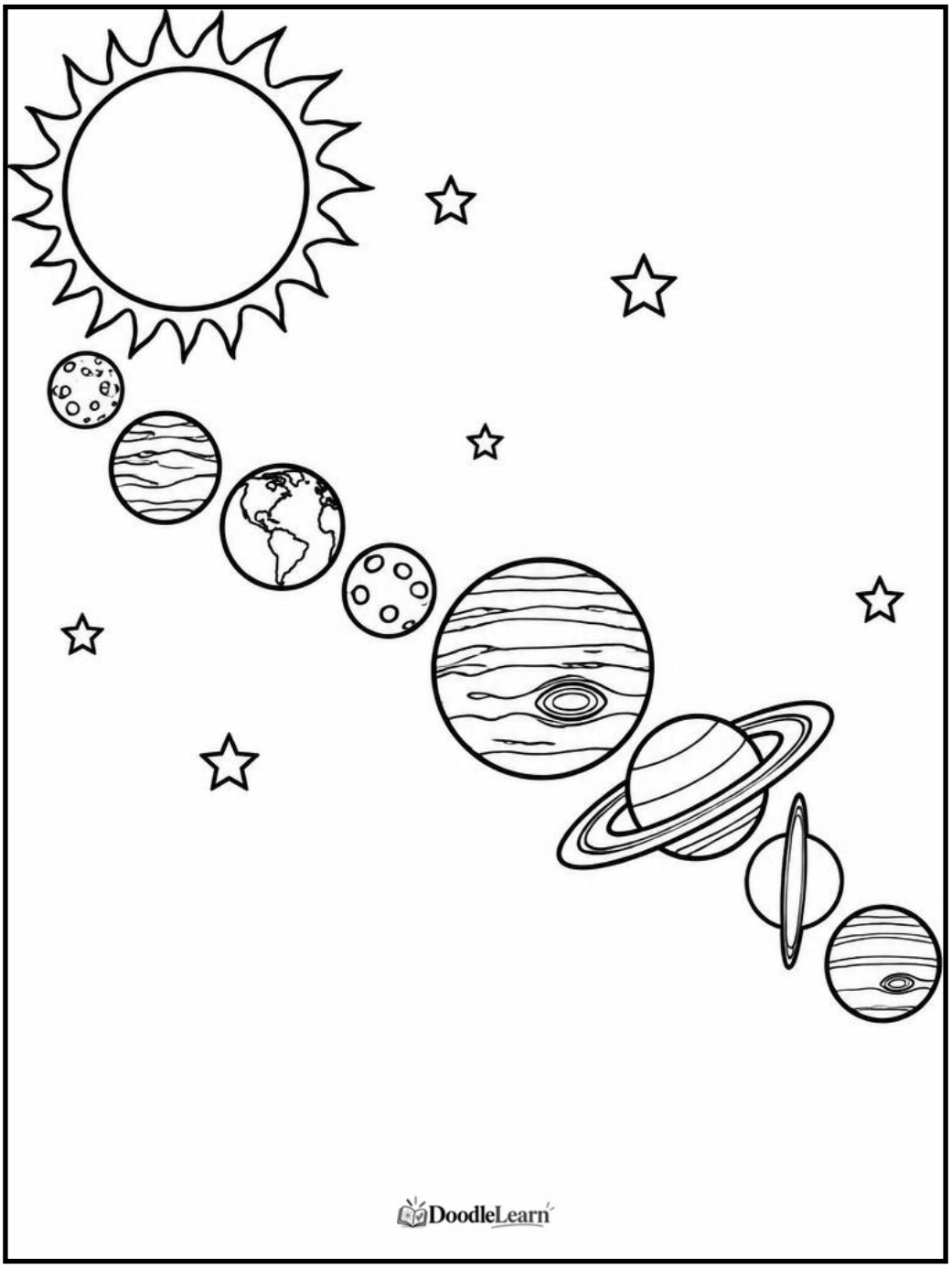
The Solar System

Learning Pack · Color It. Learn It. Explore It.

Ages 6–10 · Grades 1–4 (approximate) · Space Science · 30–75 minutes

Name: _____



Inside: facts · vocabulary · label the planets · planet order · quiz · answer key · notes

What you will learn

Learning objectives

- ☐ Name the eight planets in order from the Sun.
- ☐ Explain what a planet is and what an orbit is.
- ☐ Sort the planets into rocky planets, gas giants and ice giants.
- ☐ Describe how the Sun keeps the solar system together.
- ☐ Share one fact about why Earth is special.

