

Name _____

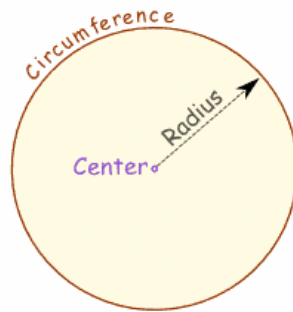
Date _____

Circles

Reading and Discussion

The idea of a circle, the basis for the wheel, has been known since the beginning of recorded history. Early scientists thought that there was something perfect or divine about circles.

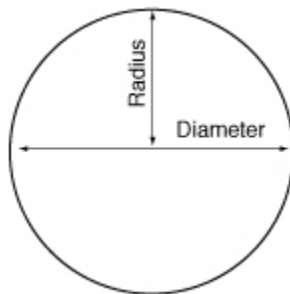
In modern times, we generally refer to a circle as a simple shape of geometry. It consists of points in a plane that are all the same distance from a given point. The given point of a circle is called the **center**. The perimeter of a circle is known as the **circumference** of a circle. We can see how these three terms apply to a circle by looking at the picture below.



The distance from the center of a circle to any point along the circumference of a circle is called the **radius**. The **diameter** of a circle is a line whose endpoints touch the circumference of a circle. This line must also pass through the center of the circle.

The above circle shows the radius compared to the diameter. As you can see, the diameter of a circle is twice the radius. If we know the radius of a circle, we can determine what the diameter is. For example, if the radius of a circle is two inches, we know that the diameter is four inches. The diameter will always be double the radius. If we know what the radius is, then we would just multiply it by two to find the diameter.

Likewise, if we know the diameter of a circle, we can determine the radius of a circle. The radius of a circle will always be half of the diameter. For example, if we know a circle is ten feet in diameter, we can determine that the radius of that same circle is five feet. If we know



what the diameter of a circle is, then we can simply divide it in half to find the radius. In other words, take the diameter and divide it by two in order to find the radius.

Circles have **360 degrees**. If you were to spin in a circle, you will have spun 360 degrees from start to finish.

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Activities

Activity A: Fill in the Blanks:

1. A _____ consists of points in a plane that are all the same distance from a given point.
2. The given point of a circle is called the _____.
3. The perimeter of a circle is known as the _____ of a circle.
4. The _____ of a circle is a line whose endpoints lie on the circumference.
This line must also pass through the center of the circle.
5. The distance from the center of a circle to any point along the circumference is called the _____.
6. Circles also have _____ degrees.

Activity B: Solve the following:

1. If the diameter of a circle is 4 inches, how many inches is the radius? _____
2. If the diameter of a circle is 8 inches, how many inches is the radius? _____
3. If the radius of a circle is 6 inches, how many inches is the diameter? _____
4. If the diameter of a circle is 10 inches, how many inches is the radius? _____
5. If the diameter of a circle is 16 inches, how many inches is the radius? _____
6. If the radius of a circle is 9 inches, how many inches is the diameter? _____
7. If the radius of a circle is 3 inches, how many inches is the diameter? _____
8. If the diameter of a circle is 20 inches, how many inches is the radius? _____
9. If the radius of a circle is 7 inches, how many inches is the diameter? _____
10. If the diameter of a circle is 14 inches, how many inches is the radius? _____
11. If the radius of a circle is 15 inches, how many inches is the diameter? _____
12. If the diameter of a circle is 24 inches, how many inches is the radius? _____
13. If the diameter of a circle is 18 inches, how many inches is the radius? _____

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Answer Key

Activity A

1. A circle consists of points in a plane that are all the same distance from a given point.
2. The given point of a circle is called the center.
3. The perimeter of a circle is known as the circumference of a circle.
4. The diameter of a circle is a line whose endpoints lie on the circumference. This line must also pass through the center of a circle.
5. The distance from the center of a circle to any point along the circumference of a circle is called the radius.
6. Circles have 360 degrees.

Activity B

1. If the diameter of a circle is 4 inches, how many inches is the radius? 2 inches
2. If the diameter of a circle is 8 inches, how many inches is the radius? 4 inches
3. If the radius of a circle is 6 inches, how many inches is the diameter? 12 inches or 1 foot
4. If the diameter of a circle is 10 inches, how many inches is the radius? 5 inches
5. If the diameter of a circle is 16 inches, how many inches is the radius? 8 inches
6. If the radius of a circle is 9 inches, how many inches is the diameter? 18 inches
7. If the radius of a circle is 3 inches, how many inches is the diameter? 6 inches
8. If the diameter of a circle is 20 inches, how many inches is the radius? 10 inches
9. If the radius of a circle is 7 inches, how many inches is the diameter? 14 inches
10. If the diameter of a circle is 14 inches, how many inches is the radius? 7 inches
11. If the radius of a circle is 15 inches, how many inches is the diameter? 30 inches
12. If the diameter of a circle is 24 inches, how many inches is the radius? 12 inches or 1 foot
13. If the diameter of a circle is 18 inches, how many inches is the radius? 9 inches