LENGTH

Objectives:

- Pupils will learn how to enter basic commands to make it move or turn in different directions.
- Pupils learn how to enter basic commands to make it draw lines of different length.
- Revise term like clockwise and anti-clockwise
- Learn how to use a ruler to measure lines in cm.

Resources:

- IWB
    - https://www.studyladder.com/resources/activity/fullscreen?id=29135
    - https://www.studyladder.com/play/activity-new/id/28109
    - https://www.studyladder.com/play/activity-new/id/21613
- A3 sheets
- Pro-Bots
- Pens
- Pro-Bot Worksheets

Lesson Note:

Introduce the topic by giving them a real-life situation where measuring the length of something . Ask pupils to give further examples.

Ask pupils to name different measuring tools.

Discuss with pupils the units of measurement used for length.

Show pupils how to use the ruler . (Study ladder video/ IWB)

YEAR 5

Introducing the Pro-Bot:

Discuss the main features of programmable floor turtles with the children:

- They only do what they are instructed to (follow commands exactly as they are given).
- Compare with wider-world technology devices which need to follow instructions eg remote-sensing devices such as a Mars rover, bomb disposal devices and medical equipment.

Let pupils experiment with the Pro-Bot to make it move and turn in different directions.

Show pupils how to insert a pen into the device to enable it to draw a trail as it moves along a sheet of paper.

In groups pupils work out the 9 tasks in the worksheets.

1 Press the forward button to draw a straight line.

Estimate the length of this line: _____

Measure the line with your ruler: _____

2 Programme the Pro-Bot to draw a line of 10cm.

In the space below draw the commands you are going to give to the Pro-Bot

Check the length of the line with your ruler.

3 Programme the Pro-Bot to draw a line of 15cm.

In the space below draw the commands you are going to give to the Pro-Bot

Check the length of the line with your ruler.

Pro-Bot

4 Place the Pro-Bot in this position:

Draw the button you are going to press to turn the

Pro-Bot to the right.

5 If you place the Pro-Bot in this position and you input the following commands:

2 **5**

the Pro-Bot will draw a : Vertical line.

Horizontal line.

(Tick✓ the correct answer)

6 If you place the Pro-Bot in this position and you press this command:

the Pro-Bot will make:

a clockwise turn.

an anti -Clockwise turn.

(Tick✓ the correct answer)

7 Place the Pro-Bot in this position:

Programme the Pro-Bot to draw a

horizontal line of 12cm.

8 Place the Pro-Bot in this position:

Programme the Pro-Bot to draw a

vertical line of 15cm.

9 Pro-Bots can write too!

Can you programme the Pro-Bot to write

the letter L using these measurements?

10cm

7cm

YEAR **5**

10

Place the Pro-Bot in this position:

Programme the Pro-Bot to write the letter T.

Use the following measurements:

10cm

11cm

11

Place the Pro-Bot in this position:

Programme the Pro-Bot to write the letter E.

Use the following measurements:

6cm

10cm **5cm**

6cm

12 **The letter T**

How many Right Angles does the letter T have? ☐

Mark them on the letter T drawn by the Pro-Bot.

13 **The letter E**

How many Right Angles does the letter E have? ☐

Mark them on the letter E drawn by the Pro-Bot.

14 Programme the Pro-Bot to write the letter F.

☐ ☐ ☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐ ☐

How many Right Angles does the letter F have? ☐

Mark them on the letter F drawn by the Pro-Bot.

15

Programme the Pro-Bot to write the letter H.

How many Right Angles does the letter H have?

Mark them on the letter H drawn by the Pro-Bot.

16

Place the Pro-Bot in this position:

Programme the Pro-Bot to write the

number 4 .

Use the following measurements:

6   6

12

6
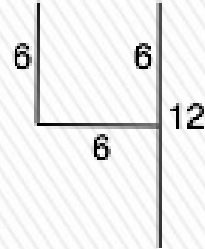
17

Place the Pro-Bot in this position:
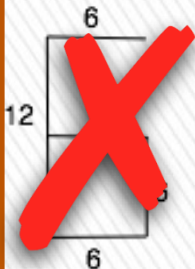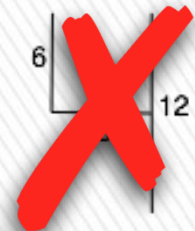
Programme the Pro-Bot to write the

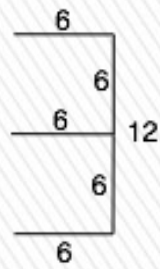number 5.

Use the following measurements:

6

12   6

6   6

6

YEAR 5
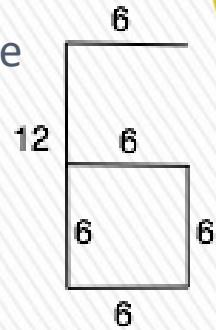
Pro-Bot
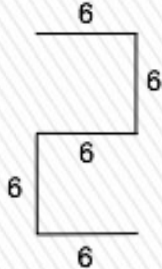
18

Choose one of these numbers and programme the Pro-Bot to write it. Use the given measurements.
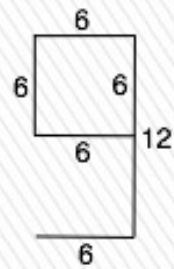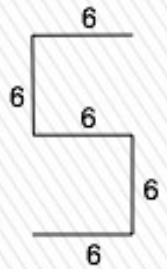
We chose to programme the Pro-Bot to write the number: