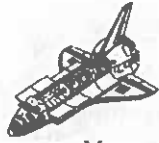


Name: \_\_\_\_\_

Period: \_\_\_\_\_



# Space Exploration TIC-TAC-TOE



**Directions:** You must choose 3 space exploration boxes from the Tic Tac Toe grid. The boxes you choose **MUST** be 3 in a row, in a column, or in a diagonal. Read about each exploration. Answer the questions below for each. Write in complete sentences. (8 pts each)

**Questions:**

- 1) What was the exploration/mission's purpose?
- 2) Draw a picture or visual representation (graphic organizer, diagram, etc.).
- 3) If this had never happened, how would our lives be different today?

**SPACE EXPLORATION 1**

1) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2)

3) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**SPACE EXPLORATION 2**

1) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2)

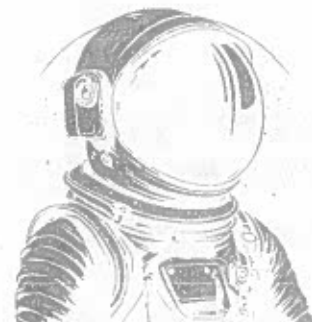
3) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**SPACE EXPLORATION 3**

1) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2)

3) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# SPACE EXPLORATION TIC-TAC-TOE

International Space Station is a large, inhabited Earth satellite that more than 15 nations operate in space. The first part of the station was launched in 1998. Eight solar panels supply electric power. The crew studies the effects of space conditions, such as weightlessness, on living things, including the crew. The value of having a space station is that all the equipment needs to be carried into space only once. Also, the station can be used repeatedly by visiting astronauts. The station was designed to operate for at least 15 years, but it could last for decades if parts are repaired/replaced as they wear out or are damaged.

Mars Science Laboratory was a robotic space mission to Mars. It consisted of a six-wheeled rover called Curiosity. Curiosity was the largest rover ever sent to Mars. The goal of the Mars Science Lab was to determine if the rover's landing site ever held certain conditions supportive to living things. Such conditions included the presence of liquid water, a source of energy such as sunlight and nutrients including nitrogen, phosphorous, and oxygen. The rover was designed to examine rocks and soils for evidence of these conditions. Curiosity launched on Nov. 26, 2011. The rover landed on Aug. 6, 2012.

Challenger disaster was one of the worst accidents in the history of space flight. On Jan. 28, 1986, the space shuttle Challenger broke apart 73 seconds after launch. The accident happened at an altitude of 26,000 feet and at twice the speed of sound. The crew quickly lost consciousness from air loss after the breakup. They died about three minutes later when the cabin hit the Atlantic Ocean. The mission included launching satellites for communications and to observe Halley's comet. It was the 25th launch of a shuttle and 10th launch of Challenger. One of the crew members, Christa McAuliffe, was to be the first school teacher in space.

NASA's Apollo space program suffered two major disasters. First, Apollo 1 was scheduled for launch on February 21, 1967. On January 27, however, a fire during a launch pad test took the lives of 3 astronauts. The second disaster occurred on Apollo 13. On April 14, 1970, about 56 hours after launch, a short circuit caused an explosion in one of the spacecraft's oxygen tanks. The blast damaged the systems that supplied electricity and oxygen. The astronauts had to move into the lunar lander for oxygen supply. During the flight, the crew, with help from NASA engineers on the ground, made the necessary repairs to overcome the lack of power, water, cabin heat, and the buildup of carbon dioxide in the vehicle in order to return safely to Earth.

Space Race was a time of competition between the United States and Soviet Union to be the best in space exploration. The Soviet Union achieved 3 of the race's earliest feats. On Oct. 4, 1957, the Soviet Union launched the first satellite, Sputnik 1, into Earth's orbit. The U.S. did not launch a satellite until Explorer 1 on Jan. 31, 1958. On Nov. 3, 1957, the Soviet space program launched the first living thing to orbit, a dog named Laika. Lastly, cosmonaut Yuri Gagarin entered orbit aboard Vostok 1. He was the first human space traveler. After many delays, the United States sent Alan Shepard, its first astronaut, into space. U.S. President John F. Kennedy challenged the Soviet Union to a moon race. The race ended on July 20, 1969 when the U.S.'s Apollo 11 landed on the moon.

