PRESENTER SCRIPT · GRADE 5 · 5-ESS1-1 · 5-ESS1-2

Earth, Sun, Moon & the Solar System: teacher script

Use with the Lesson presenter (room page -> Lesson presenter). Slides show only student cues; this script has what to say. Students need the printed lesson worksheet and a pencil.

Presenter keys: Right/left arrows change slides. N shows short notes. T pauses the timer. P picks a student. F is fullscreen.

Response routine: Students write each answer on their worksheet, then show it with fingers (1 = A, 2 = B, 3 = C, 4 = D). Scan the room before revealing.

SLIDE 1: TODAY'S TARGET — 1 min

Say	Today's learning target is: "I can use a model to explain patterns caused by Earth's rotation and orbit and describe the scale of the solar system." Read it with me.
Say	Here is how you will know you have it: the success criteria. You will prove it on the exit ticket at the end of class.
Point to	The agenda and the key vocabulary. Tell students they need their notebook, guided notes page, and pencil.

SLIDE 2: WARM-UP — 0:00–0:08

Say	Turn to Part 2 of your lesson worksheet. Answer the three questions in complete sentences. You have 5 minutes of silent work. Go.
Do	Start the 8:00 timer. Circulate. At 5 minutes say: "Turn to your partner and compare answers for 2 minutes."
Look for	1) It rises in the east and sets in the west. 2) A day is one full spin (rotation) of Earth, about 24 hours. A year is one trip around the Sun (revolution), about 365¼ days. 3) The 5 p.m. shadow is longer because the Sun is lower in the sky.
Say	Call on 2-3 students for questions 1 and 2, then reveal. Say: "We will come back to question 3 at the end of class."

SLIDE 3: HOOK — 1 min

Say	Read the question on the screen: "This morning the Sun was in the east. At dismissal it will be in the west. What moved?" Circle your prediction in Part 3 of your worksheet and write why. Then vote.
Background	Ask students to point to where the Sun was when they walked in this morning, and where it will be at dismissal. "Did the Sun move, or did we?"

Do	Tap +1 for each vote. Do not give the answer. Say: "By the end of the lesson, you will be able to check your prediction."

SLIDE 4: LEARN 1: ROTATION MAKES DAY AND NIGHT — 3 min

Say	Earth spins on its axis from west to east once every 24 hours. The half facing the Sun has day. The Sun only looks like it moves.
Worksheet	Say: "Part 5: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: Earth ROTATES on its axis once every 24 hours. This causes DAY AND NIGHT. (tap "Show the missing words" after students try.)
Explore	Point to the model: Our solar system (not to scale). Ask: "What do you notice?" Students do: Draw Earth, mark Indiana, and shade the night side. Label "day" and "night."
Turn and talk	Say: "If Earth stopped spinning, what would happen to day and night where you live?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: (B) Earth rotates. Earth spinning makes the Sun appear to move.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 5: LEARN 2: SHADOWS CHANGE DURING THE DAY — 3 min

Say	Shadows point away from the Sun. When the Sun is low (morning, evening) shadows are long. At midday the Sun is highest, so shadows are shortest.
Worksheet	Say: "Part 6: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: Shadows are LONGEST in the morning and evening and SHORTEST near noon, when the Sun is HIGHEST. (tap "Show the missing words" after students try.)
Explore	Run the simulation: Move the Sun and watch the shadow. Before each change, ask students to predict in their notes. Students do: Make a table with 3 times (9 a.m., noon, 4 p.m.). Record the shadow as long or short.
Turn and talk	Say: "Why would a shadow be longer at 5 p.m. than at noon? Use the word "angle" or "low."" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: (B) West. Shadows point away from the Sun.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 6: LEARN 3: TILT CAUSES SEASONS — 3 min

Say	Earth's axis is tilted about 23.5°. When our hemisphere tilts toward the Sun, we get more direct light and longer days: summer.
Worksheet	Say: "Part 7: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: Seasons are caused by Earth's TILTED axis. When Indiana tilts TOWARD the Sun, it is summer. (tap "Show the missing words" after students try.)
Explore	Students do: Draw Earth tilted toward the Sun and label "summer in Indiana."
Turn and talk	Say: "Earth is actually a little closer to the Sun in January. Why isn't January summer in Indiana?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: (A) Northern Hemisphere tilts toward the Sun. Tilt, not distance, causes seasons.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 7: LEARN 4: THE MOON REFLECTS SUNLIGHT — 3 min

