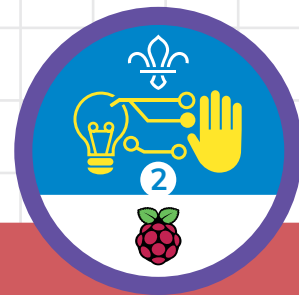


Pixel art bugs

1



Overview

This activity fulfills **Stage 2, Requirement 1** of the **Digital Maker Staged Activity Badge** ('Create a piece of interactive or animated digital art using software'). Young people will create an animated bug using PiSKEL, a simple and free program for creating pixel art and animations. They can base their design on a real bug, or create an imaginary one.

Key messages

- Computer screens are made up of a grid of tiny dots called pixels (picture elements).
- Everything you see on a computer screen uses many different coloured pixels.
- Animation is created by changing between slightly different images; each image in an animation is called a frame.
- Mistakes in computer programs are called bugs.
- Digital makers are often inspired by nature.

Safety

If the young people are working online, tell them to ask for permission before viewing any other websites. It's a good idea to set up parental controls — you can find instructions for this on the NSPCC website ([rpf.io/scouts-nspcc-online](https://www.nspcc.org.uk/online)). You should also give each young person a Stay Safe leaflet ([rpf.io/scouts-staysafe](https://www.nspcc.org.uk/online)).



20 – 30 minutes



Flexible (ideally one or two young people per computer)



If you're running this activity without access to WiFi, you will need to download the software and starter project ahead of time; you may also wish to print handouts.



Wherever you have access to computers; you could go outdoors to catch some real bugs to observe and recreate digitally.

You will need:



- Laptops or desktop computers
- Activity handouts (at least one per group)
- PiSKEL app (online or offline)
- Optional: real bugs so Scouts can see what they look like and how they move

If your meeting place has WiFi

Use the PiSKEL online app by opening the starter project rpf.io/pixel-bug in a web browser.

If your meeting place doesn't have WiFi

Download and install PiSKEL (www.piskelapp.com/download), and download and open the starter project rpf.io/pixel-bug-get before the meeting.

Leader instructions



- 1** Explain that computer screens are made up of tiny dots called pixels.
- 2** Show the example animated bug at or the downloaded example, and explain that young people will be making their own more colourful and more realistic animated bug.
- 3** Demonstrate how to open the starter project in PiSKEL, either online in a web browser at rpf.io/pixel-bug or by opening the starter project in the installed PiSKEL app.

Alternatives



If you don't have access to computers, then you can use the Digital Maker Badge offline resource Pixel Art (rpf.io/scouts-pixel-offline)

Community and sharing



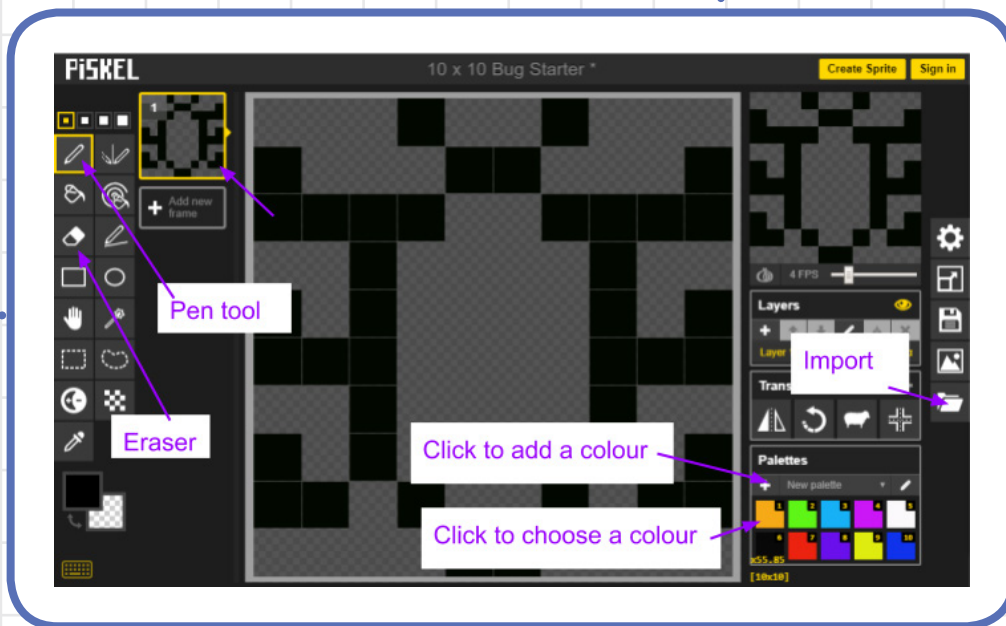
- Young people should have the opportunity to show their animations to others.
- Leaders should ask young people how their animation compares to the movement of a real bug.

