours}$

Find the hours of travel in each problem below.

1. Bobbi drove 342 miles at an average speed of 57 miles per hour. How many hours did she drive? _____

2. Jan set her speed control at 55 miles per hour and drove for 165 miles. How many hours did she drive? _____

3. John traveled 2,092 miles in a jet that flew an average of 523 miles per hour. How long was he in the air? _____

4. How long will it take a bus averaging 54 miles per hour to travel 378 miles? _____

5. Kyle drove his motorcycle in a 225 mile race, and he averaged 75 miles per hour. How long did it take for him to complete the race? _____

6. Stacy drove 576 miles at an average speed of 48 miles an hour. How many hours did she drive? _____

7. Kendra flew 250 miles in a glider and averaged 125 miles per hour in speed. How many hours did she fly? _____

8. Travis traveled 496 miles at an average speed of 62 miles per hour. How long did he travel? _____

9. Wanda rode her bicycle an average of 15 miles an hour for 60 miles. How many hours did she ride? _____

10. Rami drove 184 miles at an average speed of 46 miles per hour. How many hours did he drive? _____

11. A train traveled at a constant 85 miles per hour for 425 miles. How many hours did the train travel? _____

12. How long was Amy on the road if she drove 195 miles at an average of 65 miles per hour? _____

RATE

EXAMPLE: Laurie traveled 312 miles in 6 hours. What was her average rate of speed?

Solution: Divide the number of miles by the number of hours. $\frac{312 \text{ miles}}{6 \text{ hours}} = 52$ miles/hour

Laurie's average rate of speed was 52 miles per hour (or 52 mph).

Find the average rate of speed in each problem below.

1. A race car went 500 miles in 4 hours. What was its average rate of speed?

_____

2. Carrie drove 124 miles in 2 hours. What was her average speed?

_____

3. After 7 hours of driving, Chad had gone 364 miles. What was his average speed?

_____

4. Anna drove 360 miles in 8 hours. What was her average speed?

_____

5. After 3 hours of driving, Paul had gone 183 miles. What was his average speed?

_____

6. Nicole ran 25 miles in 5 hours. What was her average speed?

_____

7. A train traveled 492 miles in 6 hours. What was its average rate of speed?

_____

8. A commercial jet traveled 1,572 miles in 3 hours. What was its average speed?

_____

9. Jillian drove 195 miles in 3 hours. What was her average speed?

_____

10. Greg drove 8 hours from his home to a city 336 miles away. At what average speed did he travel?

_____

11. Caleb drove 64 miles in one hour. What was his average speed in miles per hour?

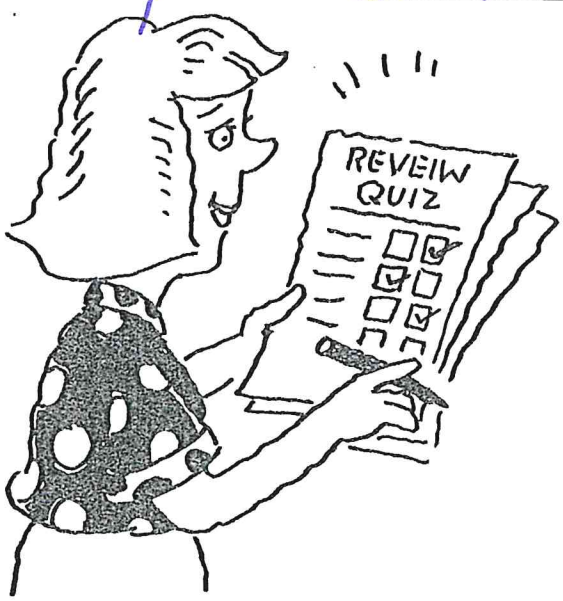
_____

12. After 9 hours of driving, Kate had traveled 405 miles. What speed did she average?

_____

Employability WEEK 1

Survival Skills Review



Matching

In the left-hand column below are some of the important words you've learned in this book. Match these words with the correct definitions on the right. Write the letter for the definition in the blank next to the word.

_____ 1. punctuality
_____ 2. goodwill
_____ 3. quality
_____ 4. strength
_____ 5. appearance
_____ 6. dependable
_____ 7. concentrate
_____ 8. reprimand
_____ 9. tolerate
_____ 10. quantity
_____ 11. implement
_____ 12. initiative
_____ 13. socialize
_____ 14. loyalty
_____ 15. competition
_____ 16. limitation
_____ 17. imagination
_____ 18. consumable
_____ 19. cooperate
_____ 20. durable
_____ 21. safety
_____ 22. gossip
_____ 23. adjust
_____ 24. communicate
_____ 25. instructions

A. something you're good at
B. doing things without being told
C. faithfulness
D. creation of a new idea
E. business rivalry
F. restriction
G. needing to be replaced often
H. warn about inappropriate behavior
I. long-lasting
J. being on time
K. work in harmony with others
L. amount
M. listening to or spreading rumors
N. degree of excellence
O. put into effect
P. how you look
Q. change
R. pay close attention to
S. exchange ideas
T. written or oral directions
U. reliable
V. freedom from danger
W. the value of a company's reputation
X. being friendly with others
Y. put up with

True or False

Read the following statements. Write **T** if the statement is true or **F** if the statement is false.

_____ 1. When beginning a job, you should find out who to contact if an accident occurs.

_____ 2. Very few occupations require an employee to have basic math skills.

_____ 3. Maintaining good eye contact is important when speaking to a customer.

_____ 4. Employers are not permitted to have regulations about length of hair of workers.

_____ 5. Most employers will tolerate an employee who is absent an average of two days per month.

_____ 6. Listening requires a person to concentrate and pay close attention to what is being said.

_____ 7. OSHA can't shut down a company for violating safety standards.

_____ 8. In most occupations it's not necessary for workers to be able to get along with other workers.

_____ 9. High productivity means completing a large quantity of good-quality work.

_____ 10. The military services offer training in many types of occupations.

_____ 11. It's not important for unskilled workers to know company operating procedures.

_____ 12. To make a sale, a salesperson may need to determine the customer's needs and wants.

_____ 13. Criticizing your employer in front of friends or relatives may damage your company's reputation.

_____ 14. A doctor can't detect high blood pressure during a routine physical examination.

_____ 15. The first step in decision-making is determining the problem.

_____ 16. Employers usually permit workers who complete tasks ahead of time to socialize with co-workers on the job.

_____ 17. Excessive employee tardiness could cause a decline in production.

_____ 18. Instructions are always given orally.

_____ 19. An employee who stands around waiting for orders is not being productive.

_____ 20. Working as a team member includes discussing personal problems with co-workers.

Now rewrite all the false statements to make them true.

Review Questions

Answer the questions below.

1. What are seven guidelines you can follow to become a more effective speaker?

2. What are six areas of personal appearance workers should examine?

3. What are seven guidelines an employee can follow in getting along with co-workers, supervisors, and the general public?

4. What are seven areas you can examine in maintaining good health?

Math Drill

Place the correct answers in the spaces provided below. Reduce to lowest terms whenever possible. Use extra sheets of paper to calculate answers if necessary.

1. $869 + 47$

2. $37{,}642 + 8{,}989$

3. $4{,}621 + 975$

4. $38{,}416 - 9{,}503$

5. $454{,}802 - 398{,}525$

6. 39×7

7. 986×45

8. $3{,}841 \times 862$

9. $23\overline{)486}$

10. $982\overline{)45{,}683}$

11. $12.25 + 6.80$

12. $539.82 + 75.9 + 3.63$

13. $385.22 + 283.19 + .65$

14. $86.28 - 7.89$

15. $386.42 - 98.85$

16. 76.2×8.6

17. 383.45×98.85

18. $9{,}683.42 \times 861.08$

19. $9.2\overline{)361.7}$

20. $35.5\overline{)863.75}$

21. $\frac{5}{8} \times \frac{3}{4} =$

22. $4\frac{1}{3} \div \frac{3}{8} =$

23. $\frac{4}{5} + \frac{9}{10} + \frac{1}{4} =$

24. $3\frac{2}{5} + 28\frac{3}{8} =$

25. $106\frac{5}{9} - 32\frac{1}{3} =$

26. .25 = _____%

27. 20% of 50 = _____

28. 200% of 36 = _____

29. 5.2% of 130 = _____

30. 20% of .42 = _____

31. 1 mile = _____feet

32. _____ pints = 1 gallon

33. _____ pounds = 1 ton

34. _____ millimeters = 1 centimeter

35. _____ centiliters = 1 liter

MS. W'S CLASS- **MENTOR** **ROOM 19**

STUDENT: **MG--** SCHOOL WORK FOR THE WEEK OF 3/30/2020

	MON	TUES	WED	THURS	FRI
ELA					
GEOMETRY					
AMERICAN HISTORY					
BIOLOGY					
EMPLOYABILITY					

COMPLETE THE ASSIGNED DAILY PACKETS TO THE BEST OF YOUR ABILITY.

SECTION

1.5 Biology and Your Future

WEEK 2
Day 1

KEY CONCEPT Understanding biology can help you make informed decisions.

Your health and the health of the environment depend on your knowledge of biology.

Do energy drinks really give you energy? Is bottled water healthier than tap water? Are you at risk for any genetic diseases or health problems? What are the benefits of exercise? How does sleep affect your brain? What are the effects of alcohol, illegal drugs, and tobacco? What are the health risks of pollution in your area? An understanding of biology can help you make choices and decisions that affect your health.

Biologists and other scientists research environmental issues such as pollution, biodiversity, land conservation, and natural resource use. But decisions about the future are made by everyone, not just by scientists. An understanding of many areas of biology—from genetics to ecosystem studies—can help you make informed* decisions.

What is one health issue that biology can help you to better understand?

_____

Biotechnology offers great promise but also raises many issues.

Biotechnology is the use of living things and biological processes. Some forms of biotechnology have been around for centuries*, such as the use of microorganisms to make bread and cheese. Today, other uses of biotechnology include DNA testing and DNA fingerprinting. DNA fingerprinting has helped to free people who were accused of a crime that they did not commit. Two other examples of biotechnology are described on the next page.

* ACADEMIC VOCABULARY

informed based on facts

centuries periods of one hundred years

1. **Genetically modified organisms** Through centuries of breeding, humans have slowly modified, or changed, many different plant and animal species. For example, carrots and poodles are genetically modified organisms because they have been selectively bred over many years. Today's technologies allow for genetic changes in short periods of time. Now we can move, or transfer, genes from one species into another species. Organisms that have genes from a different species are called **transgenic** organisms.

