

# 2 LESSON PLAN

BY PEARSON ELT

Subject: **Math and Science**

Theme: **Shapes**

Question: **What shapes can you find in nature?**

**Content objective(s):** Students will learn to look for geometric shapes (square, rectangle, circle, triangle, oval) in nature to help them appreciate the diversity of their environment.

**Language objective(s):** Students will use *be* (*This leaf is oval.*), simple present (*Shapes form patterns.*), and the modal *can* to express possibility (*What shapes can you find?*)

**21st-century skills:** Communication, creativity, collaboration, critical thinking, information literacy

**Vocabulary:** Shape, square, rectangle, circle, triangle, oval, pattern, nature, design

**Background information for the teacher:** Plants, animals, formations of the earth such as rocks, and the human body are made up of different shapes. Looking for shapes helps students observe similarities and differences between themselves and the environment, and helps them recognize various shapes. These shapes form patterns. The natural world contains an infinite variety of patterns of which students are often unaware. All living things create patterns. Patterns are also constantly being created by simple physical laws like waves on the ocean or clouds in the sky. There are more advanced mathematical principles derived from these patterns, such as fractals and Fibonacci numbers.

## Lesson:

Review the names of five geometric shapes in English (square, rectangle, circle, triangle, oval) by drawing the shapes on the board and asking individual students to come to the board and write the English names. Have the class repeat each name at their seats and draw the shape in the air at the same time.

Show pictures of a flower, a tree, an insect, and a spider's web. Have students identify each picture. Help them if necessary.

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Then write the following short reading text on the board or create a handout for each student.

Look closely at a flower, a tree, an insect, or a spider's web, and you can see that it is made up of smaller shapes. Look at your own body and you can see different shapes. Nature is made up of simple shapes like circles, ovals, squares, rectangles, and triangles. These shapes form patterns. A pattern is a series of shapes that make a design.

Have students read the text individually or with a partner. Check for comprehension by asking such questions as *What are the names of some shapes? What is nature? What are patterns? Can you draw a pattern on the board?*

Give students a Shapes Worksheet (see attached) and send them out to the playground or take them for a walk around the school. Ask them to find living things around them that are the shapes listed on their sheets. (If students need extra help remembering the shape names in English, you can have them draw the shapes next to the words).

If you have a digital camera, take it with you so you can take pictures of what your students find. If students cannot go outside, one option would be to bring lots of nature pictures to the classroom, hang them up, and have students walk around to study them and draw them on their Shapes Worksheet in the correct category.

After students return to the classroom, ask them what they found in the different shape categories. Ask them if they noticed any patterns, such as leaves on a branch or petals on a flower.

Give students these thinking questions to discuss in small groups or with a partner:

1. How can different shapes help plants and animals to survive? [Shape and color can help an animal blend in with its environment (camouflage). Plant shapes such as flowers (oval shapes), may attract butterflies, birds, moths, and bees, called pollinators.]
2. Are numbers important in nature? For example, why do some flowers have five petals, eight petals, or even 21? [These are called Fibonacci numbers and are found throughout nature. We know these pattern numbers exist but we don't know why.]
3. What do you think is the most common shape in nature? [the three-dimensional sphere or circle]

## EXTENSION

(1) In the computer lab, have students search for images in nature of more difficult shapes to find such as a diamond, star, or heart shape.

(2) Have students use another blank Shapes Worksheet to look for shapes in non-living things in their environment and draw small pictures in the correct categories. They will find that squares/rectangles and triangles are the most common shapes in non-living things.

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Name \_\_\_\_\_ Date \_\_\_\_\_

## Shapes Worksheet

<b>SQUARE</b>	<b>RECTANGLE</b>	<b>TRIANGLE</b>
<b>CIRCLE</b>	<b>OVAL</b>	<b>OTHER SHAPE</b>