

Classroom Activities

These questions, vocabulary words, puzzles, and activities are designed to help prepare your students for concepts discussed within the dome.

20 Questions

1. Why does the Moon change phases?
2. How long does it take the Moon to go through one complete set of phases (full Moon to full Moon)?
3. What unit of time is directly related to one orbit of the Moon around the Earth?
4. What keeps the Moon in orbit around the Earth?
5. How are craters formed?
6. Can the Space Shuttle go to the Moon?
7. How much gravity does the Moon have?
8. Why does the Moon have more craters than the Earth?
9. How many astronauts have walked on the Moon?
10. Who was the first person to step on the Moon?
11. What were his words as he first stepped on the Moon?
12. Who was the second man on the Moon?
13. Is the far side of the Moon always dark?
14. Why are the dark areas on the Moon called maria, which means seas?
15. Where was water ice found on the Moon's surface?
16. Why is finding water on the Moon important?
17. Which rocket was used to send astronauts to the Moon?
18. List the Moon's major phases in order from new Moon to new Moon.
19. What is the terminator line?
20. Why are the astronaut's footprints still on the Moon today, even though they were made between 1969 and 1972?

Answers to 20 Questions

1. The Moon changes shape because of two things. First, the Sun only lights up half the Moon at a time—the half that faces the Sun. Second, the Moon revolves around the Earth, which makes us see different parts of the sunlit areas of the Moon's surface.
2. One orbit, full moon to full moon, is 29.5 days.
3. The "month" is derived from the length of time it takes the Moon to orbit Earth once. A month comes from a "Moonth".
4. Gravity keeps the Moon from flying away from Earth; centrifugal force created by the Moon's motion keeps gravity from pulling the Moon into the Earth. The two forces are balanced.
5. Craters are caused by meteoroids, which are rocks that hit planets and moons. They can be very large (miles in diameter) or very small (specks of dust).
6. No, the Space Shuttle cannot go to the moon. It does not have enough power to fly that far away.
7. The Moon has 1/6th the gravity of Earth. To find out what you would weigh on the Moon, simply divide your weight by six.
8. The Moon has no air or weather. On Earth, meteors burn due to friction with the atmosphere. Most never reach the ground. If they do hit the ground and create a crater, the weather eventually erodes the crater away. On the Moon, with no air or weather, they all hit the surface. The only thing to destroy old craters is the impact of a new one on top of the old one.
9. Twelve astronauts have walked on the Moon's surface.
10. Neil Armstrong was the first to step on the Moon.
11. "One small step for man, one giant leap for mankind."
12. Buzz Aldrin was the second man on the Moon.
13. No. The far side of the Moon receives just as much light as the near side.
14. The dark areas on the Moon, the **maria**, were called that because long ago people thought those areas might actually be seas of water. Even though we now know there is no water in the maria, we still use the term.
15. Evidence of water was recently discovered frozen deep in craters at both the north and south poles of the Moon. There may be as much as six-billion metric tons of water ice in these two regions. The ice was discovered by the **Clementine** and **Lunar Prospector** probes.
16. Finding water on the Moon is important for future Moon outposts. This would mean that water would not have to be brought there from Earth, which is very expensive. Water is needed not only for people, plants, and animals to live, but it can also be used for rocket fuel.
17. The Saturn V rocket was used to send all the Apollo astronauts to the Moon.
18. The Moon's phases: New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, Waning Crescent, New Moon.
19. The terminator is the line between daylight and darkness on the Moon (or any other planet for that matter!).

20. The astronaut's footprints will remain on the Moon for thousands of years because there is no air or weather to erode them. The only things that might destroy the footprints would be if a meteorite should hit the footprint, or if we go back to the Moon and mess them up!