   Transgenic bacteria can make human insulin to treat people with diabetes. Transgenic, or genetically modified, food is a topic of debate all around the world. Genetic changes could make foods more nutritious. Genetic changes could also make plants grow well without the use of pesticides. However, there are many questions about genetically modified foods that no one knows the answers to yet. Are they safe to eat? Could they spread genes to wild plants? An understanding of the possible benefits and risks of transgenic organisms requires knowledge of biology.

VOCABULARY

Pesticides are poisons used to kill insects.

2. **Genetic screening** Another form of biotechnology is human genetic screening. Genetic screening could help to see if a person is at risk for a genetic disorder. Genetic screening also raises questions about ethics*. Who should be allowed to see a person's genetic information? Should parents be allowed to use genetic screening to choose the characteristics of their children?

What is one benefit and one risk of biotechnology?

_____

_____

THE GENE WORD FAMILY

Gene	segment of DNA that stores genetic information
Genome	entire DNA sequence of an organism
Genomics	study of genomes
Molecular genetics	study and manipulation of DNA molecule
Genetic screening	testing DNA to see if a person is at risk for a genetic disorder
Transgenic	an organism that has a gene from a different species

Biology presents many unanswered questions.

About 50 years ago, the structure of DNA was discovered. By 2003 the entire human DNA sequence was known. Today, however, there are still more questions than answers. Can cancer be cured? Does life exist on other planets? How are memories kept in the brain?

* ACADEMIC VOCABULARY

ethics questions about right and wrong

A huge number of questions in biology are not just unanswered—they have not been asked. Before the microscope was invented, no one studied anything microscopic. Before biologists knew what the genetic material was, no one used genetic screening or DNA testing. As technology and biology advance, what do you think will be discovered in the next 20 years?

INSTANT REPLAY

Will all biology questions be answered some day? Explain your answer.

_____

_____

1.5 Vocabulary Check

biotechnology
transgenic

Mark It Up

Go back and highlight each sentence that has a vocabulary word in **bold.**

1. If *bio-* means "life," then *biotechnology* means _____ is applied to technology.
2. If *trans-* means "over or across," then *transgenic* organisms have genes that have been brought _____ from other organisms.

1.5 The Big Picture

3. How could your understanding of biology help you to make decisions about your health and the environment? _____

   _____

   _____

4. An issue is a topic of discussion, or something that can raise concerns. Why is biotechnology sometimes called an issue? _____

   _____

5. Why are some biology questions still unanswered? _____

   _____

   _____

Name _____ Period WEEK 2 Date Day 2

OPTIONS FOR INQUIRY

Biology in the News

Every day, newspapers print articles related to biology. Maybe someone has reported a previously unknown species, such as the Goodman's mouse lemur, discovered in the island of Madagascar in 2005. Maybe it's a story about the effect of a low-fat diet on the risk of developing cancer. Some articles discuss biology-related questions or problems, such as the use of a mercury-based preservative in certain vaccines. What biology news stories interest you?

PROBLEM

What types of biology-based problems are reported in the news?

PROCESS SKILLS

Researching

PROCEDURE

1. Find a news story about a biology-based problem in the newspaper or from one of the news feeds in the BioZine. Because medical research is the most common topic discussed in news articles, find an article about a different topic in biology.
2. Read the article and answer the following questions:
   - What is the topic of the article?

     _____

     _____
   - What is the problem, discovery, or event?

     _____

     _____
   - What is being decided?

     _____

     _____
   - Who are the people involved in making the decision?

     _____

     _____

Biology in the News *continued*

- What are all of the possible consequences of the decision?

_____

_____

- What factors may be influencing the decision?

_____

_____

- What new questions are raised as a result of the discovery, situation, or research?

_____

_____

- How is knowledge of biology useful for understanding this topic ?

_____

_____

SECTION

2.5 Enzymes

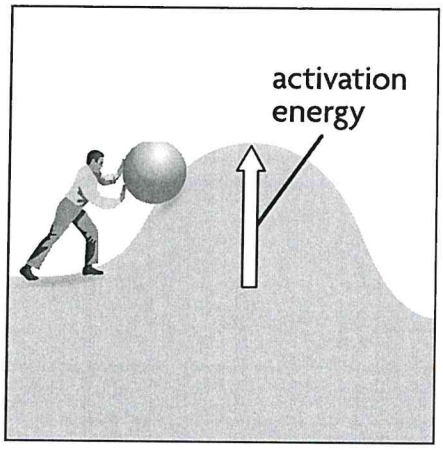
Week 2 Day 1, 3, 4, 5 and any make-up work

KEY CONCEPT Enzymes are catalysts for chemical reactions in living things.

A catalyst lowers activation energy.

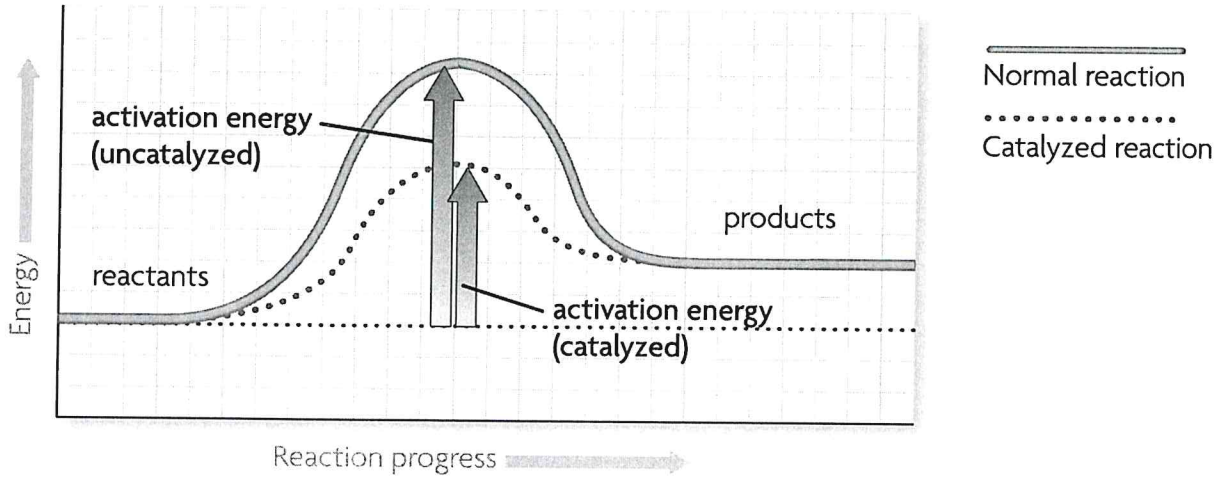
Activation energy for a chemical reaction is like the energy that is needed to push a rock up a hill. Once enough energy is added to get the rock to the top of the hill, the rock can roll down the other side by itself.

Under normal conditions, a reaction requires a certain amount of activation energy, and it occurs at a certain rate. Even after a chemical reaction starts, it may happen very slowly. A **catalyst** (KAT-l-ihst) is a substance that decreases the activation energy needed to start a chemical reaction. As a result, a catalyst also increases the rate of the chemical reaction, or makes the products form faster. A catalyst takes part in a chemical reaction, but it does not get changed or used up. Therefore, a catalyst is not considered a reactant or a product.



Activation energy is like the energy you would need to push a rock up a hill.

CATALYSTS AND ACTIVATION ENERGY



Under normal conditions, a certain amount of activation energy is needed to start a chemical reaction. A catalyst decreases the activation energy needed.

INSTANT REPLAY

How does a catalyst affect activation energy?

_____

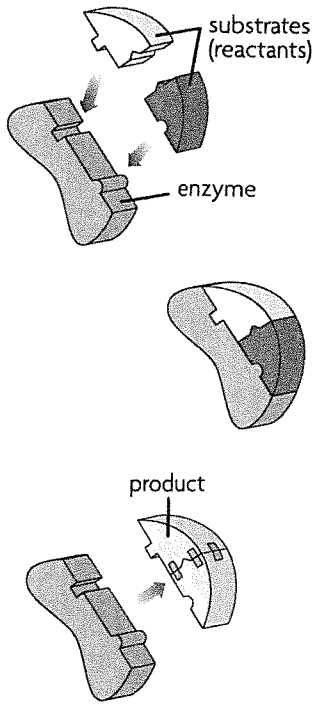
_____

Enzymes allow chemical reactions to occur under tightly controlled conditions.

Chemical reactions that happen inside organisms must take place under very specific conditions. They have to occur at the temperature of the organism's body. Often, they have to occur with low concentrations of reactants. Reactions must take place very quickly, so they usually need a catalyst. **Enzymes** are catalysts for chemical reactions in living things.

Like other catalysts, enzymes lower the activation energy of chemical reactions and make the reactions happen more quickly. Enzymes are involved in almost every process in organisms. They are needed to break down food, to build proteins, and for your immune system to work.

Almost all enzymes are proteins. Like other proteins, enzymes are made of long chains of amino acids. Each enzyme binds a particular reactant, or **substrate.** The substrate fits into a part of the enzyme, like a key fits into a lock. Just like a specific key opens a specific lock, each enzyme acts on a specific substrate. The place on the enzyme where the substrate fits—the lock that the key fits into—is called the active site. Like other proteins, enzymes also depend on structure to function properly. Enzyme structure is important because the shape of an enzyme allows only certain molecules to bind to an enzyme's active site.



An enzyme binds to substrates at the active site. It catalyzes a reaction and then releases the new product that has been formed.

INSTANT REPLAY

How does the structure of an enzyme affect its function?

_____

2.5 Vocabulary Check

catalyst
enzyme
substrate

Mark It Up

Go back and highlight each sentence that has a vocabulary word in **bold.**

1. A catalyst for reactions in living things is a(n) _____.
2. A(n) _____ is a reactant that binds to a catalyst.
3. An enzyme is a kind of _____.

2.5 The Big Picture

4. What are two ways a catalyst affects a chemical reaction?

_____

_____

5. A catalyst is not a product or a reactant of a chemical reaction. Why not?

_____

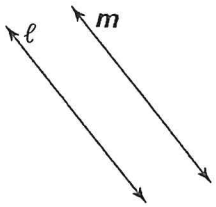
Name WEEK 2 day 1 Date Period

Workbook Activity
Chapter 3, Lesson 1
20

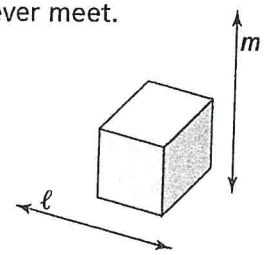
Figures with Parallel Lines

EXAMPLE

Parallel lines are coplanar lines that never meet.

