

# THE SOLAR SYSTEM



# GETTING TO KNOW... THE SOLAR SYSTEM

## SOLAR SYSTEM, DEFINED

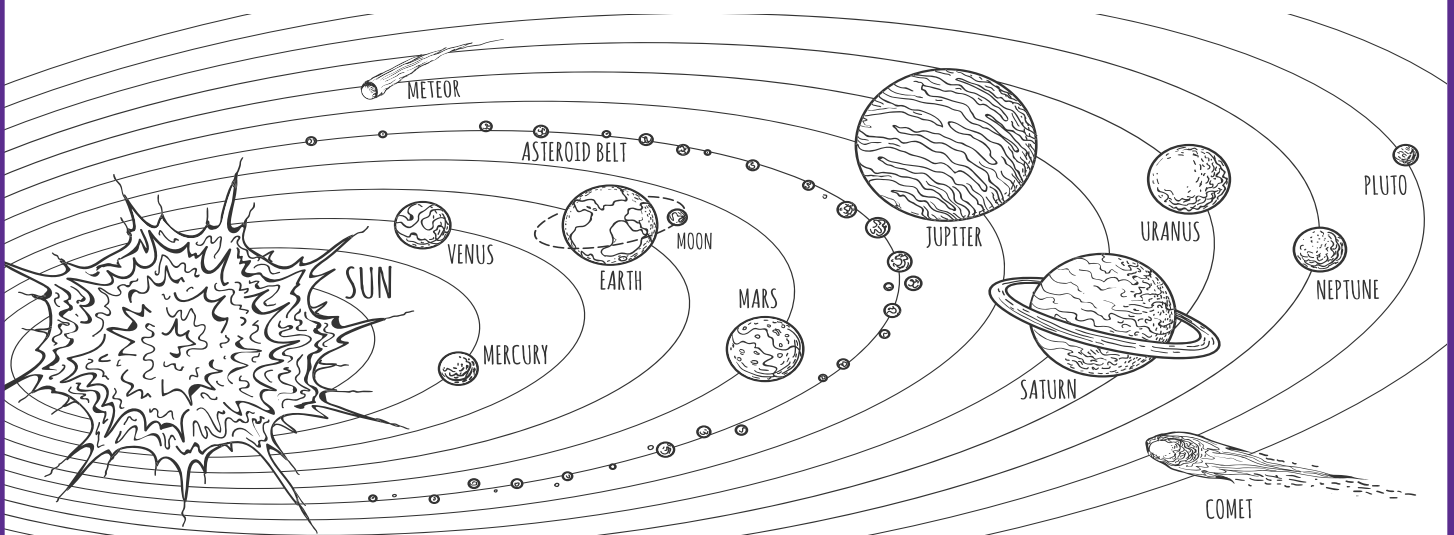
We've all heard the term, but what exactly is a solar system? It's a collection of planets and other celestial bodies (moons, asteroids, and more!) that orbit around a host star. The host stars have a massive amount of gravitational pull, which keeps the other objects bound to the system. These are technically called planetary systems and there are thousands scattered throughout the universe. The host star in our planetary system is our Sun, and because we refer to things relating to the Sun as "solar", our planetary system has come to be known as our solar system.

## COMPOSITION

So what all can be found in our solar system? We've got millions of asteroids, comets, and meteoroids, dozens of moons, a handful of dwarf planets (like Pluto!), our eight primary planets, and our Sun, or star. One thing that can't be found in our solar system is any star other than the Sun. That's right, all of the stars you see in the sky are beyond our solar system! Many of them are the host star for their own planetary system. The majority of planetary systems have at least two stars (known as binary stars) and some planetary systems have multiple stars.

## BEYOND THE SOLAR SYSTEM

Stars, galaxies, and black holes - oh my! There's a lot going on in the universe. Scientists currently know of over 3,300 planetary systems like our solar system and an additional 4,000+ planets outside of our solar system (known as exoplanets). Our solar system is just one tiny part of a galaxy known as the Milky Way and there are billions of other galaxies in the universe! Another fun fact, everything in the Milky Way orbits a supermassive black hole - a region of space where an enormous amount of mass is packed into a small volume, creating a gravitational pull so strong that nothing, including light or electromagnetic waves, can escape it.



