Youth in Arts®

Insect Adaptations

PROJECT OVERVIEW: Students learning about insect adaptations in nature will imagine and create a bug with a special adaptation that helps them to thrive.

WHAT IS THE BIG IDEA? Special design features in insects help them survive and thrive.

ESSENTIAL QUESTIONS:
- What are special traits in nature?
- What is a special trait we would like to have and how would that help us?

CONTENT AND SKILLS STANDARDS:
Next Generation Science 1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

National Core Arts Standards (Visual Arts CREATE Standards)
1.2.1 Use observation and investigation in preparation for making a work of art.
2.1.1 Explore uses of materials and tools to create works of art or design.
2.2.1 Demonstrate safe and proper procedures for using materials, tools, and equipment while making art.
3.1.1 Use art vocabulary to describe choices while creating art.

LEARNING GOALS: (What will students to know, understand, and be able to do?)
- Students will know that plants and animals have external parts that help them survive.
- Students will understand that different structures help plants and animals survive in different ways.
- Students will know they can observe plants and animals to come up with solutions to human problems.
- Students will be able to talk about decisions they've made in their artwork.
- Students will successfully make both light and dark lines with their colored pencils.
- Students will safely use scissors to carefully cut around their image ("Pop Up" Extension)

VOCABULARY: TRAITS, ABILITIES, SURVIVE, THRIVE, HABITAT, "POP-UP" BOOK

MATERIALS:
- Paper and Pencils
- Colored Pencils
- Manila folders (used is OK, for "Pop-Up" Extension)
- Scissors (for "Pop-Up" Extension)
- Glue stick (for "Pop-Up" Extension)

INQUIRY: Slideshow of animals and plants with cool features and special traits

ACTIVITY: (What will students do to achieve the learning goals?)
1. Brainstorm and discuss special traits. What are some special physical features of plants and animals (big ears, long noses or tongues, wings, claws, etc.)? How do these help them survive and thrive?
2. What is something you wish you could do? (Fly, smell flowers on high branches, swim underwater, etc). Why do you want to do this? What problem would this help you solve?
3. Do you know any plants or animals that have this ability? What adaptations do they have that gives them this "superpower"? Special ears? Eyes? Noses? Feet?
4. Give students paper and pencil to draw a special physical structure (ear, eye, etc.) that would give the "superpower" they wish to have. This can be an observational drawing from a photograph or model of a plant or animal or a drawing from imagination of what "tiger claws" or "bat ears" look like.
5. Give students more paper and colored pencils to draw a picture of themselves. Fill the page!

ACTIVITY (Continued):

6. Now ask students to add their special feature to the drawing of themselves
7. Add color to the most important parts. Press harder for darker areas.

CREATIVE VOICE: Encourage students to imagine different ways they can add special features to their self-portrait. They do not have to put "bat ears" where their own ears are, they could have two sets of ears (or more!) They could make claws that are bigger, smaller, curly or crazier than they have observed on real animals, etc.

EXTENSIONS: (How can you take this project further to enhance learning and curricular connections?)

Class "Pop-Up" Lift-the-Flap Game
1. Pre-cut manila folders into "mini folders" (i.e. by cutting them in halves or thirds)
2. Have each student carefully cut out their two drawings: the drawing of the special feature, and also the figure drawing of themselves with their special features
3. Give each student a manila mini folder and have them make a "pop-up stage" by cutting two one-inch cuts, one inch apart through the fold (perpendicular to the fold).
4. Poke the part made by these cuts to reverse the fold (this makes a little square "stage" that pops out when the folder is opened.
5. Student glues their figure to the popped-out square, standing upright when the folder is opened. Glue the special feature drawing to the outside of the mini-folder
6. Students can draw their habitat on the rest of the mini-folder: where would you go with your special feature? What problem could you solve? How would your world look different?
7. Glue the pop-ups together onto larger panels to create a community lift-the-flap game.

Common Core Writing
1. Ask students to write an imaginary story about the day they got their special trait superpower. What happened that morning when they did not have their superpower? What were they able to do differently once they had their superpower? (*CA Common Core Writing Grade 1: Write narratives recounting two or more sequenced events*).

REFLECTION: (How will you conclude the lesson? How will students reflect on what they have done today?)
1. What do you notice?
2. What did you learn today?
3. What would you like to learn how to do?
4. How did you make that?

ASSESSMENT: (What will you look and listen for to know you have achieved your goals?)

Formative (during the project):
• Students discussing attributes and adaptations;
• Students assessing their own and others' design choices;
• Students working carefully on their drawings;
• Students using pencils to draw both light and dark lines;
• Students using scissors safely to cut carefully ("pop-up" extension);

Summative (after the project):
• Drawings are complete, detailed and fill the page
• Darker lines in the more important parts of the drawings
• Different colors in the final drawings
• Evidence of students using creative voice—drawings show imagination and new ideas
• Detailed backgrounds show students "superpowers" impacting their habitats/worlds
• Narrative tells of a problem *before* and a solution *after* acquiring a special trait (written extension)

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