Programming Turtle Logo and Scratch: Green Flag

Aim:	**Success Criteria:**	**Resources:**
Understand what algorithms are, how they are implemented as programs on digital devices and that programs execute by following precise and ambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs using Scratch. I can create an algorithm and use the green flag to start.	I can write commands in the correct order. I can write a variable value where required. I can correct any mistakes. I can start an algorithm with the green flag or key press. I can change the colour of the sprite.	**Lesson Pack** Desktop Computer or Laptop. Scratch application *(installed or online).* Whiteboards and pens or books, pens and pencils for recording.
	Key/New Words: Algorithm, instructions, commands, sprite, block, move, add sound, repeat, say something, green flag, change colour, key press.	**Preparation:** **Activity Sheet** as required.

Prior Learning:	Children will have used Scratch to create an algorithm to make a sprite dance and have added sound in lessons 3 and 4.

Learning Sequence

	**Remember:** Children use move, play drum and repeat blocks to create an algorithm. Can you find different ways of starting an algorithm? *Please note, if using Scratch 3, the 'play drum' programming block is now located within the 'add extension' option that can be accessed from the bottom left of the Scatch screen. Click on the 'music' extension and the appropriate blocks will appear. The block is now a different colour but has the same function.*	
	**Green Flag / Change Colour / Press Key Block:** Demonstrate the green flag, change colour and key press commands. What do you think will happen?	
	**Start It Up:** Children create their algorithm following the **How to Use Scratch** as a guide. Use **Green Flag Activity sheet** as required. Can you run both algorithms at once? How can you change an algorithm?  Ask children to create their own algorithms to make the sprite dance. Can you add a second sprite? How will you start your second sprite?	
	**Try This:** Can you create an algorithm that will make this happen? • The cat moves to the left and plays crash cymbal. • The cat returns to its starting point and changes colour. • The cat moves to the right, plays bass drum. • The cat returns to the start and says "and again?" for 2 seconds. • This is repeated 5 times and starts when the green flag is clicked. *(Children are not told how far to move the sprite. This is deliberate, as it makes children consider what is an appropriate distance to move).*	
	**One Way:** Look at the example answer given on the **Lesson Presentation.** *(You can click on the link to see it playing in Scratch online.)*	
	**What do we need?** Children revise their list from last lesson of what is needed. Next time we will look at how to add a background or backdrop and other sprites.	

Task*it*	
***Start*it:**	Children explore different ways of starting an algorithm.

Computing

Programming Turtle Logo and Scratch

Green Flag

Aim

- I can create an algorithm and use the green flag to start.

Success Criteria

- I can write commands in the correct order.
- I can write a variable value where required
- I can correct any mistakes.
- I can start an algorithm with the green flag or key press.
- I can change the colour of the sprite.

Remember

Using the 'Move', 'Play drum' and 'Repeat' blocks, repeat the algorithm from last lesson.

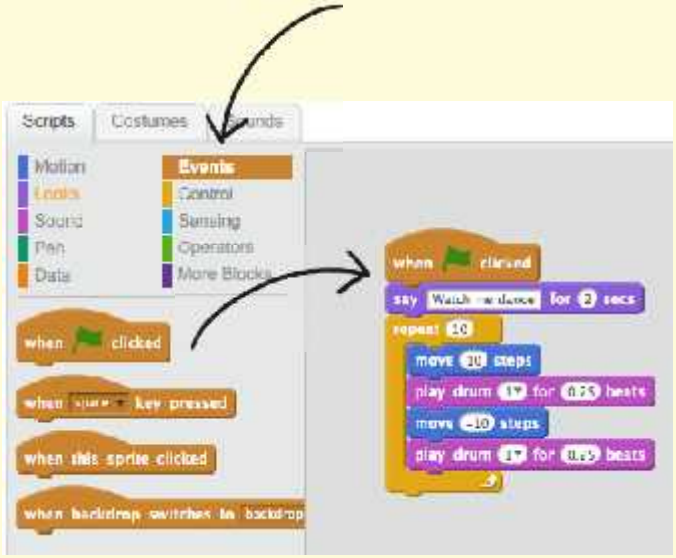
Can you remember which blocks were needed and from which set of blocks they have come from?

Can you find different ways of starting an algorithm?

?