# PLANETS

What defines a planet? To be labeled a planet, a celestial body must do these 3 things: orbit a star, be big enough to have the gravity to force it into a spherical shape, be big enough that its gravity cleared away any objects of a similar size near its orbit. Our planets can be categorized as either inner planets (closest to the sun) or outer planets (furthest from the sun).

## THE INNER PLANETS:

Mercury 

- Nearest to the Sun, but it still has ice on its surface
- Smallest planet - only slightly larger than Earth's moon
- Named after the Roman god of speed, it orbits the Sun every 88 days

Venus 

- Surrounded by a carbon dioxide atmosphere
- The hottest planet with a surface temperature around 900°F
- Named after the Roman god of love, it shines brighter than the stars

Earth 

- The only place currently known to be inhabited by living things
- Only planet in our solar system that has liquid water on the surface
- The name "Earth" loosely translates to "the ground" in many languages

Mars 

- A dynamic planet with season, polar ice caps, and extinct volcanoes
- Has a rough, crater-marked surface and two satellites
- Named after the Roman god of war, but often called "The Red Planet"

## THE OUTER PLANETS:

Jupiter 

- Has a giant red spot that is a centuries-old storm that is larger than Earth
- More than twice the size of the other planets combined
- Named after the king of the Roman gods

Saturn 

- It approximately takes 10 hours to rotate around its axis (a day)
- Has a beautiful, complex system of icy rings
- Has over 50 known moons and several others awaiting confirmation

Uranus 

- The first planet found with a telescope (back in 1781)
- Rotates at a nearly 90° angle which makes it appear to rotate on its side
- Named after the Greek god of the sky

