

Create an Alien

Purpose

Students will use their creativity and knowledge of the Moon and adaptations to create an alien that is suited to life on the Moon.

Objectives

- Students will examine how life is adapted to different environments.
- Students will explore the environment on the Moon.
- Students will predict what life might be like elsewhere in the universe.

Related Standards and State Goals

Illinois State Goals:

Early Elementary:

- *12.B.1a* Describe and compare characteristics of living things in relation to their environment.
- *12.F.1a* Identify and describe characteristics of the sun, Earth, and moon as familiar objects in the solar system.
- *26.B.1d* Demonstrate knowledge and skills to create visual works of art

using manipulation, eye-hand coordination, building, and imagination.

Late Elementary:

- *12.B.2b* Identify physical features of plants and animals that help them live in different environments (e.g. specialized teeth for eating certain things, thorns for protection, insulation for cold temperature)
- *26.B.2d* Demonstrate knowledge and skills to create works of visual art using problem solving, observing, designing, sketching, and constructing.

Integrated Subjects

- Art

Audience

1st – 5th

Time Recommended

1-1.5 hours (may be broken into multiple sessions)

Materials and Preparation

- Moon Information Sheet (at the end of this lesson)
- Alien supplies (google eyes, fabric scraps, pipe cleaners, popsicle sticks, feather, yarn, glitter, beads, glue, paper, markers, aluminum foil, plastic wrap, wax paper, socks, etc.)
- Find pictures of several animals with clear physical adaptations (ex. polar bear, duck, whale, grasshopper)

Procedure

1. Show students images of animals from different environments on Earth. Ask where they think each animal lives (ex. Polar bears live in cold, snowy environments). Ask students to identify body structures that help the animal live in that environment (ex. Polar bears have white fur to help them blend in, sharp teeth to eat seals that live in the same environment, and warm fur to help them stay warm.)
2. Tell students these body structures are called adaptations. Define an adaptation as something an animal has or does that allows it to better survive.

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3. Explain that each of the planets and moons in our Solar System have very different environments. If life were to exist in one of these places, the life form would need to be adapted to the planetary conditions.
4. Describe the environment on the Moon to the students and have students brainstorm what adaptations a life form would need to survive on the Moon. Older students could read the Moon Info Sheet themselves and brainstorm the adaptations as a class.
5. Have the students sketch their life form, being sure to include body structures that would help their creature survive.
6. After the students have completed their sketch, ask them to create their life form with supplies you have given them.

Assessment

- Have students show their alien to the class, explaining how it is adapted to the conditions on the Moon.

Grade Level Adaptations

- If your students are doing planet reports, they could instead create an alien that was adapted to life on the planet they researched.

Adler Planetarium Field Trip Connections

The following experiences* at the Adler can enhance the content covered in this lesson.

Shows:

- Learn more about conditions on the Moon during *One World, One Sky: Big Bird's Adventure* (Grades Pre K-2)

Classroom Programs:

- Learn about what humans need to survive on other planets in our solar system in *Survival in Space* (Grade 3-8)

Exhibitions:

- Learn about conditions on other planets in the *Solar System* gallery
- Learn about conditions on the Moon and how astronauts survived during the Gemini and Apollo missions in the *Shoot for the Moon* gallery

* Please note that shows, classroom programs, and guided gallery experiences are available for an additional cost.

The Moon

Surface

Over billions of years, many meteoroids have hit the Moon. The meteorites left craters, large rocks, and a gray powdery dust.

More information: The dark spots you see when you look up at the Moon are called maria and are smooth lowlands. Maria are large craters that filled with lava a long time ago. The light spots are called terrae or highlands.

Temperature

During the day, the temperature on the Moon can reach 253 Fahrenheit. At night the temperature can drop to -387 Fahrenheit.

More information: Here on Earth, our atmosphere blocks some of the Sun's light during the day and traps some of the Sun's heat during the night. Because the Moon has no atmosphere, the temperature on the Moon's surface ranges from extremely hot during the day to extremely cold at night.

Water

There is no liquid water on the Moon. Deep inside some craters where the Sun cannot reach, scientists found water frozen as ice.

Air

The Moon has no air. Because the Moon has no air, astronauts who go out onto the Moon's surface must carry their own air supply.

More information: There is very little gravity on the Moon, so any gases on the Moon would eventually float away into space.

Sound

There are no sounds on the surface of the Moon. When astronauts are on the Moon, they can only talk to each other and Mission Control through radios inside their helmets.

More information: Sound needs something to travel through to get from one place to another. On the Moon, since there is no air, sound cannot travel.

Image credit: NASA

