

SHAPES / INSTRUCTOR INFO

Summary

Shapes are everywhere and are used to define the world around us. Shapes are also the foundation for the study of geometry. This lesson provides students with a very basic understanding of common two-dimensional shapes, including identifying shapes and describing their attributes.

Part 1. Introduction

Part 2. Shapes

Part 3. Activity 1. Ocean Shapes

Part 4. Conclusion

Goals & Objectives

The students will:

- Learn how and why sharks become threatened;
- Be able to identify two-dimensional shapes, including circles, rectangles, squares, and triangles;
- Identify attributes of two-dimensional shapes using informal and formal geometric language;
- And create two-dimensional shapes using a variety of materials and drawings.

// STANDARDS

This lesson aligns with the following TEKS:

Kindergarten Math: 1A, 1D, 6A, 6D, 6F

Grade 1 Math: 1A, 1D, 6C, 6D

Grade 2 Math: 1A, 1D, 8A, 8D

STEM

This lesson plan aims to assist teachers in implementing a STEM-based program into their classroom while inspiring the next generation of explorers, scientists, and stewards of the ocean. Based on real science and the Global Shark Tracker™, “Introduction to Cardinal Directions” is intended to promote environmental awareness and to prepare students for STEM careers.

Helpful Tips

1. The content in this lesson is based on the conservation work of OCEARCH™ and the Global Shark Tracker™. Spend a few minutes getting familiar with the website and the tracker if you have not done so already. The Global Shark Tracker™ is also available as an app for iPhone and android.
2. This lesson plan is designed to be adaptable to suit your specific needs. Use the entire lesson plan or just parts of it. This material can be expanded to be an entire unit or condensed for just one day in the classroom.
3. Vocabulary words will be underlined as they first appear in the lesson plan. A complete list of vocabulary words is included as well.
4. Answers to questions and prompts for discussions will appear in italics.
5. Optional activities and content (side notes) will appear in a box. Use these to enhance your lesson and adapt it to suit your needs!
6. Have questions for M/V OCEARCH Expedition Leader, Chris Fischer? Email info@OCEARCH.org to schedule a Skype session and let your students/child talk directly to Chris and the M/V OCEARCH crew!
7. Email all questions about this lesson to info@OCEARCH.org.

Vocabulary

Characteristic: A special quality or trait that makes an object different from others.

Circle: A perfectly round shape made up of points that are equal distance from the center of the circle.

Parallel: Describes two lines that never cross and remain the same distance apart.

Rectangle: A shape with two pairs of equal sides.

Shape: The form or outline of an object.

Square: A shape with four sides of the same length.

Three-Dimensional Shapes: Shapes that have width, height, and depth – cones, cubes, and cylinders are examples of three-dimensional shapes.

Triangle: A shape with three sides.

Two-Dimensional Shapes: Shapes that only have two dimensions (such as width and height) and no thickness or depth.

SHAPES / LESSON PLAN

PART 1. INTRODUCTION 5-10 mins

Ask the students what they already know about shapes. Call volunteers up one by one to draw a different shape on the board. Do the students know what each of these shapes is called? What is one thing they notice about all of these shapes? – They are all very different!

Shapes are everywhere and are used to define the world around us. A shape is the form or outline of an object. There are many different types of shapes, each with its own special **characteristics**. What shape are the wheels on a bike? **Answer:** *Circles! If the wheels were square, it would be very hard to ride that bike!*

This lesson focuses on four common shapes – circles, squares, rectangles, and triangles. These are examples of **two-dimensional shapes**, meaning they are shapes that only have two dimensions (such as width and height) and no thickness or depth. This is in contrast to **three-dimensional shapes**, which have depth – cones, cubes, and cylinders are examples of three-dimensional shapes.

PART 2. SHAPES 20 mins

Circles

A **circle** is a perfectly round shape made up of points that are equal distance from the center of the circle.

If a student drew a circle on the board, point it out to the class. If not, draw an example on the board and write the word “circle”.

Ask the students for examples of circles. Are there any in the classroom? What about at home?

On a blank sheet of paper or on that back of a scrap piece of paper, instruct the students to practice drawing circles. Check their drawings for understanding.

