



# WOOLLY JUMPERS

**In this instalment we look at the sprite handling facilities of Atari LOGO. These are exceptionally good, and include commands to define your own sprites and determine their speed. There are a multitude of colours to choose from, and a novel facility for detecting events — like collisions — and taking evasive action.**

Atari LOGO has four sprites, which are numbered 0 to 3, with 0 as the 'default' turtle. The Atari manual refers to them as turtles rather than sprites, so we'll call them turtles too.

TELL 1 makes turtle 1 *current*; in other words, turtle 1 will obey any commands you give. Try:

```
TELL 1
FD 40
RT 90
TELL 2
BK 40
RT 90
TELL 3
RT 90
```

You can, however, have more than one current turtle. Try:

```
TELL [1 2 3]
FD 50
```

Now those three turtles will obey the commands.

All four turtles have the rotating turtle shape, shape 0, until another shape is defined. Up to 15 other shapes can be defined, using the editor, and then assigned to the turtles. These user-defined shapes do not rotate as the turtle turns.

Typing EDSH 1 will set the editor ready to edit shape 1. You can move around the screen by using the cursor keys. Pressing the Space bar will switch an empty box to full or a full box to empty. Once you have designed a shape, you define it by pressing <ESC>. The command SETSH 1 will give turtles 1, 2 and 3 (the current turtles) the new shape.

ASK enables you to send a command to a particular turtle without changing the current turtles. Try:

```
ASK 1[FD 20]
```

and you will see that only turtle 1 moves. Now type

FD 20 and all three turtles will move because the current turtles are still numbers 1, 2 and 3.

Turtles can be given a speed, as well as the heading and a position. SETSP 30 gives the current turtle a speed of 30 in its present direction. The turtles will keep their speeds until you change them. You can run procedures, or create drawings on the screen, and the speeds are unaffected. To stop the turtles, you give them a speed of 0. Entering the editor will stop them as well, since entering the editor will always destroy the graphics display because they share the same area of memory.

On the Atari you have 128 different colour shades to choose from. You can set the colour of the background, the pen colour and the colour of the turtle. For example, SETBG 92 will set the background green. SETPC 0 23 will set the pen colour to orange. The 23 is the code for orange, and 0 is the pen number. In Atari LOGO, the turtle has a choice of three pens with which to write, although we shall use only pen 0 (the default pen) in this article. SETC 7 will set the current turtle white. There is a table of colours and corresponding colour codes on page 26 of the Atari reference manual.

## DEMONS

The most original aspect of Atari LOGO is its use of *demons*. There are 21 *collisions* and *special events* (see page 145 of the Atari reference manual) that LOGO can detect. Most of these are collisions between turtles, or turtles and lines. A demon tells LOGO what to do when one of these collisions occurs. For example, collision number 0 is when turtle number 0 crosses a line drawn with pen number 0. To set up a demon we use the command WHEN. Try this:

```
CS
TELL 0
PD
FD 50
PU
RT 90
FD 100
RT 90
FD 20
RT 90
```