The Lunar Roving Vehicle was a space buggy built to transport astronauts on the moon's surface. The astronauts used it to explore their landing sites on the moon. They gathered moon rocks, soil, and traveled much farther than they could have on foot. During Apollo 17, the rover traveled 12 miles on one of its three trips. It was neatly folded up inside the lunar lander during trips to the moon, but once on the moon's surface, it unfolded with the help of springs. The Apollo 15, 16, and 17 missions used the lunar car. Since the moon's surface is rugged, the buggy was designed to climb steep slopes, to go over rocks, and to move easily over the sand-like surface. It was able to carry more than twice its own weight in passengers, scientific instruments, and soil samples.

Mir was the longest-lasting space station ever built. The station, which was built by the Soviet Union, consisted of several separately launched pieces. The first piece went into orbit in 1986, and the station was destroyed in 2001. *Mir* is Russian for *peace*. In an accident in June 1997, a ship collided with part of Mir. The crash opened a small hole in Mir, which began to leak air. The crew quickly sealed it off. Due to money cuts, Russia ended the Mir project in March 2001. One reason for the money cuts was Russia's role in the construction of the International Space Station. Russia destroyed Mir by guiding it into the atmosphere. Much of the station burned, and the remainder fell into the Pacific Ocean.

Columbia disaster resulted in the loss of the U.S. space shuttle Columbia and its crew. On Feb. 1, 2003, Columbia was returning to Earth after a 16-day mission. It broke apart over Texas at an altitude of 40 miles and a speed of 12,000 miles per hour. All 7 crew members died. On the mission, the astronauts conducted scientific experiments using a facility aboard called Space Lab. Investigators traced the disaster's cause to a piece of foam insulation that fell off the shuttle after take-off. The foam hit the leading edge of the left wing and broke some of the heat resistant tiles. Upon reentry, heat and wind entered through a small hole in the wing, creating friction and pressure, which caused the shuttle to break apart.

Mercury was the first U.S. project to send humans into space. Mercury proved that humans could survive temporary weightless conditions. It also proved that astronauts could operate complex flight machinery above Earth's atmosphere. In addition, NASA scientists gained experience in quickly recovering the astronauts and spacecraft after landing. Gemini was the second U.S. program to send humans to space. It was also the first to send 2 people in a single craft. NASA mainly used the Gemini missions to prepare for the Apollo moon missions. A goal was to support astronauts in space for a length of time sufficient for a moon mission. The Gemini missions gave many early U.S. astronauts valuable flight experience.






### What's the Better Buy?

Rates

Using Unit Rates Using Unit Rates

Using Unit Rates

\*For each problem, find the unit rate, then state which is the better buy.\*

ITEM	UNIT RATE	WHICH IS THE BETTER BUY?
<p>Jif Peanut Butter</p>  <p>18 oz - \$4.75    40 oz - \$11.29</p>	<p>18 oz jar                      40 oz jar</p> <p>Ex:</p> $\frac{\$4.75}{18 \text{ oz}} = \frac{\$0.26}{1 \text{ oz}} \qquad \frac{\$11.29}{40 \text{ oz}} = \frac{\$0.28}{1 \text{ oz}}$	<p>18 oz jar</p>
<p>Ketchup</p>  <p>32 oz - \$3.29    24 oz - \$2.59</p>		
<p>AA Batteries</p>  <p>8 batteries                      4 batteries</p> <p>\$17.99                          \$9.99</p>		
<p>Tissues</p>  <p>Kleenex                          Puffs</p> <p>100 tissues                      60 tissues</p> <p>\$1.99                              \$1.79</p>		
<p>Shampoo</p>  <p>Pantene                          Clairol</p> <p>12.6 oz                          10.2 oz</p> <p>\$4.99                              \$3.49</p>		

