

Green STEMS Activities for STEM and Sustainability (Resource Exchange)

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The Green STEMS Project

The Green STEMS Project is a STEM for sustainability outreach program for children and families. The Green STEMS programs engage children and their adults with early science and engineering concepts to build empathy around issues of sustainability. These programs are designed for informal settings, typically at community events, rather than use within classrooms.

STEM & SUSTAINABILITY PROGRAMMING

TEXTURES IN NATURE

Designed for early learners. This program features two exhibits and signage for parents about the sense of touch.

Sensory Tables: In this free play activity, children explore with their hands and simple tools a variety of textures that can be found in nature, such as sand, wood, rocks, and corn.

Planting Seedlings: Children use their hands to plant and water seedlings and take them home to grow.

Touch is an important sense children use to interact and understand the world around them. Using textures and touch helps develop language acquisition and motor skills.



COLORS IN NATURE

Designed for late elementary learners. Children learn about light and how different colors are produced in nature.

Light Tables: Light tables and light boxes are used to show the difference between structural color and color from pigment in bird feathers and butterfly wings. Wings with pigment stay the same color in light and those with structural color appear as brown or gray.

Bubble Maker: Using a large bubble maker, children can see the colors of the rainbow due to interference between the waves reflected between the surfaces of the bubble walls.



MECHANISMS IN MOTION

Designed for children of all ages as a way to interact with motion and robotics.





Robotic Movement: The program uses Sphero robotics, iPads, and city map carpets with various challenges. The initial challenge allows children to learn to move the Sphero and change its color using the controller on the iPad. For participants that have used robots before and those that want additional challenges there are stations with prompts that ask them to make paths for the Sphero to follow and to code the Sphero robot to achieve specific tasks.



MECHANISMS IN MOTION
INTRODUCTORY CHALLENGE

Can you park Sphero in the parking lot?





Can you drive Sphero to the circus?

  @green_stems_project
 @GreenStemsProjectISU 


MECHANISMS IN MOTION
INTERMEDIATE CHALLENGE

Can you draw the path to get Sphero from the house to the circus?

Where else can you draw a path for Sphero?

  @green_stems_project
 @GreenStemsProjectISU 



For additional information,
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many  futures

