

# K

## Topic 14: Identifying and Describing Shapes

### Lessons 1-8

## Math Intervention Resources

### Reteach

#### MDIS:

D48: 14-1, 14-2, 14-3, 14-4, 14-5,  
14-6, 14-7, 14-8

D49: 14-6, 14-7

D50: 14-7

### Guided Practice

Review with children the shapes circle, rectangle, square, and triangle. Make a bulletin board of the shapes.

Help the children observe shapes in the classroom. Point out plane shapes in the environment during the day; for example, the clock is a circle; the desk is a rectangle; the floor tile is a square.

Have children draw the shapes they observe and post them in the correct category on the bulletin board. Help children label their drawings as needed.

As children observe the shapes around the, they can add to the bulletin board on a daily basis.

### Reinforce

#### Envision Math Games:

#### Topic Games:

- Shapeland Dog Park

#### envision Online Games

- Geometry

#### Symbaloo

#### Building Blocks (Golden CD)

#### 10 Block Materials:

### Assessments

# K

## Topic 14: Identifying & Describing Shapes

Lesson 14-1

MDIS: D48

### Rectangles

#### Quick and Easy

#### Lesson Overview

| Objective                                       | Essential Understanding                      | Vocabulary                                       | Materials                                                                                                 |
|-------------------------------------------------|----------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Children will identify and describe rectangles. | A rectangle has four sides and four corners. | <b>rectangle</b><br><b>side</b><br><b>corner</b> | Rectangle attribute blocks (Teaching Tool 36), Rectangles (Teaching Tool 19), blunt-tipped scissors, glue |



PROFESSIONAL DEVELOPMENT

#### Math Background

A rectangle is a quadrilateral with 4 right angles. Notice that this does not say anything about the length of the sides. If 2 of the sides are one length and the other 2 sides are a different length, we think of this shape as a rectangle.



If all of the sides are the same length, it is still a rectangle because there are 4 right angles and 4 sides. A square is a special type of rectangle that children will learn about in the next lesson.

2

### Guided Practice

Remind children that rectangles can be different sizes.

#### Error Intervention

**If** children have difficulty identifying a rectangle because of different sizes or widths,

**then** review the attributes of a rectangle.

**Do you understand?** Draw a circle, a triangle, and a rectangle on the board. *Which shape is a rectangle? How do you know?* [The rectangle has 4 sides and 4 corners. The opposite sides are the same size.]

**Reteaching** Trace paper rectangles of different sizes onto cardboard to make templates. Have children choose 2 rectangles to trace onto construction paper. Have them cut out their rectangles. Discuss with children what makes a shape a rectangle.



### Common Core

#### Domain

Geometry

#### Cluster

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

#### Standard

**K.G.2** Correctly name shapes regardless of their orientations or overall size.

#### Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

# K

## Topic 14: Identifying & Describing Shapes

Lesson 14-2

MDIS: D48

### Squares

#### Quick and Easy Lesson Overview

| Objective                                    | Essential Understanding                                                                  | Vocabulary    | Materials                                                                                           |
|----------------------------------------------|------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|
| Children will identify and describe squares. | A square has four sides and four corners. All the sides of a square are the same length. | <b>square</b> | Square attribute blocks (Teaching Tool 36), Squares (Teaching Tool 20), blunt-tipped scissors, glue |



#### Math Background

**Research says . . .** kindergarten children will soon be making a transition from identifying a square as a square “just because it looks like one,” and identifying it as a square because it has the properties

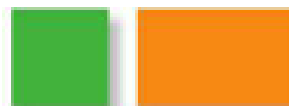
of a square: 4 sides, equal sides, 4 square corners. They will also make a similar transition with other simple geometric shapes (van Hiele, 1986).

## 2 Guided Practice

Remind children that squares can be different sizes.

#### Error Intervention

**If** children confuse squares and rectangles, **then** place a square next to a rectangle. Talk about each shape and its attributes.



**Do you understand?** *What does a square look like?* [It has 4 sides that are the same length and 4 corners that are the same size.]

**Reteaching** Trace paper squares of different sizes onto cardboard to make templates. Have children choose 2 squares to trace onto construction paper. Have them cut out their squares. Discuss what makes a shape a square with children.



### Common Core

#### Domain

Geometry

#### Cluster

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

#### Standard

**K.G.2** Correctly name shapes regardless of their orientations or overall size.

#### Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

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## Topic 14: Identifying & Describing Shapes

Lesson 14-3

MDIS: D48

### Circles

#### Quick and Easy

#### Lesson Overview

| Objective                                    | Essential Understanding                          | Vocabulary    | Materials                                                                                           |
|----------------------------------------------|--------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|
| Children will identify and describe circles. | A circle is round and does not have any corners. | <b>circle</b> | Circle attribute blocks (Teaching Tool 36), Circles (Teaching Tool 21), blunt-tipped scissors, glue |



#### Math Background

The classroom provides a wide variety of real objects that can be used to introduce and develop spatial sense. Call attention to the shapes of things used throughout children's daily activities, such as a rectangular sheet

of paper or the circle formed by players in a game. Designate a "circle" day for children and look for objects shaped like a circle as they take a walk through the school or outside.

