Year 4 – Photo editing

Unit introduction

Learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have and evaluate the effectiveness of their choices.

Software and Hardware requirements

The suggested software for this unit is Paint.net: https://www.getpaint.net/download.html which requires a download and is compatible with Windows devices. Other image editing software is available such as Pixlr or PhotoPea. When using alternate software, please ensure you check your school policies and procedures, as image searching may be possible, and there may be adverts on the website.

If you've adapted this unit to better suit your school, please share your adapted resources with fellow teachers in the STEM community. Alternatively, if this unit isn't quite right for your school, why not see if an adapted version which better suits has already been shared?

Overview of lessons

Lesson	Brief overview	Learning objectives
1 Changing digital images	In this lesson, you will introduce learners to the concept of editing images and discuss whether or not editing is ethical. They will go on to explore when we need to rotate and crop an image as well as how to use an image editor to make these changes. Learners will then discuss image composition. Learners will relate this to the role of a photographer, appreciating how this knowledge and skill helps them to effectively edit their photos in this way.	To explain that the composition of digital images can be changed • I can improve an image by rotating it • I can explain why I might crop an image • I can use photo editing software to crop an image

		• I understand that editing images can be unethical
2 Recolouring	In this lesson, learners will look at the effect that different colours and filters can have on an image. They will choose appropriate effects to fit a scenario, and explain how they made their choices. They will then edit the images using different effects to suit two different scenarios. Learners will relate this to the role of a photographer, appreciating how this knowledge and skill helps them to effectively edit their photos in this way.	To explain that colours can be changed in digital images • I can explain that different colour effects make you think and feel different things • I can experiment with different colour effects • I can explain why I chose certain colour effects
3 Cloning	In this lesson, learners will be introduced to the cloning tool and its use in both changing the composition of a photo and photo retouching. They will see how parts of a photo can be removed or duplicated using cloning. Learners will consider what parts of an image can be retouched and learn techniques to make this as unnoticeable as possible. Finally, they will consider when it is necessary to edit photographs in this way. Learners will relate this to the role of a photographer, appreciating how this knowledge and skill helps them to effectively edit their photos in this way.	To explain how cloning can be used in photo editing • I can add to the composition of an image by cloning • I can identify how a photo edit can be improved • I can remove parts of an image using cloning
4 Combining	In this lesson, students learn how to use different tools to select areas of an image. Learners then use copy and paste within one image and between two images to produce a combined image. Finally, learners will consider when it's	To explain that images can be combined • I can experiment with tools to select and copy part of an image

	appropriate to edit an image and discuss some of the ethics around retouching photos.	• I can use a range of tools to copy between images • I can explain why photos might be edited
5 Creating	In this lesson, learners will apply all the skills they have learnt in the unit so far. They will start by reviewing some images and considering what makes an image look real or made up. Learners will then plan their own image. They will choose from a selection of images, open them and edit them to create their own project.	To combine images for a purpose • I can describe the image I want to create • I can choose suitable images for my project • I can create a project that is a combination of other images
6 Evaluating	This lesson is the final lesson in the unit on photo editing. Learners will review the image that they created in Lesson 5. After they have reviewed their image, they will have the opportunity to make changes to their image based on their review. Learners will then add text to their image to complete it as a publication.	To evaluate how changes can improve an image • I can review images against a given criteria • I can use feedback to guide making changes • I can combine text and my image to complete the project

Request a computing ambassador

This unit is ideal for linking to the world of careers, and a computing ambassador can support this. Through the STEM ambassador platform, you can search for a computing ambassador. If you cannot find a computing ambassador with an offer to support this unit, then the following request will help to match you with the right person. You will need to edit the areas in red to ensure the request is right for your school.

Year 4 (ages 8-9) are learning about photo editing though the Teach Computing Curriculum unit of six lessons. Within these lessons, pupils will learn techniques to change and edit digital images.

Our lessons are taking place from *date* to *date* and we would appreciate someone with skills in this area to offer some real-world experience to this unit. The unit uses Paint.net *change software if required* on *insert devices* and focuses on the following areas:

- editing digital images using rotation, cropping
- changing the composition of digital images through changing colours, or cloning parts of an image
- combining images using tools to select and copy between images
- understand how fake images can be created

*We require an ambassador who can support in any of these areas. We are hoping for an ambassador who would be willing to join us *in the classroom/virtually* to support our learning by *providing some handy hints and tips for our projects/giving us constructive feedback on our final projects/discussing how photo editing is used within their profession and in the real-world.**

Subject knowledge and CPD opportunities

You will need to be familiar with the tools used throughout the unit in paint.net or your chosen image editor, and know how to save a new version of an image from within the editor. You can find a guide to all tools in paint.net at www.getpaint.net/doc/latest/index.html. You should consider how the learners will access the editor. For example, you may wish to create a shortcut to the program for them. You will need to be familiar with a range of photo editing techniques, and should watch the embedded video guides before the lesson to familiarise yourself with these on Paint.net:

- Guide to all tools in Paint.net: www.getpaint.net/doc/latest/index.html
- Information on cropping: www.dpreview.com/forums/post/56318241
- Information on the 'close stamp': www.getpaint.net/doc/latest/CloneStamp.html
- Information on the text tool: www.getpaint.net/doc/latest/TextShapeTools.html

Continual Professional Development

Enhance your subject knowledge to teach this unit through the following free CPD:

- Getting started in Year 4 – short course
- Introduction to primary computing remote or face to face

Teach primary computing certificate
To further enhance your subject knowledge, enrol on the teach primary computing certificate. This will support you to develop your knowledge and skills in primary computing and gain the confidence to teach great lessons, all whilst earning a nationally recognised certificate!

Progression

This unit progresses students' knowledge and understanding of digital photography and using digital devices to create media. Learners will have had some exposure to images and their manipulation through the Teach Computing Digital Photography- Year 2 unit. Following this unit, learners will further develop their image editing skills in Year 5 – Vector drawing.

Common Misconceptions

When looking at digital photos, misconceptions may arise about what has or has not been edited. In the same way that they need understand 'fake news', they need to understand that images are not static and that what they see online may have, and can be, manipulated using photo editing software. The ethical implications should be questioned, as editing can alter reality or give a misrepresentation of things. Learners may see photo editing as just a way to make photos look 'prettier', however this unit will show how editing can be used for various purposes, including correcting errors, enhancing details, adding creative effects, and conveying messages.

When looking at editing skills, learners may have the misconception that cropping and resizing are the same process. Cropping changes the image composition by removing parts of it, while resizing changes the image dimensions. They may also assume that more filters and effects always improve an image, however overuse can lead to unnatural results. When working on their projects, they may think that saving and exporting are the same actions, however saving refers to keeping the project in a format that can be re-edited, while exporting creates a final image file that is often not easily editable.

Curriculum links

Computing

- Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

- Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Education for a Connected World links

Self-image and identity

- I can explain how my online identity can be different to my offline identity

Assessment

Formative assessment

Assessment opportunities are detailed in each lesson plan. The learning objectives and success criteria are introduced in the slide decks at the beginning of each lesson and then reviewed at the end. Learners are invited to assess how well they feel they have met the learning objective using thumbs up, thumbs sideways, or thumbs down.

Summative assessment

Please see the assessment rubric document for this unit. The rubric can be used to assess student's work from Lessons 5 and 6.