

Name \_\_\_\_\_

Date \_\_\_\_\_

Teacher \_\_\_\_\_

Campus \_\_\_\_\_

# 8<sup>th</sup> GRADE

*Week Seven*

*May 11th-15th*

Mount Pleasant ISD

**English**

**Week 7: May 11-May 15, 2020**

**Directions: Read the passages and answer the following questions.**

**The Rise of Fandoms**

Superfans today have more power than ever. Is that a good thing?

Their faces were haggard, their eyes bleary. They'd been camped out on the pier for hours. But despite their exhaustion, the crowd buzzed with excitement. America's favorite celebrity would soon arrive in New York City, and these superfans couldn't wait to catch a glimpse.

Who were these throngs of adoring fans? They weren't Arianators waiting for Ariana Grande. Nor were they Selenaators, Little Monsters, or Potterheads. These were fans of the most famous writer in 19th-century America and Europe—the best-selling author of books like *Oliver Twist* and *A Christmas Carol*: Charles Dickens.

**Fans and Superfans**

For all of recorded history, there have been fans and the things they admire. Chances are you are a fan of some one or something. Maybe it's Black Panther, the L.A. Lakers, or simply your dad's pancakes. Maybe you're a *superfan*, which means you're extremely dedicated and enthusiastic—perhaps even a bit obsessive.

Superfans have always gone to great lengths to feed their obsessions. When Dickens visited America in 1842, hordes of admirers trailed him everywhere he went. They even tried to snip off pieces of his coat as souvenirs—similar to how superfans today might lurk outside a restaurant where a celebrity is eating, hoping to get a photo. A barber who once gave Dickens a haircut made a small fortune selling scraps of his hair, which perhaps isn't so different from the person who sold a tissue Scarlett Johansson had used to wipe her nose—for a whopping \$5,300.

(Yes, that happened.) Getting Dickens's autograph was probably just as thrilling in the 1840s as getting a like or a comment from a star today. But in spite of the similarities between fans past and present, there is something unique about fan culture today. Thanks to technology and social media, enormous numbers of superfans are joining together in what have come to be known as fandoms. These groups are highly creative and increasingly powerful. And they're changing the world of pop culture.

**Fans Unite**

A fandom is a group of people who unite around a shared passion for something or someone in pop culture, usually a TV show, a movie, a book, a musical artist, or an actor. There are fandoms for everything from Pixar to the Marvel Universe to the Hunger Games. Some groups give themselves clever names, like the Swifties (fans of Taylor Swift) and the Hamilteens (teen fans of the musical *Hamilton*). But being in a fandom means more than really, really liking something. Fandoms are about creating something. You might connect with fellow fans all over the world, sharing opinions, trivia, and jokes and making memes, videos, and podcasts. You might write fan fiction, creating your own stories starring the characters you love. You might dress up and act out stories, go to fan festivals, or make artwork portraying your favorite characters as you imagine them.

"I like to think of a fandom as a community," explains Katie Pascuite, 15, from New Jersey.

Katie, who considers herself a Potterhead and a superfan of all things Disney, first got into fandoms in fifth grade, when she fell in love with *Star Wars*.

"I thought I was weird for being into this crazy stuff," she recalls. "But fandoms made me feel like even if I didn't fit in at school, I fit in with someone—that there was a whole group of people I could talk to, where I could just be myself and not worry what others think."

## Tight-Knit Tribes

Not so long ago, you couldn't just pull out your phone to see what your favorite star had for breakfast—much less instantly connect with other fans. What you could do was join a fan club. For a fee, you could get an autographed poster for your room, a membership card, and a badge you'd proudly stitch on your backpack. You might send a letter—known as fan mail—and wait in agony by the mailbox every day, hoping for a reply. As for finding others who shared your enthusiasm? If none of your friends loved what you loved, you were often on your own. Thanks to the internet and social media, that is no longer a problem. Today, fandoms are large, tight-knit tribes that have enormous influence in the pop culture world. A loyal, active fan base can persuade a movie studio to make a sequel, like *Camp Rock 2*, or help a new artist sell out a world tour, which just happened to 18-year-old singer Billie Eilish. Sometimes fandoms can even influence the work itself. For example, last year an animated movie based on the *Sonic the Hedgehog* video games was created. Fans of the games criticized the way Sonic was portrayed in the movie's trailer—they thought he had strange-looking teeth. What did the movie studio do? It redesigned the character. This decision triggered a debate: How much should movie studios and other artists cater to their most devoted fans? Regardless of the answer, savvy stars understand how important their fan-bases are and work hard to celebrate them. Taylor Swift, for example, is known to invite Swifties to pizza parties, reblog their Tumblrs, and comment on their videos.

## When Things Turn Toxic

Like many good things, though, fandom has a dark side. Superfans often feel a sense of ownership over the thing they love and will defend it with the ferocity of a mama bear protecting her cubs. Sometimes these deep feelings can lead to nasty behavior that ruins the joy for everyone. For example, in 2017, more than 100,000 fans who didn't like *Star Wars: The Last Jedi* signed a petition to Disney to have it removed from the canon. (Disney did not, and the film was a smash hit.) Some fans went after Kelly Marie Tran, who plays Rose Tico, posting racist comments on her Instagram, prompting her to delete all her posts. Before the release of *Captain Marvel* last year, some **disgruntled** fans flooded the internet with fake bad reviews to discourage people from going to see it. These certainly aren't the only examples of so-called toxic fandom. Writers, actors, and singers have all been targeted. Sometimes the bullying happens between fan groups or even individual members of the same group. Sometimes the discord spills into the school day, with warring groups refusing to share a lunch table. Most of the negativity happens on social media, though, and Katie says the best response is to stay positive—and block whoever is being toxic. "Don't even respond," she says. "It's not worth it." To be sure, fandoms are—at their best—a force for good. Take the Harry Potter Alliance. Inspired by the values of the Harry Potter series, this group does **advocacy** work around issues like poverty, literacy, and civil rights. One of its campaigns was called "What Would Dumbledore Do?" Fans tweeted about what they learned from the character Albus Dumbledore and applied those lessons to their lives.

## Is Fandom Good For You? Yes!

It might seem like fandom is just about having fun. But experts say that being part of a fandom can be more than just entertaining: It can actually be good for you.

Why? It has to do with our primal need to belong to a group. Early humans grouped together to survive—to hunt, share food, and protect each other. Today we don't have to worry about a saber-toothed cat wandering into our home to make a meal of us. But we still benefit from being part of a group; groups still make us feel safe, supported, and cared about.

According to psychotherapist and fandom-expert Dr. Laurel Steinberg, fandom helps us find out who we are and build our self-esteem. "Fandom can help a person feel proud and feel part of something that's bigger than themselves," Steinberg says.

In other words, fandom gives you a sense of community. And studies show that having a community can lower the risk of depression and anxiety.

As with all things, though, moderation is key. If you're suddenly neglecting your friends, avoiding your homework, and missing out on family activities, you might need to scale back on your fandom time. But as long as they aren't taking over your life, fandoms can be a bright spot in a world that can sometimes seem divisive. They're about unity, about coming together to bond over something you care about deeply. And that can be a powerful and positive experience.

1. Using context clues, determine the meaning for the bolded word “disgruntled” as it is used in the section “When Things Turn Toxic” in the selection “The Rise of Fandoms.”

---

---

2. Using context clues, determine the meaning for the bolded word “advocacy” in the same section and selection as number 1.

---

---

3. Imagine that you are writing a paragraph explaining the kind of influence that fandoms can have on pop culture today.

\* Which of the following would be the BEST topic sentence for your paragraph?

A- Fandoms are powerful.

B- Fandoms can influence the decisions of movie studios.

C- Fandoms can have a powerful influence on pop culture today.

4. Which information from the article BEST supports the sentence you chose in Number 3?

A- “You might dress up and act out stories, go to fan festivals, or make artwork portraying your favorite characters as you imagine them.”

B- “There are fandoms for everything from Pixar to the Marvel Universe to the Hunger Games.”

C- “A loyal, active fan base can persuade a movie studio to make a sequel, like Camp Rock 2, or help a new artist sell out a world tour, which just happened to 18-year-old singer Billie Eilish.”

5. Which of the following BEST explains why the text evidence you chose in number 4 is relevant?

A- It shows what people do when they are part of a fandom.

B- It provides examples of ways fandoms have affected modern pop culture.

C- It shows that there are many different kinds of fandoms.

6. Choose the ONE piece of text evidence from the article that best supports the statement below. Then complete the sentence to explain your choice.

“Superfans have been around for a long time.”

A- “You might dress up and act out stories, go to fan festivals, or make artwork portraying your favorite characters as you imagine them.”

B- “Not so long ago, you couldn’t just pull out your phone to see what your favorite star had for breakfast—much less instantly connect with other fans.”



