




ROBOTIC INVENTIONS FOR micro:bit

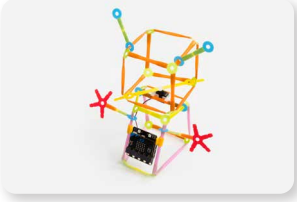
ACTIVITIES LEARNING OBJECTIVES

Strawbees activities are base models with building instructions, tips, and support materials. Below is an overview of outcomes listed for each micro:bit activity describing the intention of what is being created and what is happening when building the model.

Information about the Kit

<https://learning.strawbees.com/product/microbit/>

	DESCRIPTION	LINK TO ACTIVITY	LEARNING OBJECTIVES OVERVIEW
<p>Robotic Crane</p> 	<p>Use the Robotic Inventions for micro:bit to automate the mechanical movements of a crane.</p>	<p>https://learning.strawbees.com/activity/build-a-robotic-crane-with-bbc-microbit/</p>	<ul style="list-style-type: none"> • Make a mechanical structure using a seesaw lever pushed and pulled by the mechanical linkage connected to the servo motor. • Observe and explore how constraints happen with the crane's design when changing the mechanical linkage, the code, changing straw sizes and positioning of the servo motor and arm for different effects.
<p>Light-Up Wearable</p> 	<p>Create a portable, light-up device to wear on your body.</p>	<p>https://learning.strawbees.com/activity/create-a-light-up-wearable-with-bbc-microbit/</p>	<ul style="list-style-type: none"> • Constructing wearable technology to be attached to the body in different ways going beyond hand-only interaction and leveraging sensors from the micro:bit board such as sensing light to turn on RGB LEDs and the display of 5x5 LED matrix when it's dark. • Control the RGB LEDs to change brightness, hue, and saturation and program various patterns to blink or fade. • Design and animate images on the 5x5 LED matrix for dynamic visuals and signals.
<p>Light Sensing Plant</p> 	<p>Create an animated potted plant responding to light.</p>	<p>https://learning.strawbees.com/activity/create-a-light-sensing-plant-with-bbc-microbit/</p>	<ul style="list-style-type: none"> • Construct a model of a phototropic plant moving toward or away from light. • Building a plant model with leaves built with a lever design pushed and pulled by the mechanical linkage connected to the servo motor. • Use the 5x5 LED matrix of the micro:bit as input for sensing and measuring the light to control the amount of movement for the servo motor. • Observe and explore how constraints happen with the plant's design when changing the mechanical linkage, the code, changing straw sizes and positioning of the servo motor and arm for different effects.

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<p>Friendbot</p> 	<p>Make a robotic companion to react and express when meeting friends.</p>	<p>https://learning.strawbees.com/activity/make-a-friendbot-microbit/</p>	<ul style="list-style-type: none"> • Humans express themselves through facial expressions, gestures using hands, using body posture and dialogue to create signals to another person. Build a Friendbot and design different ways to express itself such as excitement or a reaction of being cold through non-verbal communicative gestures. • Use the motion of the servo motor connected to constructed shapes like a head, body or arm of the Friendbot and use slight movements to be portrayed as gestures to communicate a signal with you or another Friendbot. • Observe and explore how constraints happen with the Friendbot's design when changing the mechanical linkage, the code, changing straw sizes and positioning of the servo motor and arm for different effects.

Visit the following websites on how to incorporate Strawbees effectively through curriculum standards with an assessment of student understanding and performance in classrooms.

Next Generation Science Standards (NGSS): <https://learning.strawbees.com/ngss/>

United Nation's 17 Sustainable Development Goals: <https://learning.strawbees.com/sdgs/>



For more activities, lesson plans and support material please go to:

learning.strawbees.com