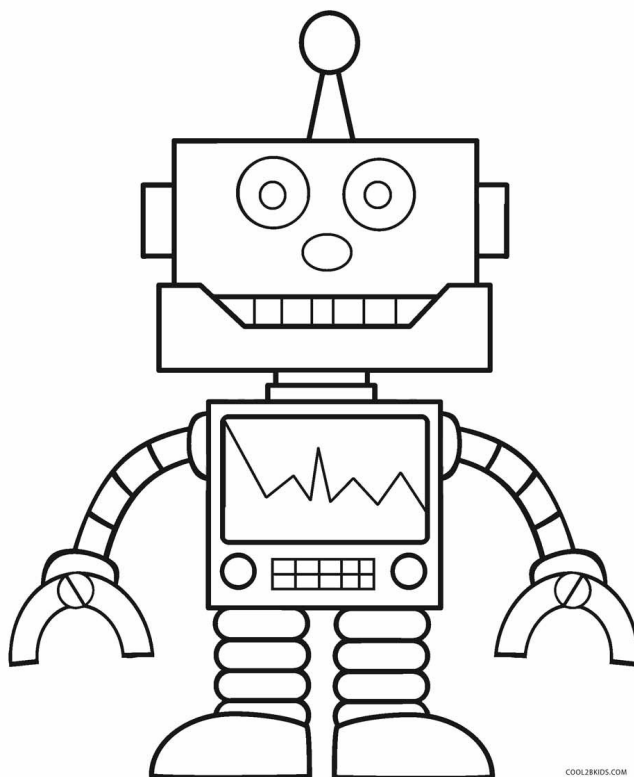


# GirlsGotSTEAM One-Day Workshop: Vibrobots

## SciNotebook



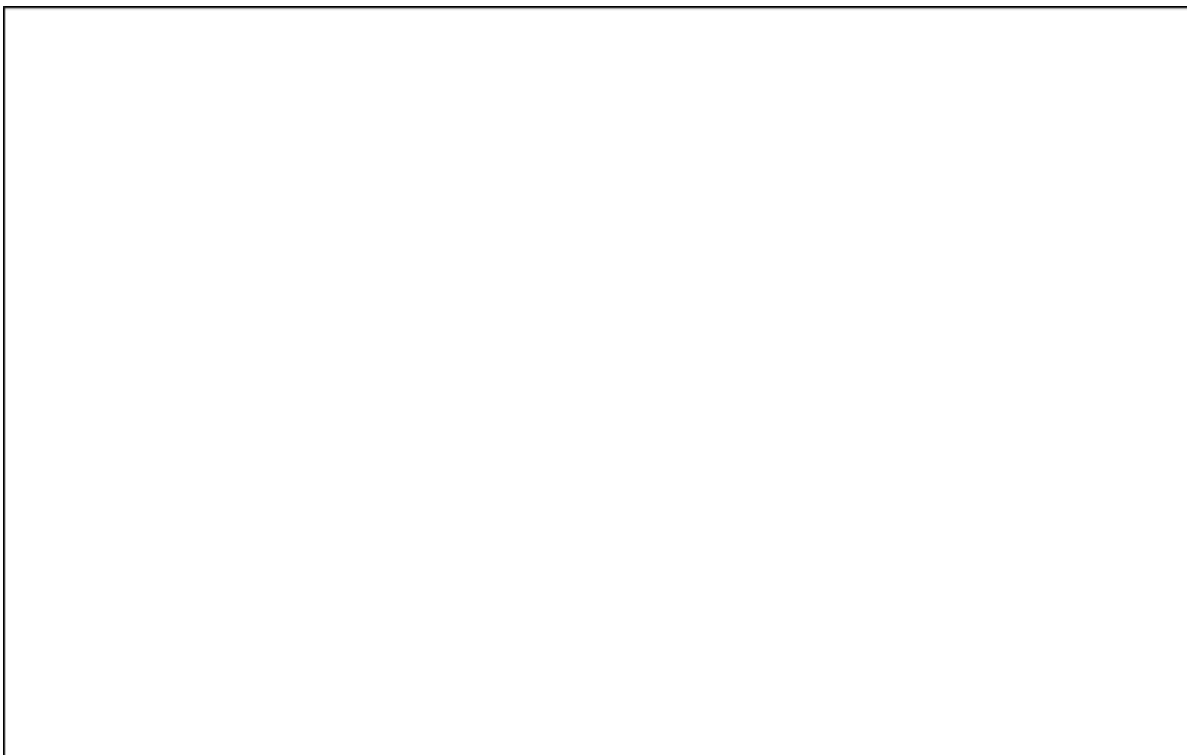
**Name:** \_\_\_\_\_



## **GirlsGotSTEAM One-Day Workshop: Vibrobots**

### **Introduction**

While your instructor is discussing vibrobots, draw what you think they look like below!