Rectangles

A **rectangle** is a shape with two pairs of equal sides. The equal sides are opposite from each other. The opposite sides are also **parallel** to each other. Parallel means non-intersecting. For example, parallel lines means that if the two lines kept going forever, they would never cross over each other—they would always be the same distance apart.

If a student drew a rectangle on the board, point it out to the class. If not, draw an example on the board and write the word

“rectangle”.

Ask the students for examples of rectangles. Are there any in the classroom? What about at home?

On a blank sheet of paper or on that back of a scrap piece of paper, instruct the students to practice drawing rectangles. Check their drawings for understanding.

Squares

A **square** is a shape with four sides of the same length. The opposite sides are also parallel to each other.

If a student drew a square on the board, point it out to the class. If not, draw an example on the board and write the word “square”.

Ask the students for examples of squares. Are there any in the classroom? What about at home?

On a blank sheet of paper or on that back of a scrap piece of paper, instruct the students to practice drawing squares. Check their drawings for understanding.

Triangles

A **triangle** is a shape with three sides. Sometimes the sides are equal, sometimes they are not.

If a student drew a triangle on the board, point it out to the class. If not, draw an example on the board and write the word “triangle”.

Ask the students for examples of triangles. Are there any in the classroom? What about at home?

On a blank sheet of paper or on that back of a scrap piece of paper, instruct the students to practice drawing triangles. Check their drawings for understanding.

PART 3. ACTIVITY 1. OCEAN SHAPES 20 mins

Introduction

Now that the students are familiar with and can recognize different shapes, use this activity to test their knowledge. In this activity, students use their listening skills to draw and color shapes – circles, rectangles, squares, and triangles – on an ocean scene.

Please note, students should have knowledge of direction such as left, right, up, down, above, below, etc.

