Mendell Primary School

Aspire   Challenge   Achieve

Medium Term Plan Design Computing

Year Group: 4	Term: Sum #2 2022	Teacher: Hannah Jones	Subject lead: Justin Cowley	Overview: Animation:	Key End Points: By the end of this unit children will be able to: - Identify
Links to other learning:	Prior Learning: Y2 Digital photography	Future Learning: Y4 Animation Y6 Web design	High Quality Text:	Risk Assessment:	Misconceptions:	Teacher CPD: Teacher must be confident user of Audacity

	Learning Intention	Lesson Outline (Key Questions in colour)	Resources	Vocabulary	Lowest 20% Adaptations
1	- I can explain how an animation / flip book works.	**Computing is the use of devices to create, store and manipulate data** In this lesson we are going to discuss whether we think that a picture can move. We will learn about simple animation techniques and create our own animations in the style of flipbooks (flick books) using sticky notes. Show the class the first slide and ask them, "Can a picture move?". Allow time for them to think about their answer, pair up with another learner, and then share their answers with the group. Discuss the answers — you should get answers such as these. • **Physically moving pictures:** Pupils may talk about physically picking up a picture, e.g. a framed print and moving it across the room. • **Animation:** Some learners may have experience of animation already, and may know that techniques can be used to make still pictures look like they are moving. • **Augmented reality (AR):** Children may have experience of AR, e.g. from books at home where they scan a page of their book with a device and the pictures 'come to life' through the medium of technology. Show slide 2 and ask the class, "What is an animation?" Tell them that they should think, write their ideas (e.g. on a whiteboard), pair with another child, and then share their ideas with the group. Tell them that this might include information on animations that they have seen, how animations are made, or any other interesting information that they can tell the class about the topic. Listen to some examples of the class' ideas. Show slide 3 and tell the class that today they are going to learn all about animations and how they are made. Explain that there are many ways to make animations, e.g. using a pencil and paper, modelling clay, building bricks, etc. but that the word 'animation' means that we are making something that cannot move on its own look like it is moving, by taking a series of pictures and then showing them very quickly in sequence. Show the video of the flip book being created on slide 4. Pause and talk through instructions where needed. Some children may benefit from multiple viewings of the video to embed the concepts being taught. Show slide 5 and share the animation tick sheet (in resources folder) with the class. Tell them that they can use it to support them in making their flip books. Explain that you have three questions to ask them, and show slides 6 to 8, pausing to allow them to answer the questions on the slides. Q1: Where would you draw the stick person? a) Close to the opening edge of the sticky note b) Close to the closed edge of the sticky note	Post it notes Animation tick sheet	Animation Flip Book	

		A1: You would draw the stick person closest to the open edge of the sticky notes, so that it can be seen easily when you flip through the flip book.
		
		Q2: Where in the sticky notes would you start drawing?
		    a) The top sheet of the sticky notes
		    b) The bottom sheet of the sticky notes
		A2: You would start on the bottom sheet of the sticky notes so that when you turn over the next page, you can see where the previous stick person was drawn. (This is called 'onion skinning' when using computer software; it is very helpful when animating to see the previous image. You will look at this later in the unit.)
		
		Q3: Which part of the stick person would you draw first?
		    a) The part that needs to move
		    b) The part that does not need to move
		A3: First, you would draw the part of the stick person that needs to move. This is purely so that when you are drawing the stick figure, you don't trace the whole image and forget about the bit that needs to move.
		
		Show slide 9 and explain that during this activity, they are going to make their own flip books/animations, and that they are going to use their animation tick sheets to support them. Challenge the class to make a stick person wave.
		
		Show slide 10 and share some examples of the class' flip books and encourage the children to comment on whether they have followed the steps on the tick sheet.
		
		Ask them whether they now think that a picture can move. Allow them time to discuss this with a partner and then share their ideas with the class.
		
		Display slide 11 and ask the children to give examples of animations that they may have seen outside the lesson. There are many examples, such as Disney films, *Minions*, *Wallace & Gromit*, etc. which are created in different ways.
		
		Ask the children to choose one animation they have seen and in their books to answer the questions on slide 12.			