What are the two components that make a vibrobot move? Draw what they look like in the box down below! (Hint: one starts with B and the other starts with M).

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Fill out the table below with the correct step for the engineering design process.

Step	Description
Step 1:	What are the challenges and how can we solve them?
Step 2:	What are things other people have done?
Step 3:	Think up lots of ideas. Pick one, make a plan and draw out what you want to make.
Step 4:	Build your plan.
Step 5:	Test your idea. What worked and what didn't?
Step 6:	Think about how your design can improve.

**Word Bank**

Explore	Make it Better
Try it Out	Create
Identify the Problem	Design

Draw your own flow chart explaining what order each step goes in. Make sure to include your arrows!



**Physics Concepts**

Draw a picture that will help you remember what each of these physics concepts are.

- Friction
  
  
  
  
  
  
  
  
  
  
- Mass
  
  
  
  
  
  
  
  
  
  
- Center of Mass
  
  
  
  
  
  
  
  
  
  
- Stiffness

Answer these reflection questions that relate to the physics concepts you just learned!

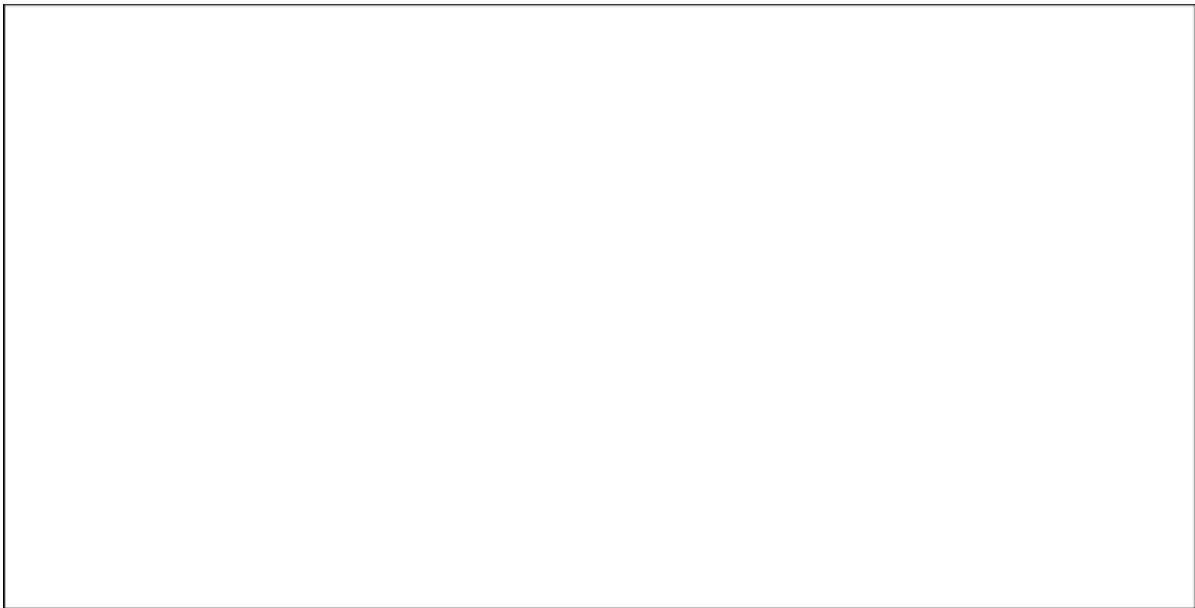
1. What are some common household materials you could use to make your vibrobot?
  
  
  
  
  
2. Do you think your robot would move faster on a smooth surface or a rough surface?
  
  
  
  
  
3. What do you think would move faster, a heavy robot or a light robot?
  
  
  
  
  
4. Which would tip over more easily, a very tall robot or one that is low to the ground?
  
  
  
  
  
5. What do you think would spin in circles faster, a robot whose body is tightly bundled up, or one that has long legs sticking out in all directions?
  
  
  
  
  
6. What do you think would move faster, a very stiff robot made of paper clips, or a very soft robot made of cotton balls?

**Planning**

Use the space below to plan your vibrobot! It's okay if it fails, we provided two boxes with plenty of space for you to sketch in. **REMEMBER:** redesigning and building is part of the engineering design process.

A large, empty rectangular box with a thin black border, intended for sketching and planning the vibrobot design.

Need to redesign? No problem! Here's some space down below.

A large, empty rectangular box with a thin black border, intended for sketching and planning the redesign of the vibrobot.

**Final Build**

After you have planned and tested out your vibrobot, draw what the final product looks like in the box down below.

**Reflect**

Here are some reflection questions. Answer them and use them as a guide during your discussion.

1. What was the hardest part about this challenge?

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2. What can you do differently next time to improve your vibrobot?

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3. What are some household items you can use to create another vibrobot?

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4. What is your favorite step of the engineering design process and why?

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For your final drawing, draw your dream robot below!

