From Prototypes to Public Service Announcements
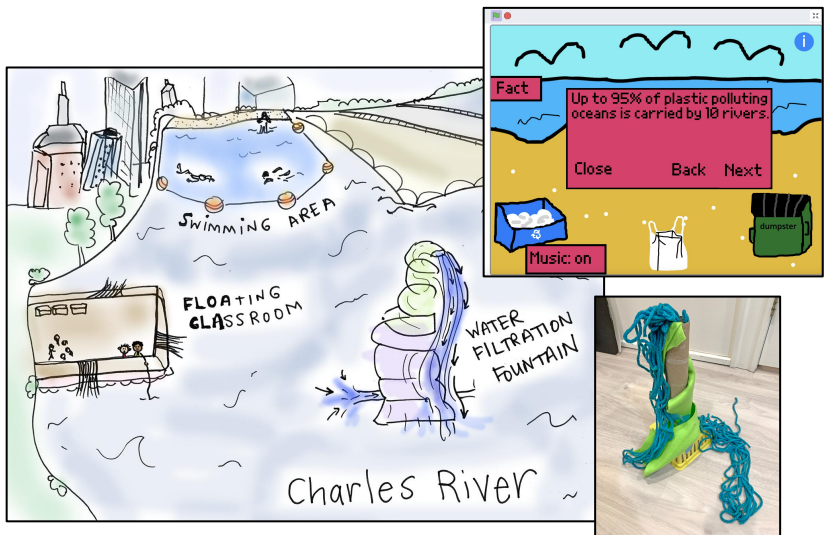
Exploring Creative Problem Solving

Cards in This Pack

- Project Message

- Prototype Your Solution

- Code Your Sprite

- Scratch Project Inspiration / Reflection

Combine with other cards like "Imagine a World" or "Create a Story" to learn how to animate your sprites!
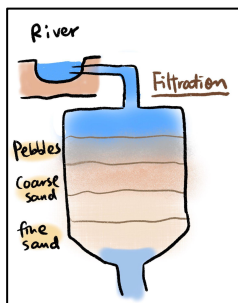
Project Message

1. **Identify** a real world problem.

2. **Imagine** a world where the problem is solved: What would it look like, feel like, sound like, etc.?

3. **Research** the problem.

4. **Brainstorm possible solutions**.

Possible Places to Research:

- ## Kiddle Safe Search
  https://www.kiddle.co

- ## Global Goals Project Podcast
  https://www.globalgoals.org/podcast

- ## Interview a Community Member
  https://www.climatehubs.usda.gov/sites/
  default/files/Interview--Lesson%20plan.pdf
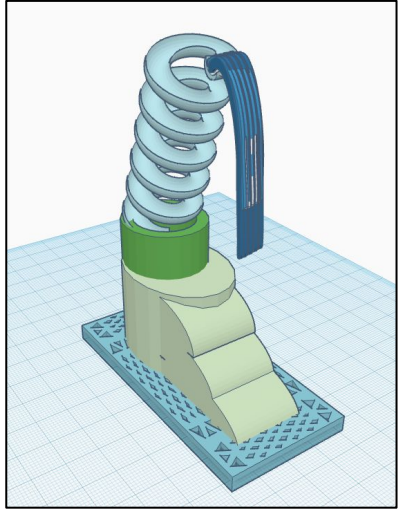
Choose one of your solutions to explore.

*Water Filtration System Drawing
Image Source: Tracy Tang*

*Petition for Awareness Scratch Project
Image Source: @shoothoops00*

Prototype Your Solution

Options:

- **Unplugged**: Use art materials and recyclables to create your prototype

- **Digital**: Use applications like Tinkercad

- **Digital:** Use the Scratch paint editor

Example solutions shown above: unplugged and Tinkercad versions of a water filtration fountain.

