



Education Programs

Inspiring Tomorrow's **Explorers**

SPACE FOUNDATION



Create an Alien

Adapted from "How Might Life Evolve on Other Worlds?"

<http://www.seti.org>

Objectives

Students will:

- Apply what they know about living things and what they need to survive and create a new life form.

Suggested Grade Levels

Pre K -2nd

Subject Areas

Science

Math

Language Arts

Fine Arts

Timeline

60 minutes

NGSS Standards

- **K-LS1-1** Use observations to describe patterns of what plants and animals need to survive
- **2-LS4-1** Make observations of plants and animals to compare the diversity of life in different habitats

Other Standards

Science

NS.K-12.3 Life Science

- Characteristics of organisms
- Life cycles of organisms
- Organisms and environments

Math

NM-NUM.PK-12.1 Numbers and Operations: Understand Numbers

- Count with understanding and recognize "how many" in sets of objects
- Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections
- Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing, and decomposing numbers.

Fine Arts

NA-VA.K-4.1 Visual Arts

- Understanding and Applying Media, Techniques and Processes

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Confidential and Proprietary to the Space Foundation



21st Century Essential Skills

- Creativity/imagination
- Flexibility
- Organizing concepts
- Constructing explanations
- Obtaining/evaluating/communicating ideas

Background

Scientists who study the possibility of life on other planets have no actual extraterrestrial creatures to study, since none have been discovered, yet. However, they can do simulations based on what they know of Earth life and how it evolved. For example, when Pangaea separated into the modern continents, each continent became a "little world" on which evolution proceeded independently; in Australia, marsupials evolved, while in North America, placental ("true") mammals evolved.

Biologists also know that any organism on any planet must have solved the same problems that all Earth organisms have, although there are many possible solutions to each problem. For example, any organism on any planet must have a method of getting nutrients into its body; the actual method depends on the organism's size. Also, each animal must fit into some sort of food web as both predator and prey. The number of offspring may be related to the degree to which the parent animal cares for its young.

Students will consider the many important characteristics of animal life such as, body shape, protective covering, habitat, senses, and their relationships to other life. These characteristics will be chosen at random, symbolizing natural selection, and adaptations to the animal's environments. The students will have the opportunity to be creative as they draw and describe the creature that they invent through natural selection. As they play the game, students can imagine that biological concepts are expected to apply to all life, no matter where in the universe it may have evolved.

Vocabulary

Tall, long, furry, scaly, hard, beak, teeth, sharp, flat, forest, cave, meadow, desert, snow, ocean

Materials

- Create an Alien worksheet
- different textures of material
- dice
- pipe cleaners
- coloring supplies
- construction paper
- glue
- craft foam sheets
- scissors
- other scrap craft materials
- google eyes



Lesson

1. Introduce the game, "Create an Alien." Ask students, "Have you ever wondered where you got your hair color from? Or Perhaps, why you have blue eyes while others in your family might have brown or green?" Explain to students we inherit them from our parents. However, in this activity, we are going to use die rolls to determine traits or characteristics and creative imagination to develop an alien creature.
2. Pass out alien worksheet and dice, one per student. Each student rolls one die to find out one characteristic of their alien. The characteristic is circled on the game sheet along with the picture example of that characteristic. After that step is finished, they proceed to the next characteristic, following directions carefully, until they have completed all of the steps in the game. Depending on the age of your students, you may do this as a class or individually. Example: As an example, go to number 2, "What type of skin does my alien have?" The student rolls the die and it lands on the number 4, their alien has scaly skin and they circle the snake.
3. Have students create a drawing/model of their alien. They should include the alien's habitat and food source in the picture. Older children can answer the questions about their alien after it is complete, lead a discussion with the smaller children.

Extensions

- Have students present their aliens to the class, answering the questions on the sheet in their presentation.
- Encourage students to name their alien and explain the reasoning behind the name. Compare the process to how we name organisms here on Earth.
- Create a story with their alien as the main character.

Resources

Curriculum. (n.d.). Retrieved from <https://www.seti.org/curriculum>