Unit 4 Geometry and Measurement
Math 3

Last Update: August 1, 2025

Archdiocesan Curriculum > Grade 3 > Math > Length of unit 25 to 28 days

Stage 1: Desired Results

General Information

In this unit, students explore the concepts of area and perimeter through hands-on and visual models. They learn to measure area using unit squares and formulas, and apply this understanding to compare and analyze shapes. Students also develop time-telling skills to the nearest minute and solve real-world problems involving elapsed time using a variety of strategies.

Mathematical Practices

- MP1 – Make sense of problems and persevere in solving them
- MP2 – Reason abstractly and quantitatively
- MP4 – Model with mathematics
- MP5 – Use appropriate tools strategically
- MP6 – Attend to precision
- MP7 – Look for and make use of structure

Essential Question(s)

- How do area and perimeter help us describe and compare shapes in the real world?
- Why is it important to understand the difference between area and perimeter?
- How can understanding multiplication help us solve problems about space and size?
- How does measuring and understanding time help us solve everyday problems?

Enduring Understanding/Knowledge

Students will:

- Count unit squares to find the area of a figure.
- Find the area by counting unit squares without gaps or overlap.
- Multiply to find the area of a rectangle.
- Use the strategy find a pattern to solve area problems.
- Break apart a figure to find the area.

Review/Assess

- Explore perimeter of polygons by counting units on grid paper.
- Estimate and measure perimeter of polygons. using inch and centimeter rulers.
- Use a formula to find the perimeter of a rectangle.
- Compare areas of rectangles that have the same perimeter.
- Compare perimeters of rectangles that have the same area.
- Develop a concise explanation of how to find the unknown length of a side in a plane figure when you know its perimeter.

Review/Assess

- Tell and write time to the nearest minute.
- Tell when to use a.m. and p.m. with time.
- Measure elapsed time in minutes.
- Find a starting time or an ending time when you know the elapsed time.
- Solve problems about time.

Review/Assess

Vocabulary

New	Review
• area • unit square • square unit • square inch • composite figure • perimeter • formula • elapsed time	• multiplication • pattern • side length • a.m. / p.m. • minute • ruler • grid • rectangle • measure

Connections to Catholic Identity / Other Subjects

Religion/Catholic Identity:

- Making connections to the Old Testament to discuss and use areas where people would gather to worship.
- Ezekiel 48:5 states about perimeter: *The perimeter of the city will be six miles and from that day on, the name will be The Lord is There.*

Type Other Subject Here:

- **ELA:** Create a room using area and perimeter for a main character of a story that is being read in ELA

Differentiation

Enrichment

- **Design real-world tasks using composite figures** – Have students create their own floor plans and calculate area and perimeter.
- **Compare and contrast area and perimeter** – Ask students to write reflections or explain concepts using precise mathematical language.
- **Solve time word problems with multiple steps** – Incorporate time intervals that cross hours or involve start/end time estimation.
- **Extend to formulas for irregular figures** – Allow students to explore strategies to calculate area beyond rectangles.

Support

- **Use color tiles or graph paper to build area understanding** – Help students visualize how units cover space.
- **Provide anchor charts with formulas and examples** – Support retention of strategies for perimeter and area.
- **Use number lines and clocks with color coding** – Assist with understanding elapsed time through hands-on tools.
- **Break time problems into smaller parts** – Guide students step-by-step to determine elapsed, start, or end time.

Standards & Benchmarks

Relate Multiplication and Area:

3.MD.5
Recognize area as an attribute of plane figures and understand concepts of area measurement.
R**3.MD.7**
Relate area to the operations of multiplication and addition (refer to 3.OA.5).
3.MD.7.b
Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.7.c
Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
3.MD.7.d
Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.
3.MD.7.a
Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
3.MD.C.7d
Understand that rectilinear figures can be decomposed into non-overlapping rectangles and that the sum of the areas of these rectangles is identical to the area of the original rectilinear figure. Apply this technique to solve problems in real-world contexts.

Understand Perimeter:

3.MD.7
Relate area to the operations of multiplication and addition (refer to 3.OA.5).
3.MD.7.b
Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.8
Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

3.OA.D.8
Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Utilize understanding of the Order of Operations when there are no parentheses.
3.MD.C.7b
Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.C.7
Relate area to the operations of multiplication and addition.
3.MD.C.8
Solve real-world and mathematical problems involving perimeters of plane figures and areas of rectangles, including finding the perimeter given the side lengths, finding an unknown side length. Represent rectangles with the same perimeter and different areas or with the same area and different perimeters.

Time Measurement and Intervals:
3.MD.1
Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, for example, by representing the problem on a number line diagram.
3.MD.A.1a
Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes (e.g., representing the problem on a number line diagram)

Teaching Ideas/Resources

Websites/Resources:

Graph paper to print as a resource. One is a ¼ inch graph paper and the other is centimeter graph paper.

- **Grid Paper**
- **Grid Paper (CM)**
- **Time Intervals**