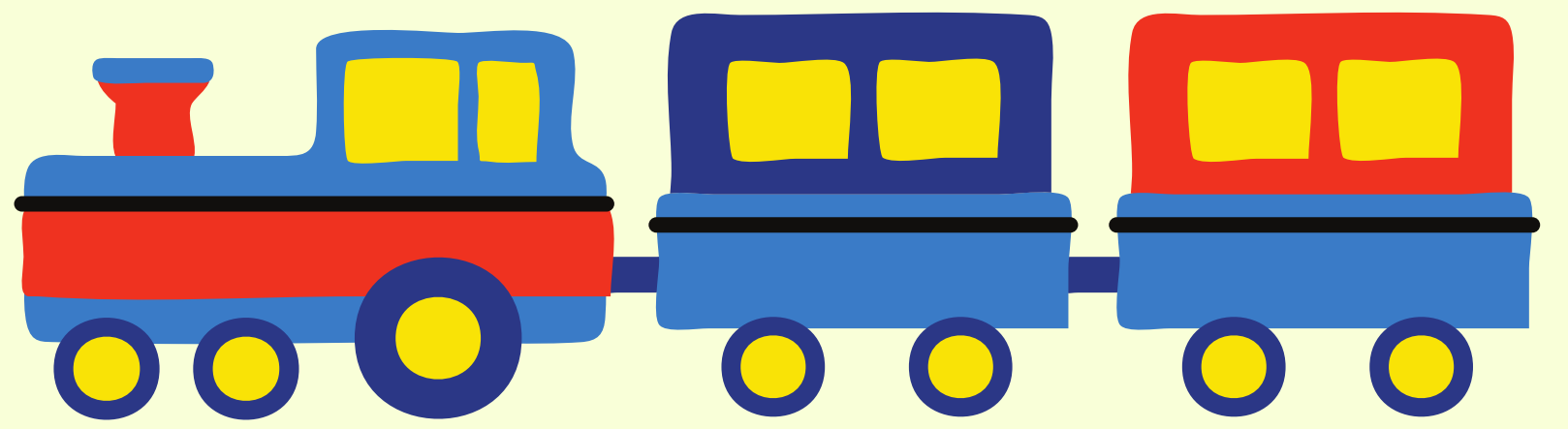


# TOTALLY COOL TRAIN WHEEL SCIENCE

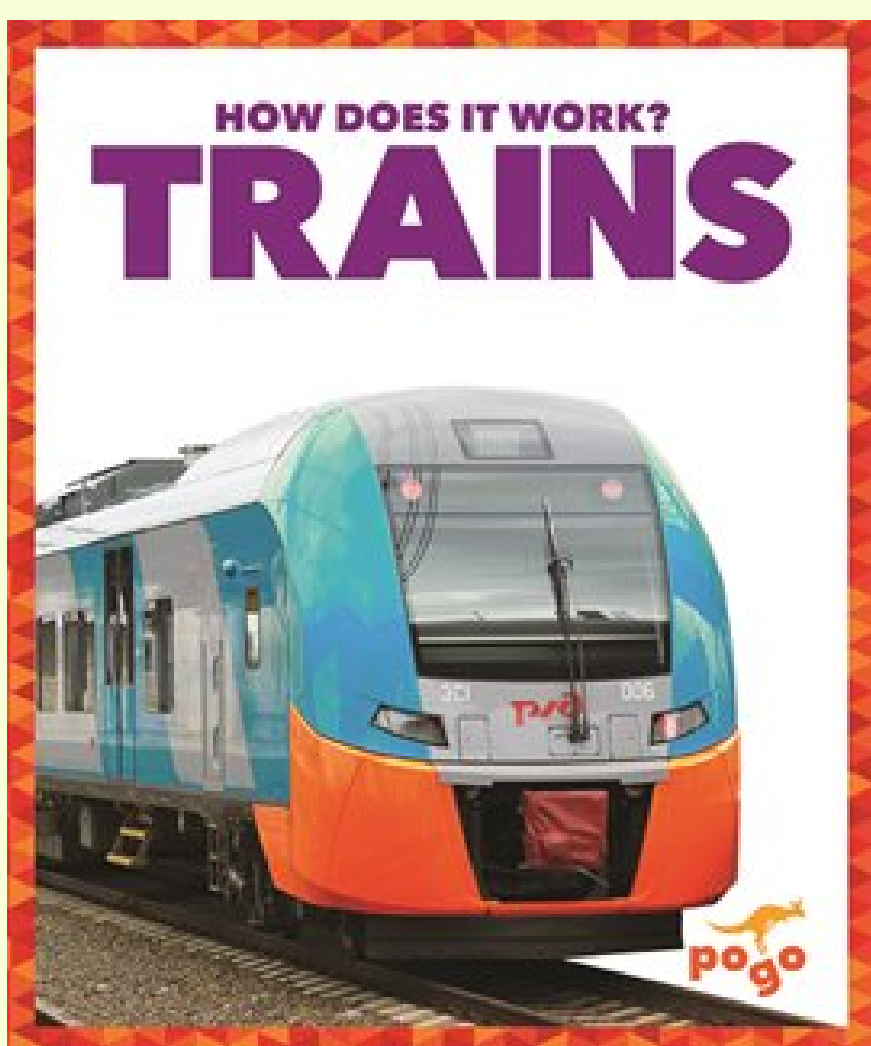
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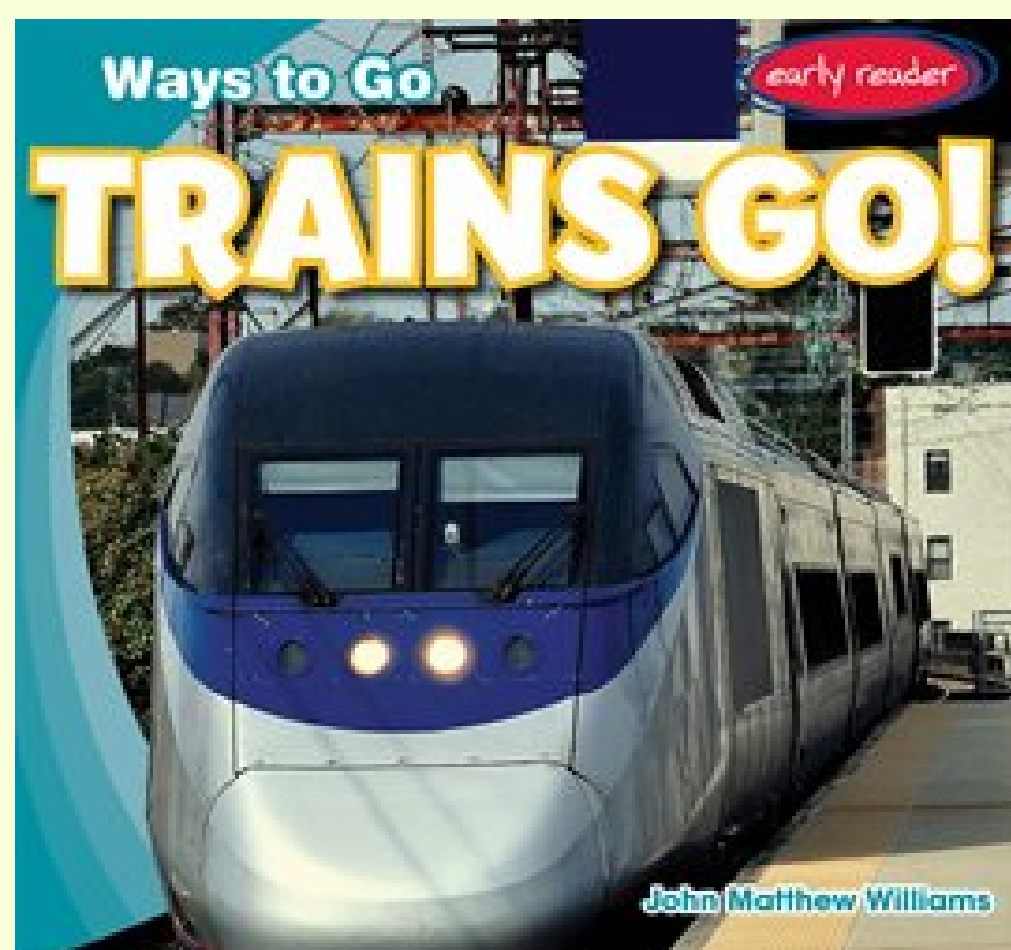
## Description:

Trains are one of the most essential locomotives that we use to move both people and cargo. But how do the train wheels stay on the tracks when they go at really fast speeds? Try this cool science experiment at home to learn about the special geometry behind train wheels!

