Unit Plan Template

Subject Area	Math
Grade Level	7
Topic	Shape and Space - Measurement
Length of Unit (days)	6 days

Desired Results

Established Goals – GLO(s):

Students will understand how measurement can be used to describe, compare, and solve problems involving 2D shapes, especially circles, triangles, and parallelograms. They will learn to use both direct measurement (using tools) and indirect measurement (using formulas and relationships).

Specific Outcome 1

Demonstrate an understanding of circles by:
- describing the relationships among radius, diameter and circumference
- relating circumference to pi
- determining the sum of the central angles
- constructing circles with a given radius or diameter
- solving problems involving the radii, diameters and circumferences of circles.

[C, CN, PS, R, V]

Specific Outcome 2

Develop and apply a formula for determining the area of:
- triangles
- parallelograms
- circles.

[CN, PS, R, V]

Understandings:

Students will understand that…

- Measurement allows us to describe and make sense of the world using numbers and relationships.
- Circles have consistent relationships (radius, diameter, circumference) that can be generalized using π.
- Area formulas are derived from reasoning about shapes, not just memorization.
- Complex shapes can often be understood by breaking them into simpler ones.
- Mathematical formulas are tools that help us solve real-world problems efficiently.

Essential Questions:

- How can we measure things that we can't directly measure?
- Why does π appear in all circles, and what does it represent?
- How are area formulas connected to each other?
- When should we use different measurement strategies?
- How can breaking apart shapes help us solve problems?
- What makes a mathematical formula useful?

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Prior understandings…

Students should already be able to:

- Multiply and divide whole numbers and decimals
- Understand basic geometric properties of 2D shapes
- Measure length and perimeter
- Recognize and describe triangles and quadrilaterals
- Use rulers and other basic measurement tools
- Understand basic concepts of area as covering space

Grade 6 - Measurement

Where does this lead?

Grade 8 Shape and Space (Measurement)

This learning supports future understanding of:

- Algebra (using formulas and variables)
- Surface area and volume in 3D geometry
- Trigonometry (relationships in triangles)
- Coordinate geometry
- Real-world applications such as construction, engineering, design, and architecture

Students will be able to…

- Describe the relationship between radius, diameter, and circumference
- Explain and apply the concept of π
- Calculate the circumference of circles using formulas
- Construct circles with a given radius or diameter using tools
- Determine the sum of central angles in a circle
- Solve real-world problems involving circles
- Develop and apply area formulas for triangles, parallelograms, and circles
- Explain why area formulas work (not just apply them)
- Choose appropriate measurement strategies to solve problems

Resources Needed:

- Mathfocus 7
- Slide decks
- Protracters/compasses

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Wednesday March 18, 2026 03/18 Math 7	SO 1 - describing the relationships among radius and diameter - Constructing circles using radius and diameter **Circle Hunt - Formative**
Thursday March 19, 2026 03/19 Math 7	SO 1 - describing the relationships among radius, diameter and circumference - relating circumference to pi - solving problems involving the radii, diameters and circumferences of circles. SO 2 - Develop formula for area of a circle **Exit Slip Qs - Formative**
Monday March 30, 2026 03/30 Math 7	SO 1 - Review - describing the relationships among radius, diameter and circumference - relating circumference to pi - constructing circles with a given radius or diameter - solving problems involving the radii, diameters and circumferences of circles SO 2 - Review - Develop formula for area of a circle **Exit Slip Qs - Formative**
Tuesday March 31, 2026 04/01 Math 7	SO 1 - Review - describing the relationships among radius, diameter and circumference - relating circumference to pi - constructing circles with a given radius or diameter - solving problems involving the radii, diameters and circumferences of circles SO 2 - Review - Develop formula for area of a circle **Start Mandala Project**
Wednesday April 1, 2026 04/01 Math 7	SO 1 - Review **with problem solving** - describing the relationships among radius, diameter and circumference

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	- relating circumference to pi - constructing circles with a given radius or diameter - solving problems involving the radii, diameters and circumferences of circles SO 2 - Review **with problem solving** - Develop formula for area of a circle **Continue Mandala Project - Summative**
Thursday April 2, 2026	SO 1 & SO 2 Summative Assessment **Problem Solving Quiz - Summative**
Wednesday April 15, 2026 04/15 Math 7	SO 2 - Develop a formula for the area of a parallelogram **Parallelogram Hunt - Formative**
Thursday April 16, 2026 04/16 Math 7	SO2 - problem solving specific - Develop and apply a formula for determining the area of a parallelogram **Exit Slip Qs - Formative**
Monday April 20, 2026 04/20 Math 7	SO2 - Develop and apply a formula for determining the area of a triangle - Include composite shapes for challenge **Triangle Hunt - Formative**
Tuesday April 21, 2026 04/21 Math 7	SO2 - problem solving specific - Develop and apply a formula for determining the area of a triangle - Include composite shapes for challenge **Exit Slip Qs - Formative**
Wednesday April 22, 2026	**SO2 Triangles and Parallelograms Quiz - Summative**

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Learning Outcomes	**Assessments**								
	Title	Exit Slip Qs	Circle Hunt	Simon Says	Mandala Project	Problem Solving Quiz	Parall. Hunt	Triangle Hunt	Parall. & Triangle Quiz
	Type (Formative/ Summative)	F	F	F	S	S			
<u>SO1 - Demonstrate an understanding of circles by:</u> • describing the relationships among radius, diameter and circumference • relating circumference to pi • determining the sum of the central angles • constructing circles with a given radius or diameter • solving problems involving the radii, diameters and circumferences of circles. [C, CN, PS, R, V]		X		X	X	X			
<u>SO2 - Develop and apply a formula for determining the area of:</u> • triangles • parallelograms • circles.		X	X		X	X	X	X	X

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Assessment Tool Title	**Brief Description**	For	AS	OF
Exit Slip Qs	Students are assigned 3-8 questions at the end of classes, sometimes they are given the answer key and are self-checking their answers as they go and sometimes they bring them to me to check. If students have completed all the practice questions they are entered in a draw for a unit prize	X	X	
Circle/Parallelogram / Triangle Hunt Activity	Circle problems are placed around the classroom and students placed in groups and are tasked to find the radius, diameter, circumference, and area of these circles. Once they think they've calculated the correct values they carry onto the next station. After they've worked with their group on questions new groups are made and they compare their answers and processes. Then I randomly spin for students to go to the board and demonstrate their understanding.	X	X	
Simon Says	Students are given actions to represent the parts of the circle (radius = 1 arm out, diameter = 2 arms out, circumference = circle an arm, area = jazz hands filling out a circle shape). This is to add physical motion to the concepts and enhance understanding. Wrong motion means they have to solve the "pop problem" which is a simple problem on the board behind me to rejoin.	X	X	
Mandala Project	Creative outlet for students to demonstrate their understanding. We spoke about mandalas and what they represent in indigenous cultures around the world - students then constructed 3 concentric circles using protractors and were asked to use patterns, symbols, and symmetry to showcase their personalities and strengths. They were also asked to calculate the diameter, circumference, and area of each circle. Students had 2 days to complete with assistance is needed.			X
Problem Solving/ Parallelogram and Traingle Quiz	Students were asked to choose 2 of the 5 proposed problems and solve them. Questions ranged from introductory knowledge to advanced knowledge.			X

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