



## HOW TO GET STARTED GOING DOWN THE RIGHT TRACK

Here are some suggestions on how to get started on the maglev train unit.

### One to two weeks before you begin:

1. Gather the following supplies for this activity.
  - cardboard (*width* – width of track – *length* – 5” and various other sizes)
  - coffee stirrers
  - construction paper (4” x 6”)
  - index cards (3” x 5” and/or 4” x 6”)
  - magnets (1” x \_” x 3/16”)
  - popsicle sticks
  - sandpaper (2” x 2”)
  - straws
  - Styrofoam (2 \_” x 5”, 3” x 5”, and 4” x 5”)
  - tape

The above materials are recommended for use during this engineering challenge. Please feel free to add to or delete from this list.

2. Build the maglev track mentioned in this section if you are unable to purchase one.
3. Measure the width of the track. Cut at least 40 – 50 pieces of cardboard about 2/16” shorter than the width of your track and five inches long. The students will use this size for the bottom of the train. The cardboard needs to be able to move freely in the track. If you have too much cut off the trains will flip so you don’t want to cut too much off. Some pieces may not work for the bottom so you want to have enough to choose from when the students are preparing the bottom of their trains. Some teams will use this size for the sides and roof. You will want to cut a variety of other sizes, also. Students should have a variety to choose from when they are building.
4. Each team will need a container to store supplies and money. You may want to send a note to parents asking them to send in large plastic containers or shoe boxes.
5. The students will be using “money” during this unit. It takes about a week to duplicate, laminate, and cut out all the coins and dollar bills. (Please look in the *Store* section.) You will want to buy or make containers to hold change in the store.
6. There are price tags in the store section you may want to cut apart, mount on construction paper, and laminate.

7. Prepare a store window.
8. There are word cards provided in the unit. It is suggested they be mounted on construction paper and laminated.
9. Have parent volunteers help you prepare the center ideas.
10. Ask a local hardware store if they will donate painters' hats for the children to wear during the building process. (This really makes them feel like engineers!) Some companies do sell plastic construction hats for a reasonable amount.
10. Run off the Engineering Portfolio for each student. Place in a folder with prongs. (See *Engineering Portfolio* section.)

**One to two days before you begin the unit:**

1. Set up your classroom store.
2. Decide which children will be working together. (It is suggested students work in teams of two.)
3. Organize materials for the bulletin boards.
4. Prepare some magnet experiments for the students to do.

**To begin the unit:**

1. Introduce magnets to the students by reading books and doing experiments. (See the *Bibliography*.)
2. Read books about trains to the students or have them read books independently. (See the *Bibliography*.)
3. Familiarize the students with the parts of a train.
  - Use pictures and word cards.
4. Introduce the terms on the word cards. Send the vocabulary list home with students.
5. Before the students actually start building, the engineering portfolio needs to be reviewed with them. They need to do the Engineering Team Information and Engineering Worksheet One first. (See *Engineering Portfolio* section.)
6. You may want to have the students read some of the selections in the *Resource Booklet* section and complete some of the worksheets that are

related to the readings.

This unit is designed to last approximately two to three weeks. The ideal amount of building time is 30 to 45 minutes each day. Take time to pick and choose the activities you feel will work best for your students and...

## **SPEED ON DOWN THE TRACK!**