# Math



## 8<sup>th</sup> Grade Math Department Week 7

- Students, over the next weeks you will each be reviewing material already learned. In each packet, you will be given instruction, examples, and practice problems.
- For those of you wondering about a calculator. If you have a phone or tablet there is a good app you may download called (Calculator X). This is the closest app we have found to our classroom calculators.
- This week we will be solving equations. This assignment is an activity.
- If you will be working online the following assignments will be available to you through google classroom.
- Login information for Google Classroom is as follows:
  - Username: first.last@stu.mpisd.net
  - Password: 8 digit birthdate followed by mpd
- Example: John.smith@stu.mpisd.net, 05041992mpd

Tania has \$55.00. Her brother has \$115.00. Tania saves \$7 per week. Her brother saves \$5 per week. After  $x$  weeks, they will have saved the same amount. Write an equation that could be used to solve this situation.

\* Equation  
\* Solving

$$\begin{array}{r} \text{Tania} = \text{Brother} \\ 55 + 7x = 115 + 5x \\ \underline{-55} \qquad \underline{-55} \end{array}$$

$$\begin{array}{r} 7x = 60 + 5x \\ \underline{-5x} \qquad \underline{-5x} \end{array}$$

$$\begin{array}{r} 2x = 60 \\ \underline{\phantom{2}2} \qquad \underline{\phantom{2}2} \end{array}$$

$$\boxed{x = 30}$$

\* Remember  
Key words  
when writing  
equations &  
inequalities!

# Solving Equations Mystery

With Variables on One Side

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Pd. \_\_\_\_\_



Riddle: Every day, a man used to cross the border on a bicycle with two bags of sand. The border officers got a tip that he is a smuggler. So the customs officers checked his bags and found they had only sand. As they could not find any evidence, they allowed him to cross the border. So, what was the man smuggling?

1. $3x - 3 = 12$    x = _____	2. $7 = 4x - 5$    x = _____	3. $4y - 14 = 10$    y = _____
4. $5x - 2 = -12$    x = _____	5. $-4 = 2x - 8$    x = _____	6. $-10b + 7 = 17$    b = _____

7. $2k - 7 = 3$    k = _____	8. $-6x + 4 = -20$    x = _____
---	--

**Code Cracker**  
(note: not all letters will be used)

3 = L	8 = O	302 = M	-1 = I
4 = Y	5 = S	-5 = R	-3 = W
-6 = P	-2 = C	-2 = H	2 = G
5 = B	19 = K	6 = E	

7   6   5   8   4   2   3   1  
\*Write the letter above the corresponding problem number.\*

# Algebra

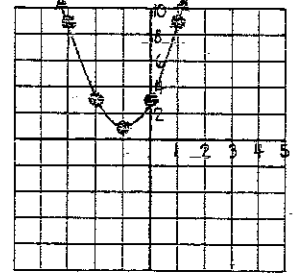
## Graphing Quadratic Functions

1. Write the equation in standard form:  $y = ax^2 + bx + c$ .
2. Find the equation of the axis of symmetry:  $x = \frac{-b}{2a}$ .
3. Find the vertex of the parabola. The x-coordinate is  $\frac{-b}{2a}$ . To find the y-coordinate, substitute the x-coordinate for x in the equation and solve for y.
4. Make a table of values by choosing 2 x-values to the left of the axis of symmetry and 2 x-values to the right of the axis of symmetry and substituting them into the equation to find the y-values.
5. Connect the points to form a parabola.

Ex: Graph  $y = 2x^2 + 4x + 3$

axis of symmetry:  $x = \frac{-4}{2(2)} = -1$

x	y
-3	9
-2	3
-1	1
0	3
1	9



## Solving Quadratic Equations by Factoring

1. Write the quadratic equation in Standard Form ( $ax^2 + bx + c = 0$ ).
2. Factor the left side of the equation.
3. Use the zero-product property to solve the equation by setting each factor equal to zero and solving for x.

Ex:  $x^2 - 6x - 16 = 0$

$$\rightarrow x^2 - 6x - 16 = 0$$

$$\rightarrow (x - 8)(x + 2) = 0$$

$$\rightarrow x - 8 = 0 \quad x + 2 = 0$$

$$x = 8 \quad \text{or} \quad x = -2$$

## Solving Quadratic Equations Using Square Roots

\*\*\* Only for quadratic equations where  $b = 0$ . \*\*\*

1. Write the equation in the form  $ax^2 = c$ .
2. Divide both sides of the equation by a.
3. Take the square root of both sides of the equation. Be sure to find both the positive and negative square root!

Ex:  $4x^2 - 32 = 0$

$$4x^2 = 32$$

$$\rightarrow x^2 = 8$$

$$\rightarrow x = \pm\sqrt{8} \approx \pm 2.83$$

## Solving Quadratic Equations Using the Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Ex:  $3x^2 + 7x - 8 = 0$

$$x = \frac{-7 + \sqrt{7^2 - 4(3)(-8)}}{2(3)} \rightarrow x \approx 0.84$$

$$x = \frac{-7 - \sqrt{7^2 - 4(3)(-8)}}{2(3)} \rightarrow x \approx -3.17$$

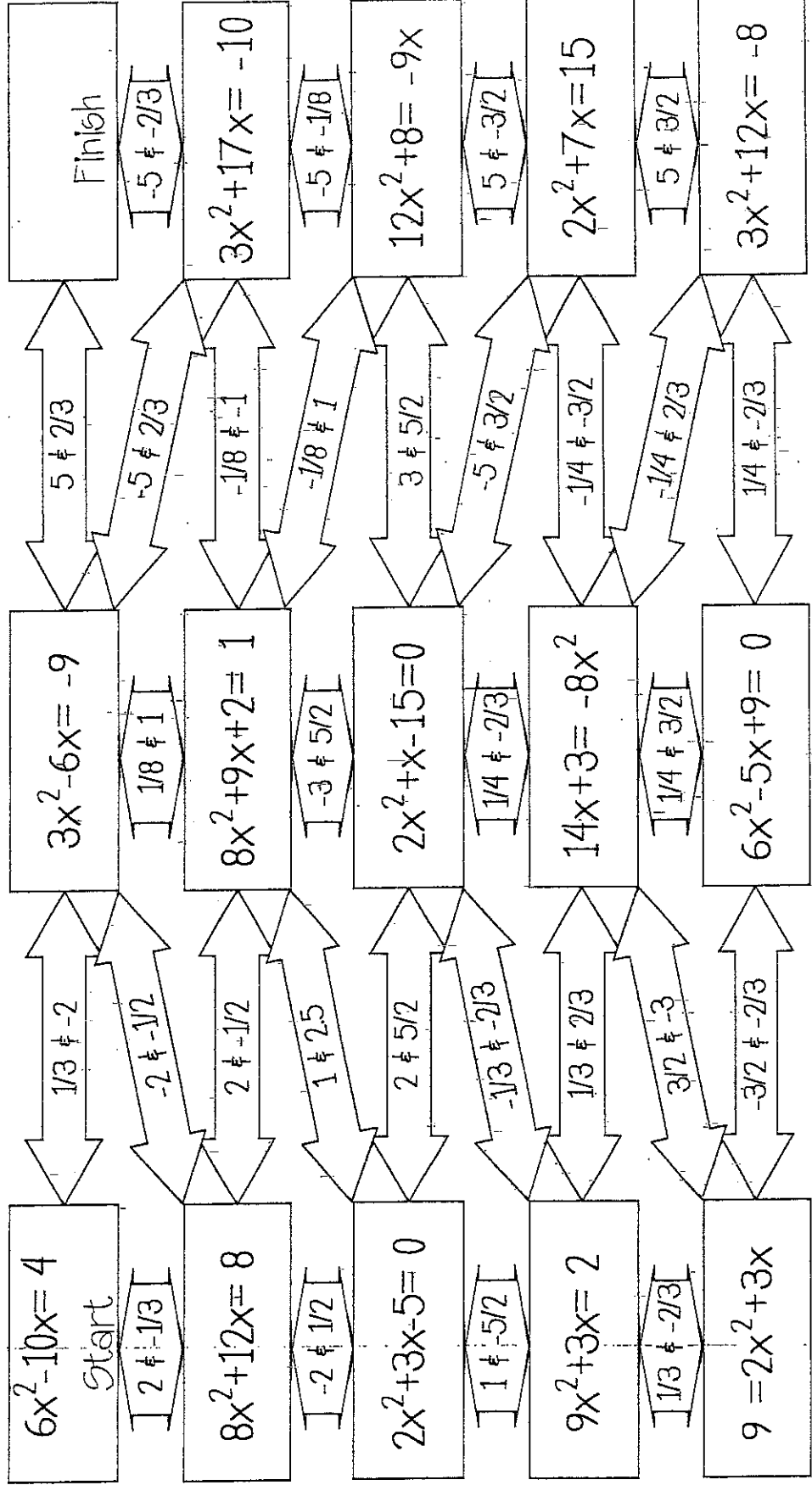
1. Write the quadratic equation in Standard Form ( $ax^2 + bx + c = 0$ ).
2. Substitute a, b, and c into the quadratic formula to find the solution(s) for x.

# Solving Quadratic Equations

Name \_\_\_\_\_

Some boxes might  
not be used

Work your way through the maze by solving the quadratic equations. Begin at the "Start" box and work your way through the maze until you reach the "Finish" box. Not all methods will work for all equations. You need to pick the method that works for that particular equation.



# **Social Studies**

# The Industrial Revolution

**Essential Question:** How did the Industrial Revolution impact the economic development and the lives of people in the United States?