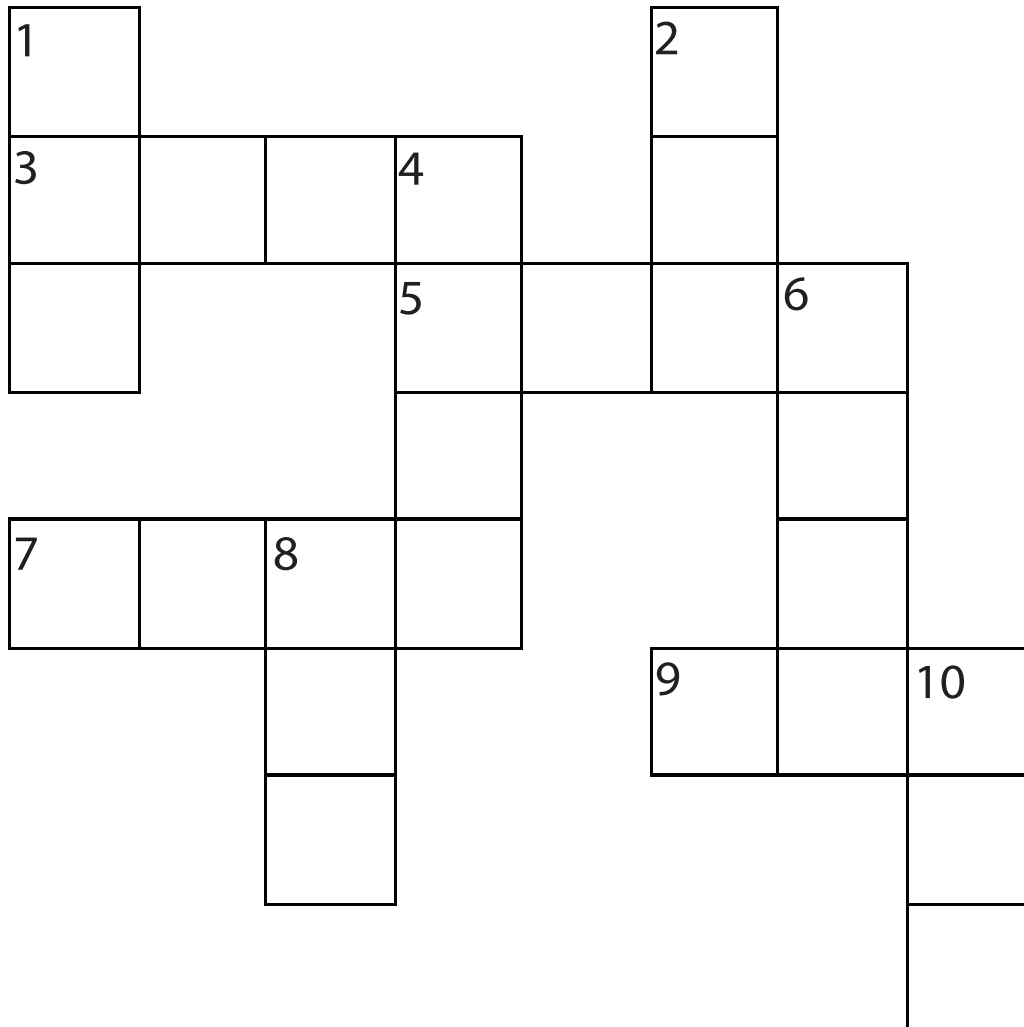
Neptune 

- Farthest planet from the sun, takes 164 Earth years to make 1 orbit cycle
- Supersonic winds on the planet can reach over 1,000 miles per hour
- Named after the Roman god of the sea

# JUMBLE

EVERY ANSWER USES ONLY THE LETTERS IN THE WORD:

## PLANETS



### Across

- 3. Earnest request
- 5. Jump
- 7. Sleep
- 9. Furry companion

### Down

- 1. Relaxing destination
- 2. \_\_\_\_ pod
- 4. Mountains
- 6. Panel
- 8. Writing tool
- 10. Spout

# WORD SEARCH

F	U	R	A	N	U	S	W	P	Z	H	F	L	Y
G	J	S	O	L	A	R	T	E	M	A	R	S	Z
N	C	D	G	N	R	Z	V	T	Y	E	Y	O	A
A	G	U	P	C	N	C	S	J	R	Y	M	T	S
S	H	K	P	O	E	F	W	A	F	V	O	T	W
C	T	D	Z	L	N	A	T	J	T	P	P	A	Q
F	K	A	R	C	U	Y	R	I	B	U	Z	D	F
F	S	N	R	G	R	T	D	T	V	V	R	U	E
V	Q	W	F	U	T	S	O	M	H	E	A	N	R
W	T	E	C	B	U	N	E	P	T	U	N	E	T
O	I	R	P	N	U	F	Y	R	O	T	E	K	S
E	E	Y	E	J	T	P	J	R	W	E	R	V	L
M	W	V	W	Z	T	J	U	P	I	T	E	R	R
G	A	L	A	X	Y	U	V	M	U	F	R	A	N

