

# Finding the Average: Mean, Median, and Mode

In statistics, there are three kinds of averages: mean, median, and mode.



-MEAN: The mean of a group of numbers is the average of the numbers.

-MEDIAN: The median of a group of numbers is the number that is exactly in the middle when the numbers are arranged numerically. **Note: For even sets of numbers, take the average of the middle two numbers.**

-MODE: The mode of a group of numbers is the number that appears most often.

## Example

Soccer Goals								
5	12	19	11	15	32	18	5	3

**MEAN:** Add all the numbers together ( $3+5+5+11+12+15+18+19+29=117$ ) then divide (117) by the number of numbers added together (9), so  $117 \div 9 = 13$ .

**MEDIAN:** In this example, the number in the middle is 12.

**MODE:** In this example, the number that reoccurs the most is 5.

Before you do any computing, you should always write the numbers in numerical order, from smallest to largest:

3 5 5 11 12 15 18 19 32



For each problem below, find the **mean**, **median**, and **mode**.

Basketball Points						
11	15	16	16	21	5	9

1. Mean: \_\_\_\_\_

Median: \_\_\_\_\_

Mode: \_\_\_\_\_



Touchdowns							
10	7	9	15	14	12	11	9

2. Mean: \_\_\_\_\_

Median: \_\_\_\_\_

Mode: \_\_\_\_\_

Golf Scores					
61	68	75	72	68	79

3. Mean: \_\_\_\_\_

Median: \_\_\_\_\_

Mode: \_\_\_\_\_



Wrestling Wins								
5	7	13	24	16	22	13	7	6

4. Mean: \_\_\_\_\_

Median: \_\_\_\_\_

Mode: \_\_\_\_\_

Boxing Wins						
24	16	23	16	15	35	19



5. Mean: \_\_\_\_\_

Median: \_\_\_\_\_

Mode: \_\_\_\_\_



Volleyball Wins								
7	14	11	12	11	20	8	5	10

6. Mean: \_\_\_\_\_

Median: \_\_\_\_\_

Mode: \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

## Revolutionary War Vocabulary Review & Timeline

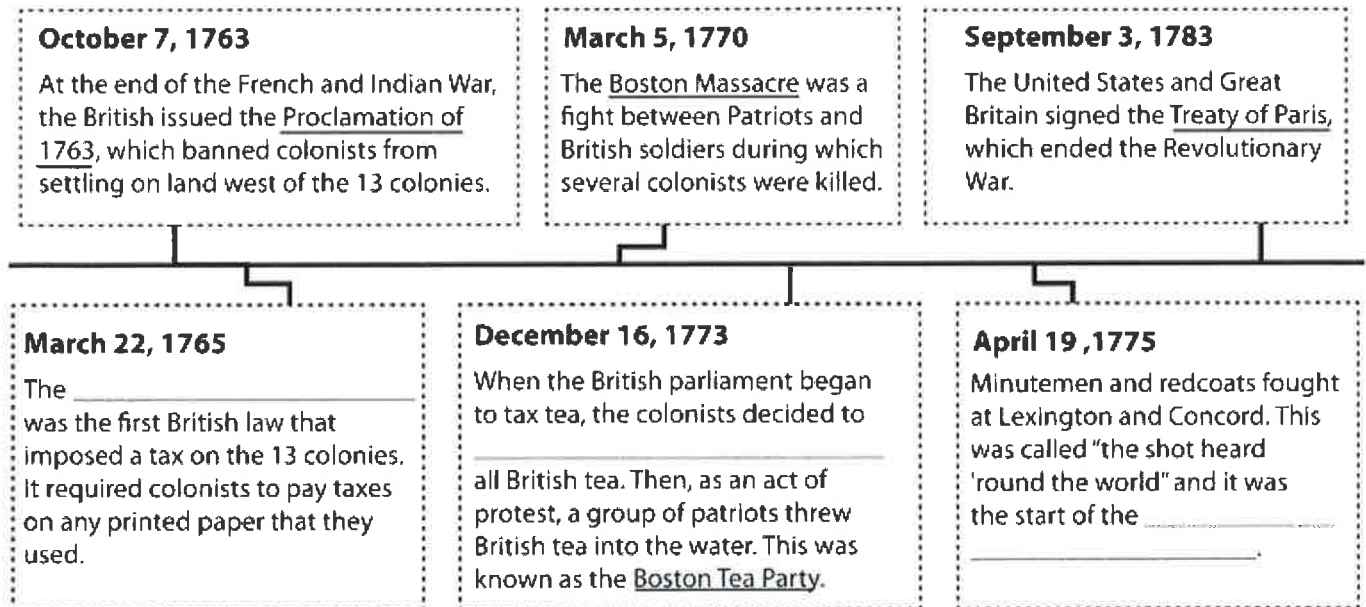
**Directions:** Use the word bank to fill in the blanks in the sentences below. Then, use the words that are left to complete the timeline.