Item	Original Deals	Unit Rates	Which Deal is Best and How Much Total \$ Spent?
<i>Example: Chocolates</i>	Deal 1: \$16.80 for 20 chocolates Deal 2: \$24.60 for 30 chocolates	Deal 1: \$0.84 per chocolate Deal 2: \$0.82 per chocolate	Deal 2: \$24.60
Candy Hearts	Deal 1: \$7.84 for a 14 ounce bag Deal 2: \$5.90 for a 10 ounce bag	Deal 1: Deal 2:	
Arrow and Heart Pencils	Deal 1: \$7.25 for 25 pencils Deal 2: \$5.20 for 20 pencils	Deal 1: Deal 2:	
Valentine Balloons	Deal 1: \$15.90 for 15 balloons Deal 2: \$12.96 for 12 balloons	Deal 1: Deal 2:	

# Read & Take Notes

**Instructions:** Read the passage below. Take notes in the space provided.

Take Notes Here

A pedigree is a special chart that shows how a trait or condition is passed down through generations of a family. It's like a family tree, but it focuses on specific traits, like eye color or a certain disease. The chart uses symbols to represent each person in the family, and lines connect them to show their relationships. For example, a square represents a male, and a circle represents a female. A line connecting a square and a circle shows that they are married, and lines going down from them show their children.

Pedigrees are also used in animal breeding to track the lineage of purebred animals. The American Kennel Club (AKC) keeps records of pedigrees for dogs. These records show the dog's ancestors and any important information about them, like if they won competitions or had any health issues. The AKC offers different types of pedigrees, including printed ones with an official seal and online versions that can be accessed anytime.

Pedigrees are important for understanding how traits are passed down from parents to children. They can help scientists and doctors learn more about diseases and how to treat them. They can also help breeders choose the best animals to breed together to produce offspring with desirable traits.

The word "pedigree" can also refer to a person's ancestry, or family history. It can also be used to describe a purebred animal, meaning that its lineage is known and recorded. For example, a "pedigreed" dog is one that has a known family history and is registered with a breed organization.

The word "pedigree" has many different meanings, but they all relate to the idea of lineage and ancestry. Whether it's tracking the inheritance of a disease, recording the history of a purebred animal, or simply tracing a family's history, pedigrees are a valuable tool for understanding the past and predicting the future.

# Answer and Explain

**Instructions:** For each question, answer the question and then explain why you picked the answer you did using specific evidence from the text.

**Question:** 1. What is a pedigree used for in animal breeding?

**Pick the Answer**

- A) To track the lineage of purebred animals.
- B) To determine the best food for animals.
- C) To predict the future of a breed.
- D) To identify animals with specific diseases.

**Explain: Why did you pick that answer?**

**Question:** 2. What symbol is used to represent a male in a pedigree chart?

**Pick the Answer**

- A) A circle
- B) A square
- C) A triangle
- D) A star

**Explain: Why did you pick that answer?**

**Question:** 3. What is one way that pedigrees can help scientists and doctors?

**Pick the Answer**

- A) To create new breeds of animals.
- B) To understand how traits are passed down.
- C) To predict the future of a family.
- D) To identify the best animals for competition.

**Explain: Why did you pick that answer?**



# Marbury v. Madison (1803)

## “But the President Said I Could Be a Judge!”

In 1800, President John Adams ran for re-election, but he lost to Thomas Jefferson. During his last weeks in office, Adams appointed a bunch of men to be justices of the peace in the District of Columbia. Each man was to receive a paper commission that was signed and sealed. The commissions were prepared, but they were not sent before Adams left office. When President Jefferson took over, he refused to send them. One man who was set to be appointed, William Marbury, was upset. He wanted to be a judge! So he asked the United States Supreme Court to issue a legal order called a writ of mandamus (man-DAY-mus). A **writ of mandamus** is a court order to a lower court or public authority that they must perform their official duty. In this case, the writ would have required Marbury’s commission to be delivered.



Courtesy: Britannica/Getty Images

James Madison was Jefferson’s Secretary of State. He was told not to deliver the commissions.

## The Argument

Did you notice that Marbury didn’t start in a regular, local court? He started at the Supreme Court. Normally, that doesn’t happen. But in 1789, Congress passed a law saying people could start at the Supreme Court if all they wanted was a writ of mandamus. Marbury argued that he was entitled to the writ because his commission had already been created. He also argued that the Supreme Court had the power to issue the writ.

