



Makes Maths Fun

Level 4 POSITION

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

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Position

Level 4 is designed for students in their fourth year at school often called Year 3. Students will use simple maps and grids to represent position and follow routes.

Knowledge: Students will complete a grid code breaker using co-ordinates.



Students who demonstrate proficiency in this activity move on to Comprehension.



Students stop here as they require additional teacher support to master this activity.

Comprehension: Students will use directions to draw a common image.



Students who demonstrate proficiency in this activity move on to Application.



Students stop here if time has run out or they require additional support with this activity.

Application: Students will construct their own set of directions for a partner to follow and check.



Students who demonstrate proficiency in this activity move on to Analysis.



Students stop here if time has run out or they require additional support with this activity.

Analysis: Students will learn to code with the Logo Turtle language.



Students who demonstrate proficiency in this activity move on to Synthesis.



Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students will learn more complex coding with the Logo Turtle language.

Evaluation: Suggested questions provide a starting point for discussions related to Position.



Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.



All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

Name: _____

Knowledge

See if you can discover what maps and fish have in common.

E	H	L	A	X
D	E	T	S	C
C	Y	E	A	X
B	V	S	H	B
A	E	O	T	H
	1	2	3	4

To solve the riddle place the letter found at each grid reference onto the chart below.

2D	4A	1D	1C

4B	2A	3A	1E

3B	3E	1B	1A

2B	4D	3C	2E	2C	3D



Let's Try This Again



Progress To Comprehension

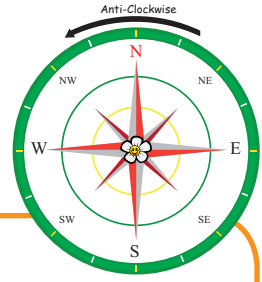
Position - Level 4 - Students will use directions, grids and coding to find positions and draw pictures.



Name: _____

Comprehension

Use the instructions below and a ruler to make the snail draw a well-known picture.



Position - Level 4 - Students will use directions, grids and coding to find positions and draw pictures.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation



1. The snail heads South-West for 8cms.
2. The snail turns 45 degrees to face due East and heads 3cms.
3. The snail turns clockwise 135 degrees and walks 6cms.
4. The snail turns back to face the East and moves 3cms.
5. The snail turns to face South-West and moves 5cms.
6. The snail turns anti-clockwise 135 degrees and moves 5.5cms.
7. The snail turns 90 degrees to the South and heads forward 1.5cms.
8. The snail turns to face due East and walks 1.5cms.
9. The snail creates a right angle and walks 1.5cms North.
10. The snail turns back to face due East and walks 5.5cms.
11. The snail slowly mirrors its previous path to create a well-known picture.



Let's Try This Again



Progress To Application

Name: _____

Application

On a spare piece of paper draw a simple image such as a hexagon or a star. Use the lines below to write instructions for a partner to follow and be able to draw the same picture shape. The space at the bottom is for your partner to follow your instructions and see how accurate you were in your directions.

Position - Level 4 - Students will use directions, grids and coding to find positions and draw pictures.

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
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Let's Try This Again



Progress To Analysis

Name: _____

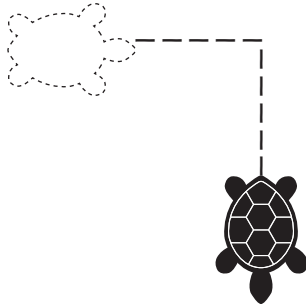
Analysis

The instructions you used in the comprehension and application activities are very similar to the computer coding language "turtle". This coding language is over 50 years old and uses simple code to make a turtle draw pictures.


In the turtle coding language the first command you need to know to control your turtle is **FORWARD**. This must be followed by a number to tell the turtle to move that many steps forward ie. **Forward 5** would be:



To make the turtle turn, you just use **LEFT** or **RIGHT** followed by a number of degrees ie. **Forward 5 Right 90 Forward 5** would be:



To turn in a full circle the turtle would turn 360 degrees and each corner is 90 degrees. To turn backwards you use 180 degrees just like on a compass.

See if you can write a script to make the turtle draw the outline for the letter . Use the website turtleacademy.com to test if your code is correct.

Note: You can use the shortcuts "fd" for forward, "rt" for right and "lt" for left.



Let's Try This Again



Progress To Synthesis



Evaluation

The following questions and activities are provided as a starting point for fun discussions related to Position. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the Position activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.



Discuss with students how far computer programming has come since 1967 when Wally Feurzeig, Seymour Papert and Cynthia Solomon first created the Logo Turtle language.



Discuss the difference and increased complexity between coding a beebot and coding using the turtle language. Both are similar but harder when you have to put in the actual degree and direction rather than just pressing the arrows.



Show the students an etch a sketch and how this can be used like a Logo turtle.



Play battle ship as a class but use letters instead of ships. See if students can spell the word you have chosen.



Students may wish to complete more of the lessons available at Turtle Academy and these are a great precursor to the coding language Python.