### Revolutionary War Word Bank

patriots	redcoats	loyalists	parliament	boycott
minutemen	Stamp Act	Revolutionary War	treason	

- 1 The British \_\_\_\_\_ passed many new laws that increased taxes for the colonists.
- 2 The British soldiers were called \_\_\_\_\_ because their uniforms were red.
- 3 Benedict Arnold was an American general who was accused of \_\_\_\_\_ when he agreed to hand over American territory to the British army.
- 4 The colonists who rejected British rule were called \_\_\_\_\_ because they wanted the United States to be an independent nation.
- 5 The \_\_\_\_\_ were always ready to fight against the British.
- 6 Even though the \_\_\_\_\_ lived in the colonies, they supported the British government.

### Timeline of events leading to the Revolutionary War



# Revolutionary War

## Questionnaire

Answer the following questions on the Revolutionary War.

1. Who did America fight in the Revolutionary War?

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2. Which country provided help and aid to America during the Revolutionary War?

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3. Which treaty ended the war?

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4. Who was the British King during the Revolutionary War?

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5. Where did the last battle of the war take place?

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6. Who wrote the Declaration of Independence?

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7. Where were the two places the British and American colonists engaged in battle for the first time?

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8. Where did the British army surrender?

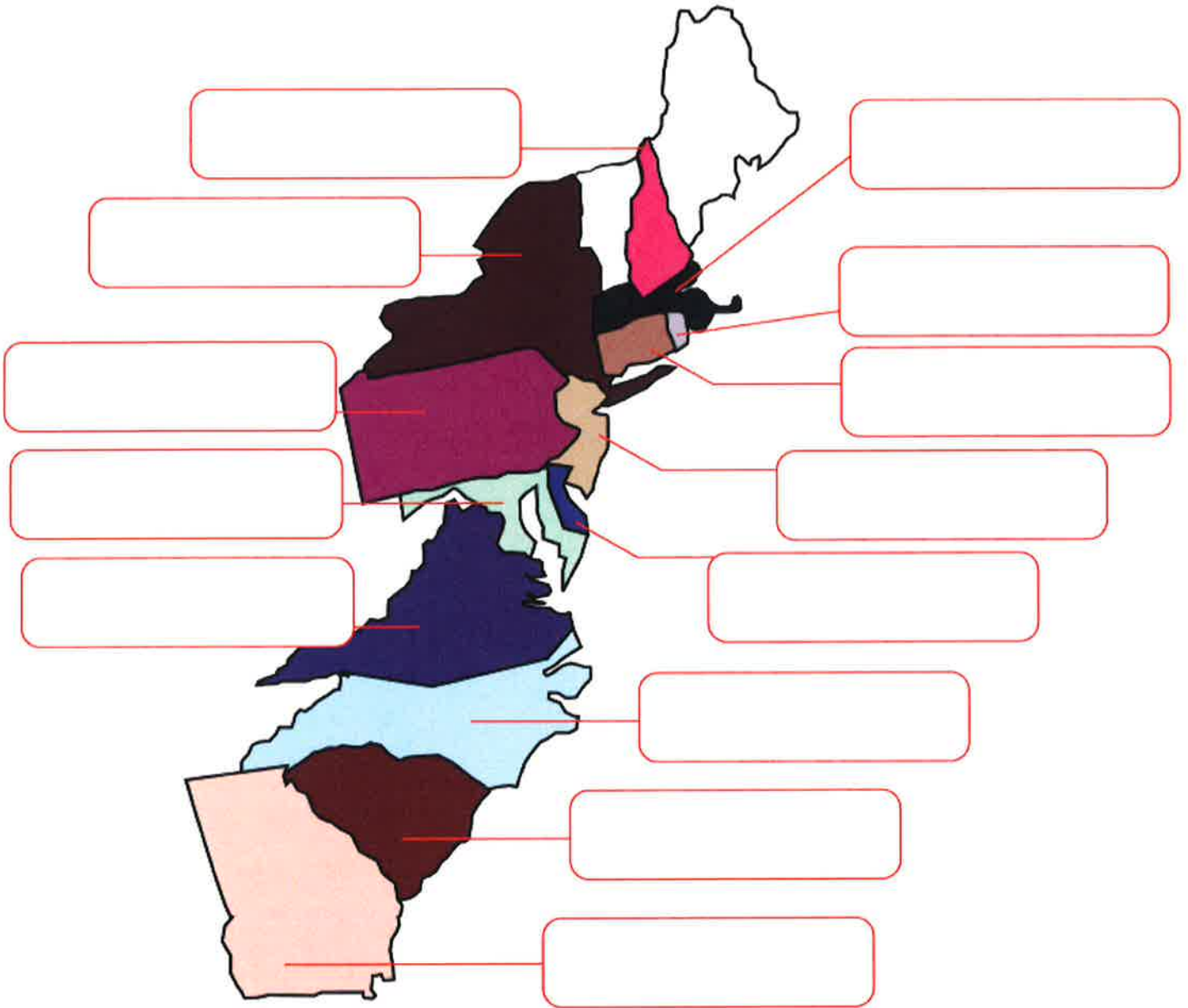
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9. Which Continental Army soldier is known for switching sides and joining the British army?

