

# Fun with Fruity Figures



## Strands:

|                          |   |
|--------------------------|---|
| Number & Quantity        |   |
| Algebra                  |   |
| Functions                |   |
| Geometry                 | X |
| Statistics & Probability |   |

## Grade Level: Kindergarten through Second grade

Use shapes of fruit in 2-D and 3-D, identify fruit shapes and use fruit stamps to create patterns.

### Description:

There are three activities. The first is a brief discussion about the shapes of fruits, what shapes children see in various types of fruit, both 2-D and 3-D. The second activity is a game. Each child received a piece of paper with a fruit on it and identifies which shapes the fruit can make. The third activity involves patterning with fruit stamps. Fruit, cut into shapes, is used to stamp shapes on paper. Students create their own pattern using fruit stamps and then describe their pattern to others.

### Objectives:

- To identify geometric shapes in everyday context, including 2-D and 3-D shapes.
- To introduce and encourage the use of mathematical vocabulary (instead of a ball, it's a sphere).
- To encourage creativity and patterns.
- To introduce unique cultural food from around the world.

### Activity 1: Shape discussion

Have students sit in a circle. Pick up first fruit. Whole Apple: What shapes do you see?

Pass the apple around to have students feel/examine it. We want students to identify what 3-dimensional shape the apple most resembles (sphere). (Note: Use an apple variety that is as spherical as possible. Red delicious apples are not a good choice for this activity).

Hold up an apple cut horizontally, and one cut vertically. Repeat the question. Again, pass around the fruit. For the horizontally cut apple, students can identify the circle (outside shape) and the star shape (the design at the core). With a vertical cut, students can identify semi-circle, or an oval shape. Depending on the shape of the apple, they might also notice a heart shape.

Hold up and pass around a whole orange. Show an orange that is cut in half so that each interior segment is cut in half exposing triangular shapes. Also peel an orange so that wedges can be viewed. Ask students to identify shapes and what they see. With the whole orange, students should recognize that it is spherical. When cut in half, you can see the triangle shapes of the cross section of each of the wedges. For a peeled orange, students might suggest "crescent", "wedge", or "half-moon shaped" to describe the individual wedges.

Display the star fruit, giving a brief discussion of where it is from. Pass around the whole fruit and also cut up portions. Star fruit, or Carambola, is from a tree native to the Philippines, Indonesia, Malaysia, India, Bangladesh, and Sri Lanka (Southeast Pacific and Asia). It can also be grown in tropical regions close to us. Trees can be grown in much of Latin America, and even in Hawaii and Florida. Students can identify the star shape before it is cut, and after it is sliced.

Display a strawberry. Cut vertically, the cross section resembles a heart. Cut horizontally, the cross section is circular. Cut into a pyramid or cut off the end, can they identify a cone? Hold up half of a kiwi to demonstrate an oval. Use pieces of a cut up star fruit to show a triangular prism and a kite shape. Half of an apple can be used to demonstrate a hemisphere.

## Materials Needed:

- Tempera Paint
- Plastic plates
- Paper towel
- Assorted shaped sponges
- Fruit – apples, oranges, strawberries, kiwi
- Dryer sheets
- Ziploc baggies
- Laminated White card stock ½ sheets
- Extra Cardstock available to use to keep.

## Where:

|         |   |
|---------|---|
| Outside |   |
| Inside  | X |
| On-line |   |
| On-site |   |

### Activity 2: Which Shape Are You?

Assign a single fruit to each student. Have a picture of the fruit printed on a piece of cardstock or computer paper, and with a string hang it around a child's neck. Have all the students stand in the center of the room and call out a shape. If the student thinks his or her fruit fits that shape, either as a whole or as a cross-section, the student should step to the front. Students should describe how to hold the fruit so others can see a circle or how to cut the fruit to get a circle as a cross section.

Alteration: Have the picture of the fruit taped to the student's back. Then, without saying the name of the fruit, students can ask each other yes/no questions about its shape to figure out which fruit they are.

### Activity 3: Stamping and Patterning

Give each student a piece of white cardstock. Set up pie tins with different color of paint in each tin. Place a dryer sheet over the pie tin; this forms the stamp pad. Using the fruit stamps, demonstrate how a pattern can be made. Ask students to make their own pattern using, at most, three pieces of the fruit around them. (Alternatively, students can use sponges cut into triangles, rectangles, circles, and squares to make their pattern).

After completing their own patterns, students should explain and describe the pattern they made.

\*Note: Prepare multiple stamps of the same fruit. Plan for approximately 3 to 4 children to share each fruit stamp. Also, some of the pieces of fruit cut in Activity 1 can be used for this portion of the activity. There are sponges included in this kit. Ask students what shapes they are using to make their patterns.