

LESSON: Flying Bags**GRADE:****3****OBJECTIVES:****Mathematics****Geometry-****Reason with shapes & their attributes**

- **3.G.A.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partitions a shape into 4 parts with equal area, and describe the area of each part as $1/4$ of the area of the shape.*

Physical Education

- **P.E. Standard 2:** Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.

MATERIALS & RESOURCES:

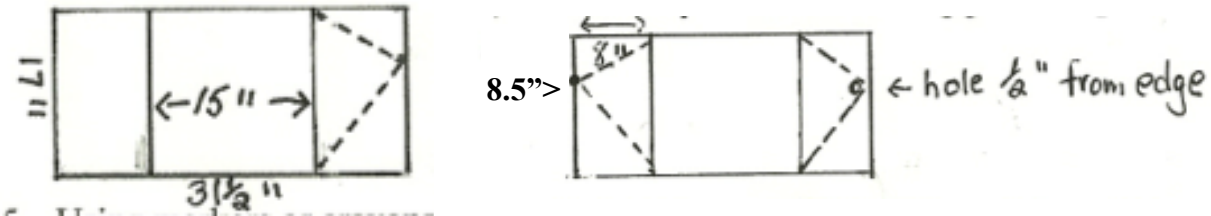
- Plastic or paper grocery bags or trash bags
- Two 17" wooden dowel rods per kite
- Kite string
- Tape,
- Ruler & yardstick
- Wide tape
- Pencil
- Scissors
- Curtain ring
- Crayons or permanent markers
- Awl
- Streamers

PRESENTATION:

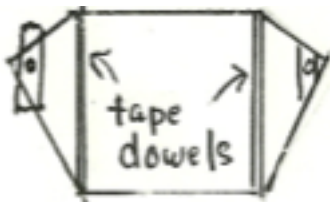
Inform students they get to make and decorate a kite with their team's name. They will divide into groups and choose team names. While having fun making kites, they will also need to use/learn some geometry skills. They should pay attention to the shapes and sizes of shapes necessary to make the kite. Team names ought to reflect something positive about nature or the earth or they could use a name related to the geometric shapes. Later, we'll fly our kites outside and learn about speed and smoothness of the wind at different altitudes.

DIRECTIONS:

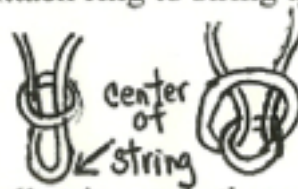
1. Divide class into small groups or teams and have them brainstorm ideas for their team name. Each team will have its materials, and instructions will be given one step at a time.
2. Cut the bottom off the bag, and cut down middle of one side.
3. Spread the bag open and cut one edge off, so the spread is $31\frac{1}{2}$ ". Have the kids measure with ruler, then a yardstick. Is it easier with a ruler or yardstick?
4. Divide this piece of plastic bag, which is now $17 \times 31\frac{1}{2}$ ", into 3 rectangles, with the middle rectangle measuring 15 " wide \times 17 " long (see picture below).
5. Then in each of the two rectangles at the ends of the bag, draw three triangles (see picture below)
6. This should have produced the shape of the kite. Now cut it out, and mark the place where the string goes through. Have the kids estimate what they think the size of the kite is overall- length by width. Have them measure the total length & width of the kite.

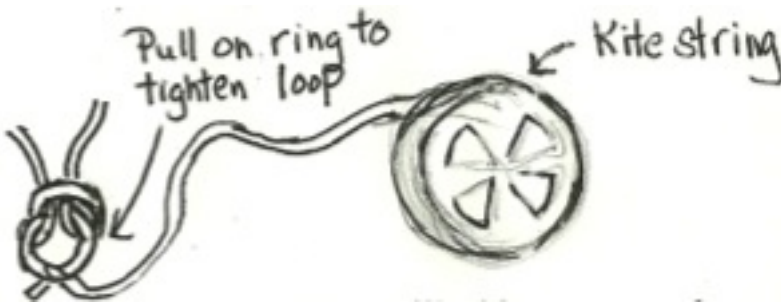


7. Using markers or crayons have groups write their team name on their kite, and decorate it. Decorations could include using smaller shapes to create larger shapes, such as when three triangles create a rectangle, two rectangles make a square, etc.
8. Punch a hole for string with awl and put clear tape over the holes on front and back, and punch through again. Tape dowels over the long edges of the bag.

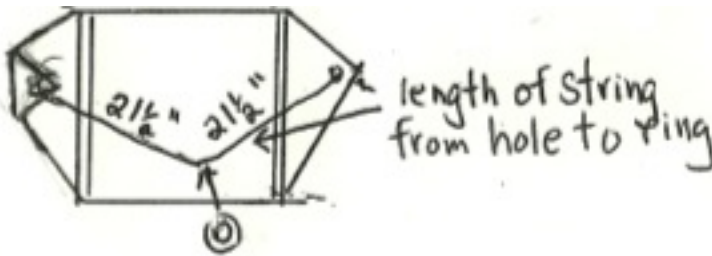


7. Attach ring to string as shown.





9. Pull string ends through holes in bag and knot securely. Add streamers just before flying the kites.
10. Have the kids try to figure out the best strategy to fly the kites. For example, does it work better to run or walk and let the string out? Or does it work better to have someone hold the kite several feet from another person who is holding the end of the string?



TIME:

45-120 min

Created on 11/21/14

PROCESSING THROUGH THE SIX PILLARS

WHAT HAPPENED?

- How did you decide on a team name?
- Was it easy to make a kite as a group?
- What did you learn about altitude when you flew your kite?

SO WHAT?

- How did you make sure all group members were being Fair?

WHAT NOW?

- What will you do differently the next time you are in a work group?