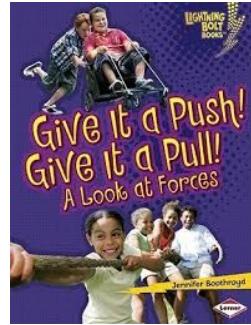


GIVE IT A PUSH! GIVE IT A PULL! A LOOK AT FORCES

BY JENNIFER BOOTHROYD



Discussion Questions:

1. What is force? What example does the text give you about the push and pull force? What other forces are in our world?
2. How do things get put into motion? How does the strength of a force change the motion?
3. Compare and contrast the difference in force with a brick wall and a glass window.
4. Which part of the text supports the idea that force is needed to help stop an object in motion?
 - a. "The batter hits the ball. The ball flies in a different direction."
 - b. "Friction is a force that slows things down or makes them stop"
 - c. "Forces change the shape of things."
 - d. "A gentle force will make a toy boat move a short distance from you."
5. How does the heading "Putting Things in Motion" help the reader?
6. Why does the author include a table of contents?
7. Give an example of a caption in the text
8. What is the difference between a glossary and an index? How do we use them?

WRITING RESPONSE:

What is the difference between a glossary and an index? How do we use them? (give examples from the text)

Explain using examples from the text about how an object goes into motion, changes motion, or even stops.

FORCE SCIENCE EXPERIMENTS!!!

1. Ball Toss:  Toss 3 different size balls (basketball, golf ball, baseball) into 3 buckets at different distances. How was the force used different between each toss?

| Ball Used | Describe the force used to toss the ball into bucket |
|-----------|--|
| | |
| | |
| | |



2. Friction Races:

- Use two pieces of cardboard to make a ramp (one smooth and one with some type of friction or bumps)
- Angle both cardboard ramps the same height.
- Estimate (make a guess) how far you think the ball/car will roll down the ramp starting at the bottom of the ramp
- Use a toy car or small ball to roll down both ramps.
- Measure how far the car/ball went down each ramp starting at the bottom of the ramp to the car.
- Which car went faster? The smooth ramp or the ramp with friction?

| Estimation of distance: Smooth Ramp | Estimation of distance: Ramp with Friction | | Actual distance of Smooth Ramp: | Actual distance of: Ramp with Friction |
|--|---|--|---------------------------------|---|
| _____ in. | _____ in. | | _____ in | _____ in |

Which ramp allowed the car/ball to roll further? Why do you think that?



3. Pom Pom Toss

- You need: Plastic spoon and pom poms and one partner to play!
- Both players need a plastic spoon and a pom pom to toss
- Place your pom pom into the spoon and line the spoons up at the starting line.
- Shoot your pom pom and record how far it flew!! If yours flew further, you're the winner!
- How do you make it shoot further? How much force do you need to use to pull the spoon back?

| Player 1 | Player 2 |
|--------------|--------------|
| _____ inches | _____ inches |



4. Catapult

- Create a catapult with your parents supervision
<https://www.youtube.com/watch?v=A6hQsJxzlws>
- Launch different objects using your catapult. Describe the distance they flew and the force needed to make them fly.

| Item Used | Distance Object Flew | Force Needed |
|-----------|----------------------|--------------|
| | | |
| | | |
| | | |
| | | |

5. Interested in some more fun force experiments?

Check out this website for some more fun like marshmallow shooters, marble mazes, stacking towers, and pendulum painting.

<http://thediscoveryapple.com/2016/12/20/10-awesome-force-and-motion-activities-plus-resources/>