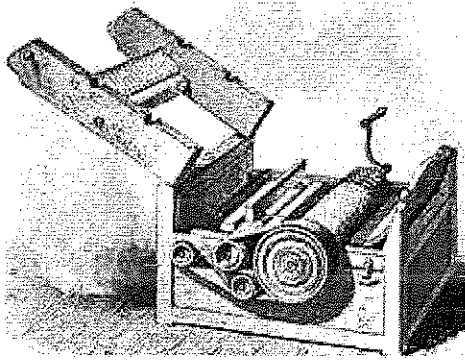


In the late 1790s to the mid-1850s, the United States experienced its first Industrial Revolution. A revolution occurs when changes are so widespread that the ways people live and work undergo a tremendous change. During this time period the free-enterprise system of the United States economy developed. In a **free-enterprise system of economics**, or market economy as it is sometimes called, people can own a business to make a profit, buy and sell goods, or work for wages with little government interference. The free-enterprise system determines what is produced, how much is produced, and for whom the product is produced.

The Industrial Revolution changed how goods were made in the United States and affected how people lived and worked. Previously, people made a living by supplying their own needs. With the new inventions, especially steam-power, the factory system (assembly line) began. Instead of spinning and weaving in their homes (cottage industries) people went to work in factories for wages. Factories boomed in the north as the demand for the products grew. The revolution started in Great Britain and was fueled in the United States by new inventions that drastically changed how goods were made. Samuel Slater is credited with stealing the plans to create the first factory in the United States. The **factory system** not only allowed for an increase of production at a cheaper cost but also turned the nation into more of a consumer economy. New agricultural inventions produced an abundance of crops and increased the demand for more land.

---

## Important Inventors and Inventions

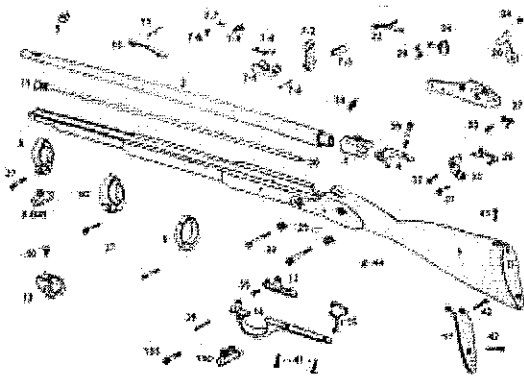


Click the image to see the Cotton Gin in action!

### **Cotton Gin:**

**Eli Whitney** invented the cotton gin in 1793. The cotton gin revolutionized the cotton production in the South by automating the seed separation process. Before the gin, the seeds were removed by hand and it took many hours to clean the cotton. With the use of the cotton gin, fifty pounds of cotton could be cleaned daily. Cotton became king in the South, which led to it becoming the leading export to New England and England. The huge profits from cotton greatly increased the demand for more land and slaves. People moved into the southeastern parts of the United States (Mississippi, Alabama, and Louisiana) to grow cotton. More and more slaves were needed to farm the vast cotton producing lands.

---



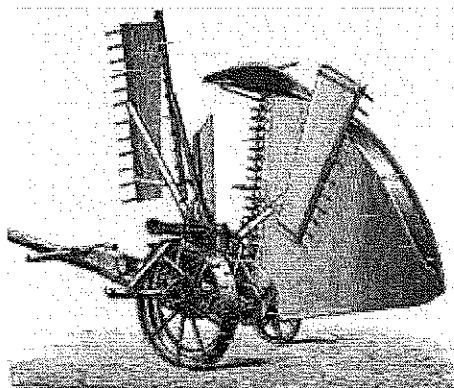
### **Interchangeable parts:**

In the early 1800s, **Eli Whitney** came up with an idea that transformed the way goods were produced. Parts to machines and guns were still being made by hand. If a part broke on a machine or a gun, the part had to be hand-made. This took forever and was costly. Whitney wanted to create a way to build machines to make parts that were exactly alike, so that when a part broke it could be easily replaced. He developed



interchangeable parts as a way to solve parts for everything. Before long, goods were being produced faster and cheaper than they ever had been before. Eli Whitney did not know it, but he also introduced the idea of mass production, the manufacture of goods in large amounts.

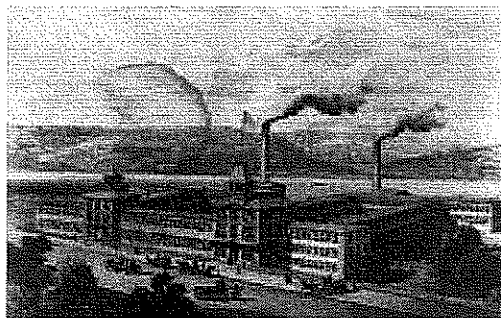
---



### **Mechanical Reaper:**

**Cyrus McCormick** invented the mechanical reaper in 1831. The reaper could cut, thrash, and bundle the grain while being pulled through the field by horses. Before the mechanical reaper it took a day to harvest one-half acre of wheat. The mechanical reaper could harvest an acre an hour. A reaper could cut 28 times more grain than a single man. The reaper brought about a change in agriculture from harvesting grains by hand to mechanized farming. The timesaving invention allowed farmers to double their crop size and spurred other agricultural inventions such as the **John Deere plow**.

---



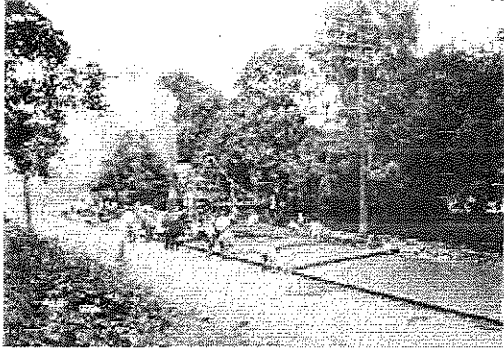
### **The Factory System:**

The first profitable factory system (mass production of goods) was developed in the United States in 1793. Samuel Slater set up a cotton-spinning factory in Rhode Island. In 1813 Francis Lowell founded the Lowell Mills in Waltham, Massachusetts. **The Lowell Mills** were famous for spinning cotton into cloth. The Lowell Mills were the first to employ women as workers. Young girls from the surrounding farms would take jobs in the mill for one to two years. After that they returned to the farm, married or moved west. At first, the Lowell System involved recruiting young women from nearby farms and housing them in boarding houses. The

girls were supervised in the boarding houses and paid a decent wage. When the price for textiles (cloth) dropped in the 1840s, the girls experienced a drop in wages and longer hours and more production at work. Eventually, the girls organized a labor reform movement.

---

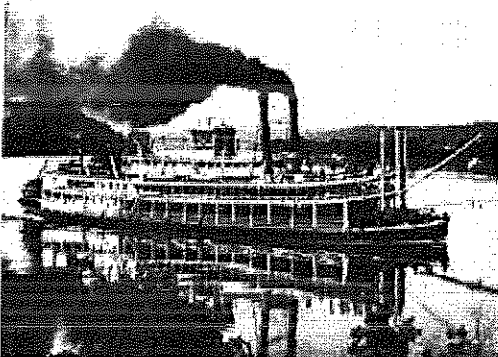
## Improvements in Transportation



### Turnpikes and Roads:

A barrier to the Industrial Revolution was the transportation system in the late 1700s and early 1800s. Most roads were dirt paths filled with potholes. The cost of overland transportation of goods was too expensive. It cost more to ship 300 miles over land than to ship from the United States to Europe. In 1791 a new era of transportation began. A turnpike between Lancaster and Philadelphia, Pennsylvania was built. When Ohio joined the Union, the Congress gave money for the **National Road** to be built. The National Road eventually reached from Baltimore Maryland to Vandalia, Illinois.

---



### Steamboat:

Because land transportation still remained more expensive to ship goods than water transportation, many farmers continued to ship goods by flatboats or rafts. Water transportation was slow and the vessels had difficulty moving upstream. In 1807, **Robert Fulton** designed and developed the first steam-powered commercial ship. The **steamboat**, Clermont, went upstream from New York City to Albany on the Hudson River in only thirty-two hours.

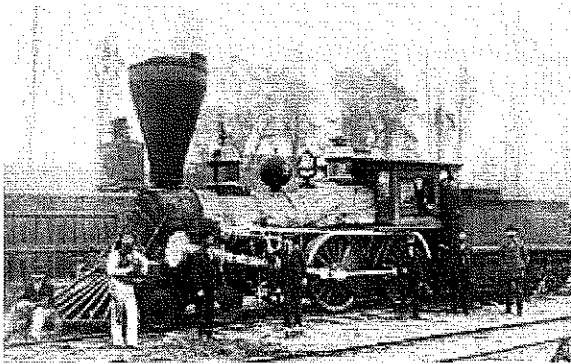
---



### **Erie Canal:**

The building of the **Erie Canal** in 1825 further revolutionized water transportation. The Erie Canal was the first artificial waterway to connect the Great Lakes to the Atlantic Ocean. The canal had 84 locks to raise or lower barges 10 feet at a time. Before the canal was built it took \$100 and 20 days to transport a ton of goods from Albany to Buffalo New York. The cost fell to \$5 a ton and six days. By 1840, 3,326 miles of canals had been dug in the United States, which sparked an economic revolution.

