

ACTIVITY

1

Ice Block Protector

Theme: Global Warming and Sustainability
Inspired by: “Ice Age: The Meltdown”

In *Ice Age: The Meltdown*, Manny, Sid, and friends must find clever ways to survive as melting glaciers reshape their world. Like them, you and your family can step into the role of environmental engineers to help slow the melting ice. Using everyday materials, you’ll design, build, and test a device to protect an ice block from warming temperatures. Can you engineer a solution that keeps your ice from melting away?



STEM Education Works®



Activity 1: Ice Block Protector

Theme: Global Warming and Sustainability
Inspired by: "Ice Age: The Meltdown"



1. Ask:

- How can we keep an ice block from melting too quickly when exposed to heat?
- What materials can we use to protect the ice and keep it from melting too fast?



2. Imagine:

- Which materials could help slow down the melting process?
- Think about how we stay cool - umbrellas, shade, lightweight clothes.



3. Plan:

- Sketch your idea.
- Gather materials: fabric, aluminum foil, plastic wrap, Styrofoam, cardboard.
- How will your materials cover the ice?



4. Create:

- Wrap your ice cube in the materials you picked.
- Try layering them in different ways.



5. Test and Improve:

- Put the ice somewhere warm (like a sunny spot).
- Check it every 10-15 minutes.
- Which designs keep the ice cold the longest?
- How can you improve your design?



CHALLENGE

Design a bigger "ice cave" that could keep more ice cool! How can you protect a whole space from the heat?

ACTIVITY

2

Chef's Choice Challenge

Theme: Food and Nutrition | Inspired by: "Ratatouille"

In *Ratatouille*, Remy the rat dreams of becoming a chef, using creativity and a love of flavors to make delicious meals. Just like Remy, you can experiment to discover tasty food combinations that are balanced and nutritious. Chefs carefully select ingredients to create meals that not only taste great but also keep us healthy. In this activity, you'll work together using foods you have at home, mixing different food groups—like fruits, vegetables, proteins, and grains—to design a balanced, delicious dish. Can you create a meal that's both tasty and nutritious?



STEM Education Works®



Activity 2: Chef's Choice Challenge

Theme: Food and Nutrition | Inspired by: "Ratatouille"



1. Ask:

- How do you know what foods are healthy?
- Why do we need different kinds of food (fruits, veggies, grains, proteins)?



2. Imagine:

- What would your perfect plate look like?
- What foods could you put together that are tasty and help your body grow strong?



3. Plan:

- Sketch your plan for your plate on paper.
- Gather ingredients: fruits, vegetables, proteins, grains.
- Choose a food from each food group to put on your plate.
- Does it look colorful? Does it have foods that give energy, help muscles, and keep you healthy?



4. Create:

- Make your meal using real foods OR draw it!
- Try to mix colors and textures like a real chef would!



5. Test and Improve:

- Taste your food (if using real ingredients)!
- Ask a friend or family member what they think.
- Would you change anything to make it even better?



CHALLENGE

Can you make a healthy meal using just 3 ingredients from different food groups? Who can make the tastiest and most colorful meal?

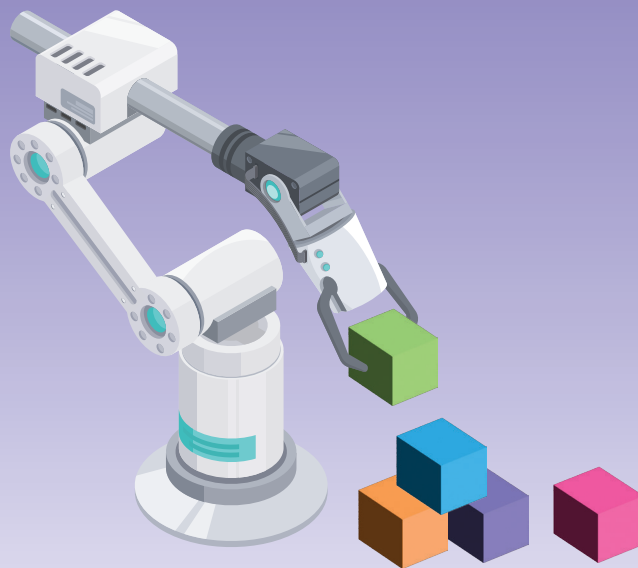
ACTIVITY

3

Robot Ready!

Theme: Engineering | Inspired by: “Big Hero 6”

In *Big Hero 6*, Hiro Hamada combines creativity, engineering, and teamwork to build Baymax, a friendly robot designed to help others. Just like Hiro, you’ll use your own problem-solving and engineering skills to design and build a robot—or even just a robot arm—that can complete a simple task. You’ll explore how different parts work together and find ways to improve your creation by testing it out. Can you build a robot that successfully completes the challenge?