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# The 13 Colonies

Below is a map of the 13 original colonies. Label each colony with a name from the word bank.



Pennsylvania

Massachusetts

Rhode Island

South Carolina

Maryland

New Hampshire

Delaware

North Carolina

New Jersey

New York

Virginia

Georgia

Connecticut



# **THE BATTLE OF CAMDEN**

The Battle of Camden took place near Camden, South Carolina on August 16, 1780. The British, under the command of Lord Charles Cornwallis, had about 2,100 soldiers. The Americans were commanded by General Horatio Gates and had about 3,700 soldiers. Of the

American forces, only 1,500 were regular soldiers. The remaining troops were militia, which were citizens who had volunteered for the war. The militia were not as trained or as experienced as the regular soldiers.

Before the battle began, the British controlled most of South Carolina. Camden was an important location, as it would help the Americans control the rural areas of South Carolina.

The battle began at dawn and lasted about an hour. Most of the militia panicked with the first shots from the British and left the battleground. General Gates left the battleground at the same time. The remaining American forces were defeated by the British troops. At the end of the battle, over half of the American forces were either killed, wounded or taken prisoner.



*Lord Charles Cornwallis, commander of the British forces at the Battle of Camden*



*General Horatio Gates, commander of the American forces at the Battle of Camden*

The loss at Camden was a big blow to the American army. General Gates had made several serious errors that contributed to the loss. He was overconfident after winning his previous battle, the Battle of Saratoga. Camden was deep in enemy territory and his troops had trouble getting good supplies. His battle plan also had serious problems. After the battle, General George Washington replaced General Gates with General Nathanael Greene as commander of the southern American forces.

## **QUICK QUIZ**

Who was the commander of the American forces at the Battle of Camden?

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When was the Battle of Camden?

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What state is Camden in?

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Who won the Battle of Camden?

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*Engraving of the Battle of Camden*

# Explore Earthquakes!

## phenomenal science

**Have you ever felt an earthquake?** If you have, you'd know it's a sickening feeling. It seems impossible that the entire earth can move so dramatically, but during an **earthquake** it actually does.

So how does the ground shake and move the way it does during an **earthquake**? In order to answer that question, it's important to know exactly what is happening. An **earthquake** is a vibration that travels through the earth's crust. **A volcanic eruption, a large meteor impact, or any sort of big underground explosion** can create that vibration.

The most common cause of **earthquakes** are the earth's **tectonic plates**. These plates are in constant motion and when they bump into one another it can cause underground vibrations. Each year, more than *three million earthquakes* are an after effect of **tectonic plates** moving.

There are three different ways for plates to interact with each other. In a **normal fault**, the plates are separating. In a **reverse fault**, the plates are running into each other. In a **slip fault**, the plates move in opposite directions, with one plate sliding against the other. **Slip faults** cause the most dramatic **earthquakes**. The edges of these plates can actually lock together as they slide against each other, building up pressure. Then, in an instant, the pressure releases.

