

LOGO BOOKMARK

To use Logo to produce a design for a purpose.

†† Pairs.

🕒 45 minutes at the computer; 15 minutes discussion/demonstration.

Previous skills/knowledge needed

The children should be familiar with the common Logo commands and be able to colour fill areas of pattern. However, it is important to bear in mind that interesting results are often obtained by accident when children first start to use the software.

Key background information

You could consider the use of Logo for any simple design, such as a plate of favourite food, an animal, a spacecraft or a 'tag'-style signature. In this activity, the children use the Logo language to produce a design for a bookmark. Although it could be done more successfully using graphics software, this more prescriptive activity will provide an opportunity for the children to use Logo for a purpose.

Often, the graphics material produced using Logo has a simple charm. This will also awaken the children to the fact that Logo is not totally concerned with routes, directions and journeys, but sequences of commands can also produce some intricate designs which have aesthetic appeal. They will learn that some complex patterns can be built up from the repetition of simple designs, especially when a simple design is twisted or flipped and repeated.

Preparation

You will need to make sure that a colour printer is available for this activity. Make a copy of photocopiable page 156 for each pair of children.

Vocabulary

Repeat pattern, rosette, rotate, angle turned, full circle, motif.

Resources needed

A computer, Logo software, a colour printer (essential), card, a laminator (or sheets of transparent sticky-backed film), adhesive, scissors, coloured wool (for decorating the book marks), a hole punch, photocopiable page 156.

What to do

Most Logo software has a text function. The idea of this activity is for the children to produce a simple design using Logo, printed with the words 'BOOKMARK', or the name of a person. Give each pair of children a copy of photocopiable page 156. Ask them to look closely at the designs on the sheet and to write down the commands they think would produce these patterns. The sheet is intended to spark their interest and to start them thinking

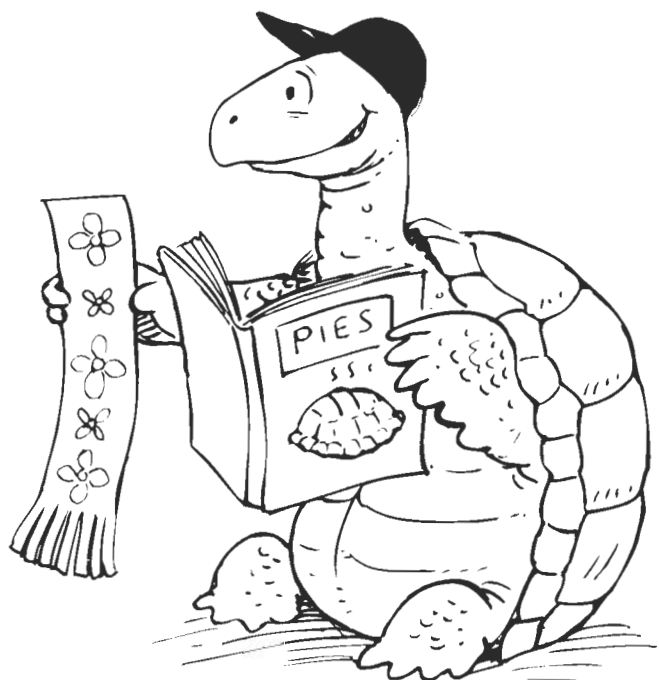
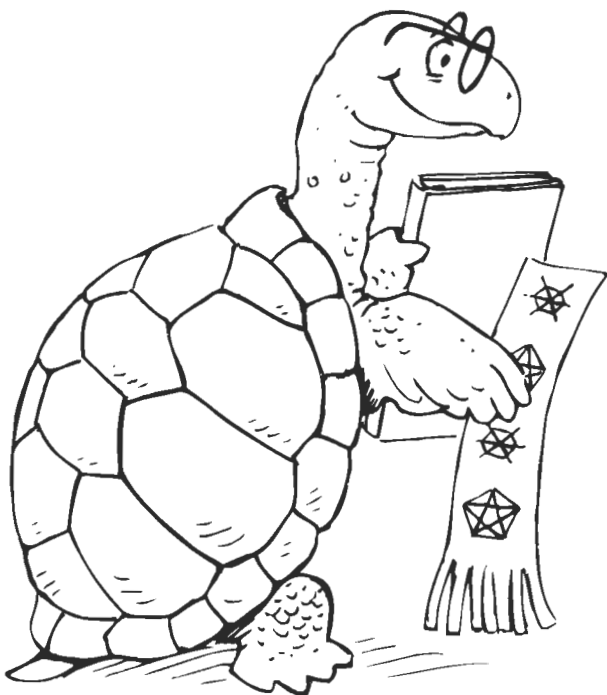
in Logo language and using simple commands such as FORWARD 20, LEFT 90.

