

Lesson 21: Area and Circumference of a Circle

NYS Learning Standards:

7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

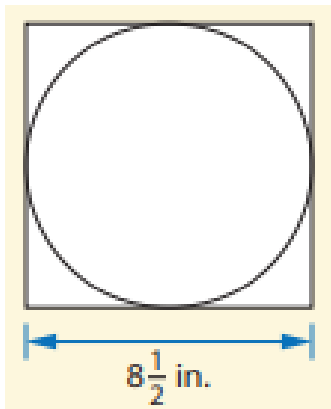
Learning Outcome:

- Understand the relationship between the radius and diameter of a circle.
- Understand that the ratio of the circumference of a circle to its diameter can be expressed as pi.
- Discover an expression for the area of a circle using the area of a parallelogram.
- Solve real-world problems involving the circumference of a circle and the area of a circle.

Vocabulary:

- Circumference: **the distance around a circle.**
- Center: **a point inside a circle that is equidistant from each point on the circle.**
- Diameter: **the distance across the circle through the center.**
- Radius: **the distance from the center to any point on the circle.**
- Pi: **the ratio of the circumference to the diameter, represented by the Greek letter π .**

Find the circumference and the area of the circle below. Use 3.14 for π .



$$\text{Circumference} = \pi \times \text{diameter}$$

$$\text{Area} = \pi \times \text{radius}^2$$

A middle school is building an oval practice track with dimensions shown below. What is the distance around the track? Use 3.14 for π .