When the shift occurs in the earth's crust, the energy radiates **seismic waves**. These waves are like waves of water in a pond, but here the waves radiate through the earth and make the ground shake. There are three kinds of waves: **P waves**, **S waves**, and **L waves**. **P waves** cause the thud in the beginning of the quake, while **S waves** and **L waves** cause the most damage because they both move plate foundations.

The largest **earthquake** ever registered on earth measured 9.5 on the **Richter scale**. **Earthquakes** that register at 3 aren't usually felt by humans. For us to feel an **earthquake**, it must measure around 5 on the **Richter scale**.

## Historical Earthquakes

1811

### Madrid Missouri Quakes

These earthquakes happened along the Mississippi river, lasting for months. These quakes actually caused the river to run backwards.

1906

### San Francisco Earthquake

One of the most famous US disasters, the fires started by this earthquake actually did more damage than the quake itself.

1970

### Ancash Earthquake

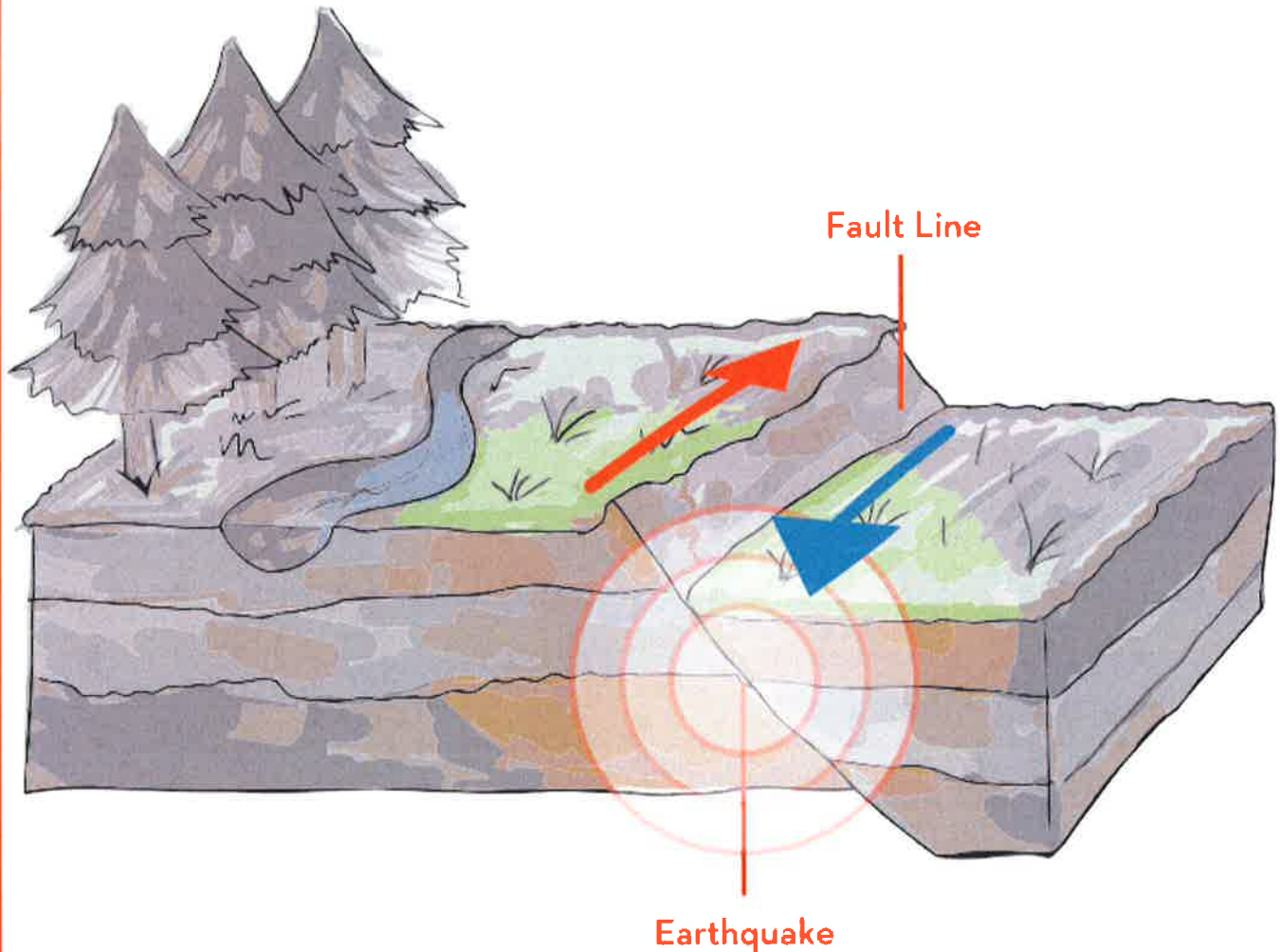
One of the biggest earthquakes ever recorded, the Ancash earthquake caused landslides, destroyed homes and took away many lives. This quake hit 7.8 on the Richter scale.

