

Astronomy Grade 3 Evaluation

Teacher Section

Overview Kids will demonstrate how well they understand important key concepts from this section.

Suggested Time 45-60 minutes

Objectives Students will be tested on the key concepts of astronomy:

- Objects in the sky move in regular and predictable patterns. The patterns of stars stay the same, although they appear to move across the sky nightly, and different stars can be seen in different seasons.
- The tilt of the Earth and its location in orbit are the reasons for the seasons.
- The Earth is one of several planets that orbit the Sun, and the Moon orbits the Earth.
- The solar system consists of planets and other bodies that orbit the Sun in predictable paths.
- Our solar system includes rocky terrestrial planets (Mercury, Venus, Earth, and Mars), gas giants (Jupiter and Saturn), ice giants (Uranus and Neptune), and assorted chunks of ice and dust that make up various comets and asteroids.
- Telescopes magnify the appearance of the Moon and the planets.
- Telescopes magnify the appearance of the Sun using special lenses and make it possible to locate sunspots and solar flares.
- Stars are the source of light for all bright objects in outer space. The Moon and planets shine by reflected Sunlight, not by their own light.
- The number of stars that can be seen through telescopes is dramatically greater than can be seen by the unaided eye.

Materials

- Two handheld magnifiers
- Sheet of paper
- Ball with a toothpick sticking out of the top and bottom to represent the Earth's north and south poles (or use a globe if you have one)
- Strong flashlight

Lab Preparation

1. Print out copies of the student worksheets, lab practical, and quiz.
2. Have materials in front of you at a desk so kids can demonstrate their knowledge using these materials.

Lesson: The students are taking two tests today: the quiz and the lab practical. The quiz takes about 20 minutes, and you'll find the answer key to make it easy to grade.

Lab Practical: Students will demonstrate individually that they know how the moon's appearance changes during the lunar cycle and explain the size of planets and their distance from the Sun. While other kids are waiting for their turn, they will get started on their homework assignment. You get to decide whether they do their assignment individually or as a group.

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Student Worksheet

Overview: Today, you're going to take two different tests: the quiz and the lab practical. You're going to take the written quiz first, and the lab practical at the end of this lab. The lab practical isn't a paper test – it's where you get to show your teacher that you know how to do something.

Lab Test & Homework

1. Your teacher will ask you to share how much you understand about astronomy. Since science is so much more than just reading a book or circling the right answer, this is an important part of the test to find out what you really understand.
2. While you are waiting to show how much of this stuff you already know, you get to choose which homework assignment you want to complete. The assignment is due tomorrow, and half the credit is for creativity and the other half is for content, so really let your imagination fly as you work through it. Choose one:
 - a. Write a short story or skit about gravity from the perspective of the planet or object (like a sun or moon). You'll read this aloud to your class.
 - b. Make a poster that teaches one of the main concepts of astronomy you enjoyed most. When you're finished, you'll use it to teach to a class of younger students and demonstrate the principles that you've learned.
 - c. Write and perform a poem or song about astronomy, telescopes, gravity, moons or atmospheres. This will be performed for your class.