

Build an orbit model

**Show it. Check it.
Improve it.**

Explain an orbit and compare the time planets take.



Retrieve the order and arrows

01

Order the eight planet names from the Sun.

02

Point towards the Sun for gravity.

03

Point along the orbit for motion.

Choose a route and set up

01

Use Sun/Earth labels, counters, two paper arrows and the year table.

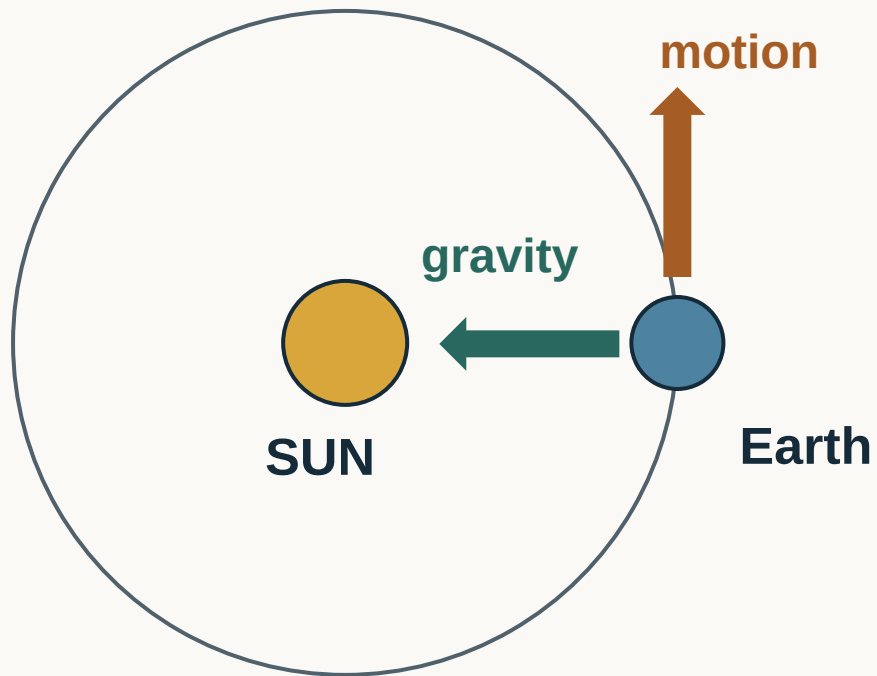
02

Choose desk model, drawing, or directing an adult.

03

Keep the kit on the desk. No swinging objects.

Two arrows, two meanings



Place Earth in two positions. Change both arrows each time.

Motion direction is not another force.

Use the supplied year data

Mercury 88 Earth days

Earth 365 Earth days

Mars 687 Earth days

Jupiter 4,333 Earth days

Neptune 60,190 Earth days

Make a claim, then check it

01

Choose a pair. Predict which has the longer year.

02

Check the numbers and name the evidence.

03

Try a second pair or explain one model limit.

Record your evidence

_____ has the longer year because _____ days
is more than _____ days.

Our model shows _____, but it does not show _____.

Pause for a two-minute check

01

Ask an adult or chosen partner to check one arrow.

02

Explain one year comparison.

03

Does 'longer year' mean more time for one orbit?

Improve one thing

01

Correct one arrow or number comparison.

02

Record two things the model shows.

03

Name one thing it does not show accurately.

Keep the evidence; return the kit

01

Check your name, planet order and recorded comparison.

02

Keep the drawing or explanation you want to use.

03

Return counters, arrows and labels.

Your voice can change the lesson

01

What helped you understand the orbit?

02

What made the model or task difficult?

03

Point, speak privately, sign, or pass.

Agree one useful change

You said_____. We can change_____.

Did that change help? What still needs explaining?

Exit: show what you understand

01

Supported: which planet is third from the Sun?

02

Standard: what force keeps a planet in orbit?

03

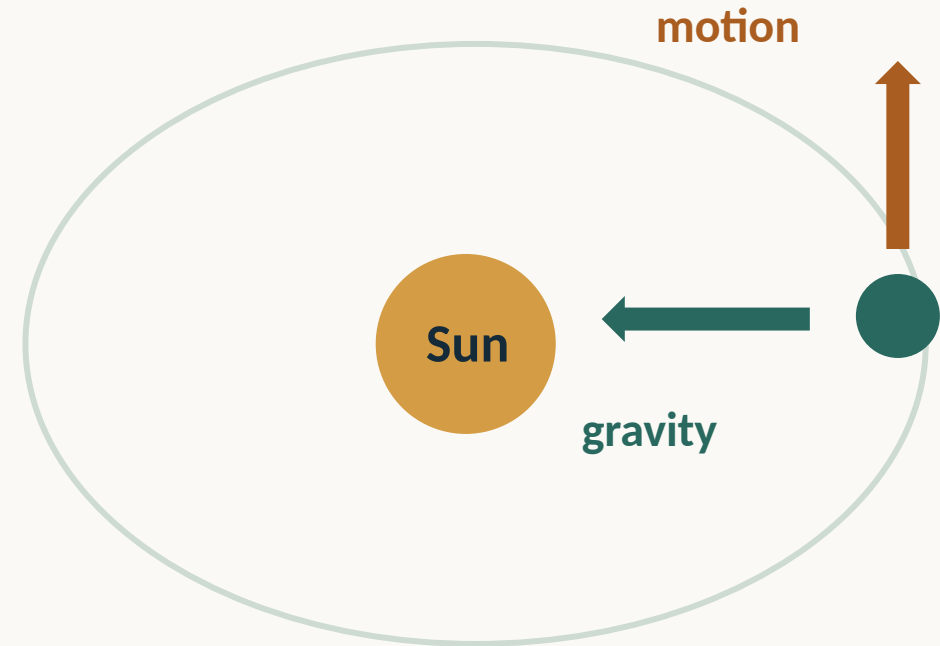
Stretch: why does Earth not simply fall into the Sun?

Check the science before you leave

Earth is third from the Sun.

The Sun's gravity keeps curving the planet's path.

Earth keeps moving while gravity pulls it inward.



Schematic: sizes and distances not to scale