2	- I can create an effective stop frame animation	**Computing is the use of devices to create, store and manipulate data** In this lesson we are going to develop our knowledge of how animations are created, and apply it to make a stop-frame animation using a tablet. Show the first slide and remind the children that in the previous lesson they made flip book animations. Ask them to tell you how flip books work. Tell the class that today they are going to make some stick people animations using iPads. Explain that they will explore the different ways that they can make their stick people move. Show the video of the whiteboard animation. Ask the learners, "How do you think this animation was made?". Give them a chance to 'think, pair, share', and give feedback to the class. Tell the children that they will learn how to make similar animations using their iPads and an app called iMotion during this lesson. Show slide 2 and tell the class that their animations today will be similar to the flip books they made in the last lesson; they will be made from a sequence of pictures. Ask the children if they can predict/guess what would happen if the pictures on the slide were in a flip book, and what the animations would show. Each slide of pictures is followed by a slide that reveals the animation: • Slides 2 and 3: A stick person waving (like the learners' flip books last lesson) • Slides 4 and 5: A stick person with hair growing • Slides 6 and 7: A stick person kicking a ball • Slides 8 and 9: A stick person throwing a ball Tell them that they will be taking photos on the devices, and that each photo is called a 'frame'. Display slide 10, and show the children that there are four frames on the slide.	Class set of black ipads	Stop Frame Frame Image Photograph Sequence	

		Show slide 11 and tell the children that today they are going to be using the iMotion app. Ask if anyone has used this before, and if so, how they used it. Tell them that they will be animating drawings using their whiteboards and pens (or paper and pencils) and the devices. Tell the class that first, they will learn how to use the iMotion app. Show them how to open the iMotion app, and walk the class through slides 11–16 to show them how to set up the app. Tell the children that they will need to stand their whiteboard up against a secure surface (e.g. attach it to a wall with sticky tape), and then put the iPad on its stand. Show how this would work with your devices in class. Demonstrate aligning the iPad so that the back camera can 'see' the whiteboard. Show your iPad to the children as you set up the app (as shown in slides 13–18). Place the iPad in position. At this point, tell the class that it is important that they do not move the iPad or the whiteboard while they are creating their animation, as this will create an unstable image. Play the video *Making your animation* on slide 18. Demonstrate the process to the class using your device. Before you save the file, tell the children that they should choose an appropriate speed for their own animation before they save their work. Display slide 19 and tell the children that it is time to create their own animations. Ask them to work with a partner, for example, one person could take the photographs and one person could draw the pictures. Tell the children to explore the different animations that they can make using their whiteboard, iPad, and the iMotion app. Tell them that they will each make an animation, and that they will have 15 minutes each to create their animation, then they should save their animation and swap roles with their partner. Display slide 20 and look at some examples of the learners' animations and discuss them with the class. Ask the children how well they worked as a team to create their animation. Ask the learners what 'onion skinning' means. Children could hold up the corresponding number of fingers to show their choice: 1. (Wrong) It stops the iPad moving, so that the animation is not jumpy. 2. (Correct) It shows the previous frame faintly to help you see where to draw next. 3. (Wrong) It shows how many frames you have taken. Display slide 21 and explain to the children that they have built on the animation skills that they learnt last lesson, but added in an additional skill of using an app to record this. Ask them to answer this question in their books, "What are the advantages and disadvantages of making stop-frame animations compared to the flip books that you made last week?" Answers you should get are: Advantages: • You can save the work that you have done on the iPad • You can speed up/slow down your animation • Using a whiteboard and pen, you can rub out mistakes • You could send your work via email (for example) to show others Disadvantages: • You need devices in order to do this task • Drawings are quite simplistic (we will build on this next lesson) • It is essential to have preparation time to set up the classroom			
3	- I can create a storyboard	**Computing is the use of devices to create, store and manipulate data** In this lesson we are going to create a storyboard showing the characters, settings, and events that they would like to include in their own stop-frame animations next lesson.	Set of black ipads Background and character resources My Storyboard	Setting Character Events Onion skinning	

| for an animation | Display the first slide and tell the class that during this lesson, they will be creating a storyboard in preparation for making their own stop-frame animations next lesson. Remind them that they have learnt some key animation techniques so far (e.g. keeping the iPad still, moving gradually to create a smooth animation, onion skinning, etc.) and that they are going to build on this by animating movable pictures/objects.

Show them the stop-frame animation made with iMotion on the first slide and ask them how they think the animation was made. Allow time for the children to think about the question, talk to a partner, and then share with the group.

Show the class the selection of resources available for making their animations. (saved in resources folder). Make it clear to the learners how many backgrounds and characters they will choose today.

Replay the animation created in iMotion on the first. Tell the class that there are constraints to creating an animation using iMotion and figures that are printed on card: there are some things that cannot be done, and some things that the learners need to consider carefully before they make their animations.

Read the examples of animation ideas to the class on slides 2 to 5. Ask them which they think would be best to animate in the next lesson. Listen to their thoughts, and then discuss any issues with the plans.

