

Name: _____

Date: _____

Lesson 12: Handout

Investigation: Building a better speaker

The question we want to answer

Investigation question: _____

What are we going to change between the two cup speakers?

Independent variable

- What part of the system will we test? _____

Difference in our independent variable between the two cups	
Cup speaker 1	Cup speaker 2

- Prediction: How do we think this will influence sound?

How will we measure if the change mattered?

Dependent variable

- What will we measure to see if our independent variable had an influence?
- How will we measure it?
- How many times do we need to measure it?
- How will we make sure our data is not biased?

What are we going to keep the same in both cup speakers?

List the parts of the speaker that you will keep the same in both cup speakers.

Part staying the same	What will you use

Plan and conduct the investigation

List the materials you need:

-
-
-
-
-
-

Number and list the steps you will take to build your two cup speakers.

1.

Results: Data table

	your tests			another team tests your cups		
	trial 1	trial 2	trial 3	other blind?	other blind?	other blind?
cup speaker 1						
cup speaker 2						

Is there anything that happened during data collection that could have unfairly influenced your results?

Model your cup speaker comparison

Draw a diagram to show how your changes in your independent variable influenced magnetic forces in the cup speakers? Include in your diagram both cup speakers. Add to the diagram how the change in magnetic forces caused the speaker to vibrate differently (if it was different).

Interpret and discuss your results

1. Does your data help you answer your investigation question? If it does, write a claim in the space below that answers the question. If it does not, write this in a statement in the space below.

2. What evidence did you find from your investigation to support this claim?
If you did not have evidence to make a claim, explain why your data does not help you answer the question, and what additional data you would need.