2

#### Guided Practice

Remind children that circles can be different sizes.

#### Error Intervention

**If** children confuse circles and ovals,

**then** place a paper circle on top of a paper oval. Discuss the similarities and differences.

**Do you understand?** *What does a circle look like?* [It is completely round. It doesn't have straight sides or corners.]

**Reteaching** Make a chart, labeling it with a picture of a circle. Ask children to cut out pictures of real-world examples of the shape. Help children glue their examples on the chart.



#### Common Core

##### Domain

Geometry

##### Cluster

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

##### Standard

**K.G.2** Correctly name shapes regardless of their orientations or overall size.

##### Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
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## Topic 14: Identifying & Describing Shapes

Lesson 14-4

MDIS: D48

### Triangles

#### Quick and Easy

#### Lesson Overview

| Objective                                      | Essential Understanding                                                                   | Vocabulary      | Materials                                                                                              |
|------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------|
| Children will identify and describe triangles. | All triangles have three sides but can have different configurations of sides and angles. | <b>triangle</b> | Triangle attribute blocks (Teaching Tool 36), Triangles (Teaching Tool 22), blunttipped scissors, glue |



#### Math Background

Many young children frequently mix up the names for a triangle and a rectangle when these shapes are shown together. Explain to

children that the prefix *tri-* means “three,” so the shape with 3 sides is the triangle.

2

### Guided Practice

Remind children that a triangle has 3 sides, 3 corners, and can be different sizes.

#### Error Intervention

**If** children confuse triangles with other shapes, **then** have them count the sides of each shape. Have them point to the shapes that have only 3 sides.

**Do you understand?** *What does a triangle look like?* [It has 3 sides and 3 corners.]

**Reteaching** Trace paper triangles of different sizes onto cardboard to make templates. Have children choose 2 triangles to trace onto construction paper. Have them cut out their triangles.



### Common Core

#### Domain

Geometry

#### Cluster

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

#### Standard

**K.G.2** Correctly name shapes regardless of their orientations or overall size.

#### Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
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## Topic 14: Identifying & Describing Shapes

Lesson 14-5

MDIS: D48

### Hexagons

#### Quick and Easy Lesson Overview

| Objective                                     | Essential Understanding                              | Vocabulary | Materials                                                                                           |
|-----------------------------------------------|------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------|
| Children will identify and describe hexagons. | A hexagon is a shape with six sides and six corners. | hexagon    | Hexagon pattern blocks (Teaching Tool 35), Hexagons (Teaching Tool 23), blunt-tipped scissors, glue |



#### Math Background

**Research says . . .** geometric thinking develops slowly over time as children take part in first informal experiences, then in

more formal experiences with shapes and relationships (van Hiele, 1986).

2

#### Guided Practice

Remind children that a hexagon has 6 sides and 6 corners.

#### Error Intervention

**If** children confuse hexagons and trapezoids,

**then** have them use pattern blocks to show how trapezoids can be used to make a hexagon.

**Do you understand?** *What does a hexagon look like?* [It has 6 sides and 6 corners.]

**Reteaching** Have children trace the outline of a hexagon with their fingers. *A hexagon has 6 sides and 6 corners.* Have children repeat the motion and the description. Children take turns tracing a hexagon on their partner's back and describing the shape.



#### Common Core

##### Domain

Geometry

##### Cluster

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

##### Standard

**K.G.2** Correctly name shapes regardless of their orientations or overall size.

##### Mathematical Practices

- ✓ Make sense of problems and persevere in solving them.
- ✓ Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- ✓ Use appropriate tools strategically.
- ✓ Attend to precision.
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## Topic 14: Identifying & Describing Shapes

Lesson 14-6

MDIS: D48, D49, D50

### Solid Figures

#### Quick and Easy Lesson Overview

| Objective                                                                                         | Essential Understanding                                                                                                                 | Vocabulary                         | Materials                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Children will identify cubes, cones, cylinders, and spheres and relate them to real-life objects. | Three-dimensional or solid figures have length, width, and height. Many everyday objects closely approximate standard geometric solids. | cone<br>cylinder<br>sphere<br>cube | Classroom objects in the shape of solid figures, Solid Figures (Teaching Tool 24), blunt-tipped scissors, glue, geometric solids: cone, cylinder, sphere, cube |



#### Math Background

Children benefit greatly by seeing connections between geometric shapes and real-world objects. Provide geometric models and

manipulatives to help children identify different shapes and their parts.