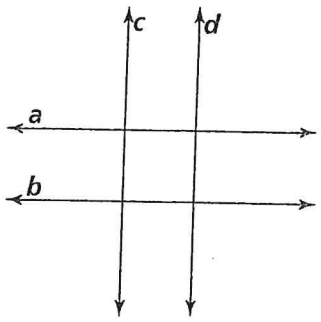


Skew lines are noncoplanar lines that never meet.



Directions Look at each figure. Find all of the parallel lines and trace them in red. Find all of the nonparallel lines and trace them in green.

1.



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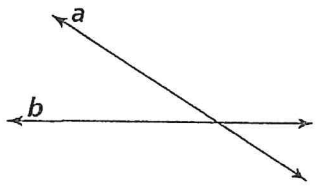
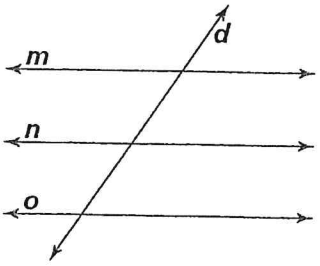
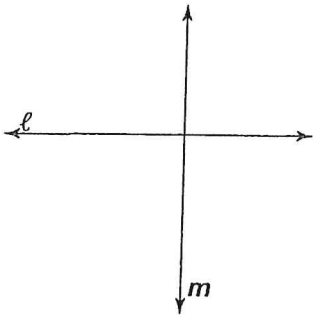


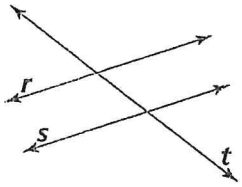
3.



4.



5.

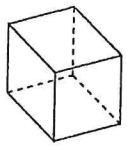


Name Week 2 day 1 Date Period

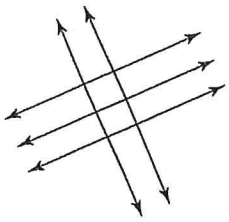
Workbook Activity
Chapter 3, Lesson 1
21

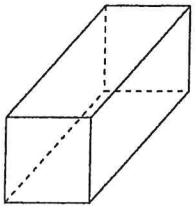
More Figures with Parallel Lines

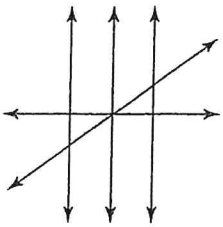
EXAMPLE This cube has 12 sets of parallel lines.

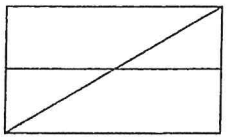


Directions State how many pairs of lines are parallel in each situation.

1.  _____

2.  _____

3.  _____

4.  _____

Directions Answer the following question.

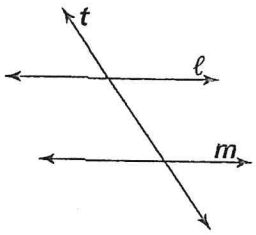
5. What do you think the cube in the example would look like if all of the panels were unfolded so that the resulting image could lay flat on a table? Draw a picture to show your answer.

Name Week 2 day 2 Date Period

Workbook Activity
Chapter 3, Lesson 2
22

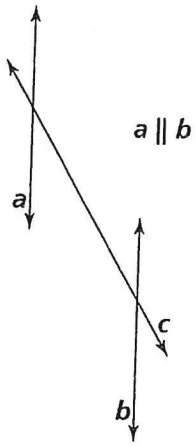
Transversals

EXAMPLE Line t is a transversal that crosses parallel lines ℓ and m.

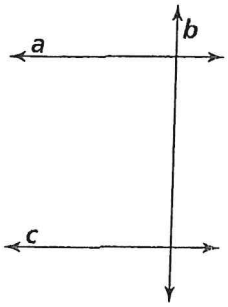


Directions Name the transversal in each figure.

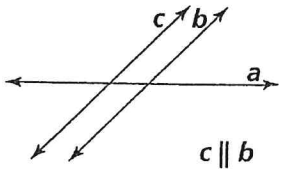
1.



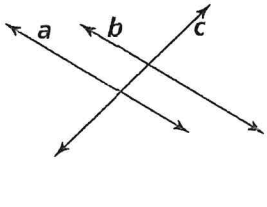
2.



3.



4.



Directions Construct two parallel lines using the two edges of your straightedge.
Draw a transversal that is not perpendicular to the parallels.
Use a protractor to measure the angles and answer the following questions.

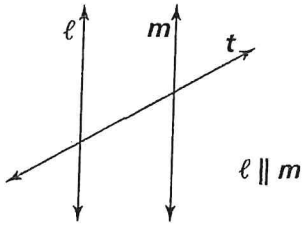
5. Which angles appear to be equal? Which angles appear to be supplementary?

Name WEEK 2 day 2 Date Period

Workbook Activity
Chapter 3, Lesson 2
23

More Transversals

EXAMPLE A transversal creates eight angles. These angles are categorized as exterior, interior, corresponding, alternate interior, alternate exterior, or supplementary angles.



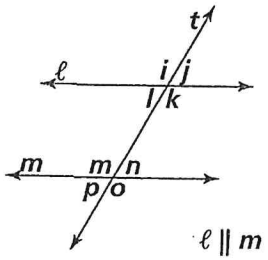
Directions Use the figure at the right for problems 1–5.

1. Name the interior angles. _____
2. Name the exterior angles. _____
3. Name eight pairs of supplementary angles.

   _____
4. Name all pairs of corresponding angles.

   _____
5. Name all pairs of alternate interior angles.

   _____



Directions Use the figure shown for problems 6–10. Name the angles as *exterior, interior, alternate exterior, alternate interior, corresponding,* or *supplementary.*

6. $\angle a$ and $\angle e$

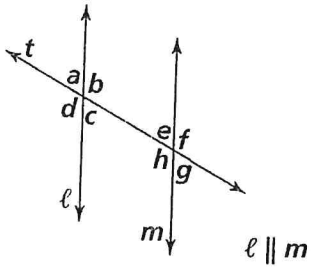
   _____
7. $\angle b$ and $\angle h$

   _____
8. $\angle d$ and $\angle f$

   _____
9. $\angle a$ and $\angle d$, and $\angle g$ and $\angle f$

   _____
10. $\angle c$ and $\angle b$, and $\angle e$ and $\angle h$

    _____



Name WEEK 2 day 3 Date Period

Workbook Activity
Chapter 3, Lesson 3
24

Theorems Using Parallel Lines

EXAMPLE

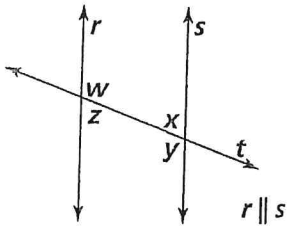
Theorem 3.3.1: If two lines are parallel, then the interior angles on the same side of the transversal are supplementary.

Theorem 3.3.2: If two lines are parallel, then the corresponding angles are equal.

Theorem 3.3.3: If two lines are parallel, then the alternate interior angles are equal.

Directions Complete the following statements.

Use the figure shown and Theorem 3.3.1 for problems 1–2.

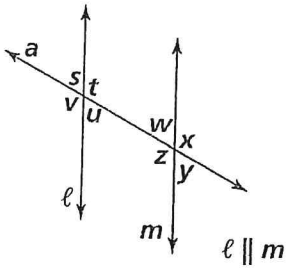


1. $m\angle y + m\angle z =$ _____
2. $m\angle x + m\angle w =$ _____

Use the same figure and Theorem 3.3.3 for problems 3–4.

3. $m\angle w =$ _____
4. $m\angle x =$ _____

Use the figure below and Theorem 3.3.2 for problems 5–10.



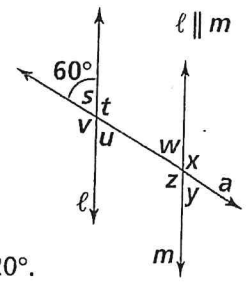
5. $m\angle y =$ _____
6. $m\angle w =$ _____
7. $m\angle t =$ _____
8. $m\angle z =$ _____
9. $m\angle s =$ _____
10. $m\angle u =$ _____

Name Week 2 Date day 3 Period

Workbook Activity
Chapter 3, Lesson 3
25

Solving Problems with Theorems and Parallel Lines

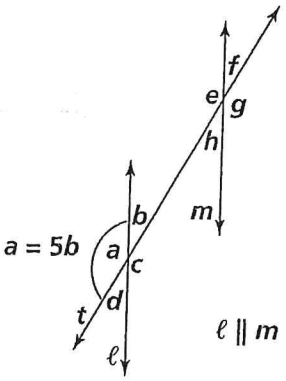
EXAMPLE With the three theorems, you can find the measures of all eight angles with the measure of just one.



Since $\angle w$ is a corresponding angle to $\angle s$, and $\angle u$ is a vertical angle to $\angle s$, they are both equal to $\angle s$ and measure 60°.
$\angle t$ and $\angle v$ are both supplementary to $\angle s$ and therefore measure 120°.
$\angle y$ is a vertical angle to $\angle w$. Therefore, it also measures 60°.
$\angle x$ and $\angle z$ are both supplementary to $\angle w$ and therefore measure 120°.

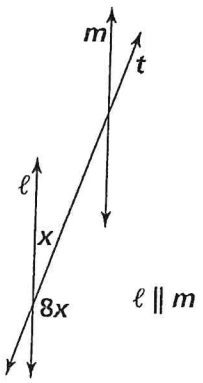
Directions Find the measures of the angles in the figure. Write your reason for each measure. Use the three theorems about parallel lines and what you know about supplementary and vertical angles.

1. m$\angle b$ = _____
2. m$\angle a$ = _____
3. m$\angle c$ = _____
4. m$\angle d$ = _____
5. m$\angle e$ = _____
6. m$\angle f$ = _____
7. m$\angle g$ = _____
8. m$\angle h$ = _____

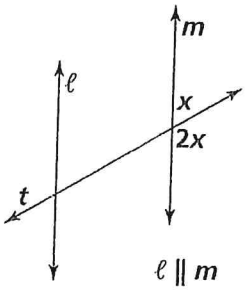


Directions Solve for x in the following problems.