---



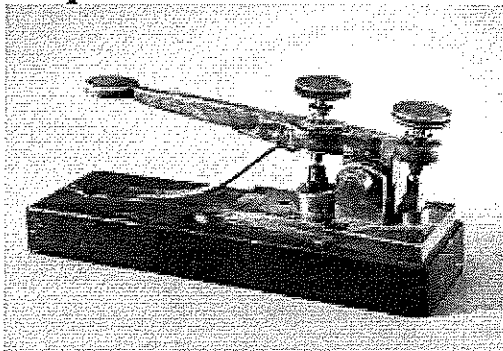
### **Steam locomotive:**

James Watt's steam engine offered a dramatic increase in fuel efficiency for everything from pumping water to transporting goods on locomotives. Because steamboats, canals, or roads could not reach some cities, the **steam locomotive** became the chief means of transportation in 1830. With a speed of 10 miles an hour, the steam-powered trains were faster than canals, steamboats and could travel in any season. A draw back to the steam-powered trains was the explosions and fires. Many travelers were fearful of train wrecks and cities and farmers were concerned with the sparks that started fires along the tracks.

The transportation revolution stimulated agriculture and industry to produce goods and reduced the costs of shipping goods to the markets. Another important outcome is that the transportation revolution strengthened the ties between the east and west. Once separated by physical barriers and distance, the two regions now were able to trade and travel with one another.

---

## Improvement in Communication



### Telegraph:

In 1840, **Samuel Morse** patented his “talking wire” or **telegraph**. The telegraph was a device that sent electrical signals along a wire. The signals were based on a code of dots, dashes, and spaces and were called Morse code. Morse’s invention was an instant success. Businesses especially gained from being able to send messages over long distances in minutes. Using the telegraph, factory owners, merchants, and farmers could access information about supply, demand and prices of goods in different areas.

---

**Essential Question:** How did the Industrial Revolution impact the economic development and the lives of people in the United States?

### Note Questions:

1. Describe a free-enterprise economic system in your own words.
2. How did the Industrial Revolution change the way goods were produced?
3. How did the Industrial Revolution change the way people lived and worked?
4. What important inventions were created during the Industrial Revolution? How did each effect the country?
5. What improvements in transportation occurred during the Industrial Revolution? How did these improvements effect the country?
6. What improvements in communication occurred during the Industrial Revolution? How did these improvements effect the country?

### Summary:

How did the Industrial Revolution impact the economic development and the lives of people in the United States?

---

# Inventors and Inventions Chart

Inventor	Invention (s)	What did the invention/(s) do?	What impact did their invention(s) have on the US?
James Watt	Steam Engine	Converts heat to energy-	Used to power the factories/improvements in transportation
Eli Whitney	Cotton gin	Cleans the seeds out of the cotton	Demand for cotton increased-more slaves, more land...
Robert Fulton	Steam boat	Used steam engine to power a boat	Improved transportation, cheaper and faster shipping
Elias Howe	Sewing machine	Sewing machine that could stitch clothes	Led to other improvements in sewing machines
Samuel Morse	Telegraph	Electronic signals along a wire (Morse Code)	Communication across long distances->westward expansion

Isaac Singer	Sewing machine	Improved Howe's sewing machine, able to sew side to side, used a foot peddle to power	First commercial sewing machine, led to more leisure time for women->reform movements
Cyrus McCormick	Mechanical reaper	Thrashing, cutting and bundling of wheat	Allowed farmers to double their crop size; increased production
John Deere	Steel plow	Plow made of steel used to till the soil for planting	Increased movement of farmers to the Midwest->westward expansion
Henry Bessemer	Bessemer Steel Process	Process to strengthen steel by adding iron	Steel used in railroad production and farm machines
Eli Whitney	Interchangeable Parts	Parts that look identical	Led to mass production (faster production of goods) factory systems

1. Of the above inventions, which one was the best for America?
2. Why was it the Best?

# Science

## SECTION

## 2

## The Skeletal System

When you hear the word *skeleton*, you may think of the remains of something that has died. But your skeleton is not dead. It is very much alive.

You may think your bones are dry and brittle. But they are alive and active. Bones, cartilage, and the connective tissue that holds bones together make up your **skeletal system**.

### Bones

The average adult human skeleton has 206 bones. Bones help support and protect parts of your body. They work with your muscles so you can move. Bones also help your body maintain homeostasis by storing minerals and making blood cells.

**Figure 1** shows the functions of your skeleton.

### What You Will Learn

- Identify the major organs of the skeletal system.
- Describe four functions of bones.
- Describe three joints.
- List three injuries and two diseases that affect bones and joints.

### Vocabulary

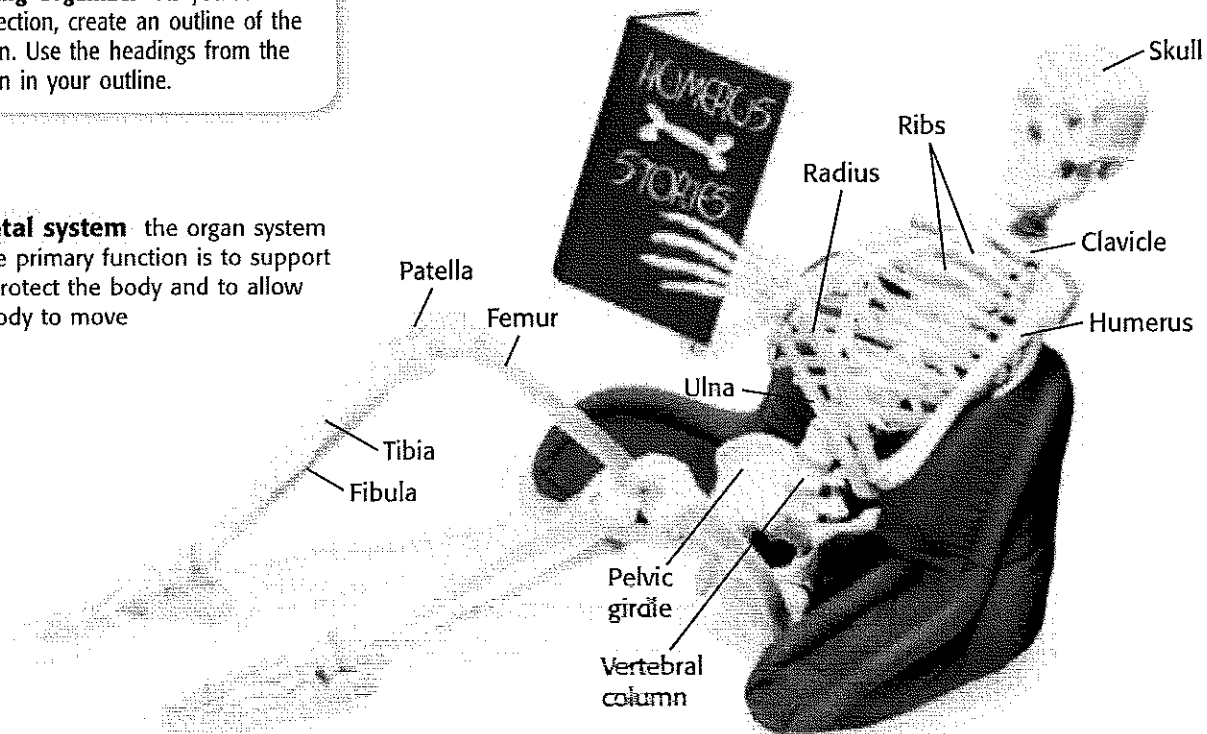
skeletal system  
joint

### READING STRATEGY

**Reading Organizer** As you read this section, create an outline of the section. Use the headings from the section in your outline.

**skeletal system** the organ system whose primary function is to support and protect the body and to allow the body to move

**Figure 1** The Skeleton

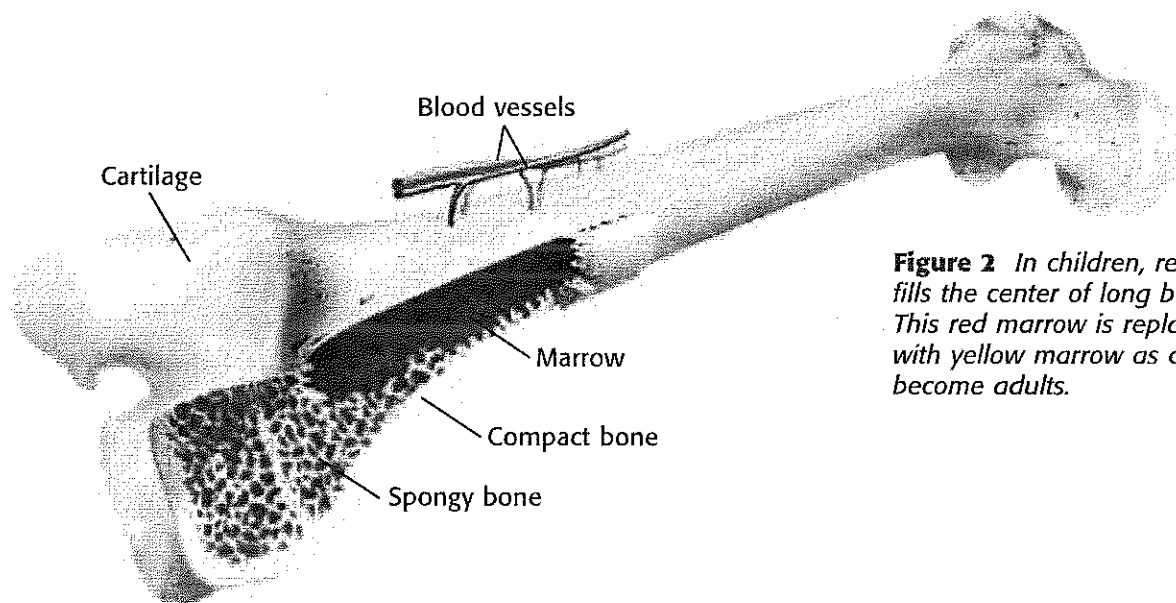


**Protection** Your heart and lungs are protected by ribs, your spinal cord is protected by vertebrae, and your brain is protected by the skull.