Green Flag

1. From the 'Events block' drag the 'Green flag' to snap to the top of your algorithm.

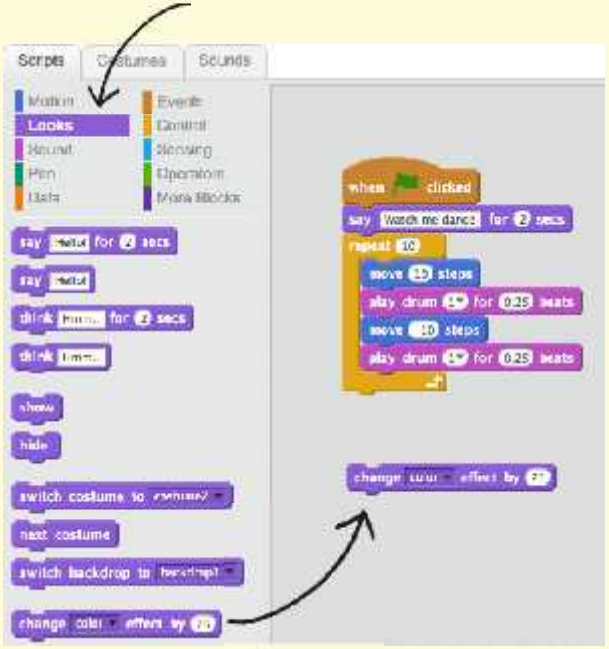


2. Click on the 'Green flag' above the stage.

What happens?

Change Colour

1. Change to the 'Look blocks'.

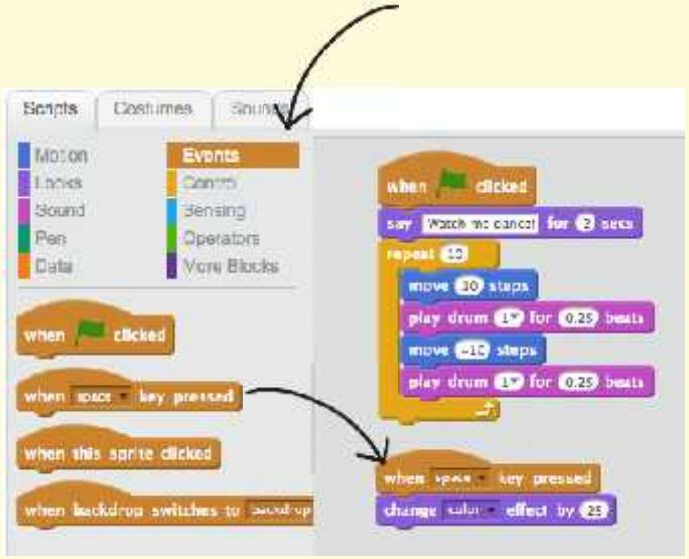


2. Drag a change block into the 'Scripts area'.

3. Click on the block to see what happens.

Press Key Block

1. Change to the ‘Events blocks’.



2. Drag a ‘Key press block’ and snap to the ‘Change block’.

3. Press space.

What happens?

Start It Up

How to Use Scratch

Start with a green flag

1.

From the 'Events block' drag out the green flag.

2.

Place it at the top of the algorithm.

3.

Click on the 'Green flag' to run the algorithm.

Change the colour

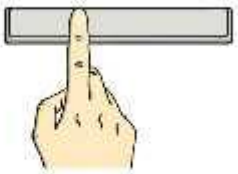
1.

Drag out the 'Key press' and the 'Change effect blocks'.

2.

Snap the blocks together.

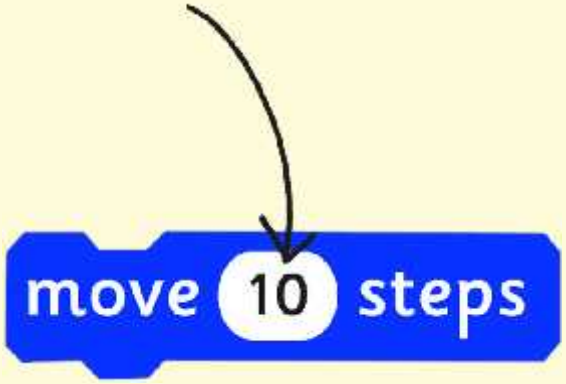
3.



Click on the space bar to change the colour.

How Can You...?

How can you alter your algorithm by changing the variable (number)?

