

# Control With Logo

Software: MicroWorlds / MSWLogo

Subject: I.T. / Maths

The pupils begin to learn about control and programming using the Logo language. The topic is split into five lessons, each building on the last, with the fifth lesson being a review session. The pupils will start by learning Logo concepts away from the computer then make the conceptual leap to controlling the screen turtle. Tasks of increasing complexity are then attempted, ranging from drawing very simple shapes, to using repeat commands and writing/refining Logo programs.

## Lesson 1 [Logo Concepts](#)

The aim of this lesson is to introduce pupils to the idea of control through Logo. The learning objective is that pupils should discover how to use a sequence of instructions to control the movements of a 'turtle'. This lesson can be done outside in the playground or inside the classroom using a person as the turtle, while others give commands. Alternatively, the teacher can conduct the activity by drawing on the board and asking pupils to give a command.

The teacher should make sure that the pupils are aware of, and can use the appropriate terminology:

<b>forward</b> <i>n</i> (where <i>n</i> = number of steps)	<b>back</b> <i>n</i>
<b>right</b> <i>x</i> (where <i>x</i> = angle of turn)	<b>left</b> <i>x</i>

Once the activity is over, the online worksheet **logo1.doc** (Control With Logo) is available to consolidate the activity. This should be saved to the pupil's individual folder. The [Turtle Search](#) worksheet is also appropriate to this lesson.

## Lesson 2 [Basic Commands](#)

The teacher should remind pupils of last lesson's activities and explain that we can do the same thing on the computer. Make sure that the commands are on the board and that pupils know what they do. Introduce the **pd** (pen down), **pu** (pen up) and **cg** (clear graphics or, if using MSWLogo, **cs**: clear screen) commands. It is essential to type **pd** to make the turtle draw the lines. Be aware that there will be a certain amount of mistakes made with spelling, spacing etc. Use the [map.lgo](#) file to allow the pupils to practise. Allow time for creativity - Logo encourages active learning.

## Lesson 3 [Abbreviated Commands](#)

Revise Logo commands and introduce abbreviations as shown on the worksheet. They are already using **pd**, **pu** and **cg (cs)**, so it should be easier to introduce the new abbreviations. More able pupils should be able to create quite complex pictures - perhaps encourage them to write down their programs and get others to test them. The [extension task](#) can be used here or in later lessons since it can be completed with and without the use of **repeat** commands.

## Lesson 4 [Repeat Commands](#)

Revise abbreviated Logo commands and introduce **repeat** concept. Make sure that pupils know how to find the square bracket. Make sure that pupils are confident using the repeat command before they move on to Task 2. Perhaps get them to draw squares of varying sizes to consolidate the concept. The [extension task](#) is quite tricky - they need to be able to work out what angle they should use to get a regular polygon. The heptagon is especially tricky: advise them to experiment around 51 to 52°.

## Lesson 5 [Logo Review Session](#)

Explain what is required of them for this activity by briefly going through the sheet. Hand out the double sided [I Know LOTS about Logo](#) sheet for the students to complete during class time. They should complete the sheet under test conditions. Any spare class time could be used to make sure that everyone is up to date with all the Logo tasks.

The attached **map.lgo** file can be used only in MSWLogo and can be inserted early on in the unit of work. The activity is very simple. Open MSWLogo, load the file; ensure that pupils scroll to the correct part of the screen and then get them to control the turtle around the map.