

crazy about kites

Activity 6

An important part of problem solving is to use testing to arrive at a good solution. In this activity, kids build a kite that's quite different from the one in *Go Fly a Kite*. After building two different kinds of kites, kids then design a kite of their own. As they design, build, test, and refine these kites, they apply their problem-solving and experimenting skills.

Prepare Ahead

- Prepare a table with kite-making materials.
- Make a sample kite, following the directions on the kids' activity sheet.

Lead the Activity

- 1 Introduce Ruff's challenge.** (5 minutes)
Explain that today kids are going to build a kite very different from ones they've seen before. Show kids the sample kite. Discuss how it is similar to and different from kites they've seen before. Ask kids to brainstorm things they could change on a kite. Record their ideas on chart paper. (*Materials, shape, size, attachment point, decoration, angle at which it flies, the number of tails, and the tail's length or shape*)



- 2 Build kites.** (10 minutes) Hand out the activity sheets. Have kids make their kites, following the directions. Give a two-minute warning before the end of the building time. As an alternative, lead the group step by step through the instructions. Doing each step together can minimize confusion and everyone will finish at the same time.
- 3 Test kites by flying them.** (10 minutes) Have kids experiment with how fast they need to go to keep their kites flying. Challenge them to change one thing about their kites to make them fly better.
- 4 Discuss what happened.** (10 minutes) Have kids show the kites they made. Ask:
 - What makes a kite a kite? (*Likely answers include: kites move through the air; have a sail to catch air; need to be light; usually have a crosspiece, string, and a tail.*)
 - Why is it important to test, refine, and retest an idea? (*One answer is that an idea can usually be improved.*)

Materials

- Activity sheet for each kid
- Sheets of 8.5 x 11 paper (colored paper is fun)
- Drinking straws (each kid needs 4)
- Paper streamers (each kid needs a 3-foot-long streamer)
- Scissors
- Tape
- Rulers
- Lightweight string

National Science Education Standards

Grades K-4

Physical Science:
Properties of objects and materials
Science as Inquiry:
Understanding about scientific inquiry

Science and Technology:
Abilities of technological design

Grades 5-8

Earth and Space Science:
Earth in the solar system
Science and Technology:
Abilities of technological design

5 Build and test a new design. (15 minutes) Have kids either modify a kite they've already built or create a new design that incorporates elements from other kite designs.

6 Discuss what happened. (5 minutes) Let kids show the kites they designed. Ask:

- What are some things you changed in your kite design?
- How did the changes affect your kite's flight?

7 Award points. (5 minutes) Time to rack up some points. Gather as a group. Review the activity's key ideas by asking the following questions. Each one is worth 50 points. Whenever you hear an acceptable answer, award 50 points to the entire group.

- For each part of a kite, such as the sail, crosspiece, and tail, is there one best solution for how to make it, or are there many good solutions? (*Many good solutions!*)
- Name some things you can change about your kite that might affect how it flies. (*Answers will vary.*)
- If you change five things on your kite all at once and it flies a lot better, what problem do you suddenly have? (*You don't know which change or set of changes made the difference!*)

- How can you know for sure how a change affects a kite? (*Change only one thing at a time, and test it before making another change.*)
- Doing science and engineering involves making predictions, testing them (which includes doing something, making observations, and drawing conclusions), and sharing your results. Give an example of how we did these steps today. (*Answers will vary.*)

Activity Tips

- Do this activity in a room with lots of space for moving around.
- Define a testing area where kids can move safely with their kites one at a time.
- To generate more wind for the kites, let kids walk quickly or skip.
- Kids' bodies will block the air a kite needs to fly properly. Have them start by holding their kites out to the side and walking or running with the kites away from their bodies.
- Tell kids to begin by holding the string lightly where it attaches to the kite and to let it out gradually when the kite tugs as it begins to fly.

