5 words to remember

bitmap: an image represented by a large, rectangular grid of pixels, each having its own colour value

pixel: the smallest element of an image; a small, square dot that, along with many other pixels, makes up a digital image

tessellation: a regular pattern of one shape that fills a space without overlapping or leaving spaces between

turtle: a small floor robot (or an on-screen representation) that draws by moving forward and turning, following programmed controls

vector graphics: a way of representing an image by specifying the lines, arcs and regions it is made from

People: Bridget Riley

Bridget Riley (born 1931) is an English artist best known for her op art style. 'Op art' refers to optical art, where colours, lines, shapes and patterns create optical illusions to trick your eyes! In this unit, Bridget Riley's art is used as inspiration for digital art.

**Test yourself:** How can technology be helpful in creating art in the style of Bridget Riley?

Key takeaways

- Digital art can be created using software such as Inkscape and Google Draw.
- Technology is particularly efficient for creating art that includes repetition, patterns or **tessellation**, as seen in the example below.
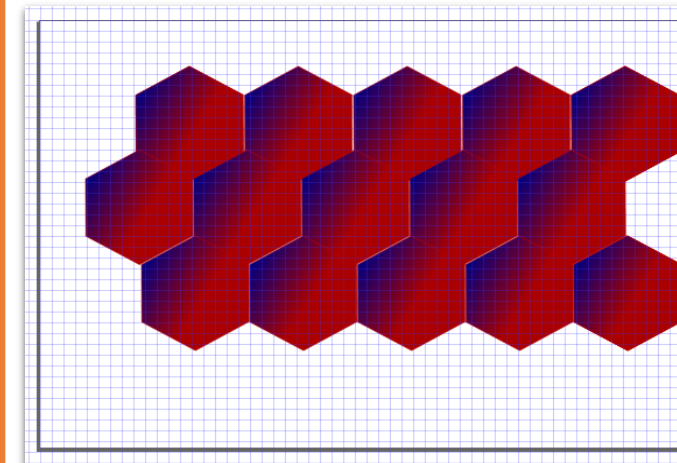
A tessellating patten can be created by drawing one shape, then copying, pasting or cloning to create a tessellation of several shapes in columns and rows.
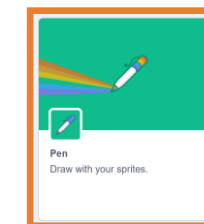
- Different software for drawing may offer options for drawing using **bitmap** or **vector graphics**. Bitmap graphics show the individual coloured **pixels** when zoomed in. Vector graphics are based on mathematical information to draw lines and shapes and can be scaled up or down with less blurring. You can see the difference in the images below:

Line drawn in Scratch vector graphics (zoomed in)	Line drawn in Scratch bitmap graphics (zoomed in)
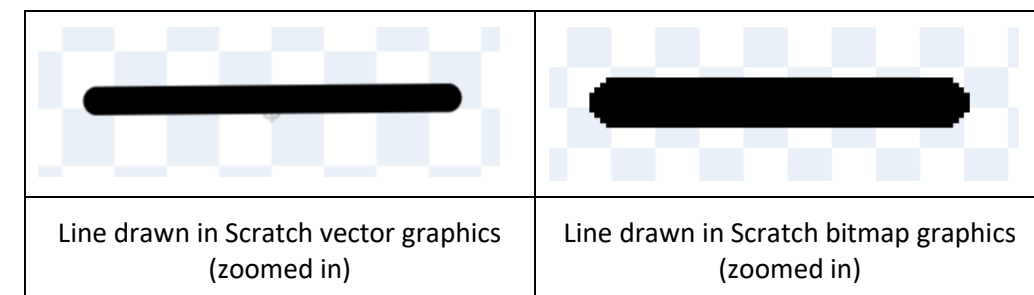
- Scratch code can be used to control the movement and drawing of an onscreen turtle (sprite). To use the drawing tools in Scratch, some additional blocks first need to be added.
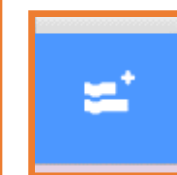
Click on 'add extension'	Choose 'pen'	New pen blocks are added to the Scratch palette.

Knowledge check: Complete the code

Scratch can be used to draw repeating patterns by controlling the on-screen **turtle**. (In the image below, a pencil sprite is being used as the on-screen turtle.) The repeating pattern below is made up of 36 hexagons.

Test yourself: Can you work out the missing code blocks that have been covered in the code below?

```
when [flag] clicked
go to x: 0 y: 0
erase all
[hidden block]
repeat 36
  repeat 6
    move 70 steps
    turn 60 degrees
  turn [hidden]
```