## Safety Tips

- 1 Stay away from windows.
- 2 Stay indoors.
- 3 Take cover under a sturdy piece of furniture.
- 4 Secure shelves and heavy objects against the wall.
- 5 Plan an earthquake preparation kit with your family.
- 6 If advised to evacuate, do so immediately.
- 7 Stay away from electrical wires.

# Explore Earthquakes!

phenomenal science



**After reading the article on earthquakes, please answer the following questions:**

Name two different events that would cause an earthquake. \_\_\_\_\_

What are the three ways tectonic plates interact with each other? \_\_\_\_\_

What are seismic waves? \_\_\_\_\_



## Earth Science

# Plate Tectonics

Read about plate tectonics, then label the three plate movements in the illustrations below.

**Did you ever wonder why the ground shakes during an earthquake?** Have you ever asked yourself why some volcanos are always active, while others only erupt once every millenium? (And some are even less active than that!) Believe it or not, many scientists believe that earthquakes, volcanoes, and even tsunamis are all related to a scientific phenomenon: **plate tectonics**.

About 50 years ago, many scientists came up with an idea about why earthquakes, volcanic activity, and some dinosaur fossils can be found on two continents that are far away from each other.

The theory of plate tectonics states that the second layer of earth, the **lithosphere**, is made up of large, broken-up pieces. Seven or eight giant plates make up earth, with lots of minor plates between them. Tectonic plates are always moving. Sometimes the plates move against or away from each other.

Scientists have come up with the following names for these plate movements:

**Divergent:** When two tectonic plates pull away in opposite directions, it is called *divergent plate movement*.

This often happens on the oceanic crust, creating large trenches on the sea floor bed where hot magma is exposed by the gap between these plates, contacting icy salt water in large smoke plumes.

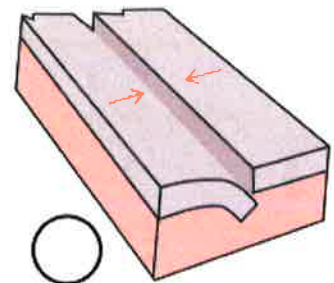
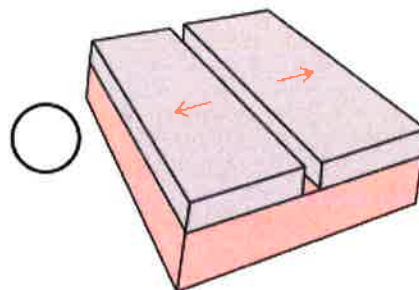
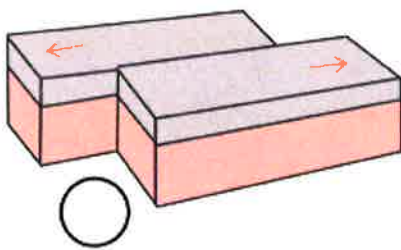
**Subduction:** This happens when two plates crash into each other. The plates behave differently depending on whether or not they are **continental** or **oceanic**. For example, when an oceanic plate crashes into a continental slab, the oceanic plate is forced to move under the overlapping continental plate. But, if two continental plates collide into each other, the crust will form mountain ranges out of the compressed plates.

**Lateral Slipping:** A lot of friction happens when two plates move against each other. As the plates grind in opposite directions and cause friction, pressure builds up until it is released. The plates will suddenly jerk apart, creating earthquakes and tsunamis.

Our world is made up of different moving parts that are constantly crashing, pushing, and brushing into one another. The plate tectonic theory helps explain how new landforms are made, where earthquakes come from, and other major questions about our planet's crust.

