

Seasonal Night Sky

Name:

Date:

Class:

My level: ☐ Explorer ☐ Investigator ☐ Legend

Mission: The planetarium needs a star guide for the whole school year. Move Earth around its orbit and find out which constellations can be seen at midnight each season, and why they change.

Big question: Why do we see different constellations in different seasons?

★ Warm-up: Notice & wonder

Think about the night sky where you live.

Have you ever noticed the same stars in the sky all year? What do you wonder?

Why can't we see stars during the day?

Key vocabulary	
Orbit	The path Earth travels around the Sun (one trip = 1 year).
Constellation	A group of stars that forms a pattern in the sky.
Revolution	One complete trip around the Sun.
Night side	The half of Earth facing away from the Sun.

1 Box 1

Predict

PREDICTION If Earth moves halfway around its orbit (to July), will we still see Orion at midnight?

☐ Yes, the stars never change ☐ No, we will see a different constellation ☐ We will see no stars

Move to July

In the simulator: Drag Earth (or use the slider) to **July**.

You predicted: _____. What do we see in July?

☐ Scorpius ☐ Orion ☐ No stars

2 Box 2

Star guide

Fill in the star guide for each season.

Month	Constellation at midnight
January (winter)	
April (spring)	
July (summer)	
October (fall)	

3 Box 3

Where is Orion in July?

In July, Orion is still out there. Why can't we see it?

- ☐ Orion is on the same side as the Sun, so it is in the daytime sky ☐ Orion burns out in summer
☐ Clouds cover it every July ☐ Orion moves to the other side of the galaxy

Rotation or revolution?

Sort each effect by its cause.

Sort: Day and night · Sun rises in the east · Different constellations each season · Stars seem to move across the sky in one night · Orion returns every January

Earth's rotation (spin, 24 h)	Earth's revolution (orbit, 1 year)

4 Box 4

Complete the year

In the simulator: Visit all four constellations by moving Earth around the whole orbit.

How many months until the January stars come back to the midnight sky?

Answer: _____ months

5 Box 5

Legend: 6 months later 🏆 Legend only

Leo is overhead at midnight in April. When will Leo be hidden near the Sun?

- ☐ October ☐ May ☐ January ☐ Never

6 Box 6

Explain it (CER)

Why do we see different constellations in different seasons?

Claim Start: "We see different constellations because..."

Evidence Start: "In January we saw..."

Reasoning Start: "At night we face..."

Exit ticket: answer the big question in your own words

Why do we see different constellations in different seasons?

Completion code:

Shown on the last screen of the simulator.