

**Content Area: Mathematics**  
**Standard: 3. Data Analysis, Statistics, and Probability**

**Prepared Graduates:**

- Solve problems and make decisions that depend on understanding, explaining, and quantifying the variability in data

**Grade Level Expectation: First Grade**

**Concepts and skills students master:**

1. Visual displays of information can used to answer questions

**Evidence Outcomes**

**Students can:**

- a. Represent and interpret data. (CCSS: 1.MD)
  - i. Organize, represent, and interpret data with up to three categories. (CCSS: 1.MD.4)
  - ii. Ask and answer questions about the total number of data points how many in each category, and how many more or less are in one category than in another. (CCSS: 1.MD.4)

**21<sup>st</sup> Century Skills and Readiness Competencies**

**Inquiry Questions:**

1. What kinds of questions generate data?
2. What questions can be answered by a data representation?

**Relevance and Application:**

1. People use graphs and charts to communicate information and learn about a class or community such as the kinds of cars people drive, or favorite ice cream flavors of a class.

**Nature of Mathematics:**

1. Mathematicians organize and explain random information
2. Mathematicians model with mathematics. (MP)

## Content Area: Mathematics

### Standard: 4. Shape, Dimension, and Geometric Relationships

#### Prepared Graduates:

- Make claims about relationships among numbers, shapes, symbols, and data and defend those claims by relying on the properties that are the structure of mathematics

#### Grade Level Expectation: First Grade

##### Concepts and skills students master:

1. Shapes can be described by defining attributes and created by composing and decomposing

##### Evidence Outcomes

###### Students can:

- a. Distinguish between defining attributes<sup>1</sup> versus non-defining attributes.<sup>2</sup> (CCSS: 1.G.1)
- b. Build and draw shapes to possess defining attributes. (CCSS: 1.G.1)
- c. Compose two-dimensional shapes<sup>3</sup> or three-dimensional shapes<sup>4</sup> to create a composite shape, and compose new shapes from the composite shape. (CCSS: 1.G.2)
- d. Partition circles and rectangles into two and four equal shares. (CCSS: 1.G.3)
  - i. Describe shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. (CCSS: 1.G.3)
  - ii. Describe the whole as two of, or four of the equal shares.<sup>5</sup> (CCSS: 1.G.3)

##### 21<sup>st</sup> Century Skills and Readiness Competencies

###### Inquiry Questions:

1. What shapes can be combined to create a square?
2. What shapes can be combined to create a circle?

###### Relevance and Application:

1. Many objects in the world can be described using geometric shapes and relationships such as architecture, objects in your home, and things in the natural world. Geometry gives us the language to describe these objects.
2. Representation of ideas through drawing is an important form of communication. Some ideas are easier to communicate through pictures than through words such as the idea of a circle, or an idea for the design of a couch.

###### Nature of Mathematics:

1. Geometers use shapes to represent the similarity and difference of objects.
2. Mathematicians model with mathematics. (MP)
3. Mathematicians look for and make use of structure. (MP)

---

<sup>1</sup> e.g., triangles are closed and three-sided. (CCSS: 1.G.1)

<sup>2</sup> e.g., color, orientation, overall size. (CCSS: 1.G.1)

<sup>3</sup> rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles. (CCSS: 1.G.2)

<sup>4</sup> cubes, right rectangular prisms, right circular cones, and right circular cylinders. (CCSS: 1.G.2)

<sup>5</sup> Understand for these examples that decomposing into more equal shares creates smaller shares. (CCSS: 1.G.3)