

The Grand Old Duke of Space

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

The Grand Old Duke of Space, He had ten thousand spacemen.

Children will need to tinker with the wait blocks to get a spaceman character to move in time with the song and then “Drag and Drop” their code to several other spacemen to create a space themed nursery rhyme.

Learning Objectives:

- To use wait blocks
- To coordinate simple actions between characters and a song.

National Curriculum Links

Computing

- Children will understand that programs execute by following precise and unambiguous instructions

Speaking & Listening

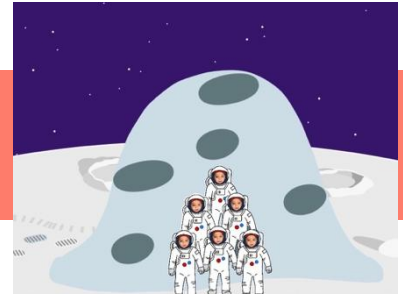
- To critique, evaluate and test their ideas and products and the work of others.

Warm up game: Flash card sorters

- Spread the flashcards around the room or on the table.
- *Oh no! My flashcards are such a mess. Could you help me to sort them into the correct piles?*
- Challenge the children to find the flashcards and put them into the correct pile.
- Depending on how calm your children are you could do this at a table, with the children taking turns, or around the room with the children all moving around to locate the cards and put them into the correct pile (have one pile for each corner of the room: motion, start, looks and control).

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

- Do you know the song about The Grand Old Duke of York. I have a new version all about the Grand Old Duke of Space. Sing the song with the children joining in for the actions – See resources for song lyrics.
- Show the children the project. All the Spacemen are going up and down the crater at the same time. *How do you think this effect is achieved?* They all have the same code, check this and correct any misconceptions. Demonstrate how to “Drag and Drop” the same code to each of the Spacemen.
- *What do you think the spacemen’s code will look like? What start block have I used?* (Have the flash card start blocks available for the children to select from)
- *What motion blocks have been used?* Have the flashcards available for the children to select.
- *What Control Blocks have been used?* Again have the flashcards available for children to select the correct blocks.
- Depending on the experience of your coders, show the Advanced project – Do you notice the spacemen are moving in time with the song? Demonstrate how to tinker with the wait blocks to achieve this.



The Grand Old Duke of Space

Main Activity

Key questions and teaching

1. Select the moon background from the library. Use the Paint Editor to draw a crater.
2. Select and edit 6 spacemen. *Will you add a photograph of your face? Will all the spacemen look the same?* Set a clear time limit to choose & edit the background and characters.
3. Resize and position the spacemen
4. Let's code the first spaceman. Record the song. What start block will you choose? [Start on Green Flag, Record 1]
5. To make the first spaceman move up and down the crater. **[Start on Green Flag, Slow, Wait 10, Up 8, Wait 10, Down 8, Repeat forever]** *How fast will your spaceman travel? How far up the crater will the spaceman go? Will he go back down the same distance? If it is a different distance down the crater than up, does it affect what happens later? Will you use the repeat block to create a counting loop or will you use the repeat forever block to create a loop?*
6. Test and Debug. Are you happy with your spaceman's movement?
7. When you are happy, drag and drop the spaceman's line of code to the other spacemen.
8. Test and debug. Do all the spacemen move together?

The Grand Old Duke of Space

Oh, the grand old Duke of Space
He had ten thousand spacemen
He marched them up to the top of the crater
And he marched them down again

And when they were up, they were up
And when they were down, they were down
And when they were only half-way up
They were neither up nor down

Teaching points

- Support children to tinker with timing of the wait block.
- Have the code blocks the children will use available to remind the children of what each block looks like and specifically what colour background they are on, to help the children locate them.
- Encourage the children to test and debug throughout.
- If a spaceman is moving at double speed, check the character does not have 2 or more lines of the same code.
- The children should test on "full screen" because sometimes the speed of the characters is different than when it is on the "small screen."

Possible Extensions

- Children tinker with the "timing" on the wait blocks to move the spacemen in time with the song.
- Use the speed blocks to keep in time with the song.
- Challenge: *Can you add twinkling stars and a spinning earth?*

To Simplify

- Only have 3 Spacemen.
- Use either wait block or speed block to keep the spacemen moving up and down the crater

Finishing up

- Share with group.
- *Did you have to do any debugging today? What did you do?*