

2023

# Mass STEM Week Design Challenge

## Grades 3–5


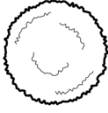
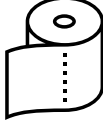
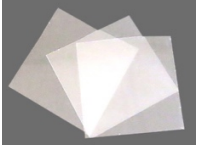

*Learner Pages*



Museum of Science

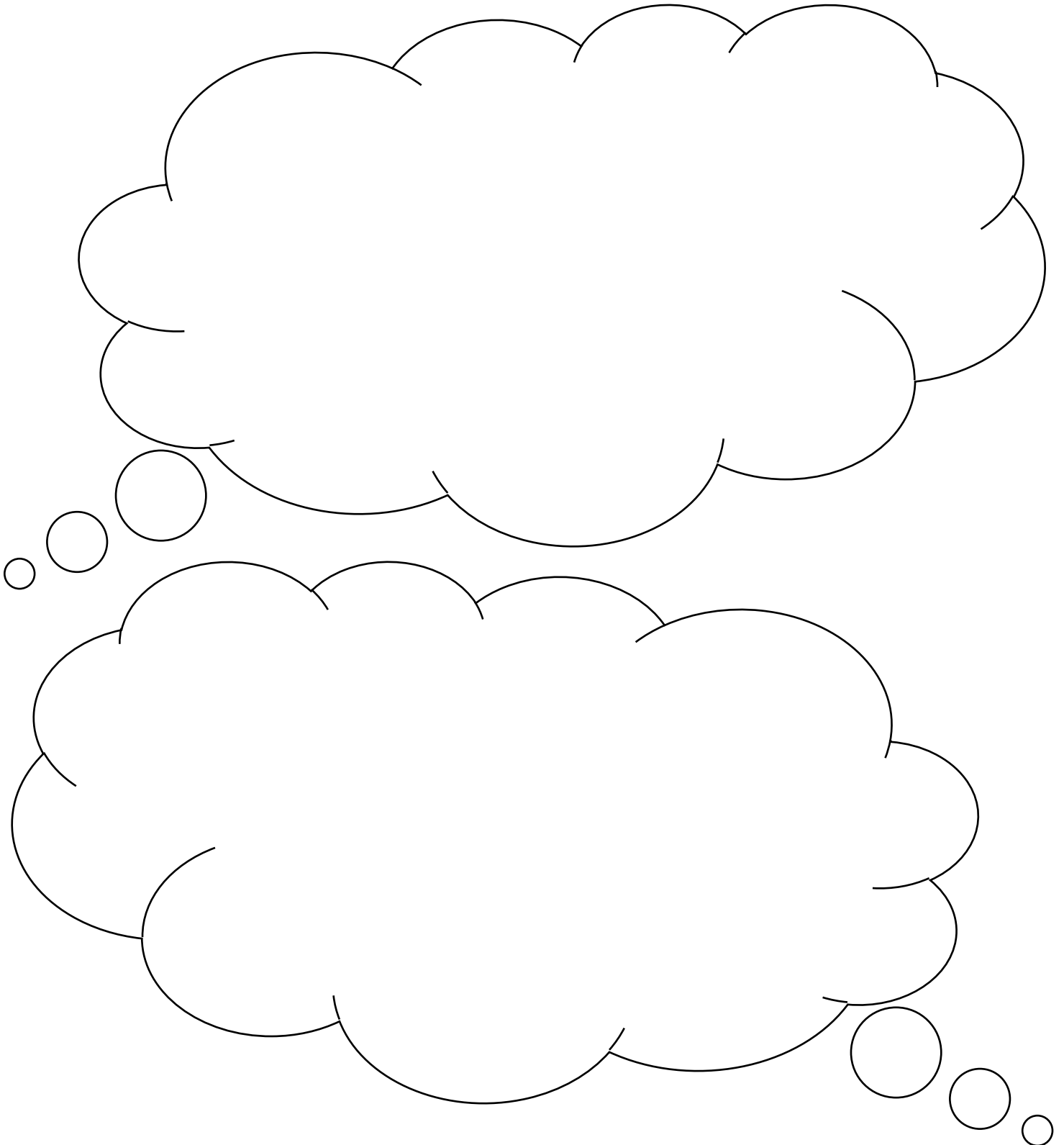


*Lesson 1: Ask: Materials Testing***Record the test results for each material below. Circle your results.**

	Cardstock 	Cotton Balls 	Paper Towel 	Transparency 	Wax Paper 
<b>Sunlight</b> Hold the material up to a light. Can you see through?	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No
<b>Air</b> Blow on the material with a straw. Can you feel the air from the other side?	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No
<b>Water</b> Place 5 drops of water onto the material. Does it soak in?	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No	Yes  Kind of  No

*Lesson 2: Imagine Plant Packages*

**Think of a few designs. Sketch your ideas below.**





*Lesson 2: Plan a Plant Package*

**Work with your group to select 1 idea. Draw and label your plan below.**

**Circle the base package you will use and record the materials you need.**

plastic bottle

cardboard carton

For Sunlight:	For Air:	For Water:
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### Lesson 3: *Testing a Plant Package*

**Test your plant package design. Circle the result and record any notes.**

	Test your plant package	Notes
<b>Sunlight</b> Hold the package up to a light. Can sunlight get in?	Yes Kind of No	
<b>Air</b> Blow on the package with a straw. Can air get in?	Yes Kind of No	
<b>Water</b> Does the package have a way to keep the plant wet?	Yes Kind of No	
<b>Protection</b> Shake the package 5 times. Push the package off the table.	A lot of damage Some damage No damage	

*Improve:* Circle a test you will try to improve on. Go back to your *Plan* page. Use another color to record your ideas: What will you change? What materials will you use?