Balancing Objects

Activity

Find out what makes an object easier to balance.

Time
20 minutes

Materials
- ✓ Assorted nonbreakable objects of different shapes, found around your room. Here are some examples:
  - pencils, markers, crayons
  - small toys
  - small boxes
  - blocks
  - erasers
  - rulers

  Note: Objects need to have pointy, round, narrow, wide, or flat sides.
- ✓ Does the Object Balance? recording mat with three columns: Balances, Does Not Balance, Sometimes Balances (1 mat per pair)
- ✓ Three pieces of paper

Prepare Ahead of Time
- ✓ Write the word *Balances* on a piece of paper.
- ✓ Write the words *Does Not Balance* on a piece of paper.
- ✓ Write the words *Sometimes Balances* on a piece of paper.


Balancing different-sized stones

Doing Science
Children **investigate** objects with different shapes and **predict** whether the objects can or cannot balance. Children **share information** about which objects balance.

Science Big Idea
Objects with wide, flat sides balance easier than objects with narrow, rounded, or pointy sides.

Science Question
What types of sides help an object balance?

5 Min: Intro (whole group)
1. Say, *We will use the same Superpowers of Science that scientists use. The question we will investigate today is, What types of sides help an object balance?*
2. Introduce the idea of balance. Ask, *What does balance mean?* Then show the idea by standing on one foot versus standing on two feet.
3. Ask children to stand still with both feet on the floor. Then have them stand on one foot.
4. Ask, *What was different about standing on one foot?* (It is more difficult to stand still on one foot. Standing on one foot is more wobbly.)
5. Explain the idea of balanced versus not balanced. Balanced objects do not wobble or fall over, like when we stood on two feet. Objects that are not balanced fall over, like when we wobbled on one foot. An object that is not balanced can stay up only when we hold on to it to keep it upright.

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10 MIN: EXPLORE (whole group, pairs)

Check in with children while they explore. Listen for Science Big Ideas and Science Talk.

6. Demonstrate the way to investigate balance:
    - Show children one object. Point out the object's different sides—flat, narrow, pointy, etc.
    - Choose one side of the object. Predict whether the object will balance or not balance on that one side.
    - Test the balance of the object. Explain what happened out loud to the children.
    - Show children the recording mat, Does the Object Balance? Explain that the mat shows whether the object balanced on all sides, did not balance, or sometimes balanced (balanced on some sides). Place the object on the recording mat.
7. **Observe and Predict**
    - Give each pair of children an assortment of several objects. (They do not all need to have the same objects.)
    - Each pair picks one of their objects. Have pairs look at the sides of the object.
    - Pairs predict whether the object will balance or not balance.
8. **Test the Prediction**
    - Have pairs test the object for balance. Make sure they try all the different sides of the object and observe what happens.
    - Remind children to say whether the object did what they predicted or not.
    - Pairs place the object on the recording mat to show whether the object balanced on all sides, did not balance, or sometimes balanced (balanced on some sides).
9. **Observe, Predict, Test**
    - Repeat steps 7 and 8 for each object.
    - Guide children to notice that an object may balance on some sides and not on others. Prompt children to notice and discuss the differences in these sides.

5 MIN: REFLECT (pairs, whole group)

10. Have pairs discuss the objects on their recording mat. Ask, *What do you notice about the sides of the objects that balance? What did you notice about the sides of the objects that do not balance? What did you notice about objects that had different types of sides?*
11. Lay out the three labeled pieces of paper. Have pairs bring one item for each category: Balances, Does Not Balance, and Sometimes Balances. Have pairs place their items in the appropriate group.
12. Have a brief discussion. Ask, *What types of sides help an object balance?*

WRAP UP

13. Say, *We investigated the balance of different objects, just like scientists. We learned that some objects balance on a wide, flat side like a block.* (Hold up a block to demonstrate.) *And other objects do not balance because they have a thin, flat side or a pointy part.* (Hold up an object that did not balance and show the thin, flat side or the point.)

SCIENCE TALK

Use these words when talking with children. Listen for children to use these ideas.

SUPERPOWERS OF SCIENCE	CHILD-FRIENDLY LANGUAGE
observe	notice • observe
predict	predict • tell what you think happens next
share what you know	share your ideas • share information • talk about what you found out
test	see what happens • test your idea • try it

SCIENCE WORDS
balance • bottom • flat • side • sometimes • stable • unstable

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The contents of this program were developed under a grant from the U.S. Department of Education (PR U295A150012). However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.

Funding for Hero Elementary is provided by a Ready To Learn grant from the U. S. Department of Education. Corporate funding made possible by ABCmouse.com.

DOES THE OBJECT BALANCE?

YES 	NO 	SOMETIMES 