Slide 2
- Plan 1:
  - Characters are limited — there will not be enough for a long line
  - Characters printed on card can't turn around
  - There are no props to throw (although these could be added)
  - Adding a castle would mean adding another background
  - Learners would need to carefully consider how running up and down the stairs would work on screen. Discuss this with the learners.
- Plan 2: This is easier. The number of characters and settings is limited, and the movements are easy to animate.

Slide 5
- Plan 1: This is easier. The number of characters and settings is limited, and the movements are easy to animate.
- Plan 2:
  - It is difficult to make it look like a character is entering through a door.
  - Characters are limited — there will not be enough for an army
  - Characters printed on card can't really bend down

Slide 6
- Plan 1: This is easier. The number of characters and settings is limited, and the movements are easy to animate.
- Plan 2:
  - It is difficult to add weather to an animation
  - It would be tricky to add effects such as thunder/lightning
  - Characters printed on card can't really sit down

Tell the class that they really need to think about how they are going to make the different events in their story happen on screen, and consider whether each one is possible.

Show the children the examples of characters and settings again. Remind them to choose the specified number of characters/settings.

Ask them to do the 'think, write, pair, share' activity on slide 5

The children should work with a partner to choose a setting and two characters, and decide on a simple story with a beginning, middle, and end. They could write their ideas on a whiteboard. Share some of their ideas. Discuss ways in which these animations might/might not work, and try to remedy some of the issues as a group. | | | |

		Show the class the 'My Storyboard' resource (saved in folder) and demonstrate what a simple storyboard would look like on slide 6. Show them how you have used simple stick people and that this is just a simple plan — they don't need to spend too much time on the pictures. You could demonstrate this by storyboarding one of the their story ideas on the class whiteboard, adding short annotations or arrows to show how certain things would move in the animation. Display slide 7 and tell them that they can storyboard one of the ideas that they have heard so far, or create a new story of their own. Allow them time to prepare their resources for their animation next lesson. This might include cutting out characters, drawing characters on card, creating settings from building blocks, etc.			
4	- I can review a sequence of frames to review my work	**Computing is the use of devices to create, store and manipulate data** In this lesson the children will use tablets to carefully create stop frame animations, paying attention to consistency. Tell the class that today they are going to create their own stop frame animations based on the storyboards that they created last lesson. Tell them that they are going to set up their tablets in a similar way to in lesson 2 when they created their whiteboard animations, and they are going to use the same app (iMotion). Discuss sticking the background to a stable surface. Show slide 2 and play the video and discuss how the children are going to make their animations. Talk about how onion skinning is used, how the characters are moved just a small amount in each frame, and how the background and iPad stay as still as possible. Tell the group that they need to be patient as they create their animations. Show slide 3 and tell the class that they are going to look at the things that they need to keep consistent throughout their animations. Ask the children what the word 'consistent' means. Click the slide to animate the image and tell the learners that 'consistent' means keeping things the same. Ask them to talk to their partners and discuss what they will keep the same (consistent) in their animation. They should understand that characters and backgrounds need to be kept the same, but should also discuss using the same app and keeping the iPad and background in exactly the same place. Tell them that you are going to play some videos. Ask the learners to see if they can spot any changes in consistency, i.e. if they can spot the things that change, in each of the short clips. • Slide 4: The character on the left-hand side changes midway through the animation to a larger character • Slide 5: The position of the iPad changes, which makes the film jumpy • Slide 6: The background changes midway through the animation Tell the class that it is very important today to be consistent when making their animations: • To support others in being consistent, they should try not to move anyone else's iPad/background • They should take care when creating their own animations, e.g. they should use onion skinning and move their characters just a tiny amount, as they learnt in lesson 2 Show them the checklist on slide 7 that they should follow to ensure that they keep consistency in their animations. Show slide 8 and tell them how much time they will have to create their stop frame animations, and tell them that they will spend the last five minutes saving their work to the camera roll. Allow the children time to set up their tablets and backgrounds and create their animations. (If wall space is limited, it may help to turn the tables on their side around the edge of the classroom and allow learners to stick their backgrounds carefully on to the table tops.) Give frequent time reminders as the children work on their animations. Stop the class with five minutes to go, and ask them to press 'stop' two times, choose an appropriate speed for their animation, and then save/export their work to the camera roll.	Class set of black ipads	Stop frame Onion skinning Consistency	

		AirDrop the finished videos to the teacher ipad. Save the videos to Google Drive and upload to school website. Create a QR code to put in children's books to direct to finished animations.			
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