Mendell Primary School

Aspire   Challenge   Achieve

Medium Term Plan Design Computing

Year Group: 2	Term: Spring #2 2022	Teacher: Sarah Bride		Subject lead: Justin Cowley	Overview: Digital Photography: Understanding how to take a digital photograph and change it.	Key End Points: By the end of this unit children will be able to: - To take a digital photograph with a device - Explain what portrait and landscape are - Use light to change a photograph - Edit a photograph to change how it looks
Links to other learning:	Prior Learning: F1: When buttons on a technological toy are pushed, they will behave in different ways F2: Technological toys need to be instructed to achieve an outcome.	Future Learning: In Y2 children will be using algorithms to predict the behaviour of a computer. They will be introduced to events and repeating loops	High Quality Text:	Risk Assessment: Before teaching lesson 4 you must use the search term you're going to ask the children to use to check the content they will see. Check the online safety policy and know what to do if children find inappropriate content online.	Misconceptions: Most desktop computers need to have a camera plugged into them (often called a 'webcam'). Without a webcam, desktop computers do not have a camera, unlike most laptops or tablets.	Teacher CPD:

	Learning Intention	Lesson Outline (Key Questions in colour)	Resources	Vocabulary	Lowest 20% Adaptations
1	- I can use a digital device to take a photograph	**Computing is the use of devices to create, store and manipulate data** In this lesson we are going to learn what digital photographs are and how we can take them.

Show the learners the images on the first slide on the Powerpoint. They have been sorted into two groups. What is the difference between the two groups of images? Both groups have images of children, but the images look different — why is that? Discuss that the group on the left are 'photographs' of children and the ones on the right are 'drawings' of children. Photographs are images which have been captured with a camera. Both of them are useful, but they are created in different ways.

Show the next slide on the Powerpoint. Check that the children know what all the items are. Explain to the children that some of these devices are cameras, some have cameras inside of them, and some are not cameras at all. The devices with cameras 'can take photos', while the ones without can't. Work together to sort the pictures into two groups: 'can take photos' and 'cannot take photos'.

Ask children what they know about taking photographs. Have they seen someone take them? Have they taken one themselves? What did they use? What did they have to do? | Ipads Examples of cameras Lesson Powerpoint | Digital Photograph Composition | Set of picture steps to create a sandwich which the children must put in correct order. |

		Talk to the children about the importance of asking permission before taking a photo of someone. It's also good practice to check who is in the background of a photo so you don't accidentally capture them as well. Everyone has the right to say no to their photo being taken if they do not want it taken. Show the 'Photography bingo' slide on the Powerpoint. For this activity, the children are required to take photos of different things (using the ipads) think about what their photo looks like and work together to figure out how to take a good photograph using that device. For those children who are more experienced at taking photos, it's important for them to begin thinking about composition. Why did they take the photo from that angle? Is this one better than another? Could they look at three photos of the same object and suggest which one they liked more? Ask the children to share with a partner the best photograph they have taken in the lesson and explain why they like it and how they were successful. They can write a sentence in their book to describe their best photograph.			
2	- I can take photographs in landscape and portrait	**Computing is the use of devices to create, store and manipulate data** In this lesson we are going to learn to decide if a photograph would be better in landscape or portrait. Display the first slide on the Powerpoint and ask for children's ideas on tips for taking a good photograph, recapping the learning from the previous lesson. After the responses, build the slide to reveal the list from the previous lesson. Show children the next slide and introduce the concept that photographs can be taken in landscape and portrait formats. Use an ipad to demonstrate taking a photograph in both formats. Display the next slide to reinforce the terminology, and ask the children to consider the main difference between the two images. Explain that the first image (left) is a photograph that has been taken in **portrait format** with the device held upright, whereas the second image (right) is a photograph taken in **landscape format** with the device held sideways. Use the next four slides as examples and then ask the children to take four photographs, two in each format. For the photograph of a place, use somewhere suitable either inside the classroom, through a window, or outside, if this is practical. For the purpose of this activity it is good to choose a subject that is suited to a landscape format such as our classroom or the MUGA. Before the children start to take their own photos, remind them of some basic rules, particularly emphasising that they must first ask for permission before taking a photograph of somebody else. Ask the children to review the four photos (by using the Photos app) they took by viewing them with a partner and deciding together which two they think look the best. Agree that photos taken of a person usually look better in portrait format, whereas photos of places usually look better in landscape format. There are exceptions to this, such as the photo of a tower included as an example in the slides, which suits a portrait composition, or groups of people, which often look better in landscape. Ask the children to delete the two images that don't look as good in the opposite format. Use the sentence starters on the next slide to support the children writing about which format looks best for people and which is best usually for places.	Lesson Powerpoint Class set of ipads	Landscape Portrait	
3	- I can explain the effect that light has on a photograph	**Computing is the use of devices to create, store and manipulate data** In this lesson we are going to investigate the effect that different light sources have on a photograph and consider why a picture may be unclear. Show the first slide of the lesson Powerpoint. Ask the children to divide their individual whiteboard into two sections with the word 'Delete' on one side and 'Keep' on the other. Ask them to look carefully at the numbered images and then write the number of each image in either the 'Delete' column, if they think it isn't a good-quality image, or in the 'Keep' column if they think it is a good-quality image. (The answers are on the next slide) **Delete:** Images 1 and 5 (too dark), image 3 (out of focus) **Keep:** Images 2, 4, and 6	• Black set of ipads • Torches • Whiteboards	Light sources Flash Focus Background	

Note: Some of the children may have different opinions about which images should be kept and which are deleted. At this stage, it doesn't matter too much if they are 'right'. They just need to recognise that we don't need to keep every image that we take.

