



Sparklers

Activity Structure – 45min

Activity	Timing
Warm up Game	5 mins
Introduce Story and Project	10 mins
Main Activity	25 mins
Final test & debug	throughout
Share with group	5 mins

Overview

This project builds on the skills taught in the previous project. The children will use simple drawings to create a 'sparkler', before using small movements to make it look like it is being waved around on the screen.

Learning Objectives

- To use looks blocks to create different effects.
- With some support, use the Paint Editor to create a new character.

EYFS Curriculum Links

Moving and handling: Begins to use anticlockwise movement and retrace vertical lines.

Warm up game: Scratch Cat

- Select the following code cards: jump, turn right, turn left, show, hide, grow, shrink, green flag, repeat forever, wait, repeat.
- Run through the flashcards with children and tutor saying what they do.
- The following can either be acted out by the children (calmer class) or demonstrated using a character in Scratchjr.
- *How could we make the cat wobble?* Children select the code cards. *Will that work? Let's try it in Scratchjr.*
- Use the format above to practise creating different effects with the code blocks, e.g. shrink then grow, hide then show (flash), etc. *What would happen if I added a repeat loop here? What if I use a repeat forever block?*

Introduction (discuss the project together, share ideas and create excitement)

- *Do you know what a firework is? Have you ever seen any fireworks?* Fireworks are used to celebrate lots of different things. You may have seen them at a wedding or during Diwali or on Bonfire Night or maybe another celebration. Remind the children that fireworks can be very dangerous so we only watch them with an adult, and only adults are allowed to touch them.
- *What do fireworks look like? What colours did you see? What did you hear? Were they noisy or quiet?*
- *Have you ever seen a sparkler?* you might have even held one. Today we are going to make our own sparkler.
- Show the children the project.
- Do you notice that even though they're separate characters, the sparkler stick and the sparks move together?
- Let's look at the code for the stick. There are quite a lot of blocks so 'read' the code together from start to finish (left to right). Run the code for the stick by itself.
- Point out that the 'sparks' and the 'stick' have the same movement code. *Why might this be?*
- Continue to look at the code for the 'sparks'. *Can you predict what the other (effects) line of code will do? Shall we try it out?* If applicable refer back to the 'flashing' effect created for the rain cloud in the previous project.



Sparkler

Main Activity Key questions and teaching

1. Select a night time background from the library.
2. Use the Paint Editor to draw the sparkler 'stick'.
3. Now draw the 'sparks' for the sparkler. Depending on the children's abilities you could either:
4. Simple: use the freehand drawing tool and draw a rough 'spark' shape (use a variety of lines and colours).
5. Advanced: use the circle tool and the fill tool to create lots of brightly coloured sparks.
6. Children can draw from 1-3 'spark' characters (depending on their ability).
7. Let's code one of our 'sparks'. *How do you want it to move?* Remember we're going to use the same movement code for our 'stick' (and any other spark characters).
8. Encourage the children to use small numbers for their movement blocks (because we want the 'sparks' to stay on the screen).
9. Experienced coders could include [turn] and [repeat] blocks. Let the children experiment and tinker until they're happy with their movements. *Which block could we add to the end of our code so that the spark keeps on repeating this movement?*
10. Once the children are happy with the movement show them how to drag and copy the movement code to the other 'spark' characters and the 'stick'. Adults will probably need to support them to do this. Alternatively, the children could try and recreate the code manually.
11. Test the movement of the sparkler with the sparks. *Do they stay synchronised? Do you need to change any blocks? Don't forget if you do change a block you need to make sure you make the change for all your characters.*
12. *What effect are you going to create for the sparks? Will they have the same effect or different effect? Let the children experiment with using shrink & grow, and hide & show until they're happy with their effects.*
13. Experienced coders could use [wait] blocks to stagger the effects of the different sparks.

Teaching points

- There are lots of opportunities for the children to tinker in this project. If there are parents there, explain why this is part of the children's learning.
- While the children are tinkering, encourage them to evaluate the code they have created. *Do you like that movement/effect? How could we improve it?*
- Support the tinkering with clear objectives, i.e. let's try out different movement blocks to create the perfect movement for our sparkler
- To support new coders the code cards used in the project could be laid out on the table in front of them.
- If you know a child struggles with drawing pre-empt this by being ready to help them yourself, or suggest they work with a friend: *I noticed that you're both really good at helping and being kind. This project is a bit tricky. Could you help each other with difficult bits like the drawing? Could you help Sam to decide which movement blocks to use? You created a really fantastic movement last week / you had lots of good ideas during the warm-up.*

Possible Extensions

- Use three or more sparks and have a different effects for each spark.
- Make a bonfire animation of page 2. The children might like to use several characters to create the flames. Encourage them to tinker to create the most effective looking fire.

To Simplify

- Use just one spark. The children can use lots of different colours to make their spark look most effective.
- Draw the sparkler stick for the child.
- Use the freehand tool and lots of different colours (and line thicknesses) to create the 'spark'.

Finishing up

- Share the projects.
- Hold up the 'opposite' flashcards and the children can act out the movements. For example, 'Hide' and 'Show' (use their hands in front of their face to peekaboo).