



# THE BUS PROJECT

## TODAY'S EXPLORATION: Creating and Designing a Toy

### Grade Level : 2

**Overview:** Students will collect and use materials to construct a toy for entertainment.

**NGSS: 2-PS1-3.** Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.]

### Practices

- Planning and Carrying Out Investigations
- Constructing Explanations and Designing Solutions

### Crosscutting Concepts

- Energy and Matter

### Materials:

- Building materials:
  - No longer needed household items: hangers, tubes, beads, etc.
  - Recyclables: cardboard boxes, styrofoam, plastics, etc.
  - Craft Items: plastic utensils, beans, cotton balls, etc.
- Adhesives: glue, tape, rubber bands, etc.
- Scissors
- (Optional) paint, crayons, markers, etc.

### Investigation:

1. Collect all the items that students can use to craft a new toy or recreate an existing type of toy.
2. The collection can be over a matter of days or weeks and used as an opportunity to collect from the community.
3. Students can work independently, in pairs, or teams of 3-4 students.

4. To have some constraints on the project, decide on the amount of time students will have for this project ahead of time.
5. Have students develop a plan for a toy. They should brainstorm an idea of a type of toy they would like to create and decide on one. They can then draw a prototype.
6. Students should decide on the materials they would like to have to make their toy. They can look at what has been collected (Optional - students could have one night to collect additional materials they want for their toy now that they have a plan).
7. Give students a construction timeline (ex. 2 - 4 days, at 30 minutes per day)
8. After students have constructed their toy, they can “show and tell” what they created, the materials they used, and what they would do to make it better in the future.
9. (Optional) You could allow students the opportunity to iterate their design one more time if time allows.

### Product or Artifact Possibilities:

- A drawn prototype and plan
- A constructed toy

### Guiding Questions:

1. Are some things better to build with than others? Why did they work better?
2. What smaller parts made up the whole of the created toy?

### What Are We Discovering?

Objects are made up of smaller parts. Small objects can be put together to create larger objects. We can create solutions and designs for problems, wants, and needs.

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