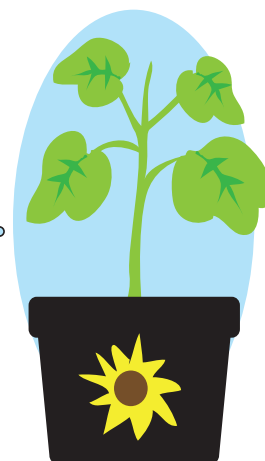
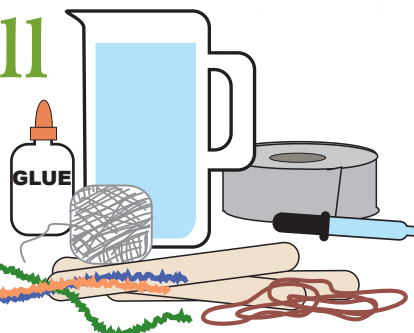


HELP

a Plant Grow Tall

You Will Need (for each team of students):

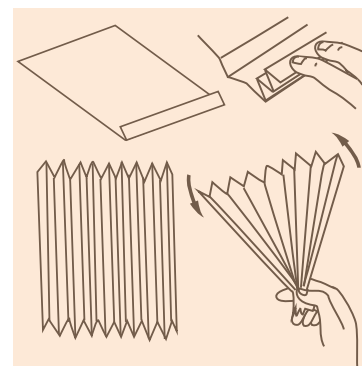
6" sunflower plant in a pot; 1 cup water; water dropper; materials that can be used as connectors such as pipe cleaners, glue, duct tape, string; 5 rubber bands; 5 tongue depressors; 5 pieces of scrap paper



Distribute materials to each team of students. Ask them to manipulate each one in the following ways: stretch, bend, crumple. Then prompt them to "Turn and Talk" with a partner. What are they observing?

1. Have students fold a piece of scrap paper into a fan, like you can see in the illustration. Fan air onto your various materials and Turn and Talk about observations.
2. Distribute the water and water droppers. With adult help, have children drop water droplets onto each material. Turn and Talk again.
3. Ask the whole group: How can we build a support for our plants? What material should we use? How can we connect our materials to make them tall enough and strong enough? Model in front of the classroom as needed to support students using glue and tape.
4. You can add a marker (e.g. a line with marker, string, sticker) at the tallest point of the plant and repeat as it grows to measure the growth.

Snacks for Tasting: shelled sunflower seeds



WONDER

Which materials are stretchier or bouncier than the others?

Why do you think a pipe cleaner moves so much when you wave your paper fan near it?

Do you think it's better to use something that absorbs more water or less water?

Sing



You're an Engineer

(Music and lyrics by Dan Crow)

If molecules are what you mix,
you're an engineer.
If circuit boards are what you fix,
you're an engineer.
Now if you run a choo choo
train, invent a better
Strain of grain, know what crops
need how much rain,
You're an engineer!

(For the tune and other verses,
search for "You're an Engineer"
by Dan Crow on YouTube.)

DISCOVER

Sunflowers can grow up to 6 feet tall! What will we need to do with our support systems to make sure that our plants stay protected? Sunflowers don't just need protection to stand up straight - one species of the plant called the "whorled sunflower" is considered an Endangered Species by the U.S. Fish and Wildlife Service.

READ

Ten Seeds by Ruth Brown.
Andersen Press, 2013.

Sunflower House by Eve Bunting,
HMH Books for Young Readers, 1999.

Teaching Tips

GrowingGreat activities encourage children and adults to learn and play together. We suggest you alternate between quiet, focused time and moving and playing together. For this activity, we start with the materials exploration and building activity, then we read a book, and end with the song and snack.

1. Do you encourage children to play with science?

We focus on process rather than content. We allow children to practice STEM (science, technology, engineering, and math) skills through engaging, exciting activities. In this lesson, students use water droplets and their own breath to test the durability of their construction projects, injecting full-body learning into an academic setting.

2. Are there opportunities for language development?

We read stories, ask questions and sing songs to connect with students and teach vocabulary. We stop throughout the story time to allow children to talk about what we're reading. Students are prompted to put words to their experiences during each and every "Turn and Talk".

3. Are the experiences open-ended?

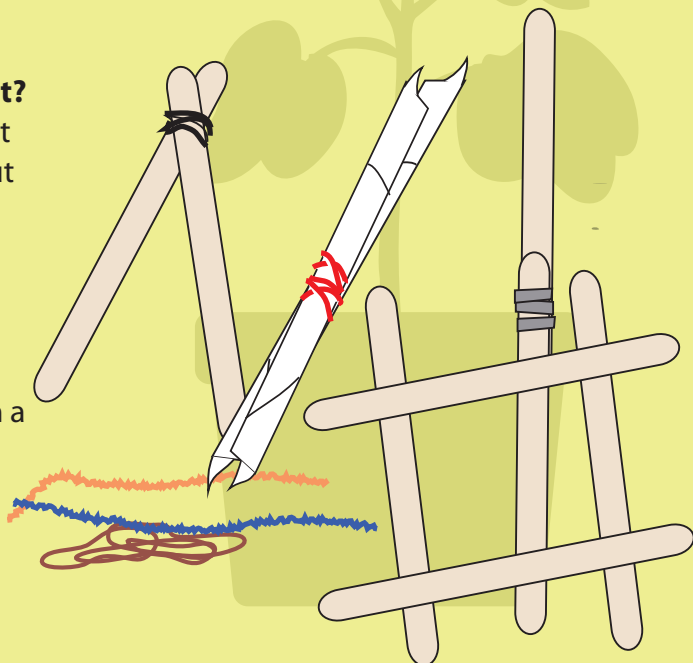
We offer more than one way to engage with materials in a setting where there can be more than one right answer. We ask open-ended questions about the building materials we used and listen carefully to children's answers. There isn't a singular correct way to build a sunflower plant support!

4. Do your environment and materials include a mixture of familiar and new things?

We provide authentic, real-life experiences that encourage children to ask "why." Using real sunflowers and seeds from the garden and grocery store, students access materials that they're used to seeing in their classrooms and homes.

5. Are you a co-explorer with the children, not an expert?

We allow children time for self-directed experimentation. We can play and be messy too. How can we best "get out of the children's way" during the materials exploration segment, while also providing the support that young learners need?



GrowingGreat's mission is to empower children to make healthy food choices through hands-on science and nutrition education.

Does your school have a garden or nutrition education program? Email info@growinggreat.org for more information.

Written by Erin Townley
Illustrated by Dennis Smith

Museum Partner: Creative Discovery Museum
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