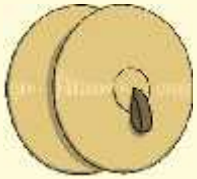


What happens when you add other blocks?

Try This

Can you devise an algorithm that will make this happen?

1. The cat moves to the left and plays crash cymbal.



2. The cat returns to its starting point and changes colour.

3. The cat moves to the right and plays the bass drum.

4. The cat returns to the start and says “and again?” for 2 seconds.

5. Repeat step 1 to 4, 5 times and start when the ‘Green flag’ is clicked.

One Way

Below is one of the ways you could have created the algorithm.

Click on the algorithm to see it run in a browser.

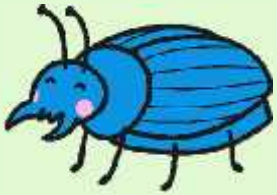
What Do We need?

Look back at the commands that you suggested at the end of last lesson.

Have you found any new commands?

Can you think of any more commands that would be useful?

Next lesson we will learn how to change the backdrop and add a sprite.



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Success Criteria

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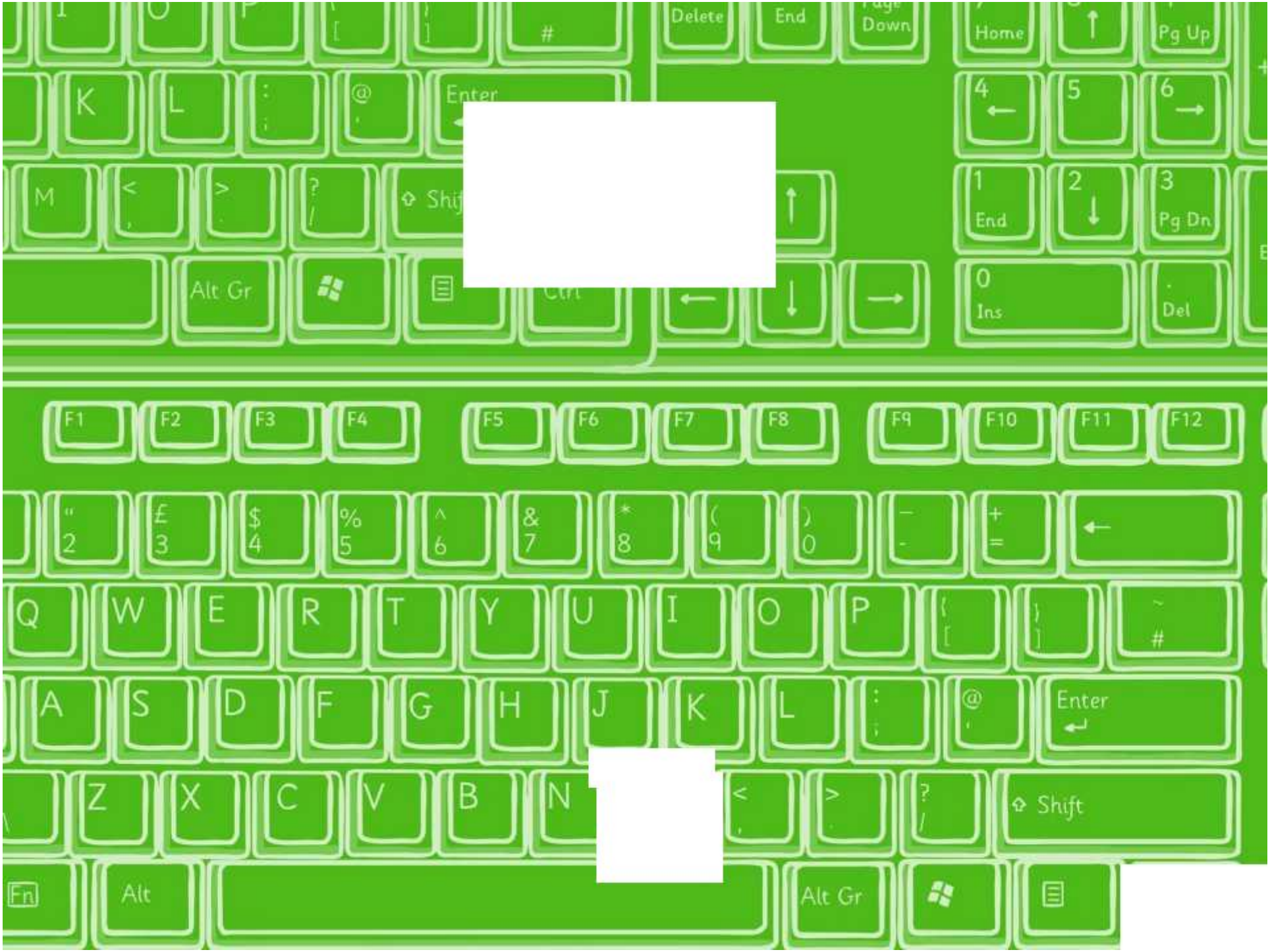
Delete
End
Page Down
Home
Pg Up
Enter
4
5
6
1
End
2
3
Pg Dn
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Enter
Z
X
C
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Shift
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Green Flag

