Science

Apple-Copter

Grade Level
K-4

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will have a better understanding of gravity and how forces on object affect their motion.

Materials Needed
- Scissors
- Paperclips
- Coloring utensils
- Copies of the apple-copter template
- Fan (optional)
- Timers (optional)

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 gravity, force, and friction.

Suggested Sequence of Events:
1. Read through the IAITC Apple Ag Mag to learn more about apples! Interactive online versions can be found on our website.
2. Read *Motion: Push and Pull, Fast and Slow* by Darlene Stille to introduce or review terms and ideas on motion.
3. Complete the activity following the procedures:
    - Give each student an apple-copter template and a paper clip. Have them color their apple-copters.
    - Next, have students cut out their apple-copters by cutting on the solid black lines.
    - Have students fold on the dotted lines.
        - At the bottom, fold the left flap back first and then the right flap back. Fold the very bottom upward and secure with a paperclip.
        - At the top, fold one wing forward and the other wing backward.
    - Have students stand by their desks, hold their apple-copters above their heads, and release! Make sure students are observing *how* their apple-copters fall to the ground.
        - Have them use timers to see how quickly the copter falls to the ground.
        - Add additional paperclips to see how weight might affect the speed of falling.
        - Drop the copters in front of a fan to observe how wind may affect the speed of falling and distance traveled.
4. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Extension Ideas:

- Read *Tap the Magic Tree* by Christie Matheson.
    - Ask students why the leaves and apples fell from the tree.
    - Ask students to shut their eyes and imagine a leaf falling from a tree. Do they all fall with the same motion? Do they all land in the same place? Does a leaf fall faster, slower, or the same speed as an apple? Do apples land and stay in the same spot?
- Use different types of paper to see how materials may affect the falling motion. Why might engineers consider these ideas when designing new things?
- Learn more about different plants that rely on the wind and light for dispersal of their seed pods. (Maple trees for example)
- Take a trip to an apple orchard and pick apples! When you get back to the classroom, use a couple apples to observe their motion as they fall. Do they bounce or roll? Would that bounce or roll be different if the apple fell on a different material (carpet vs. tile vs. grass, etc.)?
- Complete our Apple Idioms activity to learn about all the phrases we commonly use that reference apples.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!