Uranus

Mars

Solar

Saturn

Earth

Pluto

Star

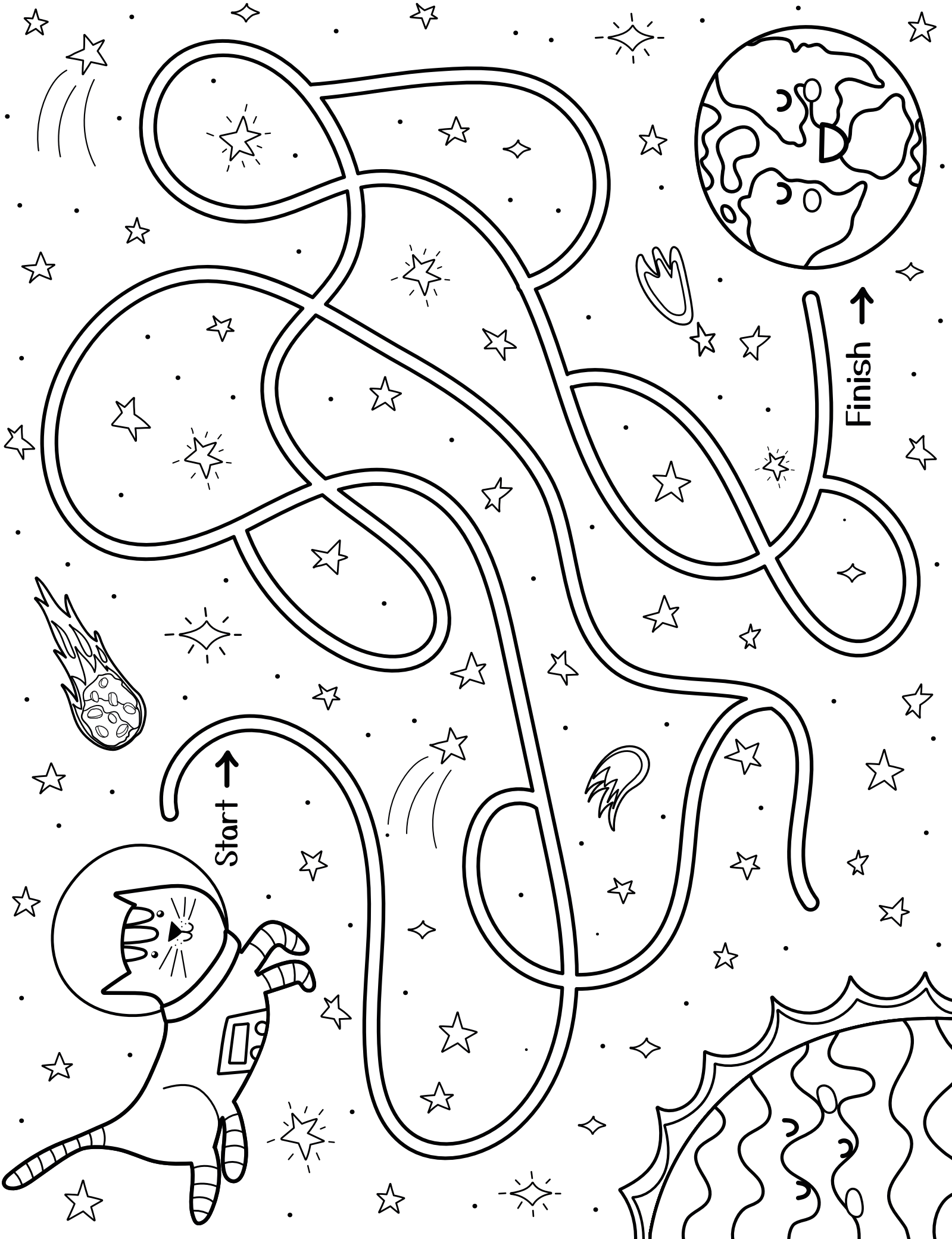
Galaxy

Jupiter

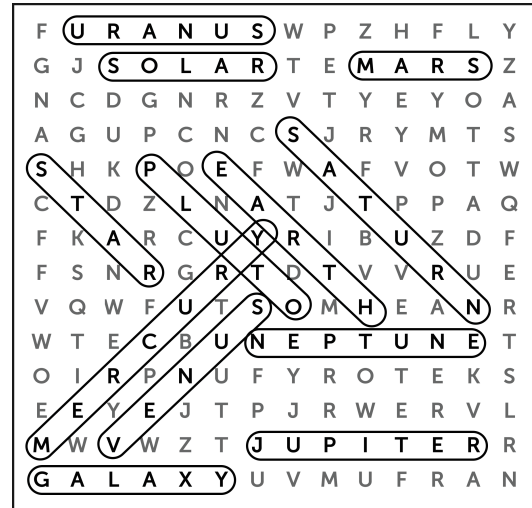
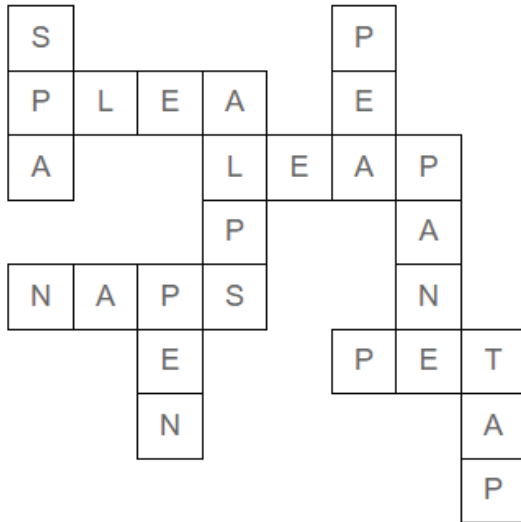
Mercury