9. _____



10. _____

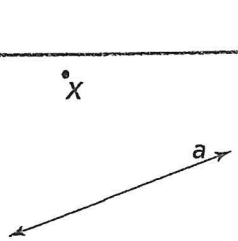


Name WEEK 2 day 4 – and Any make-up work Date Period

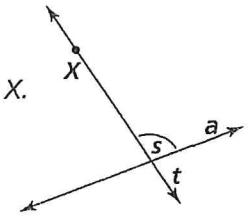
Workbook Activity
Chapter 3, Lesson 4
26

Constructions

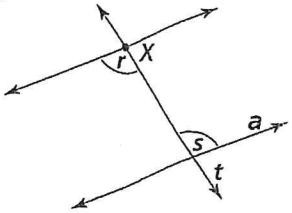
EXAMPLE **Given:** line *a* and point *X*



Step 1 Draw a transversal *t* through point *X*.



Step 2 Copy $\angle s$ at point *X*. This will produce alternate interior angles that are equal.



Directions For each problem, construct a pair of parallel lines with a set of alternate interior angles that measure *x* degrees. **Hint:** Create the stated angle with one line parallel to the bottom of the page. Place point *X* on the other line and then copy the first angle.

1. $x = 60°$
2. $x = 20°$
3. $x = 100°$
4. $x = 150°$
5. $x = 90°$
6. $x = 75°$
7. $x = 175°$
8. $x = 89°$
9. $x = 5°$
10. $x = 35°$

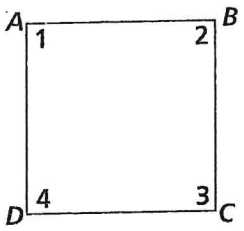
Name WEEK 2 Day 5 Date Period

Workbook Activity
Chapter 3, Lesson 5
27

Quadrilaterals and Parallels

EXAMPLE A parallelogram is a quadrilateral whose opposite sides are parallel.
A rectangle is a parallelogram with four right angles.
A rhombus is a parallelogram with four equal sides.
A square is a rectangle with sides of equal length.

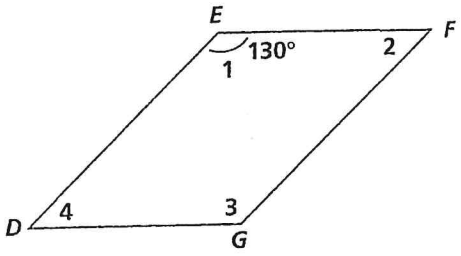
Directions Use the figure at the right and the definitions and theorems about parallels to complete the following statements.



Given: *ABCD* **is a square.**

1. $\overline{AB}$ is parallel to _____.
2. $\overline{AD}$ is parallel to _____.
3. $\overline{AB}$ is not parallel to _____ and _____.
4. $\overline{AD}$ is not parallel to _____ and _____.
5. $m\angle 1 + m\angle 2 =$ _____
6. $m\angle 1 + m\angle 4 =$ _____
7. $m\angle 2 + m\angle 3 =$ _____
8. $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 =$ _____

Directions Use the figure at the right and the definitions and theorems about parallels to complete the following statements.



Given: *DEFG* **is a parallelogram.**

9. $\overline{DE}$ is parallel to _____.
10. $\overline{EF}$ is parallel to _____.
11. $m\angle 2 =$ _____
12. $m\angle 1 + m\angle 2 =$ _____
13. $m\angle 1 + m\angle 4 =$ _____
14. $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 4$. $m\angle 2 =$ _____.
15. $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 =$ _____

Blizzard Bag #1
5 History

Name WEEK 2 Date Day 1 Class

Economics and History Activity 4

The Role of Government

Suppose you invent a mechanism that will improve ship navigation in fog. Now suppose you show it to a big shipbuilding company, it steals your idea, and then increases its business significantly because its ships now have this wonderful device for safely navigating in fog. You do not see a dime of profit. What would you do? You would likely look to the government for assistance. Why? One of the government's roles in our economy is to enforce contracts and protect property rights.

THE GOVERNMENT AND THE ECONOMY

In 1776 economist Adam Smith described a system in which government has little to do with a nation's economic activity. He said that individuals left on their own would work for their own self-interest. In doing so, they would be guided to use resources efficiently and thus achieve the maximum good for society. However, in some instances the government does become involved in the U.S. free market economy. The chart below states five ways in which government might intervene in the economy.

EFFICIENCY AND COMPETITION

In economics, **efficiency** is maximum productivity that meets society's goals. Market efficiency is created through competition. **Competition** means that producers are rivals with other producers for profits; workers are rivals with other workers for wages; and buyers are rivals with other buyers for goods and services. These rivalries create efficiency. For example, producers who charge more than their rivals will not get buyers, so competition holds down the prices of goods and services and makes them affordable to more people.

COMPETITION AND MONOPOLIES

As noted in number 5 on the chart, the government may intervene in the economy to promote competition and, thus, efficiency. A **market failure** occurs when a problem in the market causes inefficiency. Monopolies cause market failure because they reduce competition. The late 1800s and early 1900s in America saw the creation of many monopolies, called trusts. Some of the common practices these trusts used to unfairly crush competition were:

Five Government Roles in the Economy

1. Enforcing Law	The government enforces contracts and property rights.
2. Ensuring Economic Stability	The government tries to stabilize the economy through fiscal and monetary policies to shield citizens from inflation, unemployment, and recession.
3. Redistributing Income	The government redistributes income. For example, it uses tax revenues to support those unable to help themselves.
4. Providing Public Goods	The government provides certain important public services that the market cannot provide, such as national defense or systems of courts and schools.
5. Regulating Economic Activity	The government intervenes in the economy by passing workplace and product safety standards and by promoting competition.

UNIT 4

Name _____ Date _____ Class _____

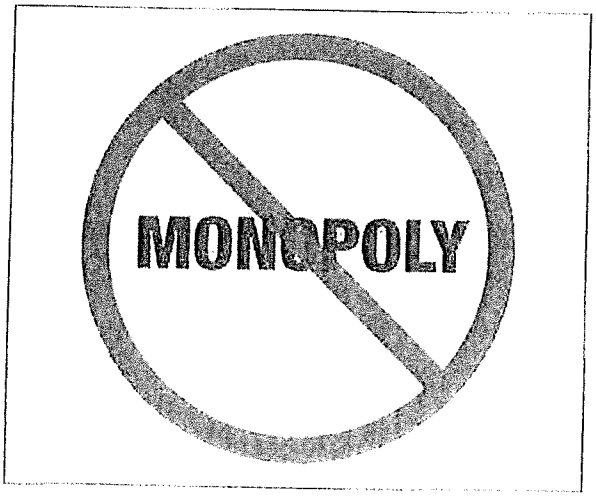
Economics and History Activity 4 (continued)

- Withdrawing their business from suppliers and retailers who did business with other rival companies
- Forcing smaller businesses out by temporarily lowering prices and then raising them after the smaller businesses failed
- Stealing inventions

Government first responded against monopolies with the Sherman Anti-Trust Act of 1890. This law established the principle that restraint or monopolization of trade or commerce is illegal. In 1914 the Clayton Act strengthened the Sherman Act. In the same year, the government established the Federal Trade Commission (FTC). The FTC is a watchdog agency that can investigate companies engaging in interstate commerce.

MONOPOLIES TODAY

Two court decisions ruled recently that Microsoft was a monopoly because it unfairly restricted the creativity and competition of an open market. The courts ruled that Microsoft practiced unfair competition against Netscape, an Internet browser. Microsoft insisted on including its Internet Explorer browser with its Windows operating system. The courts ruled this practice a restraint of trade. According to the courts, Microsoft was using the advantage of its huge share of the software market to unfairly compete in the Internet browser market.



The Federal Trade Commission, established in 1914, has the power to bring court cases against private businesses engaging in unfair trade practices.

APPLYING ECONOMICS TO HISTORY

Directions: Use the information you have read and the information in the chart to answer the following questions on a separate sheet of paper.

RECALLING INFORMATION

1. Why do monopolies make the market inefficient?
2. Name two unfair business practices of the trusts.
3. What unfair business practice caused the courts to rule Microsoft a monopoly?
4. What is competition supposed to create in the market?
5. What are the five categories of government intervention in a free market?
6. What effect does competition have on the prices at which sellers offer their goods and services?

CRITICAL THINKING

7. **Synthesizing Knowledge** When the government provides a check to support someone who is unable to work, the money is an example of a *transfer payment*. What role is government playing when it facilitates the transfer payment?
8. **Making Inferences** You have learned about some of the effects that competition has on the prices at which producers sell their goods and services. How does competition affect the wages that employers pay?

WEEK 2
Day 2, 3

9th - 10th - 11th

OGT Coverage: GE.B.9.4, GO.B.9.5

LESSON 12

Human/Environment Interaction

IT'S IMPORTANT:

- ★ Human activity can bring about geographic changes.
- ★ The causes and results of urbanization include economic development, population growth and environmental change.
- ★ Human migration is influenced by social, political and environmental factors.

There's no argument that the human activities of industrialization and transportation have an impact on the natural environment. The impact is often a large one. In the industrialized world, transportation is the largest single source of air pollution. It is greatly responsible for the large amounts of carbon monoxide, nitrogen oxides and hydrocarbons in our atmosphere. At every stage of manufacturing, distribution and use, cars and trucks pollute the air. Industrialization is also responsible for many hazardous air pollutants. These include emissions of chemical compounds that have been linked to birth defects, cancer and other serious illnesses. Plants and animals and their habitats are also negatively affected by air pollution from industry and transportation.

Whether this human impact is good or bad is open to debate. It's possible to argue that risks to health and habitats are outweighed by the benefits industry and transportation bring to humankind. This argument says that meeting human needs is more important than preserving animal species or the places in which they live. On the other hand, it's possible to argue that the Industrial Revolution has put our planet on the road to disaster. No matter which side of the argument you favor, consider the other side to reach a fair conclusion.

Habitat Destruction

Human population growth is one of the greatest threats to other species and their ecosystems. As humans take over more and more of the earth's remaining space, animals are forced to retreat. Their habitats are broken up. The remaining pieces of their habitats are often smaller and more isolated. Habitat destruction is the leading cause of species endangerment and extinction.

