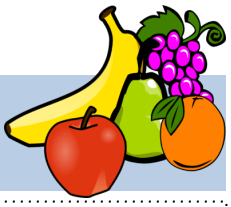
Fun with Fruity Figures



Identify the many possible shapes of fruit, look at cross-sections, and use fruit stamps to create patterns, in this activity for Kindergarten through second grade learners.

Strands:

Number & Quantity	
Algebra	
Functions	
Geometry	X
Statistics & Probability	

Materials Needed:

- Fruit – apples, oranges, starfruit, strawberries, kiwi
- Ziploc baggies
- Paper towel
- *Fun with Fruity Figures* hangtags
- String or ribbon, 12 2-ft lengths
- Fruit or other stickers
- Cardstock cut in half length-wise
- Assorted shaped sponges
- Tempera paint
- Plastic plates or pie tins
- Dryer sheets

Where:

Outside	
Inside	X
On-line	
On-site	

Overview:

There are three activities:

1. Discussion of fruit shapes and cross-sections: What 2- and 3-dimensional shapes do learners see in various types of fruit?
2. *Which Shape Are You?* Game: Learners receive a picture of a fruit and identify which shapes the fruit and its cross-sections can make.
3. Patterning with fruit stamps: Fruits, cut into shapes, are used to stamp shapes on paper strips. Learners create patterns using fruit stamps and then describe their patterns 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.

Activity 1: Fruit Shapes and Cross-Sections

Set-Up:

- Read each description below. Prepare fruit for each shape discussed.
- Have learners sit in a circle.

Fruit Shapes and Cross-Sections:

1. Pick up a whole apple. Pass the apple around to have leaners feel and examine it. What shapes do you see? What 3-dimensional shape does the apple most resemble (sphere). (Use an apple variety that is as spherical as possible. Red delicious apples are not a good choice for this activity.)
2. Hold up an apple cut horizontally, and one cut vertically. Again, pass around the fruit. What shapes do you see? For the horizontally cut apple, learners can identify the circle (outside shape) and the star shape (the design at the core). With a vertical cut, students can identify hemisphere, or an oval shape. Depending on the apple, they might also notice a heart shape.
3. 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. Identify the shapes you see. With the whole orange, learners should see a sphere. When cut in half, learners can see the triangle shapes of the cross section of each wedge, and a hemisphere. For a peeled orange, learners might suggest "crescent", "wedge", or "half-moon shaped" to describe individual wedges.
4. 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 in much of Latin America, and even in Hawaii and Florida. What shapes can you see?
5. Display a strawberry. Cut vertically, the cross section resembles a heart. Cut horizontally, the cross section is circular. With the top cut off, can learners identify a cone?
6. Hold up half of a kiwi. Can you see an oval? Cut a star fruit to show a triangular prism and a kite shape.

Activity 2: Which Shape Are You?

Set-Up:
- Print *Fun with Fruity Figures* hangtags. Make a lanyard for each picture.
- Hang a lanyard around each learner's neck.
- Learners stand in a circle.

To Play:
1. Leader calls out a shape.
2. If you think your fruit fits that shape, either as a whole or as a cross-section, step into the center of the circle.
3. Describe how to hold the fruit so others can see the shape or how to cut the fruit to get the shape as a cross-section.
4. Earn a fruit or other sticker for each correct description.
5. Players with 5 or more stickers win the game.

Variation:

Guess My Fruit: Tape a picture to each learner's back. Then, without saying the name of the fruit, learners can ask each other yes/no questions about its shape to figure out which fruit they are.

Activity 3: Stamping and Patterning

Set-Up:
- Cut fruit into different shapes. Apples are easiest to cut into a variety of shapes. Make sure to leave enough of the fruit to provide a handle to hold it.
- Alternatively, cut sponges into triangles, rectangles, circles, and squares to make shapes.
- Give each student a strip of white cardstock.
- Pour a different color of paint in each pie tin.
- Place a dryer sheet over the pie tin; this forms the stamp pad.

To Play:
1. Using the stamps, demonstrate how a pattern can be made.
2. Ask learners to make their own patterns using, at most, three different shapes.
3. Ask learners what shapes they are using to make their patterns.
4. Ask learners to describe and explain the patterns they made. Alternatively, learners can quiz each other about the patterns they see.

*Note: Prepare multiple stamps of the same fruit. Plan for approximately 3 to 4 learners to share each fruit stamp. Some of the pieces of fruit cut in Activity 1 can be used for this activity.