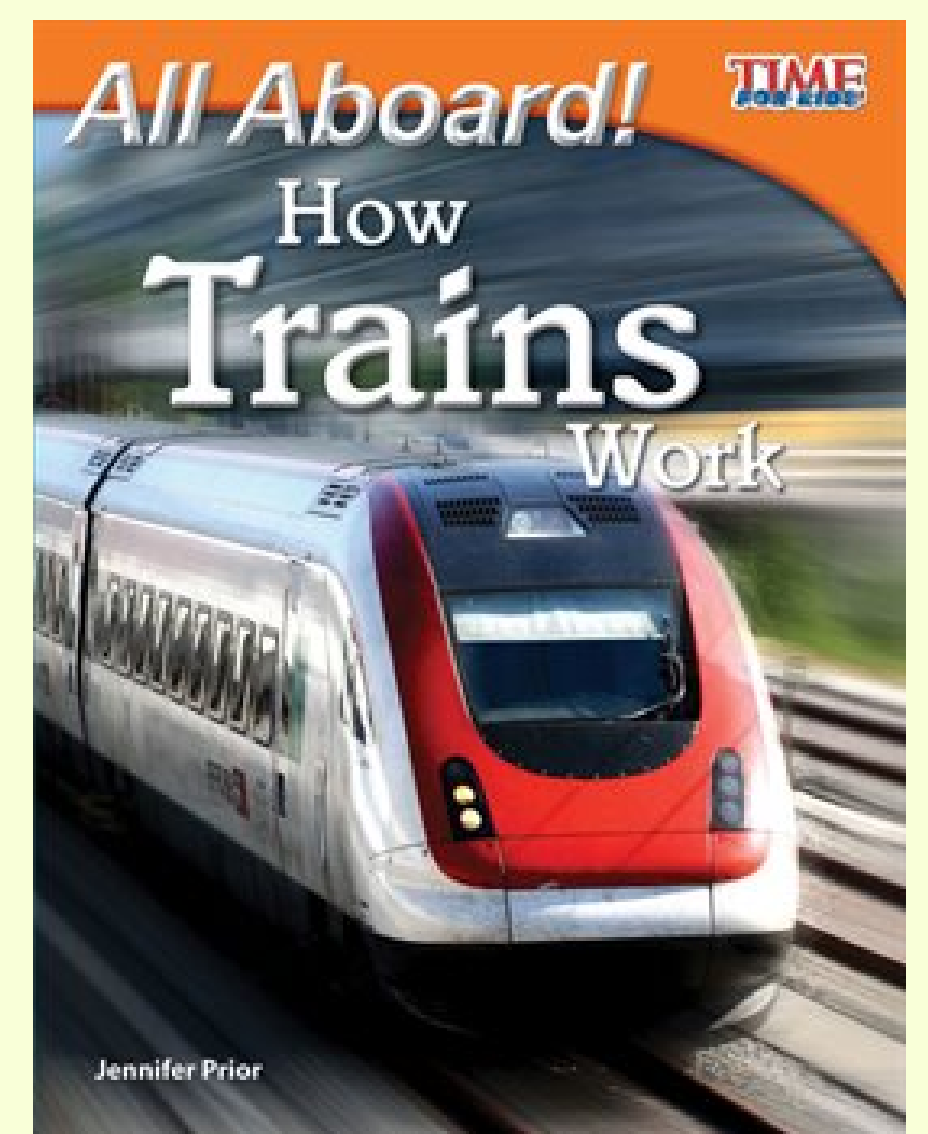
## eBooks



How does it Work?  
Trains by Nikole  
Brooks Bethea



Trains Go! by John Matthew  
Williams



All Aboard! How Trains  
Work by Jennifer Prior

# ACTIVITY:

## EXPLORE TRAIN WHEEL SCIENCE!

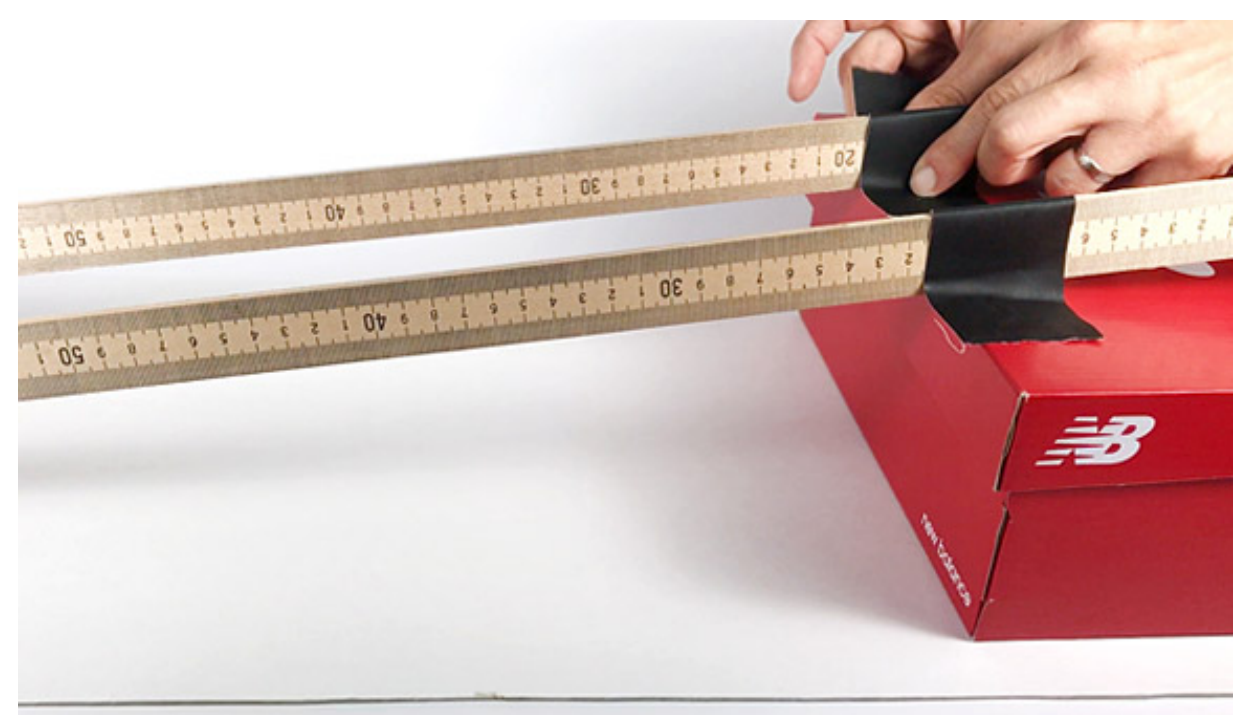
### Materials:

- At least 4 plastic or Styrofoam cups of the same size (with no raised edge)
- Tape;
- Two rulers or Yard sticks of the same length;
- Book or a shoe-box;
- Flat workspace (that can have items taped to it);
- Scissors (optional)
- Flexible cardboard or construction paper
- Wooden Skewers (optional)

**[CLICK HERE FOR MORE INSTRUCTIONS](#)**

### Steps:

1. Take 2 cups and tape both of them together using heavy-duty tape with their bases facing each other.
2. Next, take your other 2 cups and tape them together with their tops facing each other. What are the differences between the first batch of cups and the second batch? Do they have the similar or different shapes?
3. Make a model railroad track using the two rulers and the book or box. Position the rulers on top of the box so that they create an incline; place them on their narrow side up so that your cup setups will fit on top of them. Tape your rulers securely in place on the top of the box.