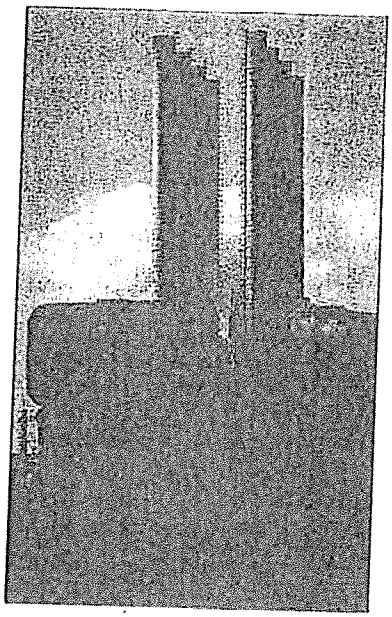
Human activities endanger species and their habitats. The wasteful consumption of resources is one of the biggest dangers. One example is corporate farming. This type of farming converts small multi-crop farms to massive single-crop businesses. It is one of the leading causes of habitat destruction in the United States. Several factors contribute to the destruction of habitats. They include planting only one crop, draining wetlands and not allowing fields to lie fallow (unplanted) between plantings. In addition to destroying habitats, these practices also lead to greater soil erosion and water pollution from fertilizers and pesticides. Other destructive forces include urban development, logging, grazing, mining and road building.

OGT Coverage: GE.B.9.4, GO.B.9.5

Water Pollution

Water pollution is a major cause of **habitat destruction**. Such pollution can be caused in a number of ways. Industrial and sewage treatment plants often dump waste materials into rivers, lakes and oceans. Pollution is also caused by rainfall and snowmelt. These can carry pollutants into bodies of water, including underground aquifers. Excess farm chemicals, oil and other toxic chemicals from city streets, and bacteria from animal and human wastes all make their way into water supplies. And, like the air, bodies of water such as rivers and oceans can be polluted with the exhaust of the vehicles traveling on them.

As a result, there are far fewer aquatic species in our rivers, lakes, streams and oceans. Water pollution also affects human beings directly, creating health hazards that are costly to treat.



Above: *Growing industrialization has helped create modern society, but often at a price: pollution.*

Global Warming

Global warming is caused by emissions of **greenhouse gases**. These result primarily from burning gasoline in automobiles. Coal, oil and natural gas used in power plants and factories also emit greenhouse gases. These gases, composed mainly of **carbon dioxide**, trap heat in the earth's atmosphere. Another name for this warming is the **greenhouse effect**. It is similar to what happens inside a glass-roofed greenhouse where plants grow. Sunlight comes in, but much of the heat it generates cannot escape, so the temperature inside increases. According to the World Meteorological Organization, the concentration of these gases in the atmosphere reached the highest levels ever recorded in 2004.

Many environmental scientists argue that Earth undergoes climatic changes on its own. However, many other scientists are convinced that global warming is a human invention that could cause the earth's average temperature to rise by as much as 10.4 degrees Fahrenheit over the next 100 years. Melting polar ice caps caused by rising temperatures would bring massive flooding to low-lying areas around the world and devastating droughts across farm lands. Rising temperatures would also increase the spread of infectious diseases, such as those carried by mosquitoes and rodents. Doctors have already linked U.S. outbreaks of malaria and dengue fever to climate change.

Many industrialized countries have agreed to cut greenhouse gas emissions. The United States has not. Many American political leaders believe that global warming is not as big a problem as scientists claim. Some also claim that it would be too expensive for American business to take necessary steps to cut gas emissions. Some developing industrial countries, such as China, would be given the right to emit more greenhouse gases. This is opposed by other countries, including the United States, which believe this would give developing industrial countries an unfair advantage.

Despite political disagreements over global warming, international climate talks continue to address the problems associated with rising world temperatures. Industrialization continues to grow, especially in countries such as India and China. If global warming is related to industrialization, it's a problem that must be dealt with.

OGT Coverage: GE.B.9.4, GO.B.9.5

Quick Review 1: Cities such as New York and Miami are located thousands of miles from the North and South Poles. Yet scientists believe these cities could suffer damage if the earth's average temperature continues to rise. What problem is most likely to strike these cities and others like them first?

A. Temperature readings will become too hot for people to live there.

B. The cities may be flooded by extra water from melting ice caps.

C. Greenhouse gases will make the air impossible to breathe.

D. People will catch diseases such as malaria from greenhouse gases.

Sprawl

Urbanization began with the Industrial Revolution in England in the late 1700s. However, many of today's problems with urbanization stem from urban sprawl. Sprawl is the uncontrolled spread of cities and their suburbs into surrounding rural land. Sprawl is the result of poorly planned city development. It threatens the environment by increasing traffic, exhausting local resources and destroying open space. In fact, all of the other environmental problems discussed in this section are due in part to sprawl. Sprawl has increased air and water pollution. It has replaced wetlands and forests with shopping malls and highways. Instead of building compact neighborhoods in which people can walk to many of the places they need to go, sprawl scatters schools, shops, banks, churches, restaurants and so on. This creates the need to drive almost everywhere. As more people move to the suburbs, inner city schools are emptied. At the same time, suburban schools become overcrowded. Many community planners are now seeking ways to create pedestrian-friendly neighborhoods that use local resources wisely.

Quick Review 2: By limiting sprawl, cities can often address a number of environmental problems. Name and briefly explain two of the environmental problems that can be limited by limiting sprawl.

OGT Coverage: GE.B.9.4, GO.B.9.5

People on the Move

Scientists believe that, because of similarities in their bone structures, native peoples of both North and South America probably descended from a single group. This group **migrated** (moved) across a "land bridge" between Asia and North America. About 12,000 years ago, at the end of the last ice age, it was possible to walk from what is now Siberia to what is now Alaska across the **Bering Strait**. It is likely that the first Native Americans did so. (New research on ancient sites in South America casts some doubt on the theory, however.)

Crossing this prehistoric land bridge was only one of many **migrations**. Europeans migrated to the New World beginning in the 1500s. Americans migrated from the original 13 colonies across the Appalachian Mountains into the American interior starting in the 1770s. In the middle of the 20th century, African Americans migrated from Southern farms to the cities of the North for industrial jobs. Some migrations, such as those of African slaves brought to America and American Indians driven west, were forced.

Forced migration is still a fact of life around the world. **Refugees** trying to get away from war or famine move across borders all over the world every day. In 1994, thousands of citizens of the African country of Rwanda fled to nearby Zaire (now the Democratic Republic of the Congo) to escape a civil war. Two million have fled from Sudan to neighboring Chad since 2002, also because of civil war. These were just two of many refugee movements in Africa in recent years. During the same period, eastern Europeans fled war-torn areas in Bosnia, Serbia and Croatia for safer places in Europe. More recently, American military action in Afghanistan sent people fleeing for Pakistan and other surrounding countries.

Sometimes people become **political refugees**. For example, they may want to escape an oppressive government. Thousands of Cubans left Cuba after Fidel Castro led a communist takeover in 1959. Before the Soviet Union fell, thousands of Jews left for Israel and the United States. Many of those migrating from place to place in Africa do so for political reasons in addition to fleeing war.

There are also **economic refugees** who hope to escape from poverty. Every year, thousands of Mexicans cross the border into the United States in hopes of finding work to support their families. European countries have absorbed thousands of immigrants from Arab countries, Turkey and Pakistan. Refugees sometimes place an economic burden on their new home countries, although many places accept them because of their willingness to work in jobs that well-established citizens don't want.

Migrations to seek work, to find food and water and to escape war are likely to continue in the 21st century. These migrations always bring changes, both to the people moving and to the people who already live at the destination. It's a law of history that remains in effect.

Refugees, 2004

Refugees From	How Many	Fled To
Afghanistan	2,085,000	Iran, Pakistan, Germany, Netherlands, United Kingdom
Burundi	486,000	Tanzania, Dem. Rep. of Congo, Rwanda, South Africa, Canada
Sudan	731,000	Chad, Uganda, Ethiopia, Kenya, Dem. Rep. of Congo, Central African Rep.
Democratic Republic of Congo	462,000	Tanzania, Zambia, Congo-Brazzaville, Burundi, Rwanda
Somalia	389,000	Kenya, Yemen, United Kingdom, United States, Djibouti

Source: *United Nations*

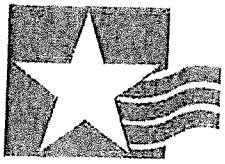
Quick Review 3: Refugees do not move in one direction only. Refugees move out of one country but are "replaced" by refugees moving in from another. According to the table above, which of the following countries has had refugees both coming in and leaving?

A. Afghanistan

B. Burundi

C. Somalia

D. Tanzania



OGT Practice

1. Some environmental organizations want strict guidelines that will limit the amount of greenhouse gases that would be allowed from industrial sources and from cars and trucks. These limits may temporarily add costs for some businesses. However, in the long run, these organizations believe limits will lead to a cleaner and safer environment. Which of these actions would most directly help lower the level of greenhouse gases in the atmosphere?

   A. recycling aluminum and paper

   B. making sure to turn off lights when they aren't being used

   C. organizing a carpool with neighbors to drop off and pick up kids at school

   D. installing plumbing equipment that reduces the amount of water used in the house

2. One method of generating electricity is solar power. Solar power emits no greenhouse gases or other waste products. However, it is much more expensive than electricity generated by burning coal. Over the long term, new ways of converting solar energy into electricity will cause the price of solar power to decrease.

   What is likely to be a short-term problem with solar power?

   A. The use of solar power will increase global warming.

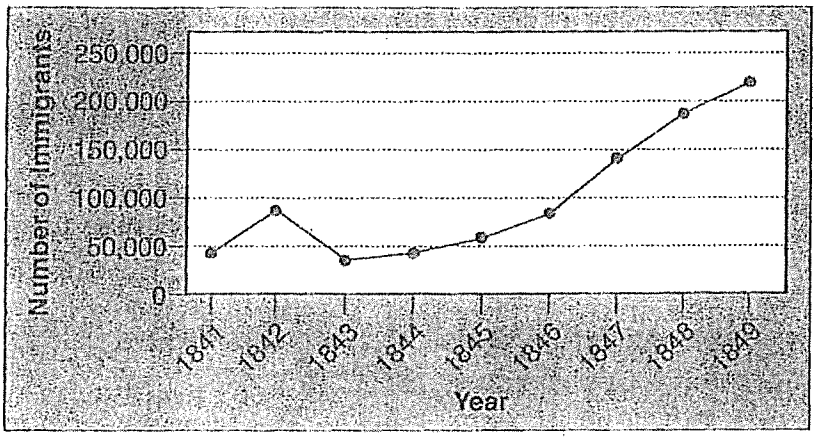
   B. Power companies may deplete their source of solar power.

   C. Makers of solar power equipment could be forced to lay off workers.

   D. Low-income households may be unable to afford to heat their homes in winter.

Use the following graph to answer question 3.

Irish Immigrants to the U.S.



