The Snowy Owl

Subject: Biomimicry

Grade Level: K-5

Topic: Unique Animals and Inventions

Time: 60 minutes

Learning Objectives

Students will:

- identify features of the snowy owl.
- illustrate their understanding of the snowy owls' features as they think of ways the unique characteristics of the owl could inspire an invention.

Materials

Styrofoam cups, white feathers, yellow and black construction paper, scissors, glue, brown or black markers or crayons, *Snowy Owl Traits Worksheet*, book, "Snowy Owls" by Melissa Hill

Procedure

Engage: To promote student curiosity, use a game to get students to guess what animal they will be studying. Have students ask "yes" and "no" questions about the bird (snowy owl) until they guess what it is. Write down answers on the board or a large sheet of paper as you go along. Typical questions to get started could be "Does it swim?" or "Does it have fur?". Once students guess or are close, guessing an owl is close enough, you can go back over the list to review what characteristics an owl does and does not have. Show them a picture so

they can see the characteristics. The **Snowy Owl Traits** worksheet can be used for this purpose.

Explore: Help students build an understanding by reading the story, “Snowy Owls” by Melissa Hill. This is a link to the book being read aloud: Snowy Owls by Melissa Hill.

Explain: Have students begin to show what they have learned by having each student complete a diagram of a snowy owl. Non-readers can cut and paste descriptions with the teacher's help. Early readers/writers may write answers.

Elaborate: Have students use their new knowledge by having students make snowy owl models to look at more detail about the owls. This website has directions Foam Cup Snowy Owl Kids Craft *Ask: How do your owls look like the ones we have studies? How are they different? How are they the same?*

Assessment

Evaluate: Evaluate student learning by having students discuss how the unique features of the snowy owl can be copied or mimicked to create an invention. Ask students if they can think of anything else in nature that could be the inspiration for an invention.

Extension Activities

- Have students watch video about inventions/inventors.
  What Are Inventions? | Young Explorers | PBS LearningMedia
- Have students work in groups of 2-4 to design an invention that is inspired by the traits of the snowy owl. Have students draw their invention or use recycled material to create their inventions.

NGSS Alignment

K-2 Engineering Design

K-2-ETS1-1 - Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the

development of a new or improved object or tool.

K-2-ETS1-2 - Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a problem.

1-LS1-1 (Life 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.

3-5 Extension (Optional)

3-5-ETS1-1 - Define a simple design problem reflecting a need or a want that includes criteria for success and constraints.

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