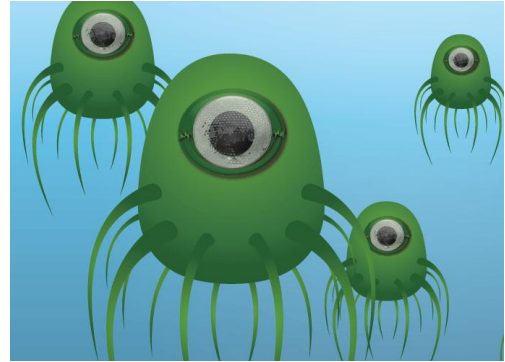


CREATING CREATURES OF THE DEEP

LESSON OVERVIEW

Students will be introduced to concepts regarding biology/physiology of living organisms in the sea or ocean. Students will look at examples of interesting sea and ocean creatures and discuss why they have certain features, possibly for protection, to survive in their environment, or to catch prey. Students will also analyze the habitats of the creatures and why their physical traits help them thrive in such an environment.



Students will work in groups to create their own unique “creature of the deep” and by considering scientific concepts, such as species physical and behavioral characteristics, environment/atmosphere/climate/weather, etc.

STANDARDS

| | |
|---------------------------------|--|
| NGSS MS-LS1-5 | Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. |
| NGSS HS-LS2-8 | Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce. |
| CCSS K-12.W.R.5 | Production and Distribution of Writing: Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. |
| Social Emotional- SEL 31C.4a | Identify strategies to make use of resources and overcome obstacles to achieve goals. |
| IL Visual Arts IL.26.B.3d | Visual Arts: Demonstrate knowledge and skills to create 2- and 3-dimensional works and time arts (e.g., film, animation, video) that are realistic, abstract, functional and decorative. |
| IL Visual Arts IL.26.B.4d | Visual Arts: Demonstrate knowledge and skills that communicate clear and focused ideas based on planning, research and problem solving. |

OBJECTIVES

- Students will discuss the job of biologist and will describe how biological research is used in our lives.
- Students will analyze physical characteristics of various living organisms and determine their purposes.
- Students will describe various environments in which unique organisms live based on their physical and social/behavioral traits.
- Students will make use of basic resources (masking tape and paper) to construct their creatures of the deep sculptures.
- Students will write an artist statement of their creature, describing how the elements of art and principles of design were used to illustrate the function of the creature's anatomy.

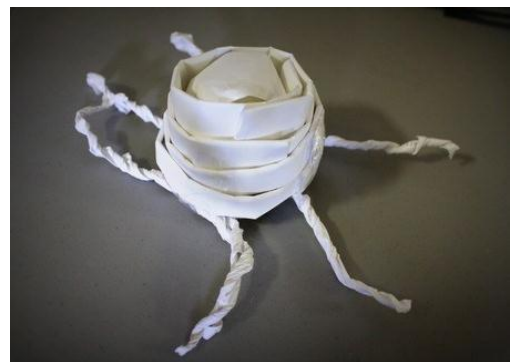
- In their creature artist statements, students will describe how environmental factors influenced the design of their creature's body structure.
- (Alternative to sculpture) Students will use drawing software or various materials and a digital camera to illustrate an imaginative creature.

MATERIALS

- Species Data Chart
- Masking tape
- Newspapers or newsprint
- Tablets or computers
- (For alternative to sculpture project) App or Web 2.0 tool for illustration (Apps: Sketchbook Xpress, Lux Draw, Fingerpaint Magic) (Web 2.0: <http://pixlr.com/>)

PROCEDURES

1. Discuss the job of a biologist and how biological research is used in our lives. Also discuss marine biology. http://education-portal.com/articles/Field_Biologist_Job_Description_Duties_and_Requirements.html
2. Examine interesting creatures of the deep. Discuss their physical characteristics and determine the purposes of those characteristics. <http://ocean.nationalgeographic.com/ocean/photos/unique-sea-creatures#/>
3. Discuss the environments in which interesting organisms live. Show a picture of an organism and have the students provide suggestions for the type of environment in which they might live based on their physical and social/behavioral traits. Also try the reverse. Show images of various environments and ask what physical characteristics a creature might need to have to survive in such an environment.
4. Explain to the students that they will be creating their own creature of the deep.
5. Have them work in groups to complete the Species Data Chart.
6. Have each group make use of basic resources (masking tape and paper) to construct their creatures of the deep sculptures. An alternative to the sculpture project is to have students use drawing software or other materials and a digital camera to design their creature.
7. Tell the students to write an artist statement of their creature, describing how the elements of art and principles of design were used to illustrate the function of the creature's anatomy. In their creature artist statements, students will describe how environmental factors influenced the design of their creature's body structure.
8. Have the students present their creatures and describe the items on their Species Data Charts. Engage the students in a dialogue about each group's creature, analyzing the physical characteristics, social/behavioral roles, and chances of survival in the type of environment in which they are said to live.



