



## Lesson Plan: The Paper Dutch Kite

**Grade Level:** 4-6

**Subject Area:** Science and Math

**Time Required:** *Preparation:* 30 minutes  
*Activity:* 3 hours

**National Standards Correlation:**

**Science (grades K-4)**

- Science as Inquiry Standard: Understanding about scientific inquiry.
- Unifying Concepts and Processes Standard: Evidence, models, and explanation.
- Physical Science Standard: Position and motion of objects.

**Science (grades 5-8)**

- Science as Inquiry Standard: Understanding about scientific inquiry.
- Unifying Concepts and Processes Standard: Evidence, models, and explanation.
- Physical Science Standard: Motions and forces.

**Math (grades 3-5)**

- Measurement Standard: Apply appropriate techniques, tools, and formulas to determine measurements.

**Math (grades 5-8)**

- Measurement Standard: Apply appropriate techniques, tools, and formulas to determine measurements.

**Summary:** Students will construct Dutch Kites. Students will learn basic kite terminology: spine, crosspiece, bridle and tail.

**Objectives:** Students will:

- Build a Dutch Kite
- Accurately measure and cut paper for the kite
- Learn kite terminology
- Successfully fly a Dutch Kite

**Materials:** Students will need:

- Heavy paper (12" x 16")
- Scraps of paper (for bridle)
- 1/16" dowel
- Glue
- Paper hole punch
- Crepe paper for tail (1"x 4 feet)
- Lightweight string (26 " long)



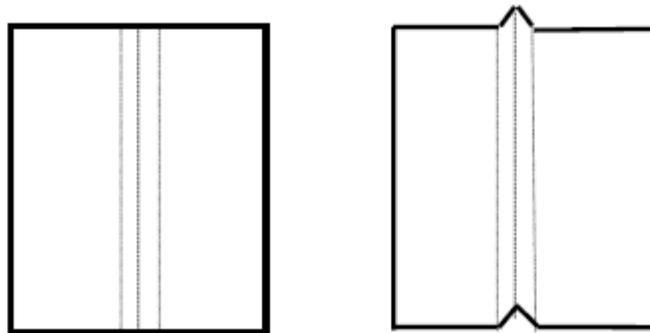
**Procedure:**

**A. Warm-up**

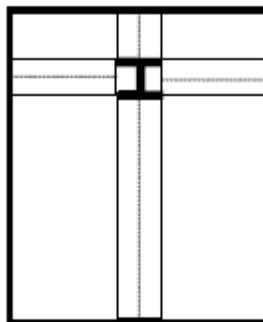
1. Give a brief lesson on kite terminology and discuss factors that affect the flight of a kite.
2. Review the importance of measuring accurately and following directions.

**B. Activity**

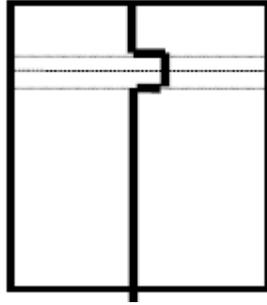
1. Give each student a piece of paper (12" x 16").
2. Measure and draw a line down the center and  $\frac{3}{4}$ " on either side of the center line. Draw a line across the paper 3" from the top and lines  $\frac{3}{4}$ " on either side of that line.
3. Fold paper in half the long way. Fold the other direction  $\frac{3}{4}$ " on each side of the center fold. This is the spine.
4. Open so that the folded section forms a ridge up the middle on the front of the kite.



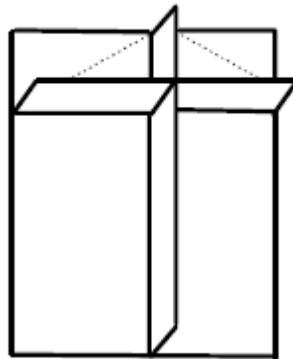
5. Open the paper flat. Fold and crease on the line 3" from the top of the paper.
6. Fold and crease  $\frac{3}{4}$ " on each side of this fold.
7. Open the paper flat, ridge side down. Make a slit in the form of an "H" as shown. Put glue on top and bottom parts of the long-folded section — but **NOT** on the H-shaped slit section.



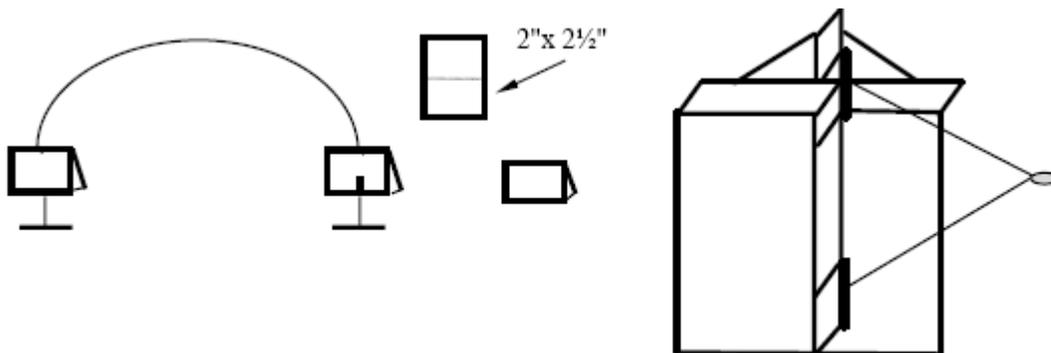
8. Make the spine. Cut 2 pieces of 1/16" dowel to exactly fit in the crease above and below the H-shaped slit, and press the glued parts together with sticks inside, to form the spine.



9. In the section where the H-slit is, the 2 flaps of paper should then slide over each other with one on top of the other. Glue these down on the front and back of the kite.



10. Make the cross spar. Working from the back again, brush glue on the horizontal fold, lay a piece of dowel (cut to fit in the crease), and press together to form the cross spar.



11. Make the bridle. Cut two pieces of paper 2" x 2 1/2", fold and cut holes as shown. In one, cut a 3/4" center slit to allow it to slip over the cross spar. Put a 26" string through the holes and tie to 2" pieces of dowel. Glue to the kite in the center and at the bottom as shown.

12. Tie a ring or loop of string to the bridle using the knot as shown.



**C. Wrap-up: Let's Go Fly a Kite!**

1. Stand with the wind at your back and lift your kite up, thus allowing the wind to carry it. If your kite is well constructed, then it is not necessary to run with your kite to get it up in the air.

**Assessment/  
Evaluations:**

The students will be evaluated with a quiz on kite terminology.

**Resources/  
References:**

Adair, Stan, et al. *The Sky's The Limit! With Math And Science*. Fresno, California. AIMS Education Foundation, 1994.

