**Words to Know**

*Fill in this table as you work through the lesson. You may also use the glossary to help you.*

**Warm-Up** Introduction to the Volume of a Cylinder

**?**

**W2K**

**Lesson Question**

for volume.

a cylinder.

a cylinder.

of

**Generate** the

of

**Calculate** the

**Identify**

**Inspect** the volume of a cylinder.

**Lesson Goals**

|  |  |
| --- | --- |
|  | a solid figure with two congruent circular or elliptical bases connected to a curved side |
|  | the measure of the amount of space occupied by a three-dimensional solid object |
|  | a segment that extends from the center of a circle to any point on the circle |
|  | a chord that passes through the center of a circle |
|  | to take the place of; to replace |

**Slide**

base

base

.

and

bases that are congruent

A **cylinder** is a solid figure with

**Identifying Parts of a Cylinder**

In a cylinder the bases are circular shapes.

Base

height

* Not a Base

**Base Versus Not a Base**

* Base

Base

**2**



**4**

.

We know that the area of this circle is

= *Bh*

*V* 

×

Volume = Area of

Height

*r* 

Base

**The Volume Formula**

**Slide**

**The Volume of a Cylinder**

How is the **volume** of a cylinder measured?

*V* =

Where, *B* = base

Area

*h*

**Slide**

When we leave the  symbol in the answer, it is the exact value.

in.3

*V* =

*B*  9 in.2

2. Simplify to find the volume.

7 in.

*V* = *Bh*

*V* = ( )( )

.

Use the formula to calculate the volume of the cylinder.

*V* = *Bh*

Follow the steps to find the volume.

1. **Substitute** the given measures for the corresponding

**Using the Formula to Calculate Volume**

**PROCEDURE**

**7**

**9**

ft3

.

)

)(

)3

*V*  (

*V*  (

*V* 

What is the volume of a cylinder with a

**radius** of 5 feet and a height of 3 feet?

Cylinder *V* = *Bh V* 

Follow the steps to find the volume.

1. Substitute the given measures for the corresponding variables.
2. Simplify to find the

**Finding Volume Given Radius and Height**

**EXAMPLE**

**Slide**

**Determining Volume Given the Diameter**

**EXAMPLE**

Consider this cylinder and the given **diameter** of the circle base.

16 in.

 *d* = = *r*

2

6 in.

**12**

What is the volume of the cylinder?

Cylinder *V* = *Bh*

*V* 

*V*  ( )( )

*V*  ( )6

*V*  in.3

# Summary

**Lesson Question**

**??**

How can you find the volume of a cylinder?

**Lesson Question**

**Answer**

Introduction to the Volume of a Cylinder

*Use this space to write any questions or thoughts about this lesson.*