Five solar system facts

Fact 1: The Sun is a star

The Sun is a star — a huge ball of hot gas. It holds about 99.8% of all the mass in our solar system, and its gravity keeps every planet moving around it.

Fact 2: Eight planets

Our solar system has eight planets. Mercury is closest to the Sun and Neptune is the farthest. Pluto is a dwarf planet, so it is not counted as one of the eight.

Fact 3: Biggest and smallest

Jupiter is the largest planet — more than 1,300 Earths could fit inside it. Mercury is the smallest planet, only a little bigger than our Moon.

Fact 4: Earth is special

Earth is the only planet we know of with life. It has liquid water on its surface and an atmosphere with the air we breathe.

Fact 5: A year is one trip around the Sun

A year is the time a planet takes to orbit the Sun once. Mercury's year is just 88 Earth days. Neptune's year is about 165 Earth years!

Sources (checked October 2026)

Facts 1–5: NASA Science, science.nasa.gov/solar-system
Facts 1, 3, 5: NASA Science, science.nasa.gov/sun
Facts 3–5: NASA Space Place, spaceplace.nasa.gov

Space vocabulary

Solar system	The Sun and everything that travels around it: planets, moons, asteroids and comets.
Star	A huge ball of hot gas that makes its own light and heat. Our Sun is a star.
Planet	A large round object that orbits a star. Earth is a planet.
Orbit	The path one object takes around another. Earth orbits the Sun.
Moon	A natural object that orbits a planet. Earth has one Moon.
Asteroid	A small rocky object that orbits the Sun, mostly between Mars and Jupiter.
Comet	A ball of ice and dust that grows a glowing tail when it comes near the Sun.
Gravity	The pulling force between objects. The Sun's gravity holds the planets in their orbits.
Atmosphere	The blanket of gases around a planet. Earth's atmosphere gives us air to breathe.

Your turn: write a sentence using one of the new words.

Label the planets

Name: _____ Date: _____

The eight planets are shown in order from the Sun (the Sun is on the far left). Write each name from the word bank on the line with the matching number.

Mercury · Venus · Earth · Mars
Jupiter · Saturn · Uranus · Neptune

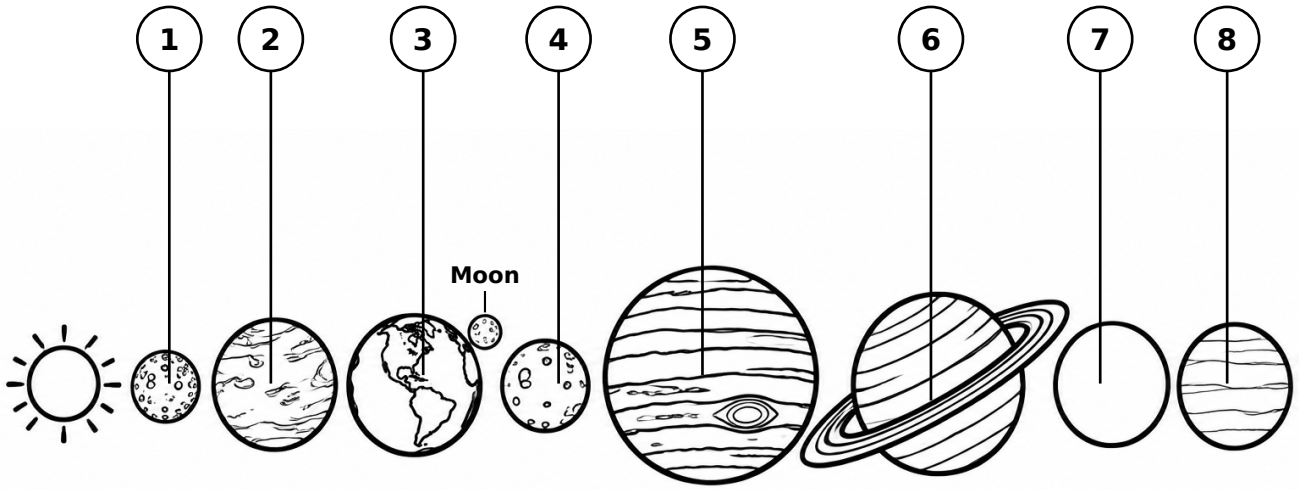


Diagram not to scale — the real planets are much farther apart and their sizes differ even more.
The small circle beside Earth is Earth's Moon. It is not a planet, so it has no number.

