MA.2.FR.1.1

Overarching Standard: ***MA.2.FR.1*** *Develop an understanding of fraction by partitioning shapes into halves and fourths.*

Benchmark of Focus

MA.2.FR.1.1: Partition circles and rectangles into two, three or four equal-sized parts. Name the parts using appropriate language, and describe the whole as two halves, three thirds or four fourths.

Benchmark Clarifications

Clarification 1: Within this benchmark, the expectation is not to write the equal-sized parts as a fraction with a numerator and denominator.

Clarification 2: Problems include mathematical and real-world context.

Related Benchmark/Horizontal Alignment

- MA.2.NSO.1.2
- MA.2.M.2.1

Vertical Alignment

Previous Benchmarks	Next Benchmarks
MA.1.FR.1.1	MA.3.FR.1.1

Terms from the K-12 Glossary

- Circle
- Rectangle

Purpose and Instructional Strategies

The purpose of this benchmark is to extend the work from grade 1 of partitioning circles and rectangles. At this grade level, students will partition into three equal-sized parts,
name the parts as three thirds and describe the whole. (MTR.5.1)

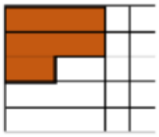
- Instruction includes the use of manipulatives such as geoboards, fraction circles, pattern blocks or color tiles, along with contextual sharing situations.
- Instruction includes the idea of part-whole relationships as supported by a model.
- Naming the parts is based on the number of equal parts that make the whole.
- Students are not expected to use formal fraction notation until grade 3.

Common Misconceptions or Errors

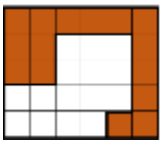
- Students may have difficulty partitioning into equal-sized parts.
- Students may not understand that the parts can be equal parts even if they do not look identical.

Strategies to Support Tiered Instruction

- Instruction includes geoboards to partition rectangles and circles into thirds.
- Instruction includes graph paper to divide shapes into equal parts when given part of a whole by counting the units inside the shape.
    - For example, the shape is a total of 30 units and one equal part is given. Students partition the shape into 3 equal parts using the knowledge that one part is equal to 10 units.



- Teacher provides opportunities to use fraction manipulatives to develop understanding of thirds in circles and rectangles.
    - For example, teacher provides pictures of circles and rectangles (of the same size as the manipulatives) on a sheet of paper. Students then use the "thirds" manipulatives to trace the thirds into the circles and rectangles, so they develop an understanding of how to partition these shapes into thirds.
- Teacher provides opportunities to use a pre-partitioned shape on graph paper to count units and determine if the different sized parts are equal.
    - For example, if the shape is partitioned in 2 parts. Students may count to determine if they are equal parts.



Questions to ask students:

- **Point to a rectangle that is divided into thirds. Ask: If this were a cake and you ate one piece, what fraction of the cake would you be eating?**
    - Sample answer that indicates understanding: *I would be eating one third of the cake. I know this because there are 3 equal pieces in the whole cake, and I am eating one of those pieces.*

- **Point to a circle that is divided into fourths. Ask: What fraction is the same as the whole circle?**
    - Sample answer that indicates understanding: *The whole is the same as four fourths because there are four equal pieces in the whole.*

- **Referencing a rectangle or circle, ask: How could you partition this shape into 3 equal pieces? What would you call the equal pieces?**
    - Sample answer that indicates understanding: *The student correctly partitions the shape into thirds and explains that they know they are called thirds cause there are 3 equal pieces.*

Instructional Tasks

Instructional Task 1

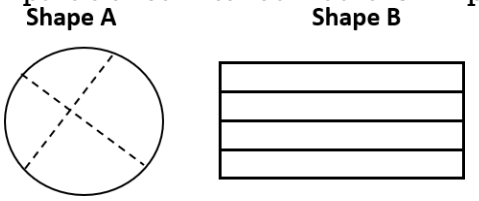
Provide students with paper copies of circles and rectangles.

- Part A. Cut or fold the figures to determine how one can create two, three, or four equal-sized parts.
- Part B: Use mathematical language to describe the parts created in Part A.

Instructional Items

Instructional Item 1

Is Shape A or Shape B partitioned into four fourths? Explain your thinking.



Instructional Item 2

Below is one half of a whole. Draw two halves to make a whole. Encourage students to provide two different ways to make a whole.

Additional Resources:

CPALMS Resources

Resources/Tasks to Support Your Child at Home:

Geoboard square and rectangle – Ask your student to use the virtual rubber bands to partition the shapes into thirds. Ask if they can show another way to partition the shapes into thirds. Repeat with halves and fourths.

Geoboard circle – Ask your child to use the virtual rubber bands to partition the circle into two, three and four equal parts. Ask them what the name of the parts would be called (halves, thirds, and fourths).

Use the geoboard tools above to show *non*-examples of two, three, and four equal parts. Ask your child if the shapes show halves, thirds, and fourths and have them explain how they know.

Khan Academy Video: Equal Parts of Circles and Rectangles

EG Videos: Partitioning Halves, Thirds, and Fourths