**Directions:** Label the three plate movements in the illustrations below.

a. divergent    b. subduction    c. lateral slipping



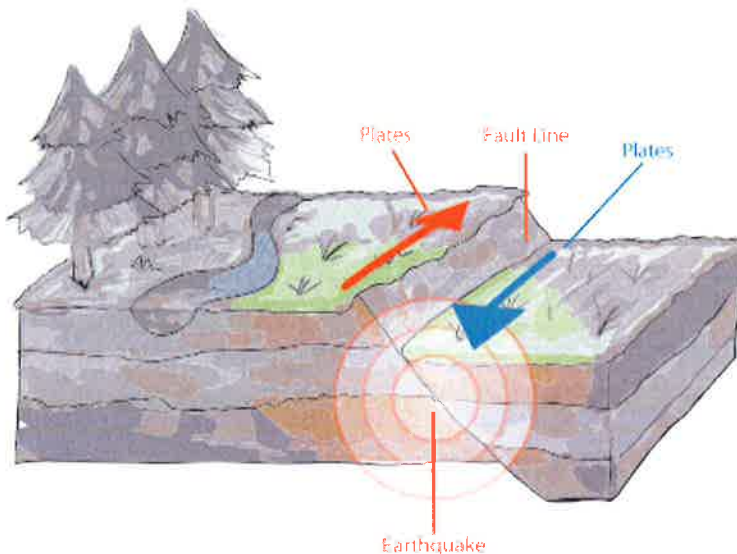


# Earthquakes: Text Features

**Directions:** Read only the text features (i.e., sidebars, diagram, and bold words). Then, answer the questions.

## Earthquakes

Have you ever felt an earthquake? During an earthquake, the earth feels like it is shaking. An **earthquake** is a vibration that travels through the earth's crust. The most common cause of earthquakes are the earth's **tectonic plates**. These plates are in constant motion and when they bump into one another it can cause underground vibrations. The place where the plates bump each other is called the **fault line**. Earthquakes are common along the Pacific Ocean.



## Historical Earthquakes

**1811**

**Madrid Missouri Quakes**  
These earthquakes happened along the Mississippi river, lasting for months. These quakes actually caused the river to run backwards.

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- 6 If advised to evacuate, do so immediately.
- 7 Stay away from electrical wires.

Name \_\_\_\_\_

Date \_\_\_\_\_

1. What information do you get from the text features? (i.e., bold words, sidebars, diagram)

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2. Read the article. How do the text features help you understand the article?

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3. What information do you get from the text features that is not included in the article?

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4. What earthquake happened in 1906?

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5. What is the first safety tip you should follow during an earthquake?

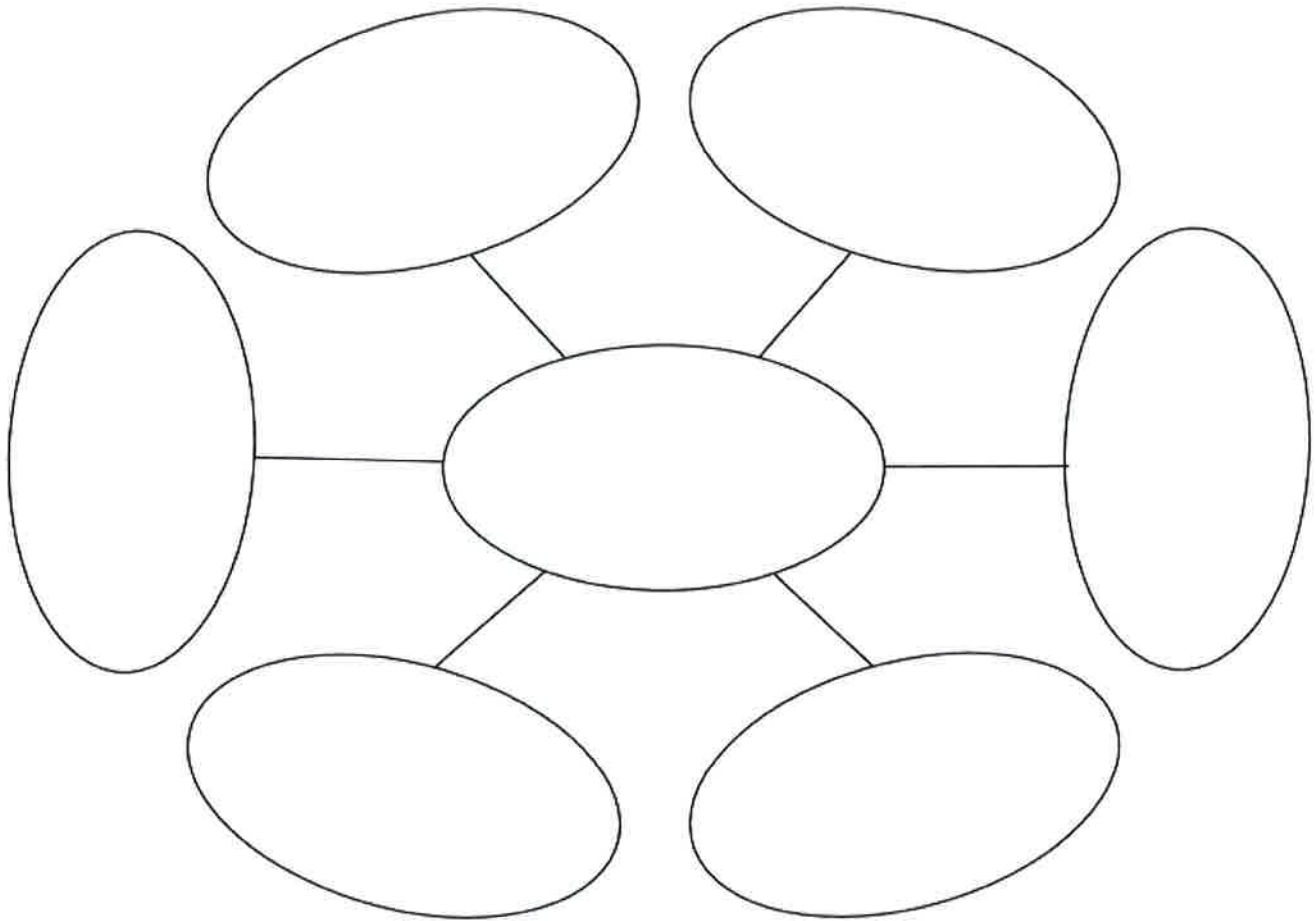
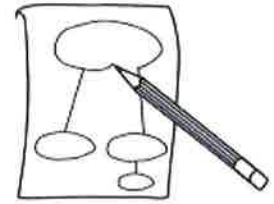
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Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Concept Web