3. In the 1800s, potatoes were the most important food in the Irish diet. Between 1845 and 1849, the potato crop in Ireland was destroyed by a disease. Widespread food shortages and starvation resulted. Based on this information and the graph above, which statement is supported by the data in the above paragraph?

   A. As food supplies decreased, an increasing number of Irish people moved to the United States.

   B. Population increases in the United States during the 1800s were made up mostly of people from Ireland.

   C. The birth rate (number of babies born) in Ireland probably increased during the 1840s.

   D. Food shortages caused more people to move during the 1800s than wars did.

4. On the South Pacific islands of Sumatra and Borneo, some lowland forests are being burned to make way for agriculture. In other forests, the trees are being cut down and sold for their wood. These forests are the habitat of Sumatran and Bornean orangutans, a species of ape. Briefly explain the likely effect of these activities on the orangutans. Write your answer on the lines below. (2 points)

History

WEEK 2

Day 4

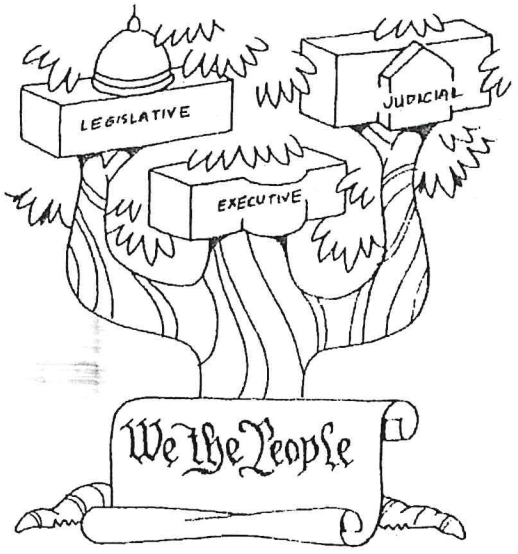
Day 5
Make-up

THE BIRTH OF THE CONSTITUTION

Separation of Powers

Another problem facing the Constitutional Convention was how to divide the powers of a government. Who will make the laws? Who will make sure the laws are obeyed? Who will make sure the laws are "good" laws? These questions were answered in the next set of compromises.

American government can be seen as a tree. The Constitution is the trunk, or base, with three branches extending from that trunk. Those three branches are the legislative branch, the executive branch, and the judicial branch. Each branch has different responsibilities and looks out for and checks the other two branches. These concepts, respectively, are called *separation of powers* and *checks and balances.*



The U.S. Constitution provides for the legislative, executive, and judicial branches of government.

The *legislative* branch was defined during the Great Compromise. Together, the House of Representatives and the Senate make the laws to govern our country. The legislative branch also checks the executive and judicial branches.

The second branch is the *executive* branch. Eventually, the delegates decided to create a chief executive. Under the Articles of Confederation, there was no national leader. The founding fathers had feared creating another "king." There was much discussion, even talk of having two equally powered leaders. The convention agreed to create one President, but only if the President would be checked or watched by the legislative and judicial branches. The job of the President and the executive branch is to carry out the laws passed by the legislative branch.

The third branch established the *judicial* system. The judicial branch was to be headed by the Supreme Court. It is the job of the Supreme Court to interpret or define the laws. The Supreme Court is chosen by the President and approved by the Senate. The judicial branch checks the executive and legislative branches.

Each branch has its own specific responsibilities. Each has a separate power. Part of the responsibility of a branch is to control or check the power of the other branches. That way, no one branch gets to be too powerful; each branch is balanced.

Date _____ Name _____

THE BIRTH OF THE CONSTITUTION

Separation of Powers
≈ Challenges ≈

1. Define:

   Separation of Powers: _____

   Checks and Balances: _____

   Legislative: _____

   Executive: _____

   Judicial: _____

2. Name three ways in which the powers of the United States are divided.

   _____

   _____

   _____

3. Why are the powers separated? _____

   _____

4. What is the job of the legislative branch? _____

   _____

5. What is the job of the executive branch? _____

   _____

6. What is the job of the judicial branch? _____

   _____

7. What two branches are checked by the legislative branch? _____

   _____

8. What two branches are checked by the executive branch? _____

   _____

9. What two branches are checked by the judicial branch? _____

   _____

Day 1-5 Week Language Arts

Just for Teens: A Personal Plan for Managing Stress

WHAT IS STRESS?

Stress is the uncomfortable feeling you get when you're worried, scared, angry, frustrated, or overwhelmed. It is caused by emotions, but it also affects your mood and body. Many adults think that teens don't have stress because they don't have to work and support a family. They are missing the point and are wrong!

WHAT CAUSES STRESS?

Stress comes from many different places.

- *From your parents.* "Don't disappoint me, clean up, hurry up, finish this, do your homework, go out for the team, practice your music, try out for the school play, do your best, stay out of trouble, make more friends, don't ever try drugs."
- *From your friends.* "How'd you do on the test, try this, prove you're not a loser, don't hang out with them, don't wear that."
- *Even from yourself.* "I need to lose weight, build my muscles, wear the right clothes, get better grades, score more goals, show my parents I'm not a kid anymore."

And from

- Watching parents argue
- Figuring out how to be independent
- Feeling pressure to get good grades
- Thinking about the future
- Being pressured to do something you know is bad for you, like smoking
- Not being good enough at sports
- Worrying about how your body's changing
- Dealing with sexual feelings
- Worrying about neighborhood or world problems
- Feeling guilty

HOW DOES THE BODY HANDLE STRESS?

First, here are 2 short definitions.

- *Hormone:* a chemical made by one part of the body that travels through your blood to send messages to the rest of the body.
- *Nervous system:* the brain, spinal cord, and all of the nerves. The nerves send messages between your brain and the rest of your body.

The body is a finely tuned machine that can change quickly to do what we need it to do, like react to stress. The body has 2 nervous systems. The voluntary system does what you choose to have it do—walk, talk, move. The involuntary system keeps the body running without your even thinking about it—breathe, sweat, digest. The body actually has 2 different nerve pathways in the involuntary system. One works while we're relaxed, and the other works when there's an emergency. These 2 systems can't work together at the same time. It's important to know this because we can shut off the emergency system by flipping a switch and turning on the relaxed system.

IS STRESS ALWAYS BAD?

Even though stress is uncomfortable, it's not always a bad thing. Sometimes stress helps us deal with tough situations. A lot of stress changes our bodies quickly and helps us react to an emergency. A little stress keeps us alert and helps us work harder.

Ages ago, when people lived in the jungle—where a tiger might leap out at any moment—the emergency nervous system was key to survival. Imagine your great, great, great ancestors, Sam and Zelda, munching on some berries. Suddenly they saw a tiger and had to *run!* Hormones gave them the burst of energy they needed to escape.

How did their bodies react? First, Sam and Zelda got that sinking feeling in their stomachs as the blood in their bellies quickly went to their legs so they could take off. When they jumped to their feet, their hearts beat faster to pump more blood. As they ran from the tiger, they breathed faster to take in more air. Their sweat cooled them as they ran. Their pupils became bigger so they could see in the dark, in case they needed to jump over a log while running away. They didn't think about anything but running because they weren't supposed to stop and figure out a friendly way to work it all out with the tiger.

Our ancestors never would have survived without the stress reaction, but stress helps us do more than run. It keeps us alert and prepared for the next lurking tiger.

Few of us need to outrun tigers today, but we all have problems and worries that turn on some of those exact same stress responses, like that panicky feeling you sometimes get when you're studying for a big test. Your heart beats fast. Your breathing becomes heavier. You sweat and get flashes of heat because your hormones are confused about why you aren't listening to them.

① Read Entire Packet
② Complete the My Personal Stress plan, Stress worksheet and last page

Why are you standing still when they are telling you to run?

IF STRESS IS A SURVIVAL TOOL, WHY DOES IT MAKE US FEEL AWFUL?

Sam and Zelda had few choices when the tiger chased them. Either the tiger ate them or they escaped. As sick as it sounds, if they'd been eaten, they wouldn't have had much to worry about anymore, right? If they lived, you can be sure their burst of energy allowed them to outrun the tiger or at least outrun Zok (their slower friend who was eaten by the tiger). In their run for survival, Sam and Zelda used up every drop of their hormone burst and then took a well-deserved nap.
In the modern world, our biggest worries aren't usually about life or death. We don't really have to run away from our problems. But those same stress hormones stay in our bodies because, unlike Sam and Zelda, we don't use them up by running. Instead, those hormones continue to hang around, unused and confused. They seem to be asking, "Why did my body stand still when that 'tiger' attacked?"

It would be better if we had different hormones for different stresses. Hormones to deal with parental pressure would make you love chores. Hormones related to school stress would make you focus longer and shut down your kidneys so you wouldn't need bathroom breaks. But we only have those hormones that prepare us to flee or fight. So it's really important to use your brain to decide what's a real emergency and to use exercise to use up those hormone bursts.

Even when there are no real emergencies, our emotions make our bodies act like there is a huge crisis because the brain controls emotions and stress hormones. If your brain thinks something terrible is happening, your body will react as if it really is! Even a little bit of stress that never seems to go away can confuse the body. It makes the body work harder to prepare for an emergency that may not really be there.

A tiger running at you is a real crisis. If you believe a mild stress (like a math test) is an emergency, you will not be able to study. Your body will be preparing to deal with a real tiger, and you won't be able to concentrate on anything but escaping. The trick is to figure out when something really is an emergency and when your emotions are only treating it like one.

A REVIEW

- Stress is an important survival tool and can keep you alert and focused. But when you're not dealing with a real survival issue, it can make you uncomfortable and interfere with your ability to think through the problem.
- Stress hormones are telling us to run, so exercise uses them up.
- The body reacts to stress when the brain tells the body to prepare for an emergency.
- Emotions play an important role in how our bodies experience stress. How we think about a stressful situation and what we choose to do about it affects how it makes us feel.

HOW DO PEOPLE DEAL WITH STRESS?