**Storage** Bones store minerals that help your nerves and muscles function properly. Long bones store fat that can be used for energy.

**Movement** Skeletal muscles pull on bones to produce movement. Without bones, you would not be able to sit, stand, walk, or run.

**Blood Cell Formation** Some of your bones are filled with a special material that makes blood cells. This material is called *marrow*.



**Figure 2** In children, red marrow fills the center of long bones. This red marrow is replaced with yellow marrow as children become adults.

## Bone Structure

A bone may seem lifeless. But a bone is a living organ made of several different tissues. Bone is made of connective tissue and minerals. These minerals are deposited by living cells called *osteoblasts* (AHS tee oh BLASTS).

If you look inside a bone, you will notice two kinds of bone tissue. If the bone tissue does not have any visible open spaces, it is called *compact bone*. Compact bone is rigid and dense. Tiny canals within compact bone contain small blood vessels. Bone tissue that has many open spaces is called *spongy bone*. Spongy bone provides most of the strength and support for a bone.

Bones contain a soft tissue called *marrow*. There are two types of marrow. Red marrow produces both red and white blood cells. Yellow marrow, found in the central cavity of long bones, stores fat. **Figure 2** shows a cross section of a long bone, the femur.

## Bone Growth



Did you know that most of your skeleton used to be soft and rubbery? Most bones start out as a flexible tissue called *cartilage*. When you were born, you didn't have much true bone. But as you grew, most of the cartilage was replaced by bone. During childhood, most bones still have growth plates of cartilage. These growth plates provide a place for bones to continue to grow.

Feel the end of your nose. Or bend the top of your ear. These areas are two places where cartilage is never replaced by bone. These areas stay flexible.

**✓ Reading Check** How do bones grow? (See the Appendix for answers to Reading Checks.)

## Quick Lab

### Pickled Bones

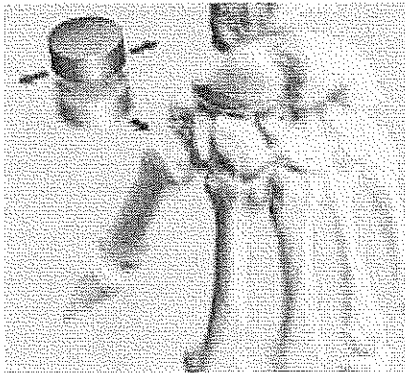
1. Place a **clean chicken bone** in a jar of vinegar. 
2. After 1 week, remove the bone and rinse it with water. 
3. Describe the changes that you can see or feel.
4. How has the bone's strength changed?
5. What did the vinegar remove?



**Figure 3** Three Joints

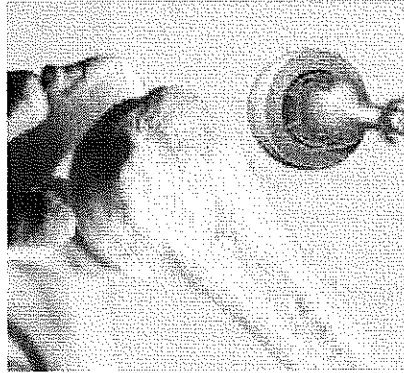
### Gliding Joint

Gliding joints allow bones in the hand and wrist to glide over one another and give some flexibility to the area.



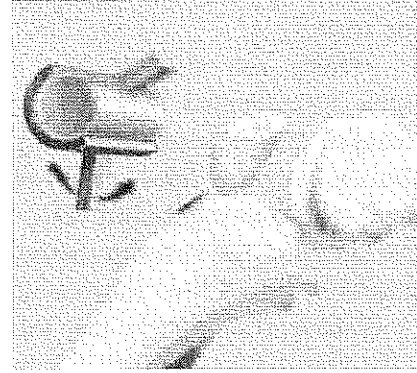
### Ball-and-Socket Joint

As a video-game joystick lets you move your character all around, the shoulder lets your arm move freely in all directions.



### Hinge Joint

As a hinge allows a door to open and close, the knee enables you to flex and extend your lower leg.



**joint** a place where two or more bones meet

## Joints

A place where two or more bones meet is called a **joint**. Your joints allow your body to move when your muscles contract. Some joints, such as fixed joints, allow little or no movement. Many of the joints in the skull are fixed joints. Other joints, such as your shoulder, allow a lot of movement. Joints can be classified based on how the bones in a joint move. For example, your shoulder is a ball-and-socket joint. Three joints are shown in **Figure 3**.

Joints are held together by *ligaments* (LIG uh muhnts). Ligaments are strong elastic bands of connective tissue. They connect the bones in a joint. Also, cartilage covers the ends of many bones. Cartilage helps cushion the area in a joint where bones meet.

**Reading Check** Describe the basic structure of joints.

## CONNECTION TO Environmental Science

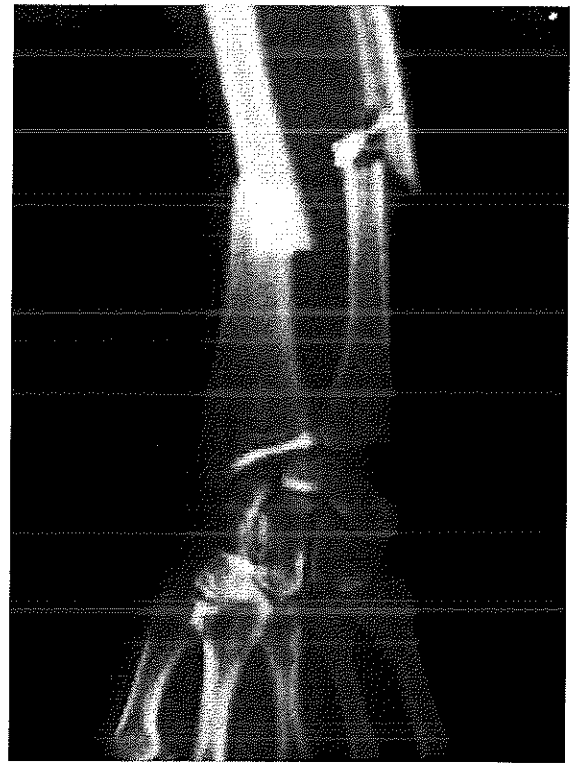
### WRITING SKILL

**Bones from the Ocean** Sometimes, a bone or joint may become so damaged that it needs to be repaired or replaced with surgery. Often, replacement parts are made from a metal, such as titanium. However, some scientists have discovered that coral skeletons from coral reefs in the ocean can be used to replace human bone. Research bone surgery. Identify why doctors use metals such as titanium. Then, identify the advantages that coral may offer. Write a report discussing your findings.

## Skeletal System Injuries and Diseases

Sometimes, parts of the skeletal system are injured. As shown in **Figure 4**, bones may be fractured, or broken. Joints can also be injured. A dislocated joint is a joint in which one or more bones have been moved out of place. Another joint injury, called a *sprain*, happens if a ligament is stretched too far or torn.

There are also diseases of the skeletal system. *Osteoporosis* (ahs tee OH puh ROH sis) is a disease that causes bones to become less dense. Bones become weak and break more easily. Age and poor eating habits can make it more likely for people to develop osteoporosis. Other bone diseases affect the marrow or make bones soft. A disease that affects the joints is called *arthritis* (ahr THRIET is). Arthritis is painful. Joints may swell or stiffen. As they get older, some people are more likely to have some types of arthritis.



**Figure 4** This X ray shows that the two bones of the forearm have been fractured, or broken.

## SECTION Review

### Summary

- The skeletal system includes bones, cartilage, and the connective tissue that connects bones.
- Bones protect the body, store minerals, allow movement, and make blood cells.
- Joints are places where two or more bones meet.
- Skeletal system injuries include fractures, dislocations, and sprains. Skeletal system diseases include osteoporosis and arthritis.

### Using Key Terms

1. In your own words, write a definition for the term *skeletal system*.

### Understanding Key Ideas

2. Which of the following is NOT an organ of the skeletal system?
  - a. bone
  - b. cartilage
  - c. muscle
  - d. None of the above
3. Describe four functions of bones.
4. What are three joints?
5. Describe two diseases that affect the skeletal system.