Show slide 3 and ask the children to consider what the issue is with this image. Agree that the image is too dark and as a result it is difficult to tell what the photograph is of (it's five horses running through the sea).

Explain that our eyes are better at seeing the world than many cameras are and so sometimes it doesn't look dark to us, but the photo we take is dark. Explain that to prevent their images turning out too dark, good photographers will check that there is enough light.

Note: For this activity to work, your devices need to have any 'auto flash' options turned off.

Show the next slide. Find locations around the school where there are different levels of light, including a place where there is very little light. Some suggested places are:

- On the windowsill (with the blinds open)
- On the windowsill (with the blinds closed)
- Under a table
- On a table
- In a partially opened cupboard
- Outside (e.g. in the playground or on the field)
- In the school hall

Take any object to be the subject of the photo, such as a Lego character, a piece of fruit, or a pencil.

Explain that the photograph should be the same each time, with the only thing changing being the amount of natural light that is present (recap fair test concept from science lessons). As a class, discuss the following questions:

Where were the locations in school that provided good levels of light? What effect did this have on the photograph? Did anybody notice that too much light had a negative impact on their photo (e.g. if it were taken in direct sunlight learners may have found that this caused shadows to be cast on the object, resulting in the object being obscured).

Ask the children to look at their images on their ipads and choose one which didn't work very well. Why do they think this image has turned out so dark?: There wasn't enough light present, just like with the horses before.

Explain that for this next task learners are going to explore three ways in which they can get a better photograph when they take it again.

- Option 1: Take the photo again but in a place where there is more natural light present.
- Option 2: Activate the camera flash (explain that the camera flash is a tool that provides additional light when conditions become too dark). Show learners how to use the camera flash. – Check ipads have flash function available
- Option 3: Provide an artificial light source (in this case a torch or lamp of some kind). You could explain at this point that studio photographers will use professional studio lighting. Learners may remember seeing this type of light when they've had their school photographs taken.

Explain to the children that they are now going to experiment with using some of the different light sources. They should first take a photograph in a place in the room that is not very bright and then take the same photograph again while using a torch. They could also try holding the torch from different directions to see how that changes the photograph.

Come together and share what learners found when using the torches and taking the photographs. Did everyone's pictures improve from the first dark image, to the one with the torch?

Explain that they may not always have a torch to hand, so instead many cameras have a 'flash'. The flash lights up the subject of our photo quickly, while the camera takes the photo. Demonstrate with iphone if ipads do not have flash function.

| 4 | - I know that images can be altered and I can use a tool to achieve the desired effect. | **Computing is the use of devices to create, store and manipulate data**
In this lesson we are going to learn to adjust images to achieve a desired effect.

Ask the children to think about what a photographer could do to change the appearance of an image; jot down their ideas.

Show the first slide on the Powerpoint. Explain that one thing a photographer can do to change the appearance of an image is to adjust its colour.
Ask the children to say in what way the images on the slide have changed in colour from the original image.

• **Image A:** A blue tint has been added to make the image appear colder
• **Image B:** A red tint has been added to make the image appear warmer
• **Image C:** A black and white/sepia effect has been applied to make the image appear more old-fashioned

Explain that photographers use different tools to edit their images and that editing simply means changing or correcting something, usually with the aim of making it better, or in this case, to alter its overall effect.

Introduce learners to the Pixlr image editing software and show them how to access it.

Note: There is a video on slide 3 to help you with this, please watch in advance of the lesson so you can then model effectively for the children.

Demonstrate how to use a stock photo by choosing one of the example photos.

Note: Before searching for anything online, it is good practice to ensure learners know what to do if they see something that makes them uncomfortable.

Next, show the children where the 'Effect' tool is located (it's the seventh tool down from the main menu, in the list running down the left-hand side). Point out the colour tools. Try different effects and ask learners to describe the changes to the image.

Show the next slide, and ask the children to find an image using the stock search tool. Once they have selected an appropriate image, ask the children to choose a colour which will make the picture seem colder and then get them to explain to their partner what they did (adding more blue). Repeat this with warmer and then suggest they make the picture look more old fashioned (black and white).

Once they have made one change to an image, they can then experiment by combining more than one effect. The example on the next slide has had a green filter applied, (as demonstrated in the video), and has then had a mosaic filter applied. | Laptops (one per child) | Editing
Filters | |
| 5 | | | | | 5 |