FROM HERE TO THERE



STUDENT WORKBOOK





THEY SEE ME ROLLIN'

Think of a time when you could not reach something you wanted. What did you do?

MARBLE RAMP

WHAT YOU NEED:

FROM THE KIT:

- 2 pieces of cardstock
- Foam cup
- Marble
- Masking tape
- Tape measure

OTHER ITEMS:

- Chair or table (optional)
- Scissors

WARNING:

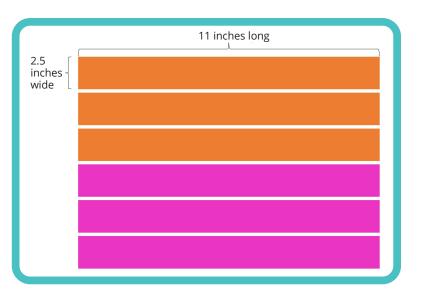
WARNING! CHOKING HAZARD Small parts. Not for children under 3 years.

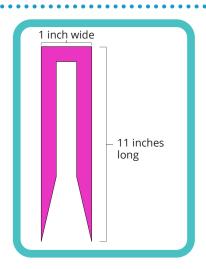
WARNING! An adult should help with steps that need scissors. Always cut away from your body.



WHAT TO DO:

STEP I Cut each piece of cardstock into three long strips. Each piece should be 2.5 inches (in) wide by 11 in long. You will have six same-size pieces in total.





Fold the sides of each piece STEP 2 in towards the middle to make a thinner piece. You should have a channel. The channel will be about 1in wide by 11in long.

- Set the ends of the channels together so they STEP 3 make one long channel.
- Tape the individual channels together. STEP 4
- Measure the length of your channel using the STEP 5 tape measure and write it in the table on the next page.
- Hold your long channel, or tape it STEP 6 to a chair or table.



- **STEP 7** Set the foam cup at the bottom of the channel.
- STEP 8 Place the marble at the top of the channel and let it roll down the marble run.
- STEP 9 Write how long it took the marble to reach the cup on the table. Measure time in seconds (s).

STEP IO Repeat Steps 8–9 two more times.

Note: Save all materials for future activities in this kit.

TRIAL	LENGTH OF MARBLE RUN	TIME TO REACH CUP
1		
2		
3		



REFLECT

- ?
- 1. What are two things you noticed about the marble run?
- ?
- 2. What are two questions you have about the marble run?



MORE MOVEMENT

There is a lot more to learn about simple machines. Here are some other activities you can use to learn more!

15 PARK PLAY

HANDS-ON

There are many simple machines all around you. One of those locations is at your local park. Visit your local park and check out the simple machines yours has. Look for slides, ramps, see-saws, pulleys, and wheels.

16 CHANGING DIRECTION

DIY ACTIVITY

In Activity 1, you made a marble ramp that moved the marble in one direction. Many marble ramps have more than one piece and have the marble switch directions. Make your own marble ramp design to see how changing directions affects how long the marble takes to get down the ramp.

WHAT YOU NEED:

- Cardstock
- Marble
- Masking tape
- Scissors

WHAT TO DO:

- 1. Design your marble ramp.
- 2. Build your marble ramp.
- 3. Test your marble ramp.
- 4. Compare the amount of time it took the marble to reach the bottom of the ramp with the amount of time it took in Activity 1. Which marble ramp took the longest to complete? Why do you think that is?

17 ROLLER COASTER RIDE

TECHNOLOGY CONNECTION

Do you like roller coasters? Have you ever been on a roller coaster? Roller coasters are a series of simple machines.

Visit a theme park or amusement park with roller coasters and other mechanical rides. When you're there, look for examples of simple machines used. You can even ride the different rides to see which types of simple machines you like best.

18 ZIPPY ZIPLINE

TECHNOLOGY CONNECTION

Have you ever been on a zipline? If not, take this time to try it out for yourself. Ziplines are a fun simple machine that people use for travel and fun.



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