### Math Skills

6. A broken bone usually heals in about six weeks. A mild sprain takes one-third as long to heal. In days, about how long does it take a mild sprain to heal?

### Critical Thinking

7. **Identifying Relationships** Red bone marrow produces blood cells. Children have red bone marrow in their long bones, while adults have yellow bone marrow, which stores fat. Why might adults and children have different kinds of marrow?
8. **Predicting Consequences** What might happen if children's bones didn't have growth plates of cartilage?

SciLINKS

NSTA

Developed and maintained by the  
National Science Teachers Association

For a variety of links related to this chapter, go to [www.scilinks.org](http://www.scilinks.org)

Topic: Skeletal System  
SciLinks code: HSM1399

## The Muscular System

Have you ever tried to sit still, without moving any muscles at all, for one minute? It's impossible! Somewhere in your body, muscles are always working.

Your heart is a muscle. Muscles make you breathe. And muscles hold you upright. If all of your muscles rested at the same time, you would collapse. The **muscular system** is made up of the muscles that let you move.

### What You Will Learn

- List three kinds of muscle tissue.
- Describe how skeletal muscles move bones.
- Compare aerobic exercise with resistance exercise.
- Describe two muscular system injuries.

### Vocabulary

muscular system

### READING STRATEGY

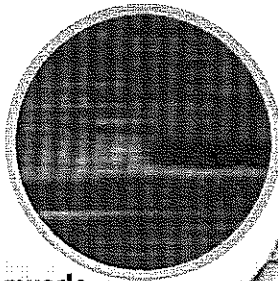
**Discussion** Read this section silently. Write down questions that you have about this section. Discuss your questions in a small group.

### Kinds of Muscle

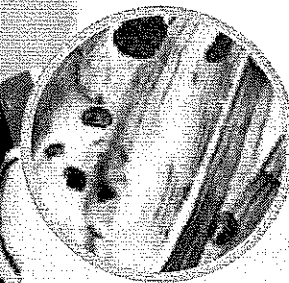
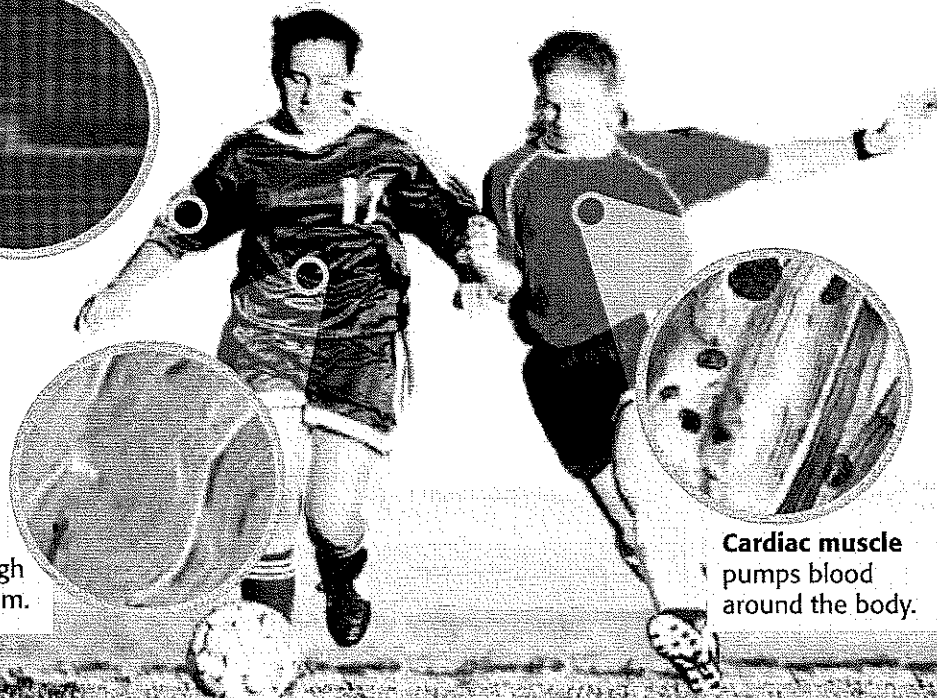
**Figure 1** shows the three kinds of muscle in your body. *Smooth muscle* is found in the digestive tract and in the walls of blood vessels. *Cardiac muscle* is found only in your heart. *Skeletal muscle* is attached to your bones for movement. Skeletal muscle also helps protect your inner organs.

Muscle action can be voluntary or involuntary. Muscle action that is under your control is *voluntary*. Muscle action that is not under your control is *involuntary*. Smooth muscle and cardiac muscle are involuntary muscles. Skeletal muscles can be both voluntary and involuntary muscles. For example, you can blink your eyes anytime you want to. But your eyes will also blink automatically.

**Figure 1** Three Kinds of Muscle



**Skeletal muscle** enables bones to move.

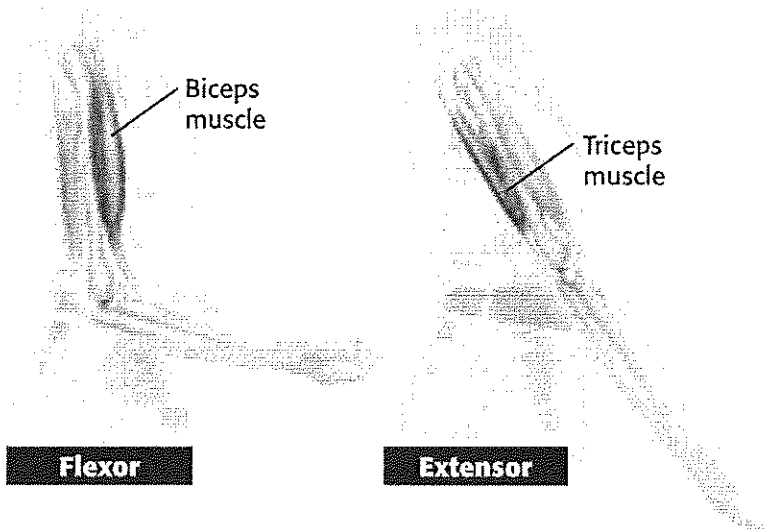


**Cardiac muscle** pumps blood around the body.

**Smooth muscle** moves food through the digestive system.

## Figure 2 A Pair of Muscles in the Arm

Skeletal muscles, such as the biceps and triceps muscles, work in pairs. When the biceps muscle contracts, the arm bends. When the triceps muscle contracts, the arm straightens.



**muscular system** the organ system whose primary function is movement and flexibility

### Movement

Skeletal muscles can make hundreds of movements. You can see many of these movements by watching a dancer, a swimmer, or even someone smiling or frowning. When you want to move, signals travel from your brain to your skeletal muscle cells. The muscle cells then contract, or get shorter.

### Muscles Attach to Bones

Strands of tough connective tissue connect your skeletal muscles to your bones. These strands are called *tendons*. When a muscle that connects two bones gets shorter, the bones are pulled closer to each other. For example, tendons attach the biceps muscle to a bone in your shoulder and to a bone in your forearm. When the biceps muscle contracts, your forearm bends toward your shoulder.

### Muscles Work in Pairs

Your skeletal muscles often work in pairs. Usually, one muscle in the pair bends part of the body. The other muscle straightens part of the body. A muscle that bends part of your body is called a *flexor* (FLEKS uhr). A muscle that straightens part of your body is an *extensor* (ek STEN suhr). As shown in **Figure 2**, the biceps muscle of the arm is a flexor. The triceps muscle of the arm is an extensor.

**Reading Check** Describe how muscles work in pairs. (See the Appendix for answers to Reading Checks.)

## SCHOOL to HOME

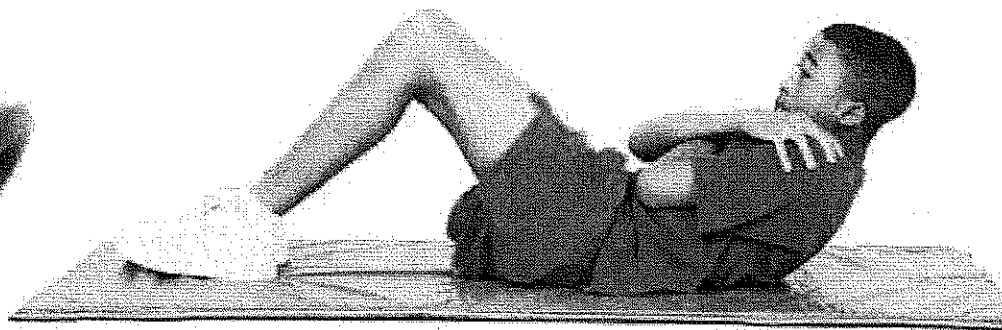
### Power in Pairs

Ask a parent or guardian to sit in a chair and place a hand palm up under the edge of a table. Tell your parent to apply gentle upward pressure. Feel the front and back of your parent's upper arm. Next, ask your parent to push down on top of the table. Feel your parent's arm again. What did you notice about the muscles in your parent's arm when he or she was pressing up? pushing down?

## ACTIVITY



**Figure 3** This girl is strengthening her heart and improving her endurance by doing aerobic exercise. This boy is doing resistance exercise to build strong muscles.



