

Unit 9 (Mechanisms): Creating Team Entries

Content Objective

Make working models of the product in Design Brief.

Language Objectives

Students will listen to the teacher orally explain the Design Brief task, and will orally share questions they have

Students will use high-frequency and subject-specific vocabulary learned in previous lessons

Students will describe their products using increased specificity and detail depending upon their level of oral English language development.

Standards

- **NGSS:**

- **K-2-ETS1-1.** Ask questions, make observations, and gather information about a situation people want to change to define problem that can be solved with a new or improved object or tool.

- **TEKS:**

- **2B** plan and conduct simple descriptive investigations such as ways objects move (investigate movement)
 - **2E** communicate observations with others about simple descriptive investigations (communicate observations)
 - **4A** collect information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as terrariums and aquariums (use tools)
 - **6D** observe and describe the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow (how objects move)

- **ELPS:**

- **Listening 2D:** Monitor understanding of spoken language during classroom instruction and interactions and seek clarification as needed
 - **Speaking 3E:** Share information in cooperative learning interactions (Communicative Competence)
 - **Speaking 3D:** Speak using grade-level content area vocabulary in context to internalize new English words and build academic language proficiency [Application for Acquisition]

Suggested Literature Connections:

“If I Built a Car” by Chris Van Dusen

Materials:

All consumable craft and construction materials the children have used up to this point should be available to them to use in making their products (eg., boxes; paper towel rolls; construction paper; clay; milk cartons; paste; tape; etc.)

Design Brief

Make a vehicle that rolls when you push it or pull it. It should have at least one door that opens and will stay shut.

Suggested Exploratory Activity Centers:

- **Art:** Students work with wheel macaroni to make pictures of vehicles from their stories.
- **Multimedia:** Students tape-record a story about a magic vehicle.
- **Reading:** Place on display storybooks that have wheels in them, or books shaped like cars.
- **Reading/Listening:** Set up listening stations for stories like *The Little Engine That Could* and *Mike Mulligan*.
- **Math:** Students count how many turns of different-sized wheels are necessary to cover a given distance.
- Use a digital camera to take pictures of student products; children can word-process accompanying stories.
- **Cooking:** Students make pizza and cut it with a pizza wheel.
- **Sorting:** Sort model cars and wheeled toys by how fast they roll, the types of axles they have, etc.
- **Lego Car Story-Writing:** Use Legos to build vehicles that roll, then write stories about the cars they invented.
- **Teddy Bear's Trip Story-Writing:** Make a car for a Teddy bear out of a large cardboard box. Invent a story about Teddy bear's trip.

Day 1: Engage/Explore

Teacher Says/Does	Student Says/Does	Language requirements
<p>1. Show the students the Design Brief:</p> <div style="border: 1px solid black; padding: 10px; background-color: #ffffcc;"> <p>Design Brief</p> <p>Make a vehicle that rolls when you push or pull it. It should have at least one door that opens and will stay shut.</p> </div> <p>2. Tell them that there is going to be a Technology Fair at the school soon, and that their teams are challenged to come up with a product that solves the Design Brief problem. Each student team will enter a product and a dictated description that names the product, tells how the team worked on it and how it was made.</p> <p>3. Set the context. Remember that the product is to be inspired by some event, character, object or idea from a story, from science, or from social studies. Ask the students to name a vehicle that rolls and has a door from the story, Curious George in Africa? (or some other story). Allow students to give several ideas from your current book. For example, they may make “the car owned by the man with the yellow hat.” If you are studying Community Helpers, they may make a police car or a fire truck. Another approach is to ask the children to solve a problem for a child that needs to bring a large pet to school, or needs to get some other large object across town or across the garden.</p>	<p>Students share ideas that might inspire their product</p>	

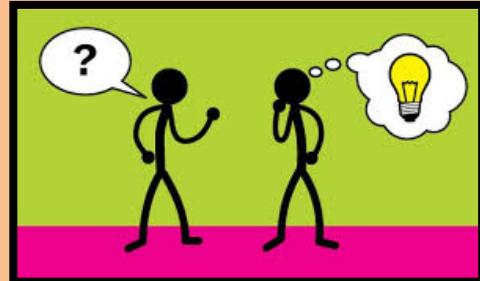
Day 2: Explore/ Explain

Teacher Says/Does	Student Says/Does	Language requirements
<p>1. Remind the student teams how important it is to think of ideas different from everyone else's.</p> <p>2. Also remind the teams how to work best. Use the handout (K.9) to discuss the Design Brief steps:</p> <ul style="list-style-type: none"> Step 1. Ask questions to be sure you understand the Design Brief. Step 2. Plan before you work. Step 3. Remember safety rules. Step 4. Check what you make. <p>3. When a team has finished, have them dictate to you or write a description of their product and how they made it. They should describe how they worked as a team. The written description can be displayed at the Technology Fair. Awards for the Technology Fair are non-competitive and celebrate the many differences between products and diversity of excellence. The Resources section has some examples of awards you may wish to use.</p>	<p>Students discuss the different stages of implementing a design</p> <p>Student teams dictate a description of their product to their teacher</p>	

Names: _____ Date: _____

Bendable Toy Design Brief

1. Ask questions to be sure you understand the Design Brief!



2. Make a plan before you work.



3. Remember safety rules.



4. Check what you make.