STEM Education Works®



Activity 3: Robot Ready!

Theme: Engineering | Inspired by: "Big Hero 6"



1. Ask:

- How do engineers design robots?
- What kind of robot or robot arm would you like to build?
- Will it help with a specific task, like picking up objects, or maybe moving something?



2. Imagine:

- Think about what kind of robot or robot arm you want to make.
- What should it be able to do? What will it look like?



3. Plan:

- Sketch your idea.
- Gather materials: cardboard, straws, rubber bands, spoons, skewers, paper clips, paper/plastic cups, tape, glue, string, scissors.
- Decide how parts will move or connect.



4. Create:

- Build your robot using the materials.
- Test it by making it do a simple task, like moving an object.



5. Test and Improve:

- Try your robot! Does it work?
- Make changes to improve how it moves or completes tasks.
- Can it go faster or carry more?



CHALLENGE

Create a fun obstacle course or race for your robot. Can it push blocks or follow a path? Compete to see which robot is the fastest or strongest!

ACTIVITY

4

Glow in the Deep

Theme: Ocean Exploration & Bioluminescence

Inspired by: “Finding Nemo”

In *Finding Nemo*, Marlin and Dory meet fascinating creatures that live in the dark depths of the ocean. Some of these deep-sea animals use bioluminescence—natural light they produce to attract prey, communicate, or stay safe. Like the glowing jellyfish and anglerfish in the movie, you’ll explore how creatures light up in the dark and design your own glowing deep-sea creature. Can you create a bioluminescent animal built for survival in the deep?



STEM Education Works®



Activity 4: Glow in the Deep

Theme: Ocean Exploration & Bioluminescence
Inspired by: "Finding Nemo"



1. Ask:

- How do deep-sea creatures light up in the dark?
- Why do they need to glow? What does the light help them do?



2. Imagine:

- What could your glowing creature look like?
- Will it glow all over or just in certain places?
- What shapes or parts should glow to help it survive?



3. Plan:

- Sketch your creature.
- Gather materials: Glow-in-the-dark paint, stickers, LED lights, pipe cleaners, foam, construction paper, markers, googly eyes, glue, tape or scissors.
- Where will it glow - on the tail, eyes, tentacles?



4. Create:

- Build your glowing creature using craft supplies.
- Add glow-in-the-dark features or lights to help it shine!



5. Test and Improve:

- Turn off the lights. Can you see it glow?
- Does it glow long or bright enough?
- Try new materials or colors to make it better!



CHALLENGE

Can you design a light-based code for your creature? Imagine it uses glowing patterns to say "hello" or send a warning. How will your creature use light to communicate?

ACTIVITY

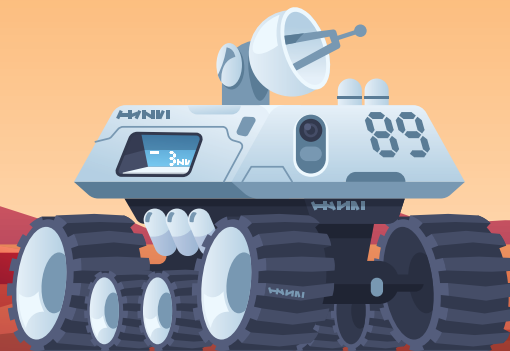
5

Rover Rescue Mission

Theme: Space Exploration

Inspired by: “Space Buddies”

In *Space Buddies*, a group of adventurous puppies become astronauts and explore the Moon. Real astronauts use special vehicles called rovers to travel across planets and moons, designed to handle tough terrain and harsh conditions. In this activity, you’ll design and build your own space rover to explore a distant world. Can you create a rover ready for an out-of-this-world mission?



STEM Education Works®



Activity 5: Rover Rescue Mission

Theme: Space Exploration | Inspired by: "Space Buddies"



1. Ask:

- How do rovers explore other planets?
- What features would a rover need to make it safe and effective for space exploration?



2. Imagine:

- What tools would your rover need?
- Would it scoop rocks, roll over bumpy ground, or take pictures?
- What special tools or designs would make your rover ready for space exploration?



3. Plan:

- Draw your rover design.
- Gather materials: cardboard, paper cups, foam, straws, wooden sticks, toy wheels, markers, aluminum foil, plastic wrap, small plastic cups or containers.
- What will help it move and survive on another planet?



4. Create:

- Build your rover using your materials.
- Add wheels or legs to help it improve.
- Be creative - add fun details to get it ready for space!



5. Test and Improve:

- Set up a "space obstacle course" with bumps and ramps
- See how well your rover rolls or slides!
- If it doesn't work well, try making changes:
 - Should it have bigger wheels?
 - Does it need to be stronger or faster?



CHALLENGE

Can you design a scoop or camera to collect samples like soil or rocks? Also try creating a mini "mission control center" to help guide your rover's movements!