Venus

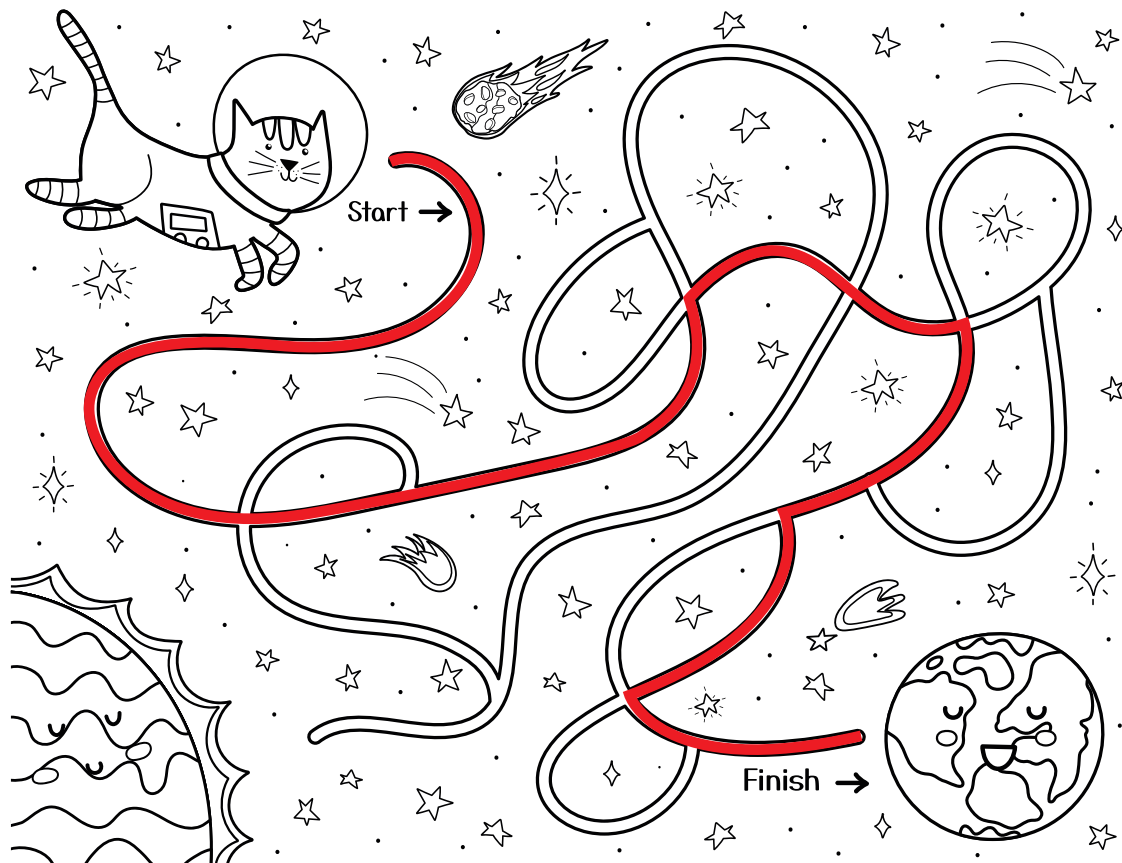
Neptune

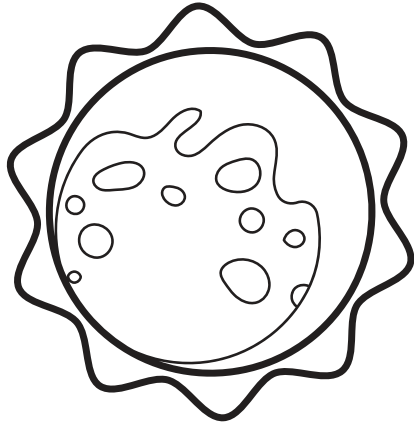


# SOLUTIONS



One of several solutions.