Adaptability



- Increase the size of the grid to create more detailed pixel art, and add more frames to create a more detailed animation.
- Young people could export their finished animation from PiSKEL as a GIF file and then import the file into Scratch as multiple costumes (alternate images) for a sprite (character). Then they can create code to build a game or interactive animation with their bug.

- 1 Open rpf.io/pixel-bug in a web browser or open the PiSKEL app and import the starter project: your leader will tell you where this is.
- 2 Change the bug as much as you like to create your own design.



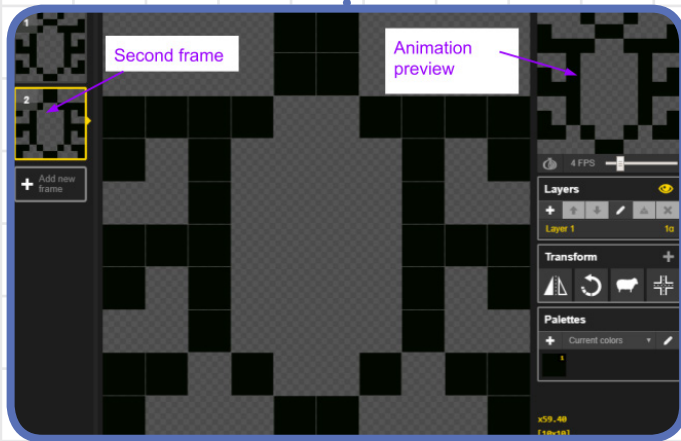
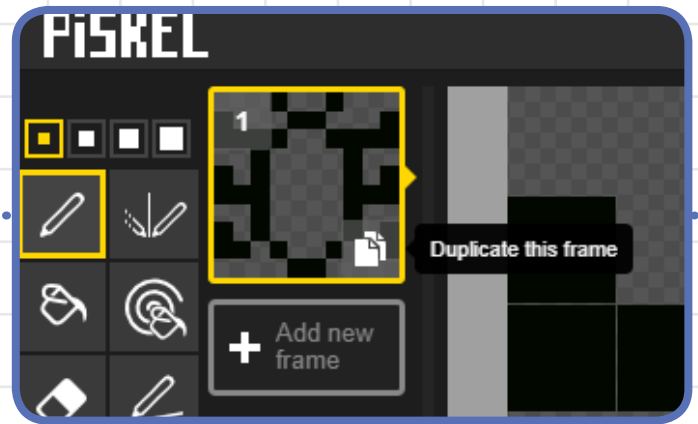
- 3 Add colours to the palette, and then click on a colour to use it. Here are some real bugs to inspire you:



Trivia

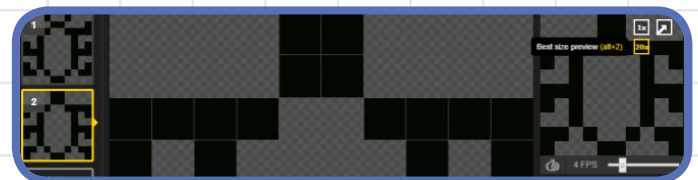
Did you know? Grace Hopper was an early computing pioneer in the US Navy who is often said to have popularised the term 'bug' as meaning 'a mistake in a computer program'. This is because her team famously found a real bug — a moth! — stuck inside their computer, causing it to malfunction. Back in 1947, computers were a lot bigger than they are now!

