

**Unit Name: Desert Design Challenge**

**Time Frame: 2-3 periods**

**Author: Egg Harbor Township STEM Committee**

## UNIT

Subject: Science/LAL

Country: **USA**

Course/Grade: 4th

State/Group: **NJ**

School: **Egg Harbor Township High School**

### UNIT SUMMARY

*This will be the closing activity for the 4<sup>th</sup> grade science unit on the structure and function of plant parts. It also will tie into the Month 3 of the 4<sup>th</sup> grade Empowering Writer's curriculum: Desert Creatures, as well as the Storytown selection "Mangrove Wilderness".*

### UNIT RESOURCES

**Science textbook- Chapter 1, Lesson 3**

**Internet Resource Links:**

<http://www.tutorvista.com/biology/parts-of-a-plant-for-kids>

[http://www.biology4kids.com/files/plants\\_structure.html](http://www.biology4kids.com/files/plants_structure.html)

<http://www.mbgnet.net/bioplants/adapt.html>

## STAGE ONE

### GOALS AND STANDARDS

#### **SCIENCE:**

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

#### **LAL:**

CCSS.ELA-Literacy.W.4.1b Provide reasons that are supported by facts and details.

CCSS.ELA-Literacy.W.4.2d Use precise language and domain-specific vocabulary to inform about or explain the topic.

### ENDURING UNDERSTANDINGS

*Students will understand that different plant structures provide specific functions for a plant. Also, that features of an environment require plants to adapt to survive. Students will also understand how to work in a group to design, build, explain, and reflect on their creations.*

## **ESSENTIAL QUESTIONS**

*What functions do the parts of a plant serve?*

*How does environment affect the way a plant is made?*

## **KNOWLEDGE AND SKILLS**

*Students will know...*

- *The structure and function of plant parts*
- *Plant adaptations to survive in various environments*

*Students will be able to...*

*Create a device to help a plant survive in the desert.*

*Work in a group to successfully design, construct, and explain.*

## **STAGE TWO**

### **PERFORMANCE TASKS**

*Students will work in teams to design a device that will help a plant to survive in the desert. This could be anything ranging from a way for the plants to store water, get water more easily, or protect it from the harsh conditions associated with the desert. They will use provided materials.*

### **OTHER EVIDENCE**

*Summative written assessment from the textbook*

## **STAGE THREE**

### **LEARNING PLAN**

- *After completing the textbook lesson on the parts of the plant, students will complete this design challenge in groups.*
- *Step 1: Present challenge. Students will brainstorm materials in their group.. A sketch of their design must be completed.*
- *Step 2: Construction. Students will build their devices.*
- *Step 3: Explanation. Students will write a short explanation how they constructed their device and how it will benefit the plant.*
- *Step 4: Reflection/ Redesign. After class discussion and observation of other teams' devices, groups will write a short paragraph to reflect on their design and develop possible improvement(s) if the challenge was repeated.*