



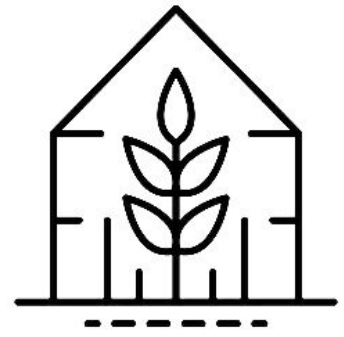
# STEM STUDENT PACKET



**NAME:** \_\_\_\_\_

**SECTION:** \_\_\_\_\_

# STEM #2 CHALLENGE: The Great Greenhouse Build



Inspired by engineers who design greenhouses to grow plants in challenging environments, your team will act as plant engineers. Your challenge is to design and build a greenhouse that protects seeds and provides the right amounts of light and water so the seeds can successfully sprout and grow.

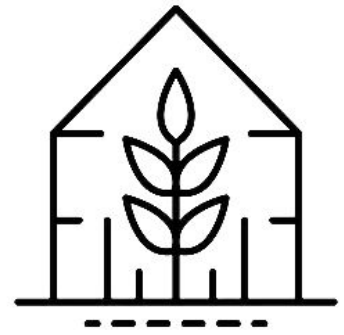


## YOUR TEAM'S MISSION

Design and build a greenhouse that allows been seeds to grow at least 5 cm tall within 14 days by controlling the amount of light and water.

<b>Group # _____</b>
<b>Team Member Names</b>
_____
_____
_____

# STEM #2 CHALLENGE: The Great Greenhouse Build



Research the internet and books on Epic to gather information on greenhouse builds and answer the following questions.

1. Name at least two important features of a greenhouse, and explain how does each feature helps plants to grow?

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2. How does a greenhouse change the environment for the plants inside compared to the plants growing outside?

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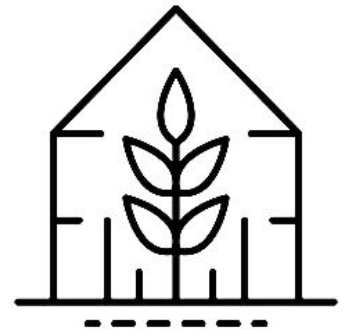
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# STEM #2 CHALLENGE: The Great Greenhouse Build

**Planning** - Research greenhouse designs, discuss ideas and decide on materials.



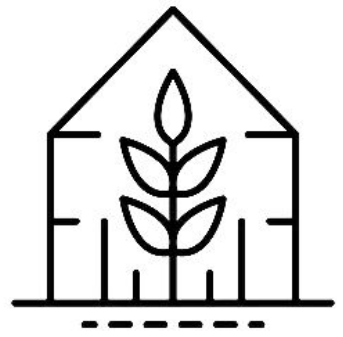
Create a labeled diagram of your greenhouse.

## Materials

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# STEM #2 CHALLENGE: The Great Greenhouse Build

**Prototyping** - Use the selected materials to build your greenhouse, be aware of the constraints.



### **Constraints:**

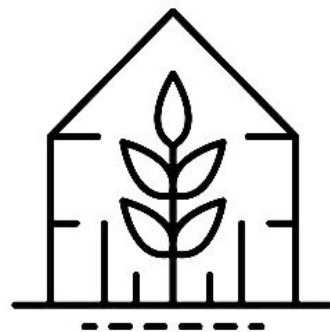
- Needs to remain stable or sturdy when moved.
- Needs to have a cardboard base.
- Should have an air vent or window
- Should have a door or a liftable roof to access plants easily.

Insert a photo of your finished greenhouse.



# STEM #2 CHALLENGE: The Great Greenhouse Build

Testing - Collecting data



Draw a picture of your plant measuring its height.

A worksheet designed for measuring plant height. It features four vertical rulers, each with a scale from 0 to 30. The rulers are positioned in four columns. The first ruler on the left has a drawing of a green plant with two leaves and a stem, extending from the 0 mark to the 10 mark. The other three rulers are empty. The entire worksheet is enclosed in a decorative border with floral corner pieces.

## **STEM #2 CHALLENGE:**

### **The Great Greenhouse Build**

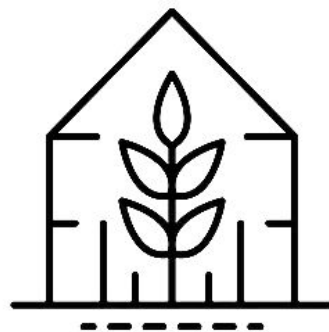
**Redesign** - Reflect on the results. What worked? What didn't?  
Make changes and test again.

Sketch your new design.



# STEM #2 CHALLENGE: The Great Greenhouse Build

Testing - Collecting data



Draw a picture of your plant measuring its height.

A worksheet with a black border and decorative corner flourishes. It contains four vertical rulers, each with a scale from 0 to 30. The first ruler on the left has a drawing of a green plant with two leaves and a stem, positioned against it. The other three rulers are empty. The rulers are connected by a series of rounded rectangular frames, creating a grid-like structure for drawing.

# **STEM #2 CHALLENGE:**

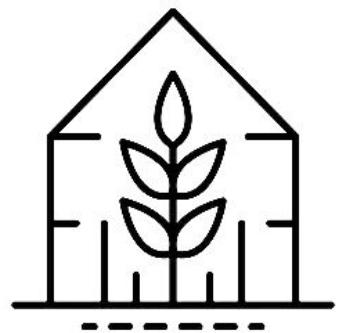
## **The Great Greenhouse Build**

### **Communicate Findings - Canva Video**

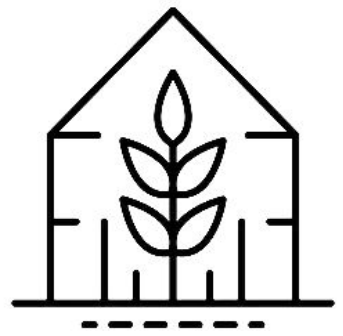
Create a video using CANVA including:

- Photos of your greenhouse.
- Explanation about your design.
- What are your findings after 14 days?
- What improvements would you made?

**Upload on Seesaw!**



# STEM #2 CHALLENGE: The Great Greenhouse Build Reflections



1. What part of your design failed or didn't work as you expected?

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2. What specific change did you decide to make first?

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3. How did you expect this change to help your greenhouse better?

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