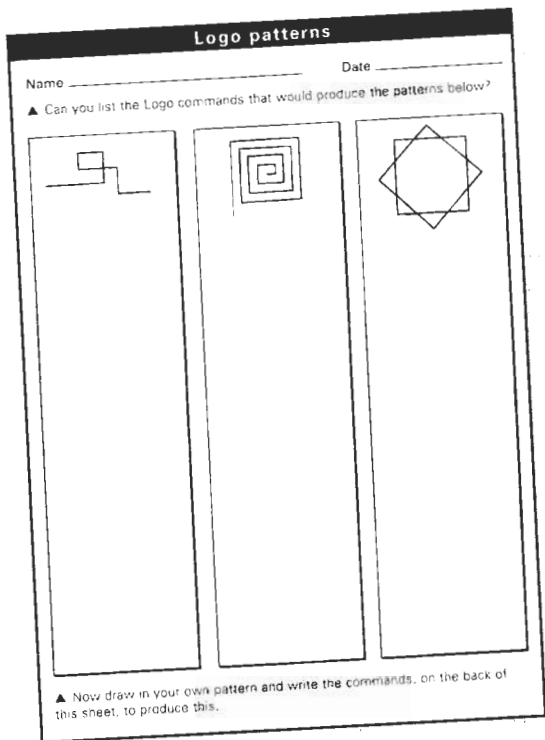
Now tell the children that they are going to choose a pattern to decorate a bookmark, produced by using Logo. While they can use any pattern, a rosette shape is appealing and easy to do using the REPEAT function (see the 'Pattern repeated' activity on page 112. This shows how to use a procedure on the robot to produce a rosette-type pattern). Provide a whole class or large group demonstration, reminding the children what a procedure is and how it is always given a name. Explain that procedures are usually built. The first stage is to build a procedure to draw a square:

```
BUILD SQUARE  
REPEAT 4  
FORWARD 50  
LEFT 90  
END
```

Whenever the software is asked to 'DRAW SQUARE', it will now draw a square of sides measuring 50 units. However, to create the rosette pattern, each time a square is drawn it needs to be rotated by 10° before the next one is drawn, and so on until 36 squares are drawn. This sequence can all be placed into another procedure that could be called 'Rose':

```
BUILD ROSE  
REPEAT 36  
DRAW SQUARE  
RIGHT 10  
END
```





Finally, show the children how to use the 'COLOUR' command to colour the background and to make the turtle draw coloured lines.

Allow the children access to the computer in pairs, giving them time to experiment. Ask them to print out their final design and stick this down onto card. Cover it with sticky-backed plastic or use a laminator to give it a longer life. The children could complete their bookmark by punching a hole in the end and threading through strands of coloured wool which they then knot to produce a tassel.

Suggestion(s) for extension

Ask those children who are able to work confidently and quickly to design motifs for other purposes. Again, this is a laborious way to produce designs but the importance of the activity lies in the thinking involved.

Suggestion(s) for support

The less confident children could perhaps produce a simple design consisting of filled squares on a coloured background. These designs can still produce attractive results.

Assessment opportunities

This activity gives you the opportunity to assess how well the children create, test and modify sequences of instructions while designing their Logo bookmark. Those children who are able to use procedures are working at a higher level.

Display ideas

The results of the children's efforts will create an interesting display if the children wish to produce a second bookmark

for this purpose. Provide an instructional slant by linking the designs with the printouts of the sequences that were used to produce them.

Reference to photocopiable sheet

Photocopiable page 156 encourages the children to consider the commands necessary to produce a variety of different patterns within Logo. It can be used as a stimulus for the bookmark activity.