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

7. _____ 8. _____

Planet order and planet types

Name: _____ Date: _____

Part 1: Put the planets in order from the Sun.

These planets are mixed up. Write them in the correct order on the lines below, starting closest to the Sun.

Saturn · Earth · Neptune · Mercury
Jupiter · Mars · Uranus · Venus

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

7. _____ 8. _____

Part 2: Rocky planet, gas giant or ice giant?

The four planets closest to the Sun are rocky planets with hard surfaces. Jupiter and Saturn are gas giants, made mostly of hydrogen and helium. Uranus and Neptune are ice giants, made mostly of icy water, methane and ammonia around a small rocky core. Write R (rocky), G (gas giant) or I (ice giant) next to each planet.

Mercury: _____ Venus: _____

Earth: _____ Mars: _____

Jupiter: _____ Saturn: _____

Uranus: _____ Neptune: _____

Solar system quiz

Name: _____ Date: _____

1. The Sun is a...

- ◯ a) planet
- ◯ b) star
- ◯ c) moon

2. How many planets are in our solar system?

- ◯ a) Seven
- ◯ b) Eight
- ◯ c) Nine

3. Which planet is closest to the Sun?

- ◯ a) Mercury
- ◯ b) Venus
- ◯ c) Mars

4. Which planet is the largest?

- ◯ a) Earth
- ◯ b) Saturn
- ◯ c) Jupiter

5. What keeps the planets moving around the Sun?

- ◯ a) The Sun's gravity
- ◯ b) The solar wind
- ◯ c) The Moon's pull

Bonus: Imagine you could visit any planet. Which one would you choose, and what do you think you would see there?

Answer key

Label the planets

1. Mercury
2. Venus
3. Earth
4. Mars
5. Jupiter
6. Saturn
7. Uranus
8. Neptune

Part 1: Planet order from the Sun

Mercury → Venus → Earth → Mars → Jupiter → Saturn → Uranus → Neptune

Part 2: Rocky, gas giant or ice giant?

Mercury: R (rocky)
Venus: R (rocky)
Earth: R (rocky)
Mars: R (rocky)
Jupiter: G (gas giant)
Saturn: G (gas giant)
Uranus: I (ice giant)
Neptune: I (ice giant)

Solar system quiz

1. b) star
2. b) Eight
3. a) Mercury
4. c) Jupiter
5. a) The Sun's gravity

Bonus (sample answer): Any planet is fine if the child gives a reason linked to a real feature — for example, Jupiter to see its giant storm, the Great Red Spot, or Mars to see its red, dusty deserts and volcanoes.

Teacher and parent notes

Who it is for

Ages 6–10 (about grades 1–4). Younger children can do the coloring and vocabulary pages with help reading.

Time

30–75 minutes, depending on the activities selected. Use two or three pages for a short lesson, or the full pack across two lessons.

Suggested order

1) Read the facts aloud (10 min). 2) Vocabulary (10 min). 3) Label the planets (10 min). 4) Planet order and types (15 min). 5) Quiz (10 min). 6) Color a sheet from the free Solar System collection (10+ min).

Hands-on activity: pocket solar system

Give each child eight bottle caps or clay balls. Children make a Mercury-to-Neptune row in the correct order, making Jupiter the biggest and Mercury the smallest. Then sort their row into four rocky planets, two gas giants and two ice giants. Finish by walking the order out loud together: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.

Discussion questions

Why do you think Mercury has the shortest year? What makes Earth a good home for living things? Why is Pluto called a dwarf planet now instead of the ninth planet?

Extension for older students

Pick one planet. Find its size, distance from the Sun and number of moons, and make a planet fact card. Compare it with a classmate's planet.

A note on the pictures

The planet diagram is not to scale: real planet sizes and distances differ far more than a page can show. Pluto is not shown, because it is a dwarf planet, not one of the eight planets.

Matching coloring pages

doodlelearn.com/coloring-pages/space