RUBRIC FOR CREATURE SCULPTURE

| | Target (3) | Meets (2) | Partially Meets (1) | Does Not Meet (0) |
|---|--|--|--|--|
| COMPOSITION (Considers the Elements of Art & Principles of Design) | Effectively demonstrates understanding of the elements of art and successfully applies the principles of design. | Demonstrates understanding of the most of the elements of art and successfully applies some of the principles of design. | Attempts to demonstrate understanding of the elements of art and apply the principles of design but product provides limited evidence of this knowledge. | Does not demonstrate understanding of the elements of art and does not apply the principles of design in the design. |
| USE OF MATERIALS | Inventively and successfully chooses tools and materials to produce the work, creating great visual interest. | Appropriately chooses tools and materials to produce the work. | Chooses tools or materials to produce the work, but a choice of tool/material does not match the desired outcome. | Does not choose appropriate tools or materials to produce the work. |
| VISUAL PRODUCT CONTENT | The product relates well to the artist's intended message, and the message is apparent to the audience. | The product mostly relates to the artist's intended message, and the message is somewhat apparent to the audience. | The product partially relates to the artist's intended message, and the message is confusing to the audience. | The product does not relate to the artist's intended message, and the message is not at all clear to the audience. |
| REQUIREMENTS | Meets all of the requirements for the project. | Meets most of the requirements for the project. | Meets some of the requirements for the project. | Does not meet the requirements for the project. |
| RELATION TO CURRICULAR CONTENT | Demonstrates an advanced understanding of the curricular content covered in class related to this project. | Demonstrates an adequate understanding of the curricular content covered in class related to this project. | Demonstrates limited understanding of the curricular content covered in class related to this project. | Does not demonstrate an understanding of the curricular content covered in class related to this project. |
| Total | | | | /15 |

RUBRIC FOR THE ARTIST STATEMENT

| | Target (3) | Meets (2) | Partially Meets (1) | Does Not Meet (0) |
|--|---|--|--|---|
| DESCRIPTION OF THE COMPOSITION (Considers the Elements of Art & Principles of Design) | Effectively explains the use of the elements of art and successfully describes application of the principles of design. | Adequately explains the use of the elements of art and successfully describes application of the principles of design. | Attempts to explain the use of the elements of art and successfully describes application of the principles of design, but has difficulty. | Does not provide an explanation of the use of the elements of art and successfully describes application of the principles of design. |
| DESCRIPTION OF CONTENT | Effectively and impressively describes how the artwork relates to the intended message. | Adequately describes how the artwork relates to the intended message. | Attempts to describe how the artwork relates to the intended message. The description is mostly confusing to the audience. | Does not adequately describe how the artwork relates to the intended message, and the message is not at all clear to the audience. |
| RELATION TO CURRICULAR CONTENT | Demonstrates an advanced understanding of the curricular content covered in class related to this project. | Demonstrates an adequate understanding of the curricular content covered in class related to this project. | Demonstrates limited understanding of the curricular content covered in class related to this project. | Does not demonstrate an understanding of the curricular content covered in class related to this project. |
| WRITING CONVENTIONS | Makes 0-1 grammatical, punctuation, or spelling errors and is easy to read. | Makes 2-4 grammatical, punctuation, or spelling errors and is easy to read. | Makes 5-7 grammatical, punctuation, or spelling errors and is somewhat difficult to read. | Makes 8 or more grammatical, punctuation, or spelling errors and is very difficult to read. |
| ORGANIZATION | The statement is very well organized and contains a logical order of information that is presented in an interesting way. | The statement is mostly well organized and contains a logical order of information. | The order of information in the statement is somewhat confusing. | The statement is not organized in a logical way and is very confusing. |
| REQUIREMENTS | Meets all of the requirements for the assignment. | Meets most of the requirements for the assignment. | Meets some of the requirements for the assignment. | Does not meet the requirements for the assignment. |
| Total | | | | /18 |

SPECIES DATA CHART



Name(s): _____

| SPECIES DATA | DESCRIPTION |
|--|-------------|
| Species Name | |
| General Appearance | |
| Mature Height/Length/Width | |
| Growth Rate | |
| Life Expectancy | |
| Coloration | |
| Typical Diet | |
| Predators | |
| Protection | |
| Unique Body Systems (i.e. How does the creature breathe, move, digest, heal/regenerate) | |
| Intelligence | |
| Other Notable Features | |
| Group Behaviors (i.e. herding/schooling) | |