



TALENT
MAKER CITY

THE BUS PROJECT

TODAY'S EXPLORATION: Storing Items On A Moving Bus

Grade Level : 3

Overview: Students will explore magnets, how they act, and how they could use them to help store items on a moving bus to keep objects safely at rest.

NGSS: 3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. [Clarification Statement: Examples could include an unbalanced force on one side of a ball that can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.]

NGSS: 3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.

Practices

- Planning and Carrying Out Investigations
- Asking Questions and Designing Solutions
- Modeling

Crosscutting Concepts

- Cause and Effect

Materials:

- Collection of magnets
- Collection of classroom or kitchen items that the magnet will and won't stick to
- [Magnet Data Recorder](#)

Investigation:

1. Use a magnet to investigate items around the classroom or house. Figure out if there are some items that the magnet sticks to or some that it does not stick to. Record the

findings in the [Magnet Data Recorder](#).

2. After the investigation, discuss or reflect on the following prompts by making a poster including details of the discussion or reflections;
 - a. Which items did the magnet stick to, and to which ones did it not stick?
 - b. What do the items have in common if the magnet stuck to them?
 - c. What do the items have in common if the magnet did not stick to them?
 - d. Based on the discoveries, what items or furniture might be magnetic in the bus?
 - e. How could magnets be used to help items stay at rest when the bus travels?
3. After the discussion, design a solution using magnets for items that shake around on the bus when it travels.
4. Draw a model using labels, arrows, and descriptions of how magnets can be used on the bus to help secure an item during travel.
5. Share the model with another person or people.

Product or Artifact Possibilities:

- Completed [Magnet Data Recorder](#)
- Discussion or reflection poster
- Drawn model of a magnetic solution for the bus

Guiding Questions:

1. What items are magnetic and which are not magnetic?
2. How can magnets be used to help solve a problem?

What Are We Discovering?

Magnets interact with materials differently. Magnets will stick to some items and not others. The items that magnets will stick to have similarities. Magnets can be used to solve problems. Magnets can apply an opposing force to keep an object at rest.

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Directions: In the table below record the items you find that a magnet sticks to and the items that magnets will not stick to.

Sticks To	Does Not Stick To