### Use It or Lose It

What happens when someone wears a cast for a broken arm? Skeletal muscles around the broken bone become smaller and weaker. The muscles weaken because they are not exercised. Exercised muscles are stronger and larger. Strong muscles can help other organs, too. For example, contracting muscles squeeze blood vessels. This action increases blood flow without needing more work from the heart.

Certain exercises can give muscles more strength and endurance. More endurance lets muscles work longer without getting tired. Two kinds of exercise can increase muscle strength and endurance. They are resistance exercise and aerobic exercise. You can see an example of each kind in **Figure 3**.

### Resistance Exercise

Resistance exercise is a great way to strengthen skeletal muscles. During resistance exercise, people work against the resistance, or weight, of an object. Some resistance exercises, such as curl-ups, use your own weight for resistance.

### Aerobic Exercise

Steady, moderately intense activity is called *aerobic exercise*. Jogging, cycling, skating, swimming, and walking are aerobic exercises. This kind of exercise can increase muscle strength. However, aerobic exercise mostly strengthens the heart and increases endurance.

### CONNECTION TO Chemistry

**Muscle Function** Body chemistry is very important for healthy muscle function. Spasms or cramps happen if too much sweating, poor diet, or illness causes a chemical imbalance in muscles. Identify three chemicals that the body needs for muscles to work properly. Make a poster explaining how people can make sure that they have enough of each chemical.

**ACTIVITY**

## Muscle Injury

Any exercise program should be started slowly. Starting slowly means you are less likely to get hurt. You should also warm up for exercise. A *strain* is an injury in which a muscle or tendon is overstretched or torn. Strains often happen because a muscle has not been warmed up. Strains also happen when muscles are worked too hard.

People who exercise too much can hurt their tendons. The body can't repair an injured tendon before the next exercise session. So, the tendon becomes inflamed. This condition is called *tendinitis*. Often, a long rest is needed for the injured tendon to heal.

Some people try to make their muscles stronger by taking drugs. These drugs are called *anabolic steroids* (A nuh BAH lik STER OIDZ). They can cause long-term health problems. Anabolic steroids can damage the heart, liver, and kidneys. They can also cause high blood pressure. If taken before the skeleton is mature, anabolic steroids can cause bones to stop growing.

**Reading Check** What are the risks of using anabolic steroids?

## SECTION Review

### Summary

- The three kinds of muscle tissue are smooth muscle, cardiac muscle, and skeletal muscle.
- Skeletal muscles work in pairs. Skeletal muscles contract to move bones.
- Resistance exercise improves muscle strength. Aerobic exercise improves heart strength and muscle endurance.
- Strains are injuries that affect muscles and tendons. Tendinitis affects tendons.

### Using Key Terms

1. In your own words, write a definition for the term *muscular system*.

### Understanding Key Ideas

2. Muscles
  - a. work in pairs.
  - b. move bones by relaxing.
  - c. get smaller when exercised.
  - d. All of the above
3. Describe three kinds of muscle.
4. List two kinds of exercise. Give an example of each.
5. Describe two muscular system injuries.

### Math Skills

6. If Trey can do one curl-up every 2.5 s, about how long will it take him to do 35 curl-ups?

## MATH PRACTICE

### Runner's Time

Jan has decided to enter a 5 km road race. She now runs 5 km in 30 min. She would like to decrease her time by 15% before the race. What will her time be when she reaches her goal?

### Critical Thinking

7. **Applying Concepts** Describe some of the muscle action needed to pick up a book. Include flexors and extensors in your description.
8. **Predicting Consequences** If aerobic exercise improves heart strength, what likely happens to heart rate as the heart gets stronger? Explain your answer.

SciLINKS®

NSTA

Developed and maintained by the  
National Science Teachers Association

For a variety of links related to this chapter, go to [www.scilinks.org](http://www.scilinks.org)

Topic: Muscular System  
SciLinks code: HSM1008

# Electives





## Dance I and Dance II (ADT)-

Hey guys!!! I hope everyone is doing well and STAYING HOME!!! Make sure you are stretching Every day and practicing your skills. I have set up a Remind in order for us to keep in contact- [www.remind.com/join/mpjhd](http://www.remind.com/join/mpjhd) I can't wait to hear from you all. Feel free to send me videos of you dancing. LOVE AND MISS YOU!!!

COACH D @ \_ericadance13@hotmail.com

**Mondays- Stretch (30 minutes; be sure to practice splits)**

**Tuesdays- Across the Floor Skills**

**Wednesdays- Center Skills**

**Thursdays- Review all Dances that we learned**

**Fridays- Freestyle Friday- (Learn any style dance routine from YouTube or TikTOK) If you do not have access to either of those, create your own.**

**From Ms. H:** If you would like to have a zoom lesson with me, please contact me and let me know. Also, if you want to send me a video of what you are working on do it!!! I look forward to hearing from you!! You can even send me a TIKTOK. My contact info is: [aliciaghargett@gmail.com](mailto:aliciaghargett@gmail.com) Feel free to message or contact me on remind as well.

## **Honors Band/Symphonic Band**

### **(YOU MUST COMPLETE 1-3 DAILY)**

#### **1. 10 minutes- Mouthpiece warm-up/face buzz**

- Breathing exercises, Long tones, sirens, lip slurs

#### **2. 10 minutes- Instrument warm-up**

- Lip Slurs, scales in whole notes

#### **3. 10 minutes- Scale Studies**

- Work on all scales (SCALE PATTERN LIKE ALL-REGION)
- Blue Book Exercises
- If you don't have scales, you can work on note recognition/memory

#### **4. 15-20 minutes- Band Repertoire**

- Work on Contest Music
- Work on fun music (you can find sheet music online to work on)

#### **5. 20-30 minutes- Friday Music Fun Day (send me your videos)**

- Play some music games
- Watch some fun music videos
- Learn any song your choice
- [http://www.musictechteacher.com/music\\_quizzes/music\\_quizzes.htm](http://www.musictechteacher.com/music_quizzes/music_quizzes.htm)

## PE Activities

Hi guys, hope you're all well and doing great.

While you're home, we just want to be sure you stay in shape. So, I'm sending you a list of workouts you can do at home.

Each Day: Before starting your workout, be sure to stretch first.

Remember to stretch your arms, legs and back.

1. Jumping Jacks.....20
2. Squat Jumps.....10
3. Push Ups.....10
4. Sit Ups.....20
5. Toe Touches.....20
6. One Minute Plank
7. Run In Place.....1 Minute

### Tennis:

HELLO STUDENTS! Coach Washington and I miss you very much. We hope that you are home resting, staying out of trouble and enjoying the extra time with your families. We have a court update: **OUR COURTS HAVE BEEN RESURFACED!!** They are done and ready for you guys to come back and hit! If you have your racket at home try and get out of the house and dribble a ball or use a wall outside to volley with.

We would also like you to get your physical activity in **DAILY**. Please do a 10 minute walk, 25 jumping jacks, 10 lunges, 10 squats, 10 push ups. Again, we miss you and cannot wait to see you.

## The Importance of Physical Fitness

Physical activity or exercise can improve your health and reduce the risk of developing several diseases like type 2 diabetes, cancer and cardiovascular disease. Physical activity and exercise can have immediate and long-term health benefits. Most importantly, regular activity can improve your quality of life. A minimum of 30 minutes a day can allow you to enjoy these benefits.

### Benefits of regular physical activity

If you are regularly physically active, you may:

- reduce your risk of a heart attack
- manage your weight better
- have a lower blood cholesterol level
- lower the risk of type 2 diabetes and some cancers
- have lower blood pressure
- have stronger bones, muscles and joints and lower risk of developing osteoporosis
- lower your risk of falls
- recover better from periods of hospitalisation or bed rest
- feel better – with more energy, a better mood, feel more relaxed and sleep better.

### A healthier state of mind

A number of studies have found that exercise helps depression. There are many views as to how exercise helps people with depression:

- Exercise may block negative thoughts or distract you from daily worries.
- Exercising with others provides an opportunity for increased social contact.
- Increased fitness may lift your mood and improve your sleep patterns.
- Exercise may also change levels of chemicals in your brain, such as serotonin, endorphins and stress hormones.

### Aim for at least 30 minutes a day

- To maintain health and reduce your risk of health problems, health professionals and researchers recommend a minimum of 30 minutes of moderate-intensity physical activity on most, preferably all, days.

## Physical activity guidelines

- Doing any physical activity is better than doing none. If you currently do no physical activity, start by doing some, and gradually build up to the recommended amount.
- Be active on most, preferably all, days every week.
- Accumulate 150 to 300 minutes (2 ½ to 5 hours) of moderate intensity physical activity or 75 to 150 minutes (1 ¼ to 2 ½ hours) of vigorous intensity physical activity, or an equivalent combination of both moderate and vigorous activities, each week.
- Do muscle strengthening activities on at least two days each week.

Name-

Date-

### Week 8-Activity Log

Directions: Every day this week, you are to find something active to do for at least thirty minutes. This does NOT have to be a workout. It can be anything you want it to be as long as you are up and moving. Each day, you will reflect on your activity. Tell me what you did, how long you did it, and how you felt after you finished.

