STEM Action Plan- Chapman Elementary

Authors: Erin Hudgens, William Neely, Cortney Keenan

Big Idea: Students will understand the differences between natural and man-made objects and their relationship to one another.

Goals and Objectives: The students will be able to:

- Identify man-made objects
- Identify natural resources
- Understand how man-made objects relate to natural resources
- Understand how all man-made objects are created by natural resources

Timeline: The goals and objectives will be applied to each science standard as the teacher sees fit.

Assessments:

- Journal- Students will keep an interactive journal with observations, graphic organizers, and evidence of their findings.
- Project- Students will create a man made object using natural resources as it relates to their particular science standard and grade level.

Resources:

- Interactive Journal- This journal will be used by the student to record information as it pertains to the objectives.
- Guest Speakers- The guest speakers will demonstrate the relationship between natural and man-made objects.
- Natural Resources (wood, minerals, plants, etc.)- These resources will be used to show students how man-made objects are created from natural resources.
- Man-made Objects (glue, tools, etc.)- These man-made resources will be used to help the student transform their natural resources into a finished product.

Classroom Preparation:

Teacher will:

- Gather natural resources and supplies
- Organize guest speakers
- Organize possible class trips to gather natural resources
- Create an appropriate learning environment for the given activity
- Provide guidance when dealing with new tools or experiences

**Learning Experiences:**

The student will:

- Apply the design process to create a man-made object from natural resources
- Identify the characteristics and scope of technology
- Develop an understanding of engineering design

**Examples:**

**First Grade**

1. Students will take a nature walk and gather natural resources.

2. Teacher will provide man-made objects that are composed of the natural resources found by the students.

3. The students will classify the objects as natural and man made using a graphic organizer.

4. Teacher will provide materials (glue, paper, tools, etc.).

5. Students will use their natural resources to create a product of their choosing that can be used to improve some area of the classroom. For example: an art project to beautify the classroom, a paperweight, etc.

**Third Grade**

1. Students will observe different habitats found in nature and how animals use natural resources to create their habitat.

3. Class will discuss the differences in human and animal habitats, including materials and methods used to create the habitats.

4. Students will observe what natural features of the animals’ shelter create durability.

5. Students will apply this knowledge and brainstorm ideas of what characteristics could be used to improve human shelters.

6. Students will use the design process to take one of those characteristics and create a product to improve human shelters.

**Example: 3rd Grade**

**Content Area:**
Science

Course:

3rd Grade

Unit:

Habitats

Standards:

3-1.3 Generate questions such as “what if?” or “how?” about objects, organisms, and events in the environment and use those questions to conduct a scientific investigation.

3-2.3 Recall the characteristics of an organism’s habitat that allow the organism to survive there.

Big Ideas:

Students will understand the differences between natural and man-made objects and their relationship to one another.

Essential Question:

What are the differences between natural habitats and mad-made habitats?

How can we use natural objects to create man-made objects?

Scenario:

1. Students will observe different habitats found in nature and how animals use natural resources to create their habitat.

2. Class will discuss the differences in human and animal habitats, including materials and methods used to create the habitats.

3. Students will observe what natural features of the animals’ shelter create durability and comfort.

4. Students will apply this knowledge and brainstorm ideas of what characteristics could be used to improve human shelters.

5. Students will use the design process to take one of those characteristics and create a product to improve human shelters.

Materials and Resources:
Interactive Journal- This journal will be used by the students to record information as it pertains to the objectives.

Natural Resources (wood, minerals, plants, etc.)- These resources will be used to show students how man-made objects are created from natural resources.

Man-made Objects (glue, tools, etc.)- These man-made resources will be used to help the student transform their natural resources into a finished product.

Content Information:
Recall the characteristics of an organism’s habitat that allow the organism to survive there.

Deliverables:
Model created by the design process

Parameters:
Source of materials, time constraints, size of project, quality of project

Assessment:
The student will be assessed by the completion of their interactive journals.
A rubric will be used to assess the final product.