# **Pixel art bugs**

## **Overview**

This activity meets requirement one of stage two of the Digital Maker Staged Activity Badge ('Create a piece of interactive or animated digital art using software'). It shows people how to create an animated bug using PiSKEL, a simple and free program for creating pixel art and animations. People can base their design on a real bug or create an imaginary one.

### Key messages

- O 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.
- O 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.
- O Digital makers are often inspired by nature.

### **Safety**

If young people are working online, they should ask for permission before viewing any other websites. It's a good idea to set up parental controls - you can find instructions on the NSPCC website (rpf.io/scouts-nspcc-online). You should also give each young person a 'Stay safe' leaflet (rpf.io/scouts-staysafe).



#### 20 to 30 minutes

Flexible (ideally one or two young people at each computer).



If you're running this activity without internet access, you'll need to download the software and starter project ahead of time. You'll probably also need 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:

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- O Laptops or desktop computers
- Activity handouts (at least one for each (qroup)
- O PiSKEL app (online or offline)
- O Optional: Real bugs so people can see what they look like and how they move

#### If your meeting place has internet access

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 internet access

Before the meeting, download and install **PiSKEL** from www.piskelapp.com/download, then

download and open the starter project rpf.io/pixel-bug-get.







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## Leader instructions



Explain that computer screens are made up of tiny dots called pixels.

Show the example animated bug at rpf.io/pixel-anim (or show the downloaded example), and explain that everyone will make their own bug.

Show everyone how to open the starter project in PiSKEL. You can open it online at rpf.io/pixel-bug or in the installed PiSKEL app.

### **Alternatives**

If you don't have access to computers, then you could try the Digital Maker Staged Activity Badge activity '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**

- O People could create more detailed art if they increase the size of their grid. They could also add more frames for more detail.
- O If people export their finished animations from PiSKEL as GIFs, they could import the file into Scratch as multiple costumes (alternative images) for a sprite (character). Then they could create code to build a game or interactive animation with their bug.





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## Instructions

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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).

Change the bug as much as you like to create your own design.

**Piskel** B 0 Pen tool  $\square \odot$ - 22 Eraser Click to add a colour Click

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 that Grace Hopper (an early computing pioneer in the US Navy) is often said to be the reason we use 'bug' to mean 'a mistake in a computer program'? Her team famously found a real bug (a moth) stuck inside their computer, which caused it to malfunction. Back in 1947, computers were a lot bigger than are now!

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## Instructions



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'.





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

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





## Instructions

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.



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

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