Monday-

Tuesday-

Wednesday-

Thursday-

Friday-



**Did You Get It?** *Práctica de gramática*

Level 1 pp. 116-117  
Level 1A pp. 129-133



**Goal:** Use *estar* to talk about location and condition.

UNIDAD 2 Lección 2 Reteaching and Practice

**1** Write the location phrases in Spanish.

- |                               |                   |
|-------------------------------|-------------------|
| 1. on top of <u>encima de</u> | 4. behind _____   |
| 2. inside of _____            | 5. close to _____ |
| 3. under _____                | 6. far from _____ |

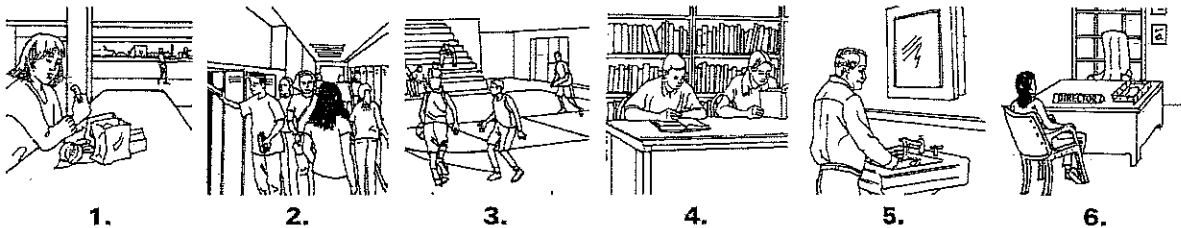
**2** Write the correct form of *estar*.

- Tú estás cansado.
- Miguel \_\_\_\_\_ contento.
- Usted \_\_\_\_\_ nervioso.
- Mis hermanos y yo \_\_\_\_\_ tranquilos.
- Yo estoy triste.
- ¿\_\_\_\_\_ ellas enojadas?
- Los chicos \_\_\_\_\_ contentos.
- Ana y yo \_\_\_\_\_ tristes.
- ¿\_\_\_\_\_ tú nervioso?
- Ustedes \_\_\_\_\_ cansados.

Remember "estar"?

Yo estoy  
Tú estás  
Él está  
Ella está  
Usted está  
Nosotros estamos  
Nosotras estamos  
Ellos están  
Ellas están  
Ustedes están

**3** Complete the sentences to describe where these people are.



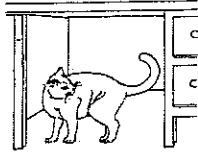
- Ana está en el restaurante.
- Mis amigos y yo \_\_\_\_\_
- Yo \_\_\_\_\_
- Los estudiantes \_\_\_\_\_
- Usted \_\_\_\_\_
- Ella \_\_\_\_\_

Copyright © by McDougal Littell, a division of Houghton Mifflin Company.

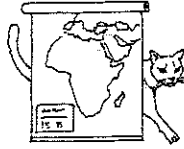
Uses of "estar"

Place  
Location  
Action  
Condition  
E... dia

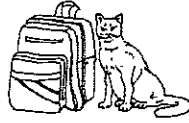
4 Where's the cat? Use each word from the box only once. The first one is done for you.



1.



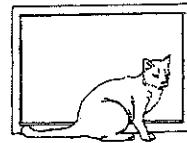
2.



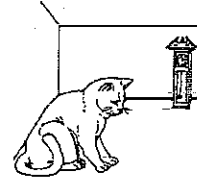
3.



4.



5.



6.

Objects	Positions
el escritorio	encima de
el reloj	delante de
el mapa	cerca de
el cuaderno	detrás de
la mochila	debajo de
el pizarrón	lejos de

1. Está debajo del escritorio.
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

5 Write five sentences to describe how the following people feel.

1. Yo estoy contento.
2. Mi mejor amigo(a) \_\_\_\_\_
3. Mis amigos \_\_\_\_\_
4. Tú \_\_\_\_\_
5. Mi maestro(a) de español \_\_\_\_\_



## SECTION 2-1

## SECTION SUMMARY

## Atoms and Ionic Bonds

### Guide for Reading

- ◆ How are valence electrons related to the reactions of atoms?
- ◆ How does an atom become an ion?
- ◆ What are the properties of ionic compounds?

**V**alence electrons are electrons that are either farthest away from the nucleus of an atom or most loosely held by the nucleus. **The number of valence electrons is the key to how an atom reacts with other atoms because valence electrons are involved in bonding.** One way to show the number of valence electrons is with an **electron dot diagram**.

When atoms have fewer than four valence electrons, they can transfer these to other atoms that have more than four valence electrons. In this way, atoms become more stable.

An **ion** is an atom or group of atoms that has an electrical charge. **When an atom loses an electron, it loses a negative charge and becomes a positive ion. When an atom gains an electron, it gains a negative charge and becomes a negative ion.**

An **ionic bond** is the attraction between oppositely charged ions. For example, a sodium atom reacts with a chlorine atom by losing its one valence electron to chlorine. The sodium atom becomes a positive ion ( $\text{Na}^+$ ). The chlorine atom becomes a negative chloride ion ( $\text{Cl}^-$ ). The oppositely charged ions attract each other. They form the compound sodium chloride, which is table salt. Compounds are electrically neutral. When ions come together, they do so in a way that balances out the charges on the ions.

**Polyatomic ions** are ions made of more than one atom. Each polyatomic ion has an overall positive or negative charge. For example, the carbonate ion ( $\text{CO}_3^{2-}$ ) is made of one carbon atom and three oxygen atoms. It has an overall charge of 2-.

The name of an ionic compound consists of the name of the positive ion followed by the name of the negative ion. If the negative ion is a single element, the end of its name changes to *-ide*.

**The physical properties of ionic compounds include crystal shape, high melting points, and electrical conductivity.** These properties result from the presence of ionic bonds.

In an ionic compound, every ion is attracted to ions near it that have an opposite charge. Together, the positive and negative ions form an orderly, three-dimensional arrangement called a **crystal**.

Ionic compounds have high melting points. All ionic compounds are solids at room temperature. A solid ionic compound does not conduct electricity well. However, the ions may be separated by dissolving the compound in water, or by melting the compound. If the ions move freely, the solution or melted compound can easily conduct electricity.

**SECTION 2-1****REVIEW AND REINFORCE****Atoms and Ionic Bonds****◆ Understanding Main Ideas**

Answer the following questions on a separate sheet of paper.

1. How does an atom become a positive ion? How does an atom become a negative ion?
2. How do ions form electrically neutral compounds?
3. What characteristics do solid ionic compounds share?
4. How does the electrical conductivity of ionic compounds change when they are melted or dissolved in water? Why is this so?

Use the chart to answer the following questions on a separate sheet of paper.

Ions and Their Charges		
Name	Charge	Symbol/Formula
Ammonium	1+	$\text{NH}_4^+$
Potassium	1+	$\text{K}^+$
Calcium	2+	$\text{Ca}^{2+}$
Magnesium	2+	$\text{Mg}^{2+}$
Chloride	1-	$\text{Cl}^-$
Oxide	2-	$\text{O}^{2-}$
Sulfide	2-	$\text{S}^{2-}$
Phosphate	3-	$\text{PO}_4^{3-}$

5. How many potassium ions are needed to balance the charge of one sulfide ion? Explain.
6. Predict the formulas for calcium chloride and potassium phosphate.
7. Name the following compounds:  $\text{MgS}$ ,  $\text{NH}_4\text{Cl}$ , and  $\text{K}_2\text{O}$ .
8. Which ions in the table are polyatomic ions?

**◆ Building Vocabulary**

Answer the following questions on a separate sheet of paper.

9. What is an ion?
10. What is an ionic bond?
11. How are ions in a crystal arranged?

## Outdoor Adventure

May 11th

We have covered many topics over the past year in Outdoor Adventure and although the year did not end the way we had all planned we can still find value in the lessons learned. For this week I would like for you to look back at the year and reflect on the topics we talked about. It can be something we talked about during our walks or it can be something like our Hunters Education course that we completed. I would like for you to write a 250 word paper about those things. What you liked and what you didn't like. Also include why you did or did not like those things. Talk about things you learned and things you were looking forward to learning. 250 words is not a lot once you get going so if you'd like to write more feel free. I will use these papers to evaluate the class and make adjustments for the future and hopefully make the class better for future students.

The second part of this assignment is to get outside. Go fishing, go hiking, build a shelter just get outside and enjoy being in the wonderful world we live in. What we have gone through the past few months hasn't been easy but the outdoors have never closed, it's open for business 24/7 and 365. Enjoy it, learn from it and when you have the chance, protect it. I'd like each of you this week to spend at least 1 hour outside enjoying the outdoors and all our world has to offer.

Practice drawing the buildings using the two point perspective method. You may use the back of this paper to practice. Week 7

### 2 Point Perspective - step by step

1 Turn your paper horizontal

2 Draw a horizon line.

3 Draw two vanishing points on the horizon line near the page edges

4 Draw a vertical line for the front edge of your form.

5 Draw orthogonal lines from front edge to both vanishing points.

6 Draw two vertical lines for back edges

7 Connect top corners to opposite vanishing points

8 Erase extra orthogonal lines.

9 Draw more forms!

10 Add windows and doors!

11 Try stacking forms.

12 Try a lower horizon line