## The Decision

The Supreme Court agreed that Marbury had a right to receive his commission but disagreed that the Court had the power to issue the writ. Why? Because the Supreme Court gets its power directly from the Constitution, and the Constitution says only certain kinds of cases can start at the Supreme Court. That meant the 1789 law passed by Congress was unconstitutional. Congress did not have the power to allow more kinds of cases to start at the Supreme Court. Therefore, the Supreme Court said it could not help Marbury get his commission.



### ISSUE

Does the Supreme Court have the power to hear more types of cases than just those the Constitution says it can hear?

### DECISION

No. The Supreme Court only has the power to do what the Constitution says.

## So What?

Believe it or not, this is considered one of the most important cases the Supreme Court has ever decided. That’s because it was the first time the Supreme Court struck down an act of Congress for being unconstitutional. The idea that the Supreme Court has the final say about what is constitutional is called **judicial review**. Judicial review lets the judicial branch do two things: 1) interpret the Constitution and decide what it means, and 2) stop the executive and legislative branches from doing things that go against the Constitution. The decision in Marbury v. Madison helped cement the judicial branch as equal to the other two branches of government by giving it equal power.



Courtesy: Maryland Center for History and Culture/Gift of Mrs. Chester Mory Carr

William Marbury never did receive his commission.



# Marbury v. Madison (1803)

## Supreme Court Strikedown: End of the Line for a Law?

The Supreme Court may declare a law unconstitutional, but that doesn't always mean the whole law is dead. Congress can change the law, repeal the law and pass a new one, drop the subject, or even amend the Constitution itself! First, read about four laws the Supreme Court has struck down. Then see if you can correctly guess what happened next! When you're done, match the letter of each law to its answer below. (Hey--no peeking!)

Law	The Supreme Court said...	Guess what happened next...
A) Flag Protection Act of 1989: Makes flag burning a crime.	Congress could not make it a crime to burn the U.S. flag. Burning the flag is expression protected by the First Amendment right to freedom of speech.	<input type="checkbox"/> Congress changed the law to make it constitutional. <input type="checkbox"/> Change would require a constitutional amendment, but there was not enough support. <input type="checkbox"/> An amendment was added to the Constitution banning flag burning.
B) Line Item Veto Act of 1996: Allows the president to veto parts of a bill, passing the rest.	Congress could not give the president the power to veto certain parts of a law. The Constitution says the president must sign a law or return it--not change it all by themself.	<input type="checkbox"/> Congress changed the law to make it constitutional. <input type="checkbox"/> Change would require a constitutional amendment, but there was not enough support. <input type="checkbox"/> An amendment was added to the Constitution, giving the president line-item veto power.
C) Stolen Valor Act of 2005: Makes lying about military service awards a crime.	Congress could not make it a crime to lie about receiving a military medal. Free speech means the government can't decide that some lies are punishable.	<input type="checkbox"/> Congress changed the law to make it constitutional. <input type="checkbox"/> Change would require a constitutional amendment, but there was not enough support. <input type="checkbox"/> An amendment was added to the Constitution, making these lies a crime.
D) Voting Rights Act Amendment of 1970: Requires states to change the voting age from 21 to 18.	The Constitution does not give Congress the power to make rules about state and local elections. Congress could not give 18 to 20 year-olds the right to vote in those elections.	<input type="checkbox"/> Congress changed the law to make it constitutional. <input type="checkbox"/> Change would require a constitutional amendment, but there was not enough support. <input type="checkbox"/> An amendment was added to the Constitution to give 18 to 20 year-olds the right to vote in all elections.

\_\_\_ In 1971, the 26th Amendment was added to the Constitution. It said no state could deny the right to vote to anyone age 18 or over. Amending the Constitution this way means people aged 18 and over have the right to vote in every election in the United States.

\_\_\_ There have been several attempts to amend the Constitution to make it illegal to desecrate the flag. As of 2024, these attempts have failed.

\_\_\_ Members of Congress revised the law so Congress would have to quickly approve the president's changes before they take effect. This would speed the legislative process up and keep the process constitutional. A new version of this law has not passed Congress as of 2024.

\_\_\_ Members of Congress revised the law to make it a crime to benefit financially from a lie about military honors. This targets people who commit fraud, not people who are just speaking. This law took effect in 2013.