**Lesson 2**

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| Topic Goal: Area of a Square, Rectangle and Triangle |

This lesson focuses on calculating the area of rectangles and triangles.

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| Example(s):  |

**Area** is the measure of how much space is in a flat surface.

**Area of a Square**



Formula:



Area = length x width

Area = l x w

Find the area of the square below:



Remember that these marks mean that the sides are equal

Solution:



**11 m**

**11 m**

**11 m**

A = l x w

Notice that the units are squared, **m2**

 = 11 x 11

 = 121 m2

**Area of a Rectangle**

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Formula:



w

Area = length x width

Area = l x w

l

Find the area of the rectangle below:



Solution:

A = l x w

 = 17 x 9

 = 153 cm2

**Area of a Triangle**

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A = base x height

 2

= 6 units x 3 units

 2

= 18 units

 2

It takes 9 square units to cover the area of the triangle.

h = height

b = base

Formula:



Area = base x height

 2

$$A = \frac{bh}{2}$$

Find the area of the following triangle:



Solution:

b = 21 m

h = 11 m

Use the formula:

$$A = \frac{bh}{2}$$

*Step 1* – multiply the base by the height

A = 11 x 21

 2

A = 231

 2

*Step 2* – divide your answer by 2

A = 115.5

For some practice, play the area game at this website:

http://www.bgfl.org/bgfl/custom/resources\_ftp/client\_ftp/ks2/maths/perimeter\_and\_area/index.html

*Step 3* – add the units

A = 115.5 m2

Problem:

The cost to lay down artificial turf at BMO field is $19.50/m2. The dimensions of the playing area are 68 m x 105 m. How much does it cost to lay down the turf?

Solution:

*Step 1* – draw and label a diagram

105 m

68 m

*Step 2* – Use the formula for Area of a rectangle

A = l x w

 = 105 x 68

 = 7140 m2

The area of the field is 7140 m2

*Step 3* – Find the cost of the turf.

Total cost = area of field x cost per m2

 = 7140 x 19.50

 = $139 230

Therefore, it costs $139 230 to put down artificial turf at BMO field.

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|  Practice Questions:  |

1. Find the area of the following unshaded (white part) below. Each box represents 1 cm2.



Area = \_\_\_\_\_\_\_\_\_

1. Find the area of the following objects using the appropriate formula.

Shape –

Formula –

Length –

Width –

A = \_\_\_\_\_\_ x \_\_\_\_\_\_

 =

a. 

b.

Shape –

Formula –

Length –

Width –

A = \_\_\_\_\_\_ x \_\_\_\_\_\_

 =

c.

Shape –

Formula –

Length –

Width –

A = x

 2

 =

3. A credit card measures 8.4 cm by 5.6 cm. Find the area of the card.

4. **Sunfish** sailboat is a personal size, beach sailboat. If it is 7.5 ft high and 10 long, how much material is needed to make the mast (sail)/



**7.5 ‘**

**10 ‘**

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|  Assessment:  |

1. Write the formula or symbol from column B that matches the description in column A.

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| **A** | **B** |
| **1.** area of a square with length and width 1 cm: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**2.** formula for thearea of a rectangle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**3.** formula for thearea of a triangle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **a)** **b)** 1 cm2**c)**  |

Write the word from column B that completes the explanation in column A

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| **A** | **B** |
| **4.** length from the base to the highest point of a triangle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**5.** the space covered by a two-dimensional shape \_\_\_\_\_\_\_\_\_\_\_**6.** the shape that has an area of:   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**7.** the shape of a door: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **a)** rectangle**b)** triangle**c)** height**d)** area |

1. Find the area of the following unshaded (white part) below. Each box represents 1 cm2.



Area = \_\_\_\_\_\_\_\_\_

1. Find the area of the following objects using the appropriate formula.



Shape –

Formula –

Length –

Width –

A = \_\_\_\_\_\_ x \_\_\_\_\_\_

 =

a.

b.

Shape –

Formula –

Length –

Width –

A = \_\_\_\_\_\_ x \_\_\_\_\_\_

 =

c.

Shape –

Formula –

Length –

Width –

A = x

 2

 =

1. An average rectangular NHL rink is approximately 61 m long and 26 wide. A rectangular Olympic rink measures 61 m by 30.5 m.
	1. Draw and label diagrams for both rinks.
	2. Use the formula for area of rectangle to find the area of both rinks.
	3. How much more playing surface do Olympic players have than NHL players?
2. Mrs. Patel has a large garden that is in the shape of triangle. It is 23 feet high and 25 feet wide.
	1. Draw and label a diagram of the garden.
	2. She needs to cover the surface with soil. How much does she need?
	3. The soil costs $1.25/square foot. How much will it cost her to cover the garden?