

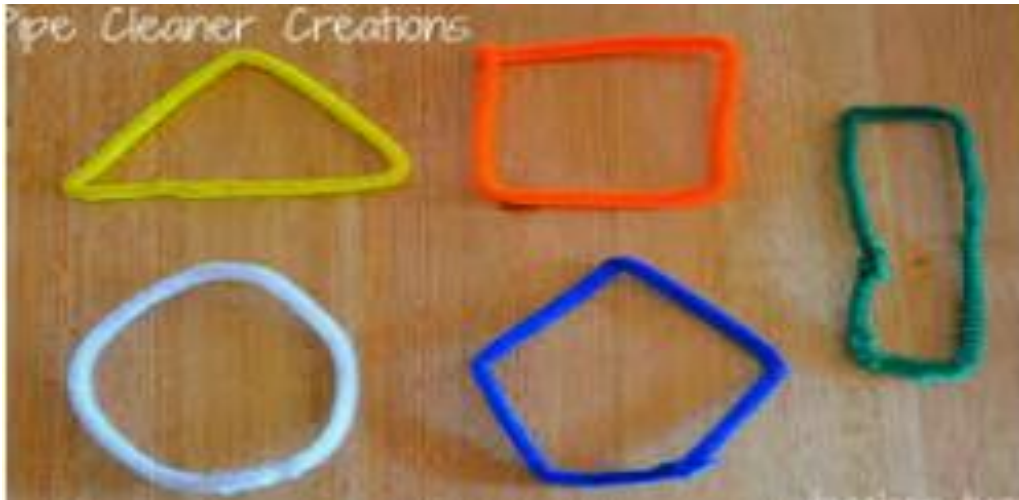
## Summer School Packet 2020

### Week1

#### Unit 1 Foundations of geometry (5 Days)

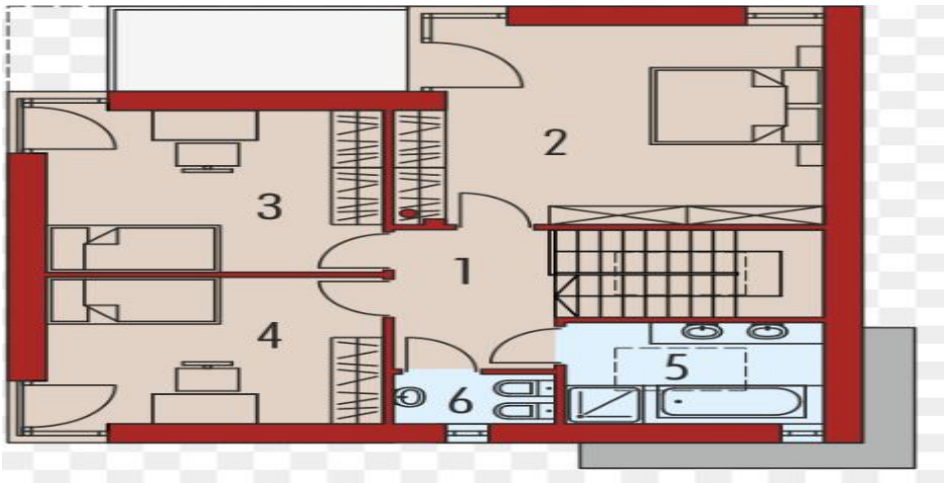
Standard: HSG-CO.A.1

#### Activity 1: Vocabulary using Pipe Cleaners creations



Define the Terms and use pipe cleaners, ice-cream sticks, and straws to model the following given terms and create a File folder/binder for the following:

1. Lines: Ray, line segment, parallel lines, perpendicular lines.
2. Types of angles based on degrees: Acute angle, obtuse angle, right angle, complementary angles, and supplementary angles.
3. Types of Triangles based on sides length: Scalene, isosceles, and equilateral triangles.
4. Types of Triangles based on degrees: Acute angle triangle, right angle triangle and obtuse angle triangle.
5. Circle: Radius, diameter, circumference, and arcs of a circle.

**Week 2****Unit 2 Transformation and the coordinate Plane****Module 1 Identify polygons and calculate area and perimeter****Standard HSG-GPE.B.7****Activity 2: Geometry Architecture (5 days)**

Draw a sketch of your house on a graph paper using rectangles, squares and write dimensions in meters for each side. Use the formulae

Area of a rectangle = Length X Width

Area of a Square = Side X Side

Now Calculate the following:

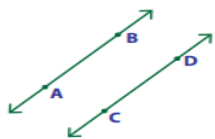
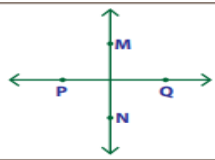
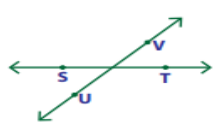
1. Find the area of all rooms including living room and bedrooms in your house.
2. Find the total Area of all rooms.
3. Find the area of kitchen and bathrooms.
4. Find the total covered area of your house.
5. Find the perimeter of your house.
6. Find the Area and perimeter of front yard and back yard.
7. Find the cost of creating a circular raised garden bed with a radius of 2 meter if the cost per square meter is \$11.50.

**Week 3**

Module 2 Parallel and perpendicular lines (5 days)

Standards HSG-GPE.B.4, HSG-GPE.B.5, HSG-CO.C.12

Name : \_\_\_\_\_ Date : \_\_\_\_\_

<b>Parallel, Perpendicular and Intersecting Lines</b>			
	Description	Figure	Symbol
<b>Parallel Lines</b>	Two lines remain the same distance apart at all times and never intersect.		$\overline{AB} \parallel \overline{CD}$
<b>Perpendicular Lines</b>	Two lines that intersect and form right angles.		$\overline{PQ} \perp \overline{MN}$
<b>Intersecting Lines</b>	Intersecting lines meet or cross each other.		$\overline{ST}$ intersect $\overline{UV}$

Using chart answer the following questions:

- 1) A line  $m$  passes through  $(1, -7)$  and  $(6, -2)$ . A line  $n$  passes through  $(3, -9)$  and  $(8, -4)$ . Prove that the lines  $m$  and  $n$  are parallel.