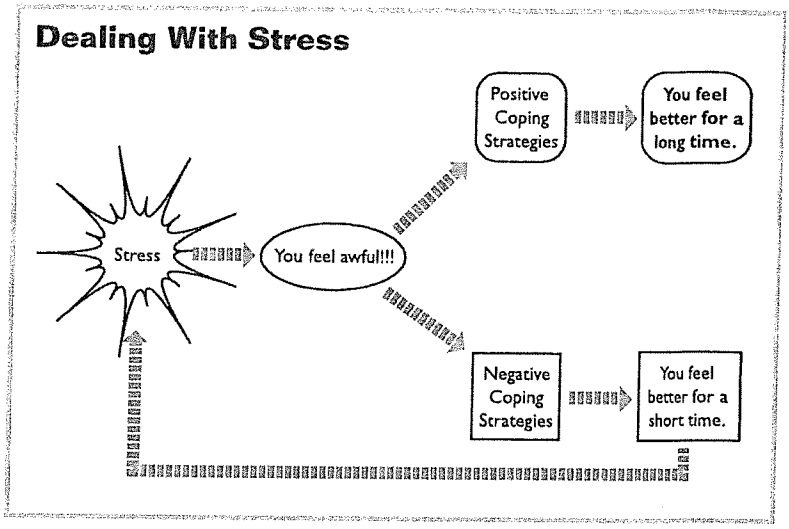
Nobody can avoid all stress, but you can learn ways to deal with it. When you are stressed, it is normal to want to feel better. Anything that makes you feel better is called a *coping strategy.* Negative strategies can be quick fixes, but they're harmful because they can be dangerous and make stress worse in the long run. Think about some of the ways people cope with stress that can really hurt them.

- Drugs
- Cigarettes
- Alcohol
- Bullying
- Fighting
- Sex
- Cutting/self-mutilation
- Skipping school
- Eating disorders
- Running away
- Isolating themselves or withdrawal
- Gangs

DEALING WITH STRESS

These harmful choices may help you feel good for a little while, but some can be really dangerous. They also end up making people worried about you or angry with you. This messes up your life, and you become a lot more stressed. They're especially worrisome if they are a major way you deal with stress because you may turn to these behaviors more often during hard times. This is one of the ways addiction starts. If you are doing some of these things, ask yourself, "Why?" If it is to deal with problems, consider other ways of dealing with the same problems.

There are many healthy ways of coping. Healthy coping strategies are safe and can help you feel better without messing up your life.



CREATING YOUR PERSONAL STRESS-MANAGEMENT PLAN

Following is a 10-point plan to help you manage stress. All of these ideas can lower stress without doing any harm. None are quick fixes, but they will lead you toward a healthy and successful life. The plan is divided into 4 parts.

1) Tackling the problem
2) Taking care of my body
3) Dealing with emotions
4) Making the world better

When you read over the plan, you'll notice that you can come up with a bunch of ideas for each point. PLEASE don't think you should try them all. This plan is supposed to help you reduce stress, not give you more. Try out some ideas, then stick to 1 or 2 ideas for each point.

You might notice that this plan is almost like building a college or work résumé. This is the sane way to build a résumé; you are doing it to manage your life and remain happy and prepared for success, not to cram in activities to impress someone else. It will ensure you're healthy and balanced, and that's very attractive to colleges and employers.

PART 1: TACKLING THE PROBLEM

Point 1: Identify and Address the Problem.

First decide if a problem is a real tiger or just feels like one. If it can't physically hurt you, chances are that it can be better handled with clear thinking. This means turning off those thoughts that make you interpret the situation as a disaster.

1) A lot of people cope by ignoring problems. This doesn't make them go away; usually they just get worse.
2) People who cope by trying to fix problems tend to be emotionally healthier.
3) When it comes to studying or chores, it is best to get the work done first. Because work or studying produces stress, many people put it off and choose to do fun things first. The problem with that is they're not really having fun because they're worrying about the work they're ignoring. And of course, the longer they put it off, the more they worry. The cycle is endless.
4) Fights with parents and friends don't go away unless you deal with what upset you in the first place or unless everyone apologizes and decides to forgive each other.

Three ideas can help you manage a lot of work.

1) Break the work into small pieces. Then do one small piece at a time, rather than look at the whole huge mess. As you finish each piece, the work becomes less overwhelming.
2) Make lists of what you need to do. This will help you sleep because your head won't spin with worry about whether you can do everything. At the end of the day, you'll have less to worry about as you check off the things you have finished. You will look at the same huge amount of work and realize you can handle it.
3) Timelines can help with big projects.

Point 2: Avoid Stress When Possible.

Sometimes we know exactly when we are headed for trouble. Avoiding trouble from a distance is easier than dealing with it up close. You know the people who might be a bad influence on you, the places where you're likely to get in trouble, and the things that upset you. Choose not to be around those people, places, and things that mess you up.

Point 3: Let Some Things Go.

It's important to try to fix problems, but sometimes there is nothing you can do to change a problem. For example, you can't change the weather, so don't waste your energy worrying about it. You can't change the fact that teachers give tests, so just study instead of complaining about how unfair they are. You can't change the fact that your parents need to know where you go, so prove that you're responsible and deserve more freedoms. People who waste their energy worrying

about things they can't change don't have enough energy left over to fix the things they can. Also learn when not to take things personally. You feel badly for no reason when you take something personally that really has little to do with you.

PART 2: TAKING CARE OF MY BODY

Point 4: The Power of Exercise

Exercise is the most important part of a plan to manage stress. When you are stressed, your body is saying, "Run!" So do it. Exercise every day to control stress and build a strong, healthy body. You may think you don't have time to exercise when you are most stressed, but that is exactly when you need it the most. If you are stressed about an assignment but too nervous to sit down and study—exercise! You will be able to think better after you have used up those stress hormones. Some people exercise before school because they can focus and learn better.

Point 5: Active Relaxation

You can flip the switch from being stressed to relaxed if you know how to fool your body. Because your body can only use the relaxed or emergency nervous system at any one time, you can turn on the relaxed system. You do this by doing the opposite of what your body does when it is stressed. Here are 2 ideas.

1) Breathe deeply and slowly. Try the 4–8 breathing technique. Lie on your back and place your hands on your belly with your fingers loose. Deep breaths first fill the belly, then the chest, then the mouth; the breath expands the belly and your hands pull gently apart. Take a full breath while counting to 4. Then hold that breath for about twice as long, or an 8 count. Slowly let it out to the count of 8, or even longer if you can. This will relax your body after a few breaths, but just as importantly, it requires your full concentration. Your mind is too focused on breathing to also focus on worries. Do this 10 times and you will feel much more relaxed. Yoga, martial arts, and meditation also teach great breathing skills. When you get good at this, you can even do this in a chair during a test and nobody will know.
2) Put your body in a relaxed position.
   - Your body knows when you're nervous. If you sit down to take a test and your legs are shaking, you are saying, "I want to run!" Remember, you can't concentrate and run at the same time, so you are making it harder to take the test. Instead, take those deep breaths, lean back, and tell your body there is no emergency.
   - When you're angry, the natural thing to do is stand up and face someone shoulder-to-shoulder and chest-to-chest. You do this without even thinking, but this subconsciously tells the other person that you're angry and ready to fight. It also may prevent you from thinking clearly. Do the *opposite* of what you would do if you were really going to fight—sit down, take deep slow breaths, and tell your body there is no danger. Then use your brain to get out of the situation.

Point 6: Eat Well.

Everyone knows good nutrition makes you healthier. Only some people realize that it also keeps you alert through the day and your mood steady. People who eat mostly junk food have highs and lows in their energy level, which harms their ability to reduce stress. Instead of eating greasy or sugary foods, eat more fruits, vegetables, and whole grains—they keep you focused for a longer time. Go to www.ChooseMyPlate.gov to learn more.

Point 7: Sleep Well.

Most kids don't get the sleep they need to grow and think clearly. Tired people can't learn as well and can be impatient and irritable. Here are some ideas to improve your sleep.

- Go to sleep about the same time every night.
- Exercise 4 to 6 hours before bedtime. Your body falls asleep most easily when it has cooled down. If you exercise right before bed, you will be overheated and won't sleep well. A hot shower 1 hour before bedtime also helps your body relax to fall asleep.
- Use your bed only to sleep. Don't solve your problems in bed. When you think about all the things that bother you, you have trouble falling asleep and wake up in the middle of the night to worry more. Instead, have another spot to think, like a *worry chair.* Give yourself plenty of time to think things through, make a list if you need to, and then *set it aside!* Go to bed to sleep.
- Don't do homework, watch television, read, or use the phone while in bed.

PART 3: DEALING WITH EMOTIONS

Point 8: Take Instant Vacations.

Sometimes the best way to de-stress is to take your mind away to a more relaxing place.

1) *Visualize.* Have a favorite place where you can imagine yourself relaxing. The place should be beautiful and calm. When you're stressed, sit down, lean back, take deep breaths, close your eyes, and imagine yourself in your calm place.
2) *Take time out for yourself.* Everyone deserves time for themselves—a bath or something that allows time to think and de-stress. Try a warm bath with your ears just underwater. Listen to yourself take deep, slow breaths. Take your pulse and count as your heart rate goes down.
3) Enjoy *hobbies* or creative art as an instant vacation.
4) Look at the beauty around you and get *pleasure from the small things* you may have stopped noticing.
5) Take *mini-vacations.* Sometimes we forget that the park around the corner is a great place to hang out. A walk outside can be a mini-vacation if you choose to forget your worries.
6) *Reading* a good book is an escape from reality. You have to imagine the sights, sounds, and smells—you are somewhere else for a while.

Point 9: Release Emotional Tension.

Sometimes feelings become so overwhelming that we cram them all away in an imaginary box and think we'll deal with them later. But later, there's so much stuff in the box that there is too much to deal with. This can make your head feel as if it is spinning. Sometimes you get angry or frustrated without even knowing why. You just know there is too much stuff going on in your head. It's good to pick just one problem to work on and forget the rest for the moment. When we decide to deal with only one problem at a time, it's much less scary to open the box.

Here are some ideas to release your thoughts or worries one at a time.

- **Creativity.** People who have a way to express themselves don't need to hold it inside. Creative outlets like art, music, poetry, singing, dance, and rap are powerful ways to let your feelings out.
- **Talking.** Every young person deserves a responsible adult to talk to and some friends to trust. Hopefully, you can talk to your parents. If you do not want to tell your parents everything, make sure to find an adult who'll listen and whom you can ask for advice.
- **Journaling.** Write it out!
- **Prayer.** Many young people find prayer or meditation helpful.
- **Laughing or crying.** Give yourself permission to feel your emotions fully.

PART 4: MAKING THE WORLD BETTER

Point 10: Contribute to the World.

Young people who work to make the world better have a sense of purpose, feel good about themselves, and handle their own problems better. It's important to understand that you really can make a difference in other people's lives. The role of teenagers is to recognize the mistakes adults have made and build a better world.

* * * *

Now that you have read about the kind of things a person can do to reduce stress, you may be ready to create a plan for yourself. Just check off the ideas you think would work best for you. There are spaces for you to write down your own ideas.