#### Common Core

**Domain**  
Geometry

**Cluster**  
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

**Standard**  
**K.G.3** Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). Also **K.G.2**

- Mathematical Practices**
- ✓ Make sense of problems and persevere in solving them.
  - ✓ Reason abstractly and quantitatively.
  - Construct viable arguments and critique the reasoning of others.
  - Model with mathematics.
  - ✓ Use appropriate tools strategically.
  - ✓ Attend to precision.
  - ✓ Look for and make use of structure.
  - Look for and express regularity in repeated reasoning.

## 2 Guided Practice

Remind children that matching shapes do not need to be the same size or color.

#### Error Intervention

**If** children are confused by the size, color, or orientation of a solid figure,

**then** have them compare models with matching classroom objects. Focus on the attributes of one shape at a time.

**Do you understand?** *Name something in our classroom that has the shape of a cube.* [Accept all reasonable answers.] Repeat for cone, cylinder, and sphere.

**Reteaching** Have pairs of children handle the set of geometric solids. Name the shapes, one at a time, and have children repeat the names and describe the shapes using the words *corner* and *side*. Then hold up each solid figure and have children find or name an object in the classroom that has the same shape.

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## Topic 14: Identifying & Describing Shapes

Lesson 14-7

MDIS: D48, D49, D50

### Flat Surfaces of Solid Figures

#### Quick and Easy

#### Lesson Overview

| Objective                                                                                 | Essential Understanding                                       | Vocabulary          | Materials                                                                                                           |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------|
| Children will identify three-dimensional figures and describe the shape of flat surfaces. | The flat surfaces of many solid figures have specific shapes. | <b>flat surface</b> | Classroom objects in the shape of solid figures, geometric solids: cone, cylinder, cube, rectangular prism, pyramid |



#### Math Background

Some three-dimensional solids have faces, like boxes. The faces of these solid figures are two-dimensional shapes, like squares. Be careful to distinguish the attributes and names

of solid figures versus flat shapes and do not use the same name for different attributes. For example, do not call a sphere a circle. It is round but it is not a circle.

2

#### Guided Practice

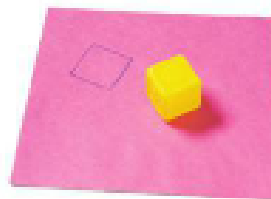
Remind children that shapes can be in different positions.

#### Error Intervention

**If** children have difficulty with the orientation of shapes, **then** provide real objects as they complete the exercises.

**Do you understand?** *What do the flat surfaces of a cube look like?* [They are square, and they are all the same size.] *What do the flat surfaces of a cylinder look like?* [They are round, and they are the same size.]

**Reteaching** Give each child a solid figure (cube, cone, cylinder) or a classroom object with one of these shapes. Model how to use a solid figure or object to trace each flat surface on paper. Then have each child trace the flat surface, or surfaces, of his or her object. Have children share their tracings and talk about the objects that have those flat surfaces.



#### Common Core

##### Domain

Geometry

##### Cluster

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

##### Standard

**K.G.3** Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). Also **K.G.2**

##### Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
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## Topic 14: Identifying & Describing Shapes

Lesson 14-8

MDIS: D48

### Problem Solving: Use Objects

#### Quick and Easy Lesson Overview

| Objective                                      | Essential Understanding                                                             | Vocabulary | Materials                            |
|------------------------------------------------|-------------------------------------------------------------------------------------|------------|--------------------------------------|
| Children will solve problems by using objects. | Some problems can be solved by using objects to act out the actions in the problem. |            | Pattern blocks (or Teaching Tool 35) |



#### Math Background

Ask questions to help children understand the relationship between geometric shapes and real-world objects. *Do they both have*

*the same shape? How can we tell? Do they both have the same number of sides? How many sides?*

2

#### Guided Practice

Remind children to look at the size of each shape and to count its sides. Exercise 1 allows children to revisit the Visual Learning Bridge to record how they found a shape to match the real object.

#### Error Intervention

**If** children cannot remember which shapes do not match, **then** have them mark an X on a shape as it is eliminated.

**Do you understand?** *How can you find a pattern block that matches the shape of a real object?* [I can look for a block that is the same shape and size as the real object. I can count the number of sides.]

**Reteaching** In advance, trace the shape of several classroom objects, such as a toy plate, a book, and a musical triangle, on chart paper. Display the objects along with the chart paper. Call on volunteers to match each object to a shape.



#### Common Core

##### Domain

Geometry

##### Cluster

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

##### Standard

**K.G.2** Correctly name shapes regardless of their orientations or overall size.

##### Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
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