GEOMETRIC SHAPES

To use Logo procedures to draw a series of specified shapes.

†† Pairs.

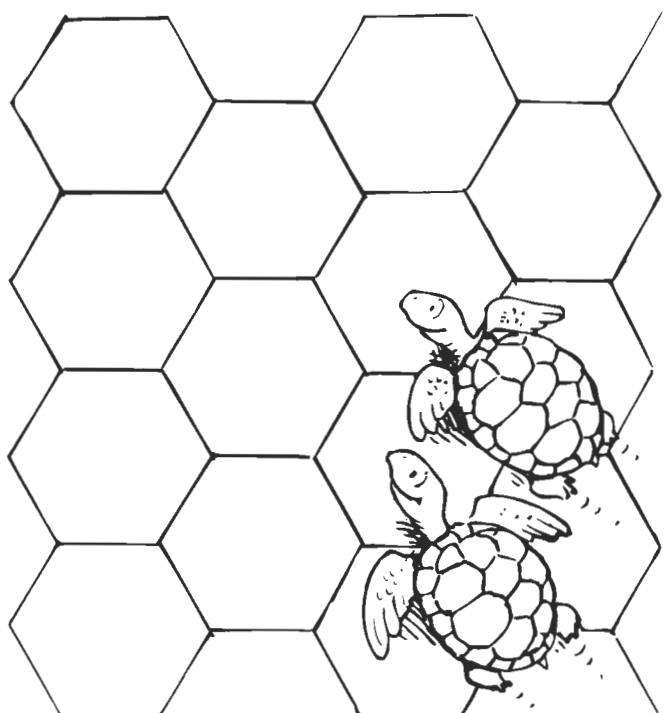
⌚ 30 minutes at the computer; 15 minutes discussion/demonstration.

Previous skills/knowledge needed

The children should have experience in using Logo and be familiar with the basic commands. They should know that regular polygons have sides of equal length. Depending on their age and ability, knowledge of the external angles of various polygons would also be useful.

Key background information

The mathematical beauty of regular polygons can be explored easily with Logo. Unlike classroom floor robots, screen turtles are very accurate, drawing with precision. Through the use of Logo, the children may draw simple geometrical shapes, making use of the REPEAT command or the procedure and REPEAT function together.