Prototype in Scratch

- Open scratch.mit.edu

- Choose "Create"

- Design your own solution by drawing sprites and backdrops

    - use the paint editor tools

    - upload photos of your prototype

    - remix available sprites

- Consider adding a narrator sprite(s) to share information

- Consider adding sounds related to your prototype

SCRATCH
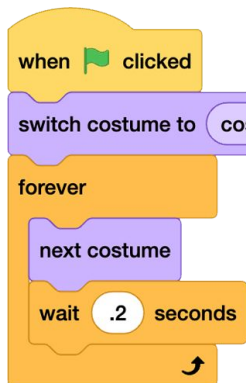
Code Your Sprite

Options:

- Create an **informational project**.

- Create a **story with characters** and your prototype as a background.

- **Animate elements** or **add interactivity**.

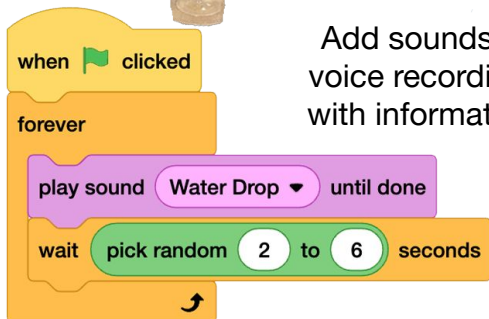*Example project scratch.mit.edu/projects/725319255 by pixelmoth*
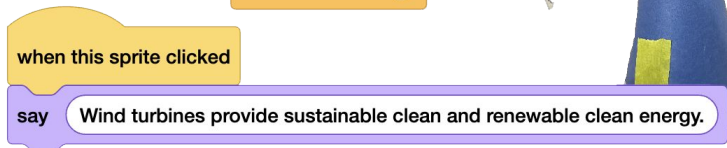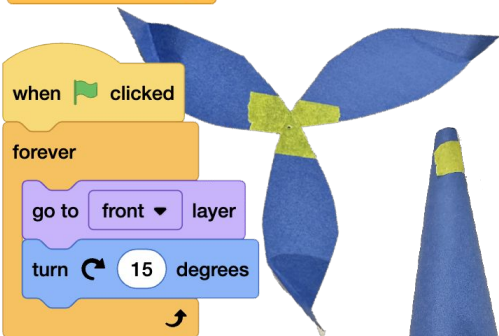
Code Your Sprite

scratch.mit.edu

IDEAS TO TRY

```
when 🏳 clicked
switch costume to ( costume1 ▾ )
forever
  next costume
  wait ( .2 ) seconds
```

Combine photos and vector shapes to create multiple costume changes.

Add sounds or voice recordings with information.

```
when 🏳 clicked
forever
  play sound ( Water Drop ▾ ) until done
  wait ( pick random ( 2 ) to ( 6 ) ) seconds
```

Add animations, like turning or moving or color changes.

Use "say" or "speak" blocks to communicate information.

```
when 🏳 clicked
forever
  go to ( front ▾ ) layer
  turn ↻ ( 15 ) degrees
```

```
when this sprite clicked
say ( Wind turbines provide sustainable clean and renewable clean energy. )
```

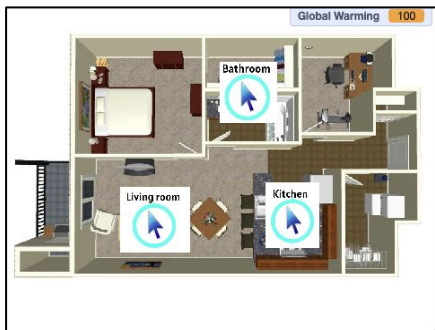# Scratch Project Inspiration

Plastic Pollution Simulation
By Action_project

Help Save the Earth!
By Maltese_Falcon

Graffiti Public Service Announcement
By NutMeg_Coder

Global Warming Simulation
By Owen-Wong

Reflection

- Step back and examine the process:

    - What have you learned about the problem?

    - Where did you get stuck?

    - How did you get unstuck?

- What would you change about your solution? Have others explored a similar real world problem? What was their solution? If you've learned new information, how might you iterate on your solution?

- What is something you are looking for feedback on?