Foundations of Math 10 LG 17

SURFACE AREA AND VOLUME

INTRODUCTION:

For some reason the government decided to make sure you knew how to plug numbers into formulas. The section on Surface Area and Volume does this well. Volume and surface area apply to many design fields.

LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to:

1) Convert units of volume or surface area into another unit.
2) Find the surface area of 3-dimensional objects or find the length of a side given the surface area.
3) Find the volume of 3-dimensional objects or find the length of a side given the volume.

EVALUATION:

You are ready to progress to the next learning guide when you can demonstrate your understanding of the above expectations. Please refer to your Mathematics 10 Marks Record Sheet to determine the assessment.

RESOURCES NEEDED:

Math Links 10 Text

Geometry Set including a ruler, compass and protractor

LEARNING ACTIVITIES:

Expectation #1: Convert units of volume or surface area into another unit.

1. Watch and take notes on instructional video on Units of Area and Volume.
2. Read pages 56-57 and then work through Examples 1, 2 & 3 on pages 58-60.
3. Read Key Ideas on page 61.
4. In your math journal, show, using an example for each, how to convert cm^2 to m^2 and cm^3 to m^3.
5. Now complete #1-5, 7, 9-12 on pages 61-65.

6. For extra practice, click here. For the answers to the extra practice, click here.

Expectation #2: Find the surface area of 3-dimensional objects or find the length of a side given the surface area.

1. Watch and take notes on instructional video on Surface Area.

2. Read Link the Ideas on pages 68-69 then work through Examples 1, 2, 3, 4 & 5 on pages 69-72.

3. Read Key Ideas on page 73.

4. In your math journal, complete and example to find the surface area for each of the shapes found in the Key Ideas

5. Now complete #1-5, 7, 5, 9, 10, 12, 13, 15, 16 &17 on pages 74-78.

6. For extra practice, click here. For the answers to the extra practice, click here.

Expectation #3: Find the volume of 3-dimensional objects or find the length of a side given the volume.

1. Watch and take notes on instructional video on Volume.

2. Read Link the Ideas on page 81 and then work through Examples 1, 2, 3 & 4 on pages 82-85.

3. Read Key Ideas on page 85.

4. In your journal, include an example for how to find the volume for a cone, pyramid and sphere.

5. Now complete #1-6, 8, 10, 12-14, 16 &18 on pages 86-90.

6. For extra practice, click here. For the answers to the extra practice, click here.

REVIEW AND CHALLENGE

1. In the Math Links 10 text, complete Chapter Review #1-13 on pages 92-94.
2. In the Math Links 10 text, complete Practice Test #1-13 on pages 95-97.
3. In the Math Links 10 text, complete Unit Connections #6-9 on pages 141-142.

PRACTICE QUIZZES

Practice quiz #1
Practice quiz #2
Practice quiz #3
Practice quiz #4
Practice quiz #5