Say	The Moon makes no light. Half of it is always lit by the Sun. As it orbits Earth (about 29.5 days), we see different amounts of the lit half: phases.
Worksheet	Say: "Part 8: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: The Moon REFLECTS sunlight. One full cycle of phases takes about 29.5 days. (tap "Show the missing words" after students try.)
Explore	Run the simulation: Move the Moon and watch the phase from Earth. Before each change, ask students to predict in their notes. Students do: Write the name of the phase at each Moon position you try.
Turn and talk	Say: "Why can't we see the new moon, even though it is still up there?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: (A) We see different parts of the lit half as it orbits. Phases come from our changing view of the lit half.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 8: WORKED EXAMPLE (I DO) — 2 min

Say	Watch how I solve this. Write the final answer in Part 9 of your worksheet.
Think aloud	Use a student as the Sun and your fist as Earth. Spin your fist slowly: "My thumbnail is Indiana. Now it faces the Sun: noon. Now it faces away: midnight." Then walk your fist around the "Sun" while keeping the tilt pointed at the same wall to show seasons.

Reveal	Imagine Earth spinning on its axis, with Indiana marked by a dot. | Step 1: When Indiana faces the Sun, it is daytime (noon when it faces it directly). | Step 2: As Earth keeps spinning west to east, Indiana turns away: sunset, then night. | Step 3: One full spin takes 24 hours: one day. | Step 4: Earth also orbits the Sun once a year, always tilted the same way. Tilt toward the Sun = summer.

SLIDE 9: WE DO — 2 min

Say	Now we solve one together in Part 10. Read the problem with me.
Do	Before revealing each step, ask: "What should we do next?" Take one answer, then tap "Show next step."
Steps	At 7 a.m. the Sun is low in the east, so the shadow points away from it: west. | Through the day, Earth rotates, so the Sun appears to move across the sky toward the west. | At 6 p.m. the Sun is low in the west. | The shadow will be long again and point away from the Sun: east.
Answer	Long and pointing east

SLIDE 10: YOU DO — 2 min

Say	Now on your own: Part 11. Solve it with no talking. You have 2 minutes.
Answer	(B) The seasons change over a year. One revolution takes a year; the tilted axis during that orbit causes seasons.
Then	Students who got it: launch the room. Students who missed it: 3-minute reteach at your table, then start the room at the Explorer level.

SLIDE 11: WORK TIME: SHADOW CLOCK ESCAPE — 0:20–0:48

Say	Open Shadow Clock Escape on your device. Type your name, choose the level I assigned, and begin. Whisper voice with your partner only.
Do	Start the 28:00 timer and leave this slide up. Circulate with the answer key.
Checkpoints	At 10 minutes: stage 2 done. At 20 minutes: stage 4 done; give a 5-minute warning for the final lock and turn-in.
Turn-in	Students tap "Copy my work" and paste it into the Canvas assignment (Text Entry).

SLIDE 12: DEBRIEF — 0:48–0:52

Ask	Explain to a partner why we have day and night using the words rotate and axis. | Why does the Sun look so much brighter than other stars? | What would happen to seasons if Earth had no tilt?

Say	Back to warm-up question 3 and our hook vote: were our predictions right? What evidence changed your mind?
Answer	The 5 p.m. shadow is longer because the Sun is lower in the sky.

SLIDE 13: EXIT TICKET 0:52–1:00

Say	Clear your desk except a pencil. Work silently and on your own. For every answer, write "I know because..." and use evidence.
Do	Hand out the exit ticket. Start the 8:00 timer. Collect and sort with page 3 (Mastered / Approaching / Beginning).

MISCONCEPTIONS TO WATCH FOR

- "Seasons happen because Earth is closer to the Sun in summer." It is the tilt, not the distance.
- "Earth's shadow causes Moon phases." Phases come from our viewing angle of the lit half. Earth's shadow causes lunar eclipses.
- "The Sun moves across the sky." The Sun only appears to move because Earth rotates.