4. Carefully place the first cup setup at the top of the slope, and put it as close to the center as possible. Let go of the cup setup and let it roll down the track. Do this several times - how does the cup setup behave? Do you always get the same results?
5. Take your second cup setup and place that on the top of the slope; again, put it as close to the center as possible. Let go of the cup setup and let it roll down the track. Do this several times - does this cup setup behave any differently than the other one?
6. Now take the first cup setup and place it off-centered, either slightly to the left or to the right. What happens now - does it stay on the track? Test it several times.
7. Take the second cup setup and also place it off-centered either slightly to the left or to the right. Does this setup stay on the track or not?
8. What conclusions can you draw as to which shape is the best for staying on the track? Tune into the video that we post on our [Facebook page](#) for an explanation of why this happens!



# Extra Fun:

**Q: HOW DO YOU FIND A MISSING TRAIN?**

**A: YOU FOLLOW THE TRACKS!**

**Q: HOW DID THE LOCOMOTIVE GET SO GOOD AT ITS JOB?**

**A: BY 'TRAINING'!**

**Q: WHAT DO YOU CALL A LOCOMOTIVE WITH A COLD?**

**A: ACHOO ACHOO TRAIN!**

[Click here for local history on trains and telegraphs in East Gwillimbury from our friends at the Sharon Temple](#)