**Directions:** Place the word or topic in the center oval. Then, write details about the topic in the remaining ovals. Lastly, place headings at the top of each oval to give more information about your details.



**Write about it!** Describe your concept web. Be sure to write about the central topic and the details about the topic.

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# Design Challenge: Making a Hot Air Balloon

In this activity, your child will create their own hot air balloon using recycled materials. Watch it fly like a real hot air balloon!



## What You Need:

- Construction paper
- Balloons
- Toothpicks
- Pipe cleaners
- Berry baskets
- Small wax paper cups
- Popsicle sticks
- Plastic garbage bags and plastic baggies
- Fishing line
- String
- Scissors
- Tape
- Hole punch
- Hair dryer
- Pens and paper for brainstorming and notetaking

## What You Do:

1. First explain how hot air balloons work. Explain that when a flame is placed under the balloon, it causes the balloon to fill with hot air. Hot air is lighter than cold air and therefore the balloon will rise and carry the basket with it. If you like, feel free to show your child pictures or videos of hot air balloons online. This might help them understand how they work and could provide inspiration for their own hot air balloons. Next, explain the challenge to your child. Explain that they must create a hot air balloon that can be powered by a blow dryer.
2. Now it's time to begin brainstorming. Ask your child to think about what will make their balloon the most effective. Have your child write or draw their ideas on paper. Encourage your child to come up with a few different designs for their balloon.
  - Remind your child of how real hot air balloons work. The balloon part is strong, but flexible enough to be filled with air.
3. Once your child has finished with the brainstorming phase, ask them to choose the design that they think will work best. Remind your child of the goal of their balloon: to float when filled with hot air.
  - This is an important step of the design thinking process, because it teaches your child to prioritize the functionality of their prototype (design) over their personal preferences. This also prevents them from getting too emotionally attached to one design.
4. When your child has chosen a design, it's time to start building! Give your child room to make mistakes in their work and to try lots of different types of balloon designs; however, provide help when needed.
5. After your child has finished building, help them to test their balloon. Hold a blow dryer under their balloon so the hot air can enter the envelope.
  - a. If your child's balloon is successful, congratulate them on completing the challenge.
  - b. If your child's balloon does not work, ask them what they think they could improve on. Be sure to remind your child that this is an opportunity to figure out what does and does not work in order to make better designs in the future.



# 12x Multiplication Table

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Courtesy of [MathsIsFun.com](http://MathsIsFun.com)

**Notes:**