Farm Animal Challenge

Objective(s)

- To engage students in a STEAM activity inspired by the nursery rhyme "Old MacDonald Had a Farm."
- To engage students in creating 3D farm animal sculptures using various craft materials and fostering creativity and collaboration.

Activity that involves problem-solving and strategic thinking:

- Students will create a 3D model of a farm animal, focusing on animal features that help them with survival on a farm.
- Students will collaborate and problem solve with their peers to create 3D farm animal's features.

Standards/Objectives addressed:

- CCSS.ELA-LITERACY.RL.K.2: With prompting and support, retell familiar stories, including key details.
- CCSS.MATH.CONTENT.K.G.A.2: Correctly name shapes regardless of their orientations or overall size.
- CCSS.ELA-LITERACY.RL.1.2: Retell stories, including key details, and demonstrate understanding of their central message or lesson.
- CCSS.MATH.CONTENT.1.G.A.2: Compose two-dimensional shapes or three-dimensional shapes to create a composite shape.
- CCSS.ELA-LITERACY.RL.2.2: Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
- CCSS.MATH.CONTENT.2.G.A.3: Partition circles and rectangles into two, three, or four equal shares.
- NGSS.K-ESS3-3: Communicate solutions with others in oral and/or written forms to make sense of the problem.
- NGSS.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.
- NGSS.1-PS4-4: Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.
- NGSS.2-PS1-1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- VA:Cr1.1.Ka: Use materials and tools in a safe and responsible manner.
- VA:Cr2.1.Ka: Engage collaboratively in creative art-making to generate multiple ideas.
- VA:Cr1.1.1a: Use materials and tools in a safe and responsible manner.
- VA:Cr2.1.2a: Engage collaboratively in creative art-making to generate multiple ideas.

Background knowledge needed:

- Familiarity of farms and animals that live on them
- Understanding the concept of animal adaptations
- A general understanding of animal anatomy
- Basic knowledge of how animals' physical characteristics help them survive in their environments
- Familiarity with different animal habitats

Materials:

- Modeling Clay or Play-Dough
- Pipe Cleaners
- Googly Eyes
- Colored Paper or Cardstock
- Scissors
- Glue or Tape
- Markers or Crayons
- Craft Fur or Feathers
- Small Beads or Sequins
- Craft Wire
- Optional: Natural Materials (e.g., twigs, leaves)

Prompts – questions or statements to elicit engagement:

- What are some features or characteristics that help animals survive in their environments? Think about specific adaptations animals may have like camouflage, protective coloration, or specialized body parts.
- How can you represent these survival features in your 3D animal model?
- What materials and techniques can you use to mimic these adaptations in your creations?
- Why do you think certain animals have evolved these particular survival features?
- How does the environment influence the survival features that animals develop?
- Can you explain how the features you're adding to your 3D animal model help it thrive in its environment?
- Encourage students to articulate the specific advantages these features provide in terms of food, shelter, protection, or reproduction.
- How does working collaboratively with your group members enhance the creativity and quality of your 3D animal model?

Vocabulary:

Adaptations, habitat, features, survival, environment, characteristics, camouflage, protective, evolution, thrive

Reflection prompts:

- What was the most challenging aspect of creating your 3D animal model, and how did you overcome it?

- Describe the survival features you incorporated into your animal and how they help it thrive in its environment.
- How did working collaboratively with your group members contribute to the success of your animal creation?
- Reflect on a specific design choice you made for your 3D animal. What inspired that decision?
- In what ways did this project deepen your understanding of animal adaptations and habitats?
- Share one thing you learned from a peer's 3D animal model that you found particularly interesting or inspiring.
- If you were to improve or add to your animal model, what changes would you make and why?
- Discuss a moment during the project when you felt most proud of your contribution or creativity.

Extensions:

- Research Project: Assign students different animals and have them research and present on the unique adaptations that help these animals survive in their habitats.
- Habitat Diorama: Invite students to create a diorama depicting a specific animal's habitat, including the plants, terrain, and other animals that coexist in that environment.
- Adaptation Simulation Game: Develop a simulation game where students role-play different animals and experience firsthand the challenges and advantages of their specific adaptations.
- Creative Writing Assignment: Have students write a short story or create a comic strip featuring an animal character with special adaptations and how they use them to survive in their environment.
- STEAM Challenge: Design a STEAM challenge where students must engineer a solution inspired by animal adaptations, such as building a structure that mimics a bird's nest or designing a camouflage pattern.
- Nature Walk and Observation: Take students on a nature walk around the school grounds or a nearby park to observe local wildlife and discuss how animals adapt to their surroundings.