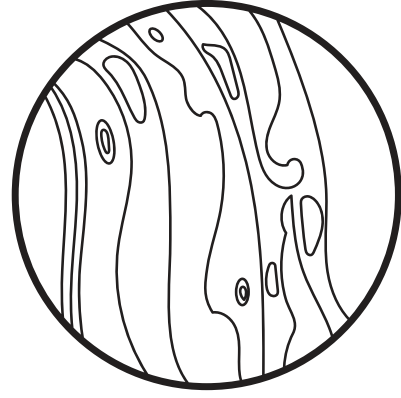




SUN



MERCURY



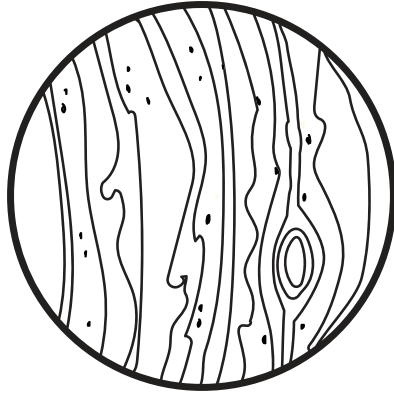
VENUS



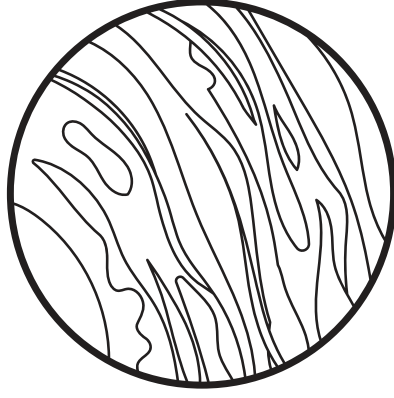
EARTH



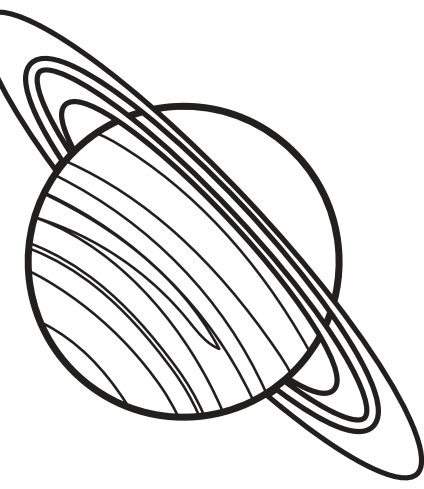
MARS



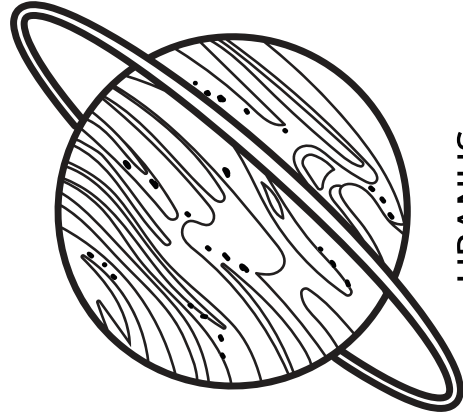
JUPITER



NEPTUNE



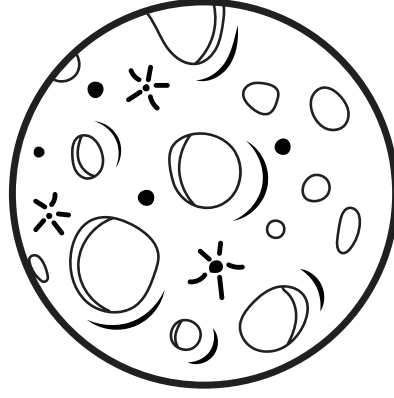
SATURN



URANUS



PLUTO



MOON



COMET



