

Just "Weight" and See-saw

A see-saw or teeter-totter is a fun piece of equipment on the playground. You have probably noticed that a heavier person can be balanced by a lighter person if they are on the right place on the see-saw. Let's see what that's about!

Materials:

- See-saw
- Pencil
- Tape
- Ruler
- Pennies

Procedures:

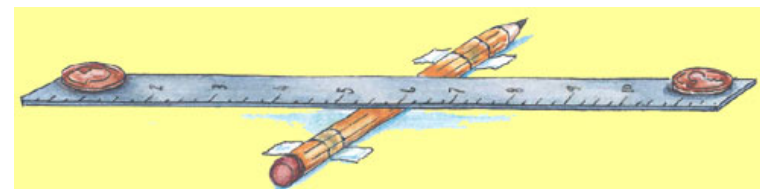
1. Have your adult partner sit on one end of a see-saw and you sit on the other. Is there any place your partner can sit along the see-saw so that you will both be balanced?



In order to balance a lighter person, should the heavier person be closer to the middle of the see-saw or further toward the end? You can make a model of a see-saw to help you answer these questions.

2. Use two pieces of tape to tape your pencil to a desk or table as shown.
3. Lay a ruler across the pencil and move it back and forth until it is as balanced as you can get it. Use a marker to mark the ruler right over the center of the pencil. This is your "balance point".

4. Place a penny on each end of the ruler. Keep the balance point of the ruler over the pencil and move the pennies until the ruler is balanced.



5. Stack a penny on top of one of the pennies at one end of the ruler. While keeping the ruler's balance point over the pencil, try moving the two pennies so they balance the one at the other end. Which way did you have to move the stack of two pennies?

Think about this ...

Instead of moving the pennies to balance the ruler, could you move the ruler to get it to balance? Place a stack of three pennies on one end of the ruler and a stack of two on the other. Move the ruler until it balances on the pencil. Which is closer to the pencil, the stack of three or two? Is that what you expected?

Where's the Chemistry?

A see-saw is like a big balance. A balance is like a lever with the fulcrum in the middle. When a force is applied to one end of a lever, like the weight of a person sitting on it, the lever can lift a weight at the other end. The further from the fulcrum the force is applied, the more weight can be lifted on the other side. If the weight on the other side is moved toward the fulcrum, less force is needed to lift it.



The American Chemical Society develops materials for elementary school age children to spark their interest in science and teach developmentally appropriate chemistry concepts. The *Activities for Children* collection includes hands-on activities, articles, puzzles, and games on topics related to children's everyday experiences.

The collection can be used to supplement the science curriculum, celebrate National Chemistry Week, develop Chemists Celebrate Earth Day events, invite children to give science a try at a large event, or to explore just for fun at home.

Find more activities, articles, puzzles and games at www.acs.org/kids.

Safety Tips

This activity is intended for elementary school children under the direct supervision of an adult. The American Chemical Society cannot be responsible for any accidents or injuries that may result from conducting the activities without proper supervision, from not specifically following directions, or from ignoring the cautions contained in the text.

Always:

- Work with an adult.
- Read and follow all directions for the activity.
- Read all warning labels on all materials being used.
- Wear eye protection.
- Follow safety warnings or precautions, such as wearing gloves or tying back long hair.
- Use all materials carefully, following the directions given.
- Be sure to clean up and dispose of materials properly when you are finished with an activity.
- Wash your hands well after every activity.

Never eat or drink while conducting an experiment, and be careful to keep all of the materials used away from your mouth, nose, and eyes!

Never experiment on your own!

For more detailed information on safety go to www.acs.org/education and click on "Safety Guidelines".