\_\_\_\_\_

- 2) A line  $u$  passes through  $(3, -7)$  and  $(5, -4)$ . Slope of a line  $t$  is  $-\frac{2}{3}$ . Prove that the lines  $t$  and  $u$  are perpendicular.

\_\_\_\_\_

- 3) A line passes through  $A(0, 0)$  and  $B(5, 15)$ . Another line passes through  $C(2, -2)$  and  $D(7, 13)$ . Is  $\overline{AB}$  parallel to  $\overline{CD}$ ? Justify.

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- 4) A line passes through  $(-2, 6)$  and  $(1, -6)$ . Another line passes through  $(-5, 4)$  and  $(3, 6)$ . Prove that the lines are perpendicular?

**Week 4**

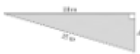



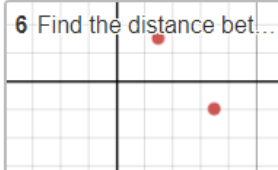
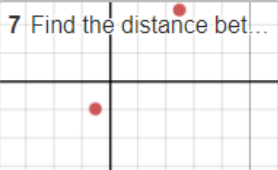
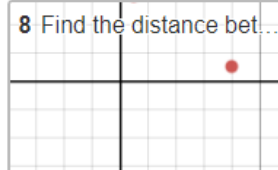
**Module 3** Using tools and Distance formula

**Standards:** HSG-CO.A.2, HSG-CO.A.4

Watch the video using the link given below:

<https://www.khanacademy.org/math/basic-geo/basic-geometry-pythagorean-theorem/pythagorean-theorem-distance/v/example-finding-distance-with-pythagorean-theorem>

Complete the exercise

<p><b>1</b> Review Pythagorean...</p> <p>Remember that Pythagorean Theorem allows you to find a missing side of a right triangle if you know the other two sides. In this activity we will practice using the Pythagorean</p>	<p><b>2</b> Solve for d.</p> 	<p><b>3</b> Solve for d.</p> 	<p><b>4</b> Solve for d.</p> 
<p><b>5</b> Distance Between P...</p> 	<p><b>6</b> Find the distance bet...</p> 	<p><b>7</b> Find the distance bet...</p> 	<p><b>8</b> Find the distance bet...</p> 

**Example:** Find the distance between the points (5, -1) and (3, 7).

$$\begin{aligned} \text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(3 - 5)^2 + (7 + 1)^2} \\ &= \sqrt{(-2)^2 + (8)^2} = \sqrt{4 + 64} = \sqrt{68} \approx 8.25 \text{ units} \end{aligned}$$

Find the distance between the points. Round the answer to two decimal places.

1) (1, 3), (5, 7)

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2) (-8, -9), (-4, -10)

\_\_\_\_\_

3) (10, 6), (1, -4)

\_\_\_\_\_

4) (3, 2), (8, 2)

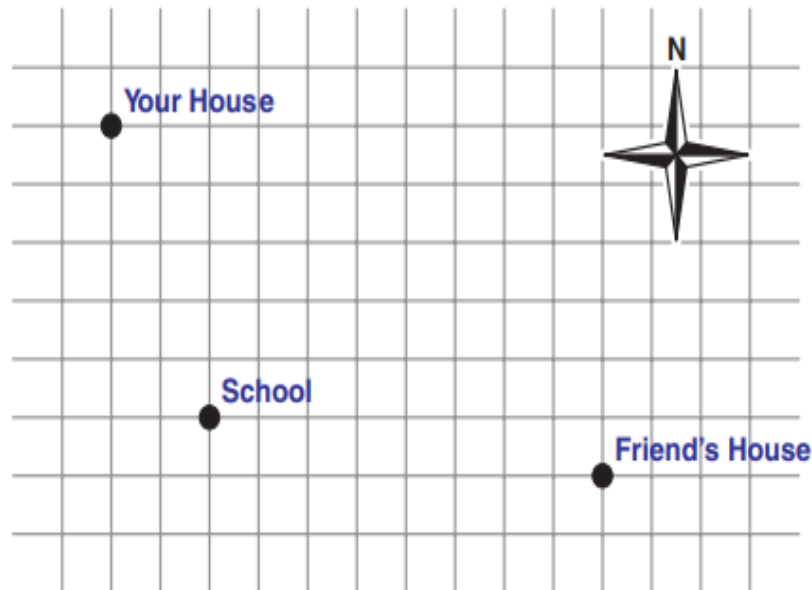
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5) (9, -3), (-1, 8)

6) (10, 0), (0, 4)

Answer the following Questions:

Suppose that the city in which you live has a system of evenly spaced perpendicular streets, forming square city blocks. The map below shows your school; your house, which is located two blocks west and five blocks north of the school; and your best friend's house, which is located eight blocks east and one block south of the school.



1. How many blocks would you have to drive to get from your house to your friend's house? Draw a path that you would drive, and calculate the distance.
2. What if you could use a helicopter to fly straight from your house to your friend's house? Draw the path that you would take. How could you find the distance "as the crow flies"?
3. Establish a coordinate-axis system, using the school as the origin. What would the coordinates be for your house? For your friend's house?

**Note: Complete all your activities and submit records with calculations.**

**\*\*\*\*\*Stay Safe and Take care\*\*\*\*\***