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| **Lesson Title:** Creating a New Zoo! |  |
| **Grade Level:** First Grade | **Quarter:** 4 |
| **Standards:** **Science****S1L1b Basic Needs of Animals**Identify the basic needs of an animal.Air, Water, Food, Shelter**S1L1d Compare and Describe Various Animals**Compare and describe various animals - appearance, motion, growth, basic needs.**Math****MGSE1.MD.4**Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. |
| **Lesson Essential Question:** How does a habitat provide for an animal’s basic needs? How can I represent and interpret a graph?How can I partition circles and rectangles? | **Vocabulary:**Air, Water, Food, Shelter, motion, growth, appearance |
| **Lesson Materials:** Recycled materials- shoeboxes, plastic milk jugs, large plastic containers, empty soda bottlesCraft materials- craft sticks, straws, fabric scraps, rocks, glue, colored paper, internet access:Mackinvia, book- *Zoo* by Gail Gibbons | **Lesson Assessment:** Student journalGraphic organizerFeeding scheduleTeacher Observations  |
| **STEM Challenge Overview:** Students will research information about an assigned zoo animalusing Mackinvia or books from the media centerStudents will sign and build a suitable habitat for an animal that meets its’ needs for food, air, and water. The habitat should be either a circle or a rectangle shape and be partitioned into several rooms. Students should also create a graph containing grocery items for feeding the animal in the zoo.  |
| **Teacher Background:** This unit is intended to take several weeks to complete and will integrate multiple learning standards across the curriculum. Students will work in groups of 2 to complete this STEM challenge. Part One: Students will work in groups to research information about their animals including, habitat, eating habitats, appearance, growth and movement. Students will need access to books or the internet (Macinvia) to research animal facts. Teachers should assign each group an animal chosen from a variety of different species representing each animal group- mammals, fish, reptiles, amphibians, or birds. Part Two: Students will construct a zoo habitat for their animal. Students will need access to recycled objects and craft supplies. Habitats should be made from a circle or rectangle shape and be partitioned into different areas. Part Three: Students will prepare a basic care sheet for the zookeeper that includes a graph of the amounts of food each animal needs in their zoo. Part Four: Students will prepare an animal fact sheet for zoo visitors that describe the animal’s appearance, growth, movement and basic needs.  |
|  **INSTRUCTION** |
| 1. **Ask/Engage**
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| **Day One: 45 minutes:**The city of Anytown, USA wants to build a new zoo and they need your help! The zoo staff is looking for a design plan on how to build habitats for their animals. Your class is going to work together to design a zoo model to present to the zoo staff. Each group (you and a partner) will be responsible for constructing a model habitat for an assigned animal. When everyone is finished, we will put all of the pieces of the zoo together to construct a full scale model of a zoo. Read the book:  *Zoo* by Gail Gibbons., show pictures/videos of zoo habitats, or visit a local zoo. Point out the features of the zoo habitat and ask students why think each component is there. Discuss how people need to take care of animals at the zoo and pets at home. Teacher should assign each group an animal. **Day Two & Three: 45 minutes each day.** Students will use the internet to research their animal. They will complete the attached graphic organizer.  |
| 1. **Imagine/Brainstorm (Day Two- 20minutes)**
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| **Day Four:** After completion of the graphic organizer, students will design their zoo habitat.**Challenge:** The city of Springfield wants to build a new zoo and they need your help. The Zoo is looking for ideas on how to build habitats for their animals. Your class is going to work together to create a model of a zoo. Each group (you and a partner) will be responsible for constructing a habitat for an assigned animal. When everyone is finished, we will put all of the pieces of the zoo together and to create a model of the new zoo. **Criteria:** You will design and build a suitable habitat for an animal that meets its’ needs for food, air, water, and shelter. You will create care instructions for the zookeeper and a schedule for feeding the animal.**Constraints:**The habitat should be either a circle or a rectangle shape and be partitioned into several rooms.You will be limited to using only the available materials. Your structure may not be more than 16 inches tall or 24 inches wide.Students will brainstorm ways to build their habitat. They should come up with 2 possible ways that they could use to build the habitat.  |
| 1. **Plan/Design**
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|  Students will collaborate with their partner and decide on a final design plan after each person has had a chance to explain their design plan.  |
| 1. **Create / Test**
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| Students should build their habitats and make sure that it meets all of the criteria. After completion, students will use their information to create an animal care sheet for the zookeeper that includes a feeding schedule and an Animal Facts sheet to post outside of their exhibit for visitors to read.  |
| 1. **Evaluate/Improve –** and repeat Steps 1-5
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| Students should evaluate their habitat and make sure that they have completed all of the necessary components of their challenge. They should complete any missing pieces. Students should work together to put all of the habitats together in a layout that is safe for animals. As an extension, students could use clay or paper to create a model of their animal. They can also complete the entire layout of the zoo by adding components that would make it a great place to visit, like a ticket booth, benches, restrooms, trees, etc.  |

 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Creating a New Zoo!**

**1st Grade STEM Challenge**

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**STEM Challenge:** The city of Springfield wants to build a new zoo and they need your help. The Zoo is looking for ideas on how to build habitats for their animals. Your class is going to work together to create a model of a zoo. Each group (you and a partner) will be responsible for constructing a habitat for an assigned animal. When everyone is finished, we will put all of the pieces of the zoo together and to create a model of the new zoo.

**Criteria:** You will design and build a suitable habitat for an animal that meets its’ needs for food, air, water, and shelter.

You will create care instructions for the zookeeper and a grocery list for what and how much to feed the animals.

**Constraints:**

The habitat should be either a circle or a rectangle shape and be partitioned into several rooms.

You will be limited to using only the available materials.

Your structure may not be more than 16 inches tall or 24 inches wide.

**Materials:**

Recycled materials- shoeboxes, plastic milk jugs, large plastic containers, empty soda bottles

Craft materials- craft sticks, straws, fabric scraps, rocks, glue, colored paper

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**My animal is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What does your animal look like?**

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**What does your animal need to live?**

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**How does your animal move?**

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**How does your animal change as it grows?**

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**Feeding Plan for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Animal in Habitat** | **Type of Food** | **Amount Needed** |
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