



# STEM STUDENT PACKET



## STEM VOCABULARY

Write the definition from each word

\*Add key vocabulary words and images/drawings

Beaver -

Dam-

Stream-

Pond-

Habitat-



**Student Name:**

## **Step 1: Ask**

Define the real-world problem / measurable goal

Beavers are known as nature's engineers because their dams play a critical role in creating wetlands, slowing water flow, and providing habitats for wildlife. However, sometimes these natural dams cause flooding in areas where humans live or farm, leading to conflicts. Your task is to design a beaver dam that mimics the benefits of a real beaver dam—slowing water flow and creating a small pool that will hold 250gr of water for 60 seconds.





## CHALLENGE

Build a dam with sticks, leaves, rocks, and play dough, that will hold 250gr of water for 60 seconds.

**Research**

**Working Packet**

**Group #** \_\_\_\_\_

**Section:** \_\_\_\_\_

**Student Name:**

\_\_\_\_\_

**Partner's Name:**

\_\_\_\_\_

\_\_\_\_\_



## RESEARCH

**Directions:** Watch the video on beavers, then go on EPIC! books and search up books on Beavers and Dams.

Write below two reasons why beavers build dams AND draw a picture of it.

1.

2.



## Step 2: Planning

Group # \_\_\_\_\_

Section: \_\_\_\_\_

Student Name: \_\_\_\_\_

Partner's Name: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

1. Get your supplies bag with the sticks and leaves and measure and record in a table the length of 10 of your leaves and sticks to the nearest cm.
2. Record the length of your longest and shortest stick and find the difference.



Item (sticks, leaves or rocks)	Measurement in cm

Longest item:	
Shortest item:	
Difference:	



Give your project a title:

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***Brainstorm ideas, sketches, designs etc.***





## Step 3: Prototyping

### Design the Prototype

(Create a labeled diagram of your prototype.)

Materials:



### Step 4: Testing

Design A	Amount of seconds that your beaver dam held up for.
Trial 1	
Trial 2	



### **RE-Design the Prototype**

(Create a labeled diagram of your prototype.)

Materials:



### Step 4: Re-testing

Design B	Amount of seconds that your beaver dam held up for.
Trial 1	
Trial 2	



**Step 6: Communicate your findings.**

**Use the application Keynote on your iPad to create a presentation to explain what you did on your project.**

**Your presentation should have the following parameters:**

- **At least 4 slides**
- **1 title slide with the title of the challenge and the name of the student and the team members**
- **At least 2 pictures of their designs**
- **At least 1 video of their testing**
- **Different colored slide's background**
- **Bold and underlined titles**

**REFLECTION**



Did you test your design?

Did your prototype work?

Did you make improvements  
to your design?

Did you enjoy this challenge?