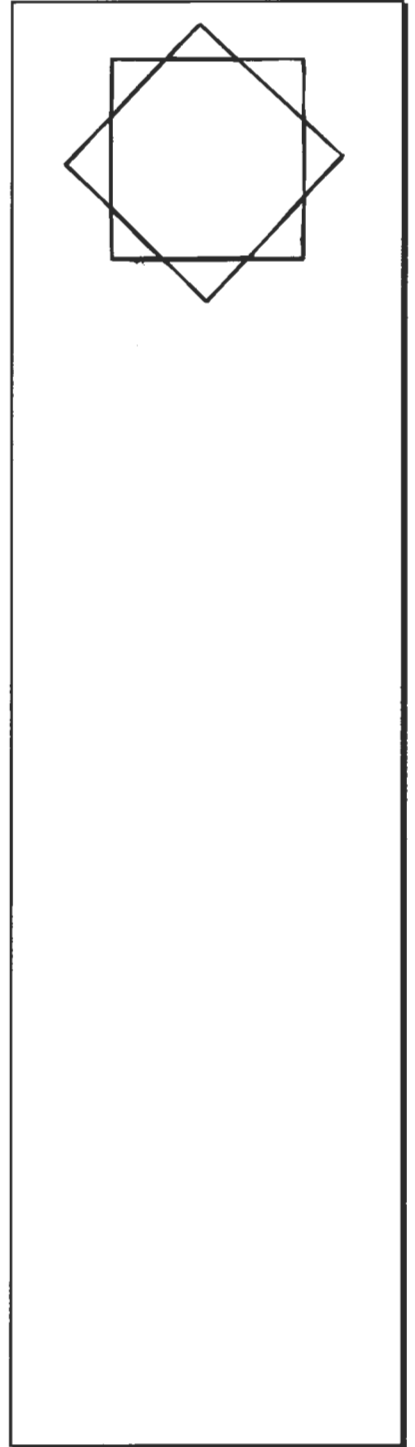
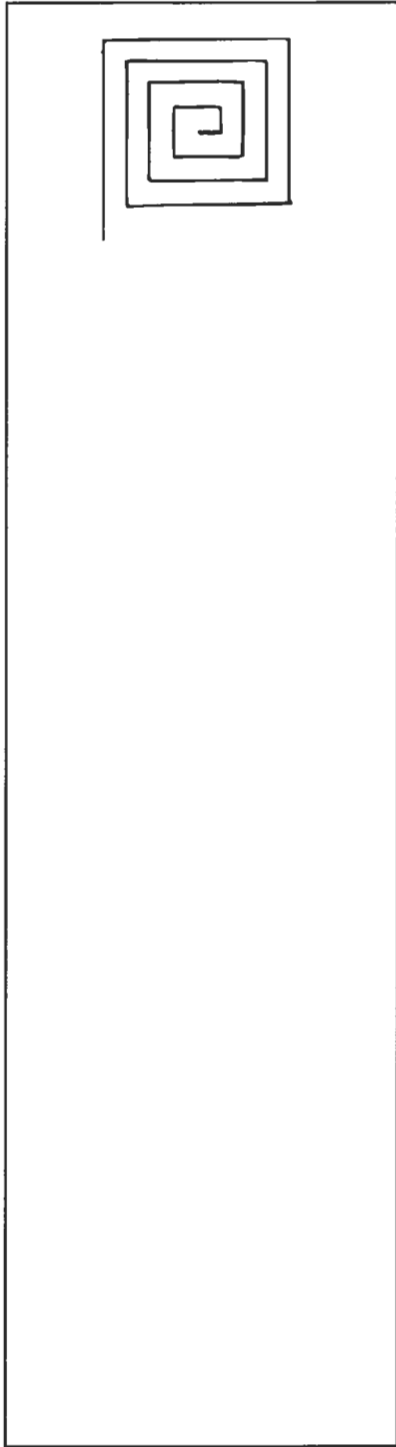
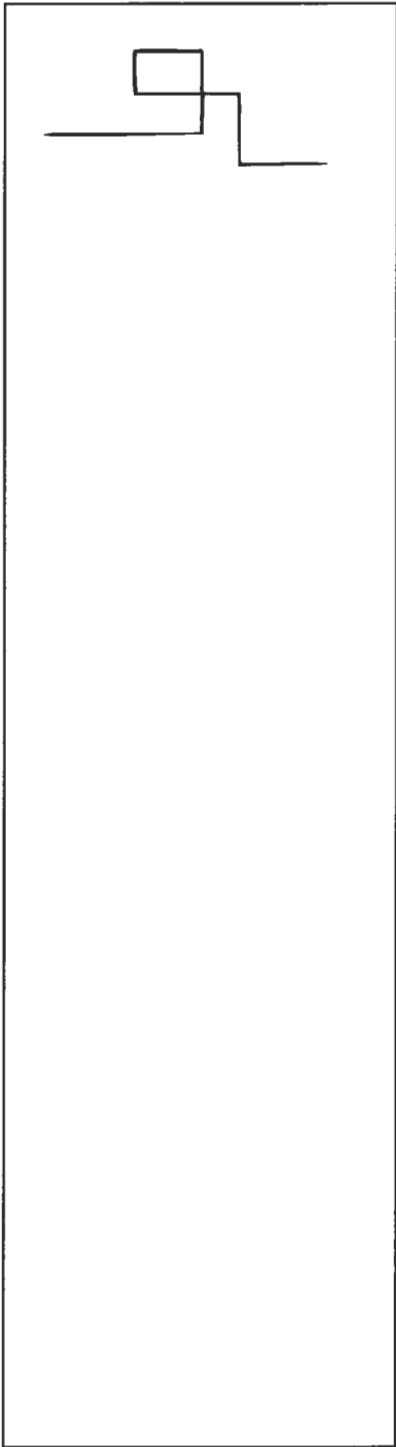


Logo patterns

Name _____

Date _____

▲ Can you list the Logo commands that would produce the patterns below?



▲ Now draw in your own pattern and write the commands, on the back of this sheet, to produce this.