**WEEK 1 – My Friend Robot Geometry**

**Grade:** Junior (4-6)

**Unit:** Geometry and Spatial Sense

**Learning Outcome**   
Construct triangles, using a variety of tools (e.g., protractor, compass, dynamic geometry software), given acute or right angles and side measurements

**Activity  
1)** Students will write step-by-step ‘code’ programming a ‘robot’ (sibling, parent, themselves) to create a series of triangles using individual coding instructions that will be performed by the robot **2)** Students will need a large empty space to program triangles and something that the robot can leave at the corners of the triangle for measurement later   
**3)** Students will only be allowed to write 2 phrases as code: “take one step” (robot takes one step forward of approximately half a metre) *and* “turn \_\_\_ degrees right/left” (robot will turn according to code)   
**4)** Students will write code to have the robot walk a triangle meeting the criteria set out in the recording sheet. (There may be multiple right answers)   
**5)** Once code is written by student, robot will perform the code exactly as it is written, dropping a marker when they are instructed to turn to mark corners  
6) Once code is complete, students will fill out the recording sheet (below)  
**Note:** Code must be followed exactly. If for whatever reason code does not go as originally thought, students are not to simply add an extra piece of ‘code’ mid-operation to make the code work. Code must be restarted if not successfully completed after a change is made.

**Check for Understanding**   
I understand how to construct different types of triangles based on the criteria provided  
I understand the importance of each piece of ‘code’  
My code got more accurate to the triangle I wanted to build with practice

**Materials**   
Recording sheet (attached below), pencil, clear space, protractor (can be printed from online), small item to mark corner of triangles

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Draw the triangle with measurement | Type of triangle (acute, right obtuse, scalene, equilateral, isosceles | Area of the triangle | Perimeter in metres and steps (2 steps/ metre) | Measurements of the angles |
| 3.6m  3m  4m | Acute isosceles | 7.2 m2 | 10 metres  (20 steps) | 700  550  550 |
| 5m  4m |  |  |  | 900  350  550 |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_ scalene |  | 15 metres  (30 steps) |  |
|  |  | 12 m2 |  |  |
|  |  |  | 18 metres  (36 steps) | 600  600  600 |
| Make your own! |  |  |  |  |