

07_Measurement

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **2 Weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

The middle school Guided Study Program is a two-pronged program. It parallels the grade-level math curriculum to reinforce and/or preview concepts taught in the grade-level math class and prepares students for success on state-mandated assessments by targeting individual student mathematical deficiencies. Guided Study marking period grades are based upon participation/preparation, classwork, and summative assessments and are reported as: O (Outstanding), S (Satisfactory), or U (Unsatisfactory).

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Objectives:

- Develop a comprehensive understanding of measurement units, systems, and conversions.
- Explore various tools and techniques for measuring length, area, volume, mass, and capacity.
- Apply measurement skills to solve real-world problems and analyze geometric properties.
- Enhance estimation skills and recognize the importance of precision in measurements.
- Foster an appreciation for the significance of measurement in daily life and various disciplines.

Essential Questions:

- What are the fundamental units of measurement, and how do they relate to different measurement systems?
- How can we accurately measure length, area, volume, mass, and capacity using appropriate tools and techniques?
- In what ways can measurement skills be applied to solve practical problems related to scale, proportion, and geometric properties?
- Why is estimation important in measurements, and how can we determine the level of precision required in various contexts?
- How does measurement play a crucial role in fields such as science, engineering, and design?

Enduring Understandings:

- Measurement units serve as standardized references for quantifying physical quantities and comparing measurements.
- Measurement tools and techniques enable accurate determination of length, area, volume, mass, and capacity.
- Measurement skills are essential for solving real-world problems involving scaling, proportion, and geometric properties.
- Estimation allows for quick approximations, while precision ensures accurate and meaningful measurements.
- Measurement is a fundamental aspect of various disciplines, contributing to understanding and

innovation.

CONTENT AREA STANDARDS

MA.7.G.B.6

Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.K-12.NJSLSA.R7

Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

LA.RST.6-8.7

Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

CS.K-12.2.d

Evaluate and select technological tools that can be used to collaborate on a project.

TECH.K-12.P.4

Demonstrate creativity and innovation.

TECH.K-12.P.5

Utilize critical thinking to make sense of problems and persevere in solving them.

TECH.K-12.P.8

Use technology to enhance productivity increase collaboration and communicate effectively.

STUDENT LEARNING TARGETS

Refer to the 'Declarative Knowledge' and 'Procedural Knowledge' sections.

Declarative Knowledge

Students will understand that:

- Measurement helps describe our geometric world using numbers.
- Volume is the quantity of three-dimensional space enclosed by a closed surface.
- Surface area is a measure of the total area that the surface of the object

Procedural Knowledge

Students will be able to:

- Calculate the volume of prisms and cylinders.
- Calculate the surface area of prisms and cylinders.

EVIDENCE OF LEARNING

Refer to the 'Formative Assessments' and 'Summative Assessments' sections.

Formative Assessments

- Do Now before each lesson
- Exit tickets at the end of each lesson and/or series of chunks of learning

Summative Assessments

This course allows students flexibility in the demonstration of their understanding at the conclusion of the unit:

- traditional/standardized assessment
- performance task
- project

RESOURCES (Instructional, Supplemental, Intervention Materials)

- [IXL](#)
- CMP3: Filling and Wrapping

INTERDISCIPLINARY CONNECTIONS

- Science
- Art & Design

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.