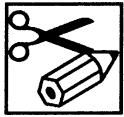


Kitchen Symmetry

Leader



Visualize and verify geometric patterns found in common fruits and vegetables with emphasis on symmetrical patterns and conical shapes.



You will need:

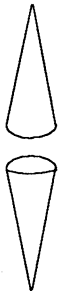
- Fruits (apple, banana)
- Vegetables (onions, cabbage, tomatoes)
- Knife



Do this:

Many fruits and vegetables display wonderfully symmetrical patterns, especially when cut.

- Give students time to examine the fruit.
- Encourage students to draw the cross-sections before cutting.



- If you wish, do the cutting yourself, after the drawings are made.
- For over 2000 years mathematicians have been studying cones and slicing them. What do cones have to do with bananas? Discuss this with students.



Symmetry is a geometrical pattern that appears on both sides of a center line passing through an object, a drawing, or an organism. Some objects have two lines of symmetry.



Adapted from:

Burns, Marilyn. *The I Hate Mathematics! Book*. Boston: Brown & Company, 1975.

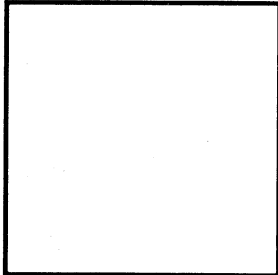
Student _____



Do this:

● Part A

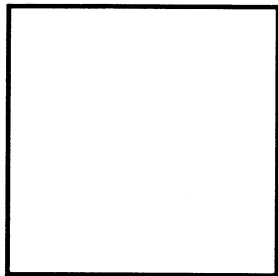
- 1. Examine an apple carefully.
Draw what you think an apple would look like if you make vertical cut.



Draw your prediction

- 2. Cut the apple to check out your prediction.

- 3. What do you think an apple would look like if you make a horizontal cut?



Draw your prediction

- 4. Cut an apple to see how accurate you were.

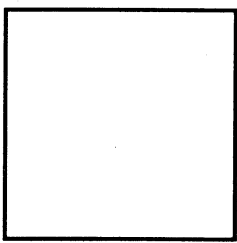
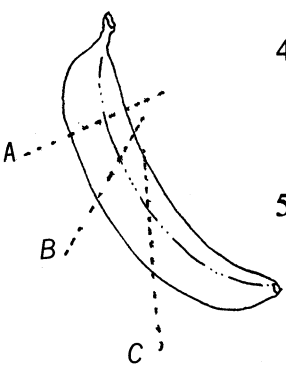
- 5. Now get a friend to help you eat all those pieces of apple—they're good for you!

● Part B

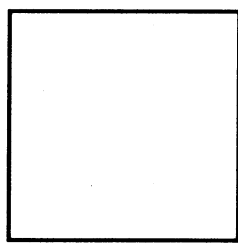
- 1. Study several bananas.
- 2. Does a banana have lines of symmetry?
- 3. Do all bananas have the same number of sides? _____

- 4. Is there a constant pattern? _____ Can you describe it? _____

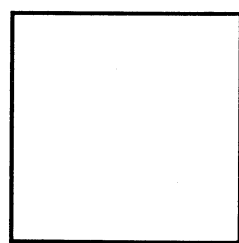
- 5. Look at the banana. Draw what you think a slice would look like if a banana with its skin on is cut along the lines shown.



Slice a



Slice b



Slice c



WHAT I FOUND