- 4** Now you can make your bug walk. Each image in an animation is called a **frame**. Move your mouse over the small image of your bug: this is the first frame of your animation. Click to **Duplicate this frame**.

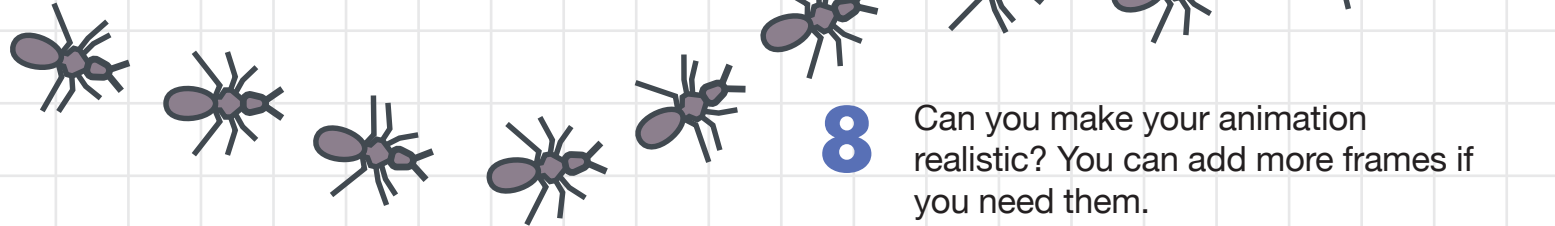


- 5** Click on the second frame of the animation and change the image so your bug looks like it's moving its legs.

- 6** Your animation will run automatically in the top right-hand corner of the PiSKEL window. If your animation is very small, move the mouse pointer over it and choose a different preview size option.

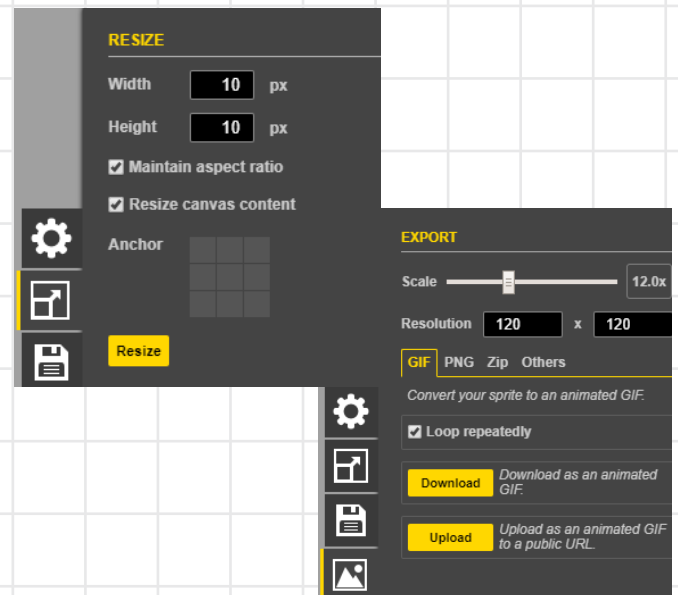


- 7** How do real bugs walk? Watch a real bug walking, or if you have internet access, check out these videos:
rpf.io/stick-insect
rpf.io/ant-walking



- 8** Can you make your animation realistic? You can add more frames if you need them.

- 9** If you want your bug to be more detailed (meaning, to have a higher **resolution**), you can change the number of grid squares in the **Resize** menu.



- 10** Scale the size of the animation so it's not too tiny. Then you can **export** your bug: download it as an animated GIF that you can view in a web browser.

Tip

You can upload your GIF file to Scratch to create multiple costumes for a sprite!

