



BALANCING COW

Grade Level

K-4

Length of Lesson

45 minutes

Objective

By the end of this lesson, students will have a better understanding of balanced and unbalanced motion.

Materials Needed

- Scissors
- Pennies (2 per student)
- Removable poster putty or tape
- Markers, crayons, or colored pencils
- Copies of student worksheet
- Copies of cow template

Standards

NGSS

K-PS2-1; K-PS2-2; 3-PS2-1; 3-PS2-2

Lesson Summary

This lesson is a fun, hands-on activity designed to help students understand what factors cause objects to move.

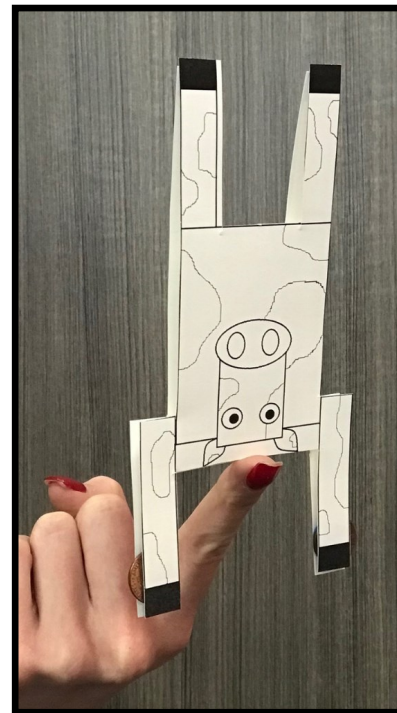
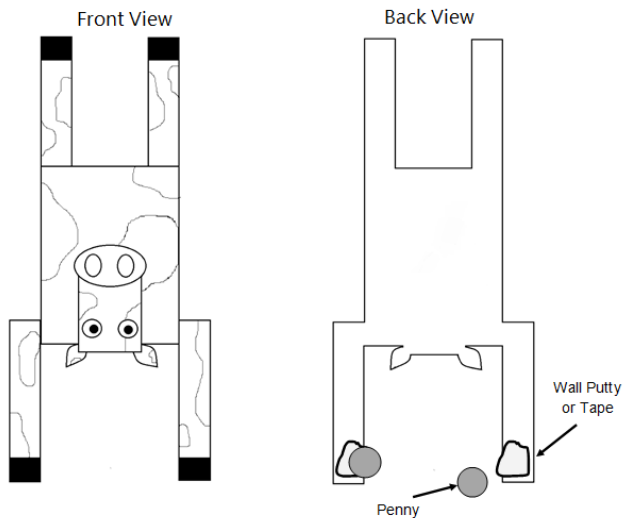
Suggested Sequence of Events:

1. Set Up: Print the cow template on white cardstock.
2. Read through the IAITC Dairy Ag Mag to learn more about cow breeds and dairy products! Interactive online versions can be found on our website.
3. Read [*Give it a Push! Give it a Pull! A Look at Forces*](#) by Jennifer Boothroyd and talk about what balanced and unbalanced forces are and what causes objects to move.
4. Complete the activity following the procedures:
 - Print the cow template on white cardstock.
 - Have students color their cow and then cut it out.
 - Tell your students that they need to balance their cow on their finger. Where do the pennies need to be placed so that the cow doesn't fall off of their finger?
 - Give each student a small amount of wall putty (or tape) and two pennies.
 - Have students choose where they need to put the pennies for their cow to balance. They need to place the putty in their chosen location and then press the penny into the putty.
 - Have them place the center of the cow's head on their finger and test its balance!
 - Have students fill out the worksheet as they repeat the procedure, changing the location of the putty and penny to observe what happens to the cow's balance.
5. Whole class discussion and reflection of activity. Here are some prompting questions:
 - What happened when you moved the pennies to different spots on the cow?
 - Was it easier to balance with more pennies?
 - What caused the cow to be unbalanced? Was this a push or a pull factor?
 - When the cow fell off of your finger, what caused it to fall to the ground?
 - Explain that objects not moving are balanced, and objects moving are unbalanced. Use the think-pair-share strategy to have them explain what that means.

TEACHER RESOURCES

Extension Ideas:

- Give students a third penny to test with.
- Use the recording sheet and have students mark where they placed their pennies and identify what happened to their cow each time they moved their pennies. Why did their cow fall in different directions based on where the pennies were placed?
 - For grades 3-5, have students write their explanation for the movement.
- Read [Newton and Me](#) by Lynne Mayer and talk more about motion.
- Use the pennies as a way to learn more about Abraham Lincoln!
 - Read [Superlative A. Lincoln](#) by Eileen Meyer or [Lincoln Clears a Path](#) by Peggy Thomas and talk about Lincoln's passion for agriculture.
- Read [Clarabelle: Making Milk and So Much More](#) by Cris Peterson. Look at the pictures and have students analyze the images.
 - Have students write a short story or create a comic strip from Clarabelle's perspective.
- Take a field trip to a dairy farm and learn about dairy farming.
- Invite a dairy farmer into the classroom.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!





Science

BALANCING COW

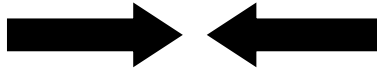
STUDENT WORKSHEET

Directions: Where have you placed your pennies? Each time you move your pennies, mark the new location on each cow below and then draw an arrow showing the direction the cow moved!

Fell to the Left



Stayed Centered



Fell to the Right