My Personal Stress Plan

PART 1: TACKLING THE PROBLEM

Point 1: Identify and Address the Problem.

When I have too many problems, I will work on just one at a time. For example, I am going to pick one huge problem and break it into smaller pieces.

- I will seek advice from family members and learn from their experience how to better handle problems.
- I will take big assignments and learn to make lists or timelines.
- I will work in teams so that I will learn that when people work well together they can do much more than if they each work alone.

Point 2: Avoid Stress When Possible.

I know that everyone has stress, but there are things that I could stay away from that really stress me out. I will

- Avoid certain people, like_____
- Avoid certain places, like _____
- Avoid certain things, like _____
- Avoid certain memories that create pain for me, like _____

Point 3: Let Some Things Go.

I realize that I waste some of my energy worrying about things I can't fix. Here are some things that I will try to let go so I can focus on the problems I can change.

- _____
- _____
- _____

I know I waste some of my energy when I take things personally that really have nothing to do with me. I am going to learn this lesson by remembering a time I did this and by choosing not to repeat that mistake.

_____

_____

_____

_____

_____

_____

_____

PART 2: TAKING CARE OF MY BODY

Point 4: The Power of Exercise

I will do something that makes my body work hard for at least 20 minutes every other day—more is better. I know that strong bodies help people better deal with stress, and this will keep me in shape. The kinds of things I like to do include

- _____
- _____
- _____

I can commit to _____ minutes of exercise a day. If I have trouble focusing in school, I will try exercising before school for _____ minutes (recommended minimum: 20) to see if it helps me concentrate better.

I know that a really hard physical workout will help me calm down when I am feeling most worried, stressed, or fearful. This is especially true when I can't concentrate on my homework because it feels like too much. The kinds of things I might do include

- _____
- _____
- _____

Point 5: Active Relaxation

I will try to teach my body to relax by using

- Exercise that controls the body and releases tension like tai chi or boxing.
- Deep breathing.
- Yoga.
- Meditation.
- Warm, long baths or showers.
- Imagine I am someplace peaceful and relaxing. The place I could imagine myself being is

_____

Point 6: Eat Well.

I know that having a healthy body helps people deal with stress better. I have already agreed to exercise more. I understand that good nutrition also makes a difference in my health and how well I deal with stress. The changes I am ready to make include

- Eating a good breakfast
- Skipping fewer meals
- Drinking fewer sodas and sugary drinks
- Drinking more water
- Eating smaller portions
- Eating less greasy meals or snacks
- Eating more fruits, vegetables, and whole-grain foods
- Going to www.ChooseMyPlate.gov to learn more
- _____
- _____

Point 7: Sleep Well.

I know that people who get a good night's sleep do a better job of dealing with stress and do better in school. For me to get the sleep I need, I will try to go to bed at ____:____.

I will consider the following plan to help me get the best night's rest:

- Avoid caffeine at least 6 hours before bed.
- Exercise 4 to 6 hours before bed.
- Finish homework after exercise because I will be my calmest, clearest, and most focused.
- Take some time to relax or hang out after homework.
- Shower or bathe 1 hour before bed.
- Begin to dim the lights 30 minutes before bed.
- Let go of my emotional tension before bed in a place other than bed (see point 9). If I am really troubled, I will do this earlier in the evening.
- I will use my bed only for sleeping. I will use another place to do some of the things I do in bed now. I will
  - —Stop reading in bed.
  - —Stop doing homework in bed.
  - —Stop watching television in bed.
  - —Stop talking to my friends or instant messaging in bed.
  - —Stop worrying in bed.
- Dock my cell phone in a charger that is not in my bedroom.
- Deal with the things that stress me out by having a time to let go of my thoughts and feelings in a place other than my bed.

PART 3: DEALING WITH EMOTIONS

Point 8: Take Instant Vacations.

Everyone needs to be able to escape problems for a while by taking an instant vacation. I will

- Read a book.
- Take a mini-vacation to a local park or recreation center.
- Imagine I am someplace peaceful and relaxing. The place I could imagine myself being is _____
  _____
- Watch television.
- Listen to music.
- Play video games that are not violent or stressful.
- Take a warm bath.
- _____

Point 9: Release Emotional Tension.

I will try to let my worries go, rather than letting them build up inside.

- I will talk to a friend I have chosen wisely because I know he or she will give good advice.
- I will talk to my
  —Mother
  —Father
  —Teacher
  —_____
- I will ask my parents or a teacher to help me find a counselor to help me work out my problems.
- I will pray to gain strength.
- I will meditate.
- I will write out my thoughts in a diary, journal, or blog.
- I will let myself laugh more.
- I will let myself cry more.
- I will make lists to get organized.
- When it seems that I have too many problems and they seem like more than I can handle, I will work on one at a time.
- I will express myself through
  —Art
  —Music
  —Creative writing
  —Poetry
  —Rap
- _____
- _____

PART 4: MAKING THE WORLD BETTER

Point 10: Contribute to the World.

I know that people who realize they are needed feel better about themselves because they can make a difference in other people's lives. I plan to

- Help a member of my family by _____
- Volunteer in my community by _____
- Help the environment (or animals) by
  _____

WHEN TO TURN FOR HELP

Even if you are great at dealing with problems, there may be times when stress feels like it is getting to you. You are not alone. This does not mean you are crazy or a failure. Strong people turn to others for support when they have too much to handle. It's OK to turn to wise friends for advice, but it is also important to turn to your parents or another adult to help you. Nobody will solve your problems; they might just help you figure out how to better deal with them. *You deserve to feel good.*

The following signs suggest that you should seek some extra guidance:

- Your grades are dropping.
- You worry a lot.
- You easily get moody or angry.
- You feel tired all the time.
- You get a lot of headaches, dizziness, chest pain, or stomach pain.
- You feel sad or hopeless.
- You feel bored all the time and are less interested in being with friends.
- You are thinking about using alcohol or drugs to try to feel better.
- You ever think about hurting yourself.
- You are using unhealthy coping strategies and are having trouble replacing them with healthier ones.

Remember that one of the best ways to be happy and successful is to manage stress well. You can do it!

Adapted from Ginsburg KR, Jablow MM. Building Resilience in Children and Teens: Giving Kids Roots and Wings. *2nd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2011*

STRESS WORKSHEET

1. Eustress vs. Distress

There are two types of Stress.

- Eustress: positive, good stress that comes from situations that are enjoyable. (e.g., wining a game)
- Distress: Negative, bad stress that can be harmful to the body. (e.g., doing poorly on a test)

Review your Stress Diary. From your stress list, identify examples of eustress and distress in the space below.

Eustress _____

Distress _____

2. From your Stress Diary list, identify stressors and their physical and mental symptoms.

Stressors	Symptoms	
	Physical	Mental

3. Review your Stress Diary and identify the areas of distress of most concern.

_____

_____

_____

4. **Many stressors can be changed, eliminated, or minimized. Here are some examples of things you can do to reduce your level of stress:**

Exercise	➢ Exercise regularly. ➢ Practice relaxation techniques. For example, whenever you feel tense, slowly breathe in and out for several minutes.
Nutrition	➢ Eat a balanced diet daily. Eat more whole grains, nuts, fruits and vegetables. Substitute fruits for desserts. ➢ Choose foods that are low in fat, sugar, and salt.
Sleep	➢ In a typical week, get sufficient sleep to wake up refreshed. ➢ Do not use medication or chemical substances (including alcohol) to help you sleep.
Stimulants	➢ Avoid caffeine, nicotine, sugar, and cola. ➢ Do not use medication or chemical substances (including alcohol) to reduce your anxiety or to calm you down.
Support System	➢ Have one or more friends with whom you can share personal matters. ➢ Talk with friends or someone you can trust about your worries/problems.
Nurture-Self	➢ Keep reinforcing positive self-statements in your mind. ➢ Focus on your good qualities and accomplishments ➢ Do something you really enjoy which is "just for me" during the course of an average week. ➢ Recognize and accept your limits. Remember that everyone is unique and different.
Good time management skills	➢ Plan ahead and avoid procrastination. ➢ Make a weekly schedule and try to follow it. ➢ Set realistic goals. ➢ Set priorities. ➢ See the iStudy for Success module on Time Management (http://iStudy.psu.edu/modules.html)
Relax	➢ Take a warm bath or shower. ➢ Go for a walk. ➢ Get a hobby or two. Relax and have fun. ➢ Get in touch! Hug someone, hold hands, or stroke a pet. Physical contact is a great way to relieve stress.

Think about how to cope with and prevent the distress you identified in your Stress Diary and the questions above. Describe your plan for coping with distress in the space below.

Exercise	
Nutrition	
Sleep	
Stimulants	
Support System	
Nurture-Self	
Good time management skill	
Relax	
Other	

FINANCE IN THE CLASSROOM

Name WEEK 2 Day 5 Date _____

CAREER PLAN

Directions: **Go to CareerLink Inventory – http://www.mpcfaculty.net/CL/cl.htm.** Work through the icons on the left beginning with Aptitude. From Your Career Inventory Result, list your top three matches and their Percent Match. Click on Cluster Titles for the top three matches. List two sample occupations you might be interested in from each Cluster Title. Print and turn in the results to the inventory.

Career	Occupation
1. _____	1. _____ 2. _____
2. _____	1. _____ 2. _____
3. _____	1. _____ 2. _____

List your three favorite careers from above. Give a pro and a con for each.

Career	Pro	Con
1.		
2.		
3.		

Day 3,4,5

Occupational Outlook

Go to the following website: www.bls.gov/oco, then click on "A-Z Index" (top right corner of page). Pick two careers and answer the following questions.

A	B
1. What is the occupation or the career you chose?	1. What is the occupation or the career you chose?
2. What appeals to you about the job you selected?	2. What appeals to you about the job you selected?
3. What is the nature of the work required of the employee?	3. What is the nature of the work required of the employee?
4. What are the working conditions?	4. What are the working conditions?
5. What is the education or training that is required or the occupation/career?	5. What is the education or training that is required or the occupation/career?
6. What might you expect as a beginning salary?	6. What might you expect as a beginning salary?
7. Is there an opportunity for advancements?	7. Is there an opportunity for advancements?
8. Do you thing this job will provide the lifestyle needed for your future, including retirements? Why or why not?	8. Do you thing this job will provide the lifestyle needed for your future, including retirements? Why or why not?
10. What related occupations might appeal to you?	10. What related occupations might appeal to you?

Career Plan

At this time, my career goal is to _____.
The schooling I need is _____.
This education would cost _____. I expect to make $_____/year.