

ORBITON

Interactive Solar System Learning • User Guide

Learn the living Solar System by clicking, dragging, and exploring

Orbiton • 2026

1. About Orbiton

Orbiton is a set of 3D interactive lessons that let students learn the core ideas of the Solar System, the Sun, the Moon, and the Earth by touching them directly. Concepts that are hard to grasp from textbook diagrams — revolution, rotation, Moon phases, tides, eclipses — become clear as learners rotate models with the mouse and change values with sliders to discover the answers themselves.

- **11 interactive lessons** — Solar System explorer, orbit simulator, and the structure and phenomena of the Sun, Moon, and Earth.
- **Korean & English** — Switch KOR/ENG on every screen. Use it in local classrooms and international learning alike.
- **No installation** — Runs in any web browser on PC, tablet, or interactive whiteboard.
- **A quiz on every page** — Check what you learned with a 5-question quiz (except the Solar System hub).

2. Common Controls (all pages)

Most interactions work the same way across pages. Page-specific sliders are listed in Section 3.

Control	How to use
Mouse drag	Press and drag on the scene to rotate the object (planet, Moon, Earth) or the viewpoint.
Mouse wheel	Scroll up/down to zoom in and out.
Sliders	Drag the bars in the left panel to change speed, angle, cutaway, and more.
Play / Pause	Use the button near the bottom to pause or resume the animation.
KOR / ENG	Toggle at the top-right to switch language instantly.
Contents (menu)	Top-left button opens the full list of lessons to jump to another topic.
Take Quiz	Neon button at the bottom of the left panel opens a 5-question pop-up quiz (instant grading).

Naming note: the former “Sitemap” button is really a menu that opens the lesson list. For learners, “Contents” or “All Lessons” reads more naturally.

3. Page-by-Page Guide

Page	What you learn	How to interact
Solar System (hub)	Freely explore the 8 planets — size, color, features	Click a planet to select · drag to rotate · wheel to zoom · sliders for spin/zoom/light/corona/rings/background
Orbit Simulator	Compare how planets revolve around the Sun	Time Speed slider · Play/Pause · drag to rotate the view
Scale of the Solar System	Compare true planet sizes and distances	Journey slider travels outward from the Sun · Play/Pause
Sun Structure	Core–radiative–convective–photosphere–corona in cross-section	Cutaway slider peels away layers · drag to rotate
Moon Phases	Why the Moon changes shape as it orbits Earth	Lunar Day & Orbit Speed sliders · drag left/right to spin the Moon (hint arrows)
Tides	How the Moon's gravity creates high and low tides	Moon Position moves the Moon · Speed sets pace · Play/Pause
Solar & Lunar Eclipses	The alignment of Sun–Moon–Earth that causes eclipses	Moon Position · Orbit Tilt · Node Direction sliders to set the conditions
Moon Structure & Surface	The Moon's interior layers and surface (craters)	Cutaway slider for the cross-section · drag to rotate
Seasons	How axial tilt and orbit create the seasons	Orbit Position sets the orbital point · Axis Tilt sets the tilt
Day & Night	How Earth's rotation makes day and night	Time of Day moves the hour · Rotation Speed sets spin speed
Earth Structure	Crust–mantle–outer core–inner core layers	Cutaway slider opens the cross-section · drag to rotate

4. Using the Quiz

Every page except the Solar System hub includes a 5-question quiz on that topic.

- Click the neon “Take Quiz” button at the bottom of the left panel to open the pop-up.
- Pick an answer — correct turns green, wrong turns red and reveals the right answer instantly.
- Press “Next” to continue; the final screen shows your score (e.g., 4/5) and a “Retry” button.
- Questions and options switch to English or Korean with the KOR/ENG toggle.

5. Tips

- **For teaching:** on an interactive whiteboard, move a slider and ask “What will happen?” — students predict, then verify.
- **Self-study:** explore freely first, then use the quiz to self-check understanding.
- **Language learning:** switch to ENG to pick up astronomy vocabulary in English.
- **Devices:** works on PC, laptop, and tablet — on tablets, rotate with a finger drag.