Materials

- Worksheet (provided)
- Colored pencils, crayons, or markers

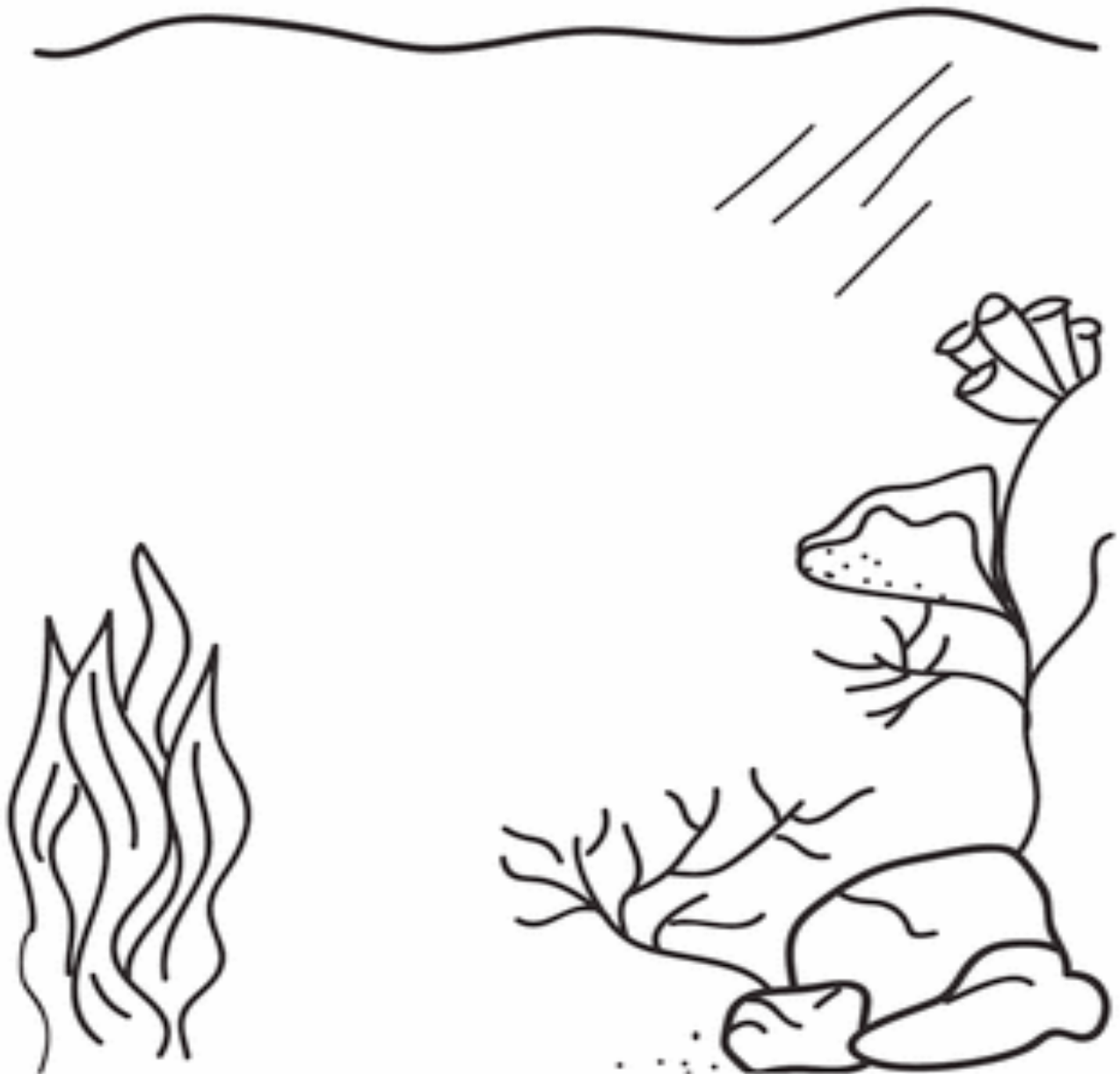
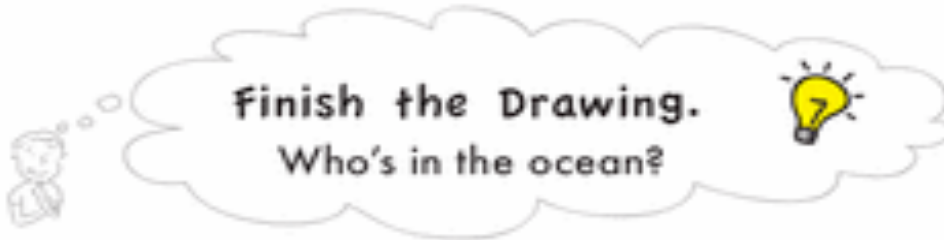
Instructions for Teachers

1. Distribute materials to students.
2. Ask students to write their name on the top of their worksheet.
3. Instruct students to listen very carefully to your instructions.
 - a. Do not color or draw anything until I tell you to.
 - b. First, draw a blue triangle on top of the shark's back to represent its fin.
 - c. Draw a yellow circle above the water.
 - d. Draw a small green circle on the head of the shark to represent its eye.
 - e. Draw three, small red squares in the sand. Give them legs to make them into crabs!
 - f. Draw a big brown or grey rectangle on top of the water line.
 - g. Draw a blue triangle above the rectangle. Then connect them together with a straight, up and down line.
 - h. Complete your ocean scene by coloring it in and drawing more animals and objects – fish, clouds, sea stars, etc.
4. Collect the students' drawings to assess their understanding. Display their drawings in the classroom for all to see!

Ocean Shapes

Name: _____

Date: _____



PART 4. CONCLUSION 5 mins

Now that the students are familiar with and can recognize different shapes, use this activity to test their knowledge. In this activity, students use their listening skills to draw and color shapes – circles, rectangles, squares, and triangles – on an ocean scene.

Students should now have a solid understand of basic two-dimensional shapes. Review the information with the class to test their understanding.

What are the common two-dimensional shapes and what are their characteristics? Give an example of each shape in the form of an everyday object.

Answers:

1. **Circle:** A perfectly round shape made up of points that are equal distance from the center of the circle. Example: The face of a wall clock.
2. **Rectangle:** A shape with two pairs of equal sides. Example: A student's desk top.
3. **Square:** A shape with four sides of the same length. Example: Letter and number keys on a keyboard.
4. **Triangle:** A shape with three sides. Example: A pizza slice.