I can create an algorithm and use the green flag to start.

In Scratch, make the following algorithms:

- Move sprite forward and play open hi-hat.
- Move sprite back to the start and play closed hi-hat.
- Repeat 8 times and start by pressing the space bar.

Find the answer at - http://scratch.mit.edu/projects/26460820/

- Move sprite backwards and say "Go forward" for 1 second.
- Move sprite forward and say "Change colour" for 1 second.
- Change colour of sprite.
- Repeat 6 times and start by clicking the green flag.

Find the answer at - http://scratch.mit.edu/projects/26460820/

- Move sprite backwards and say "Let's go forward" for 1 second.
- Move sprite backwards twice as far and say "Too far!" for 1 second.
- Change the colour of the sprite.
- Repeat 6 times and start by clicking the green flag.

Find the answer at - http://scratch.mit.edu/projects/26460820/

- Move sprite forward and play the triangle.
- Move sprite back to the start and play triangle.
- Say "Is that a triangle?".
- Repeat 4 times and start by pressing the S key.

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How to Use Scratch

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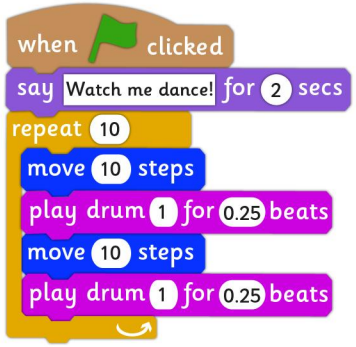
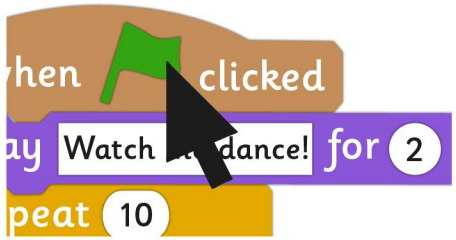
2.



Place it at the top of the algorithm.

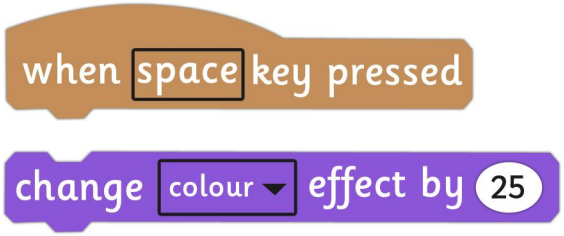
3.



Click on the 'Green flag' to run the algorithm.

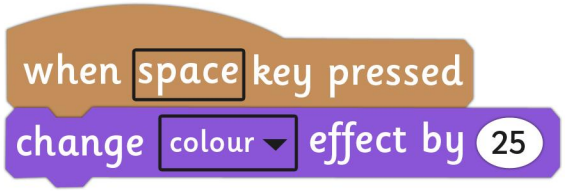
Change the colour

1.



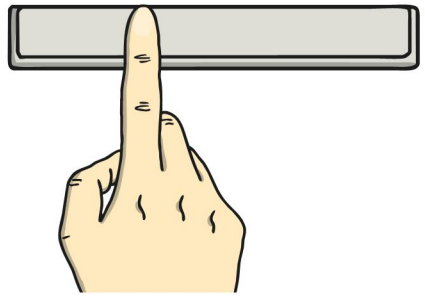
Drag out the 'Key press' and the 'Change effect blocks'.

2.

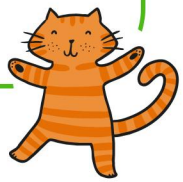


Snap the blocks together.

3.



Click on the space bar to change the colour.



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