Programming Turtle Logo and Scratch: Movement and Sound

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 that includes movement and sound.	I can write commands in the correct order. I can write a variable value where required. I can correct any mistakes. I can move a sprite. I can add sound.	**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, move, add sound.	**Preparation:** Differentiated **Activity Sheets** as required.

Prior Learning: It will be helpful if children can use Scratch and understand the commands; forward (fd), right (rt) and left (lt) alongside a variable.

Learning Sequence

	**What is Scratch?** Begin by reminding children of their learning from Turtle Logo and how they gave the Turtle commands to move or rotate.	
	**Scratch:** Show the children how to open Scratch, depending on whether you are using the online version or application. Demonstrate to the children how to start moving, add a sound and move back again to make the cat dance. *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.*	
	**Make a Dance:** Children work through the demonstrated activity and use the **Activity Sheet** to support the task. *(Note: In Turtle Logo there is no option to add sound.)*  Children may need support when creating the algorithm.  Use the **Activity Sheet** to prompt the initial task, then challenge the children to create a dance for a second sprite, and create a similar algorithm in Turtle Logo.	
	**What Will Happen?** Show a set of blocks and ask how the children would expect the sprite to move.	
	**Compare:** Ask the children to compare Scratch and Turtle Logo. How would you get the algorithm that you have written to repeat? *(The aim of this question is to get children to think how something might happen, rather than necessarily showing them.)*	

Task*it*

***Dance*it:** Children make algorithms for dancing sprites.

Computing

Programming Turtle Logo and Scratch

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Movement and Sound

Aim

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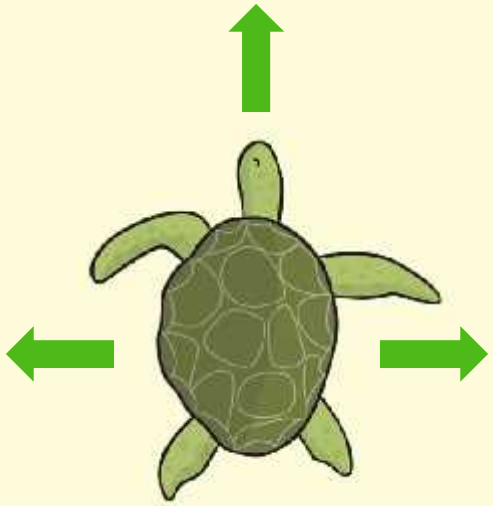
What is Scratch?

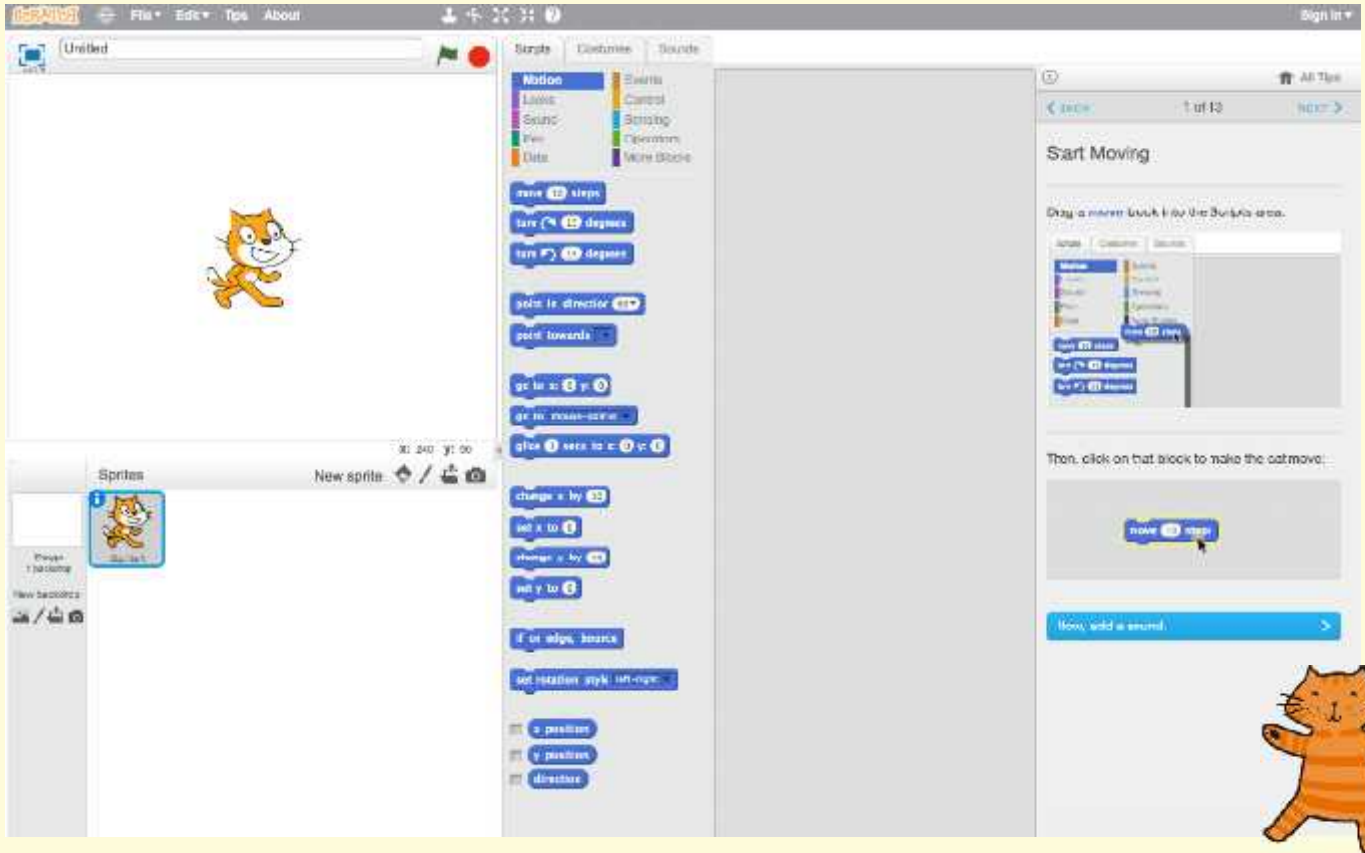
Do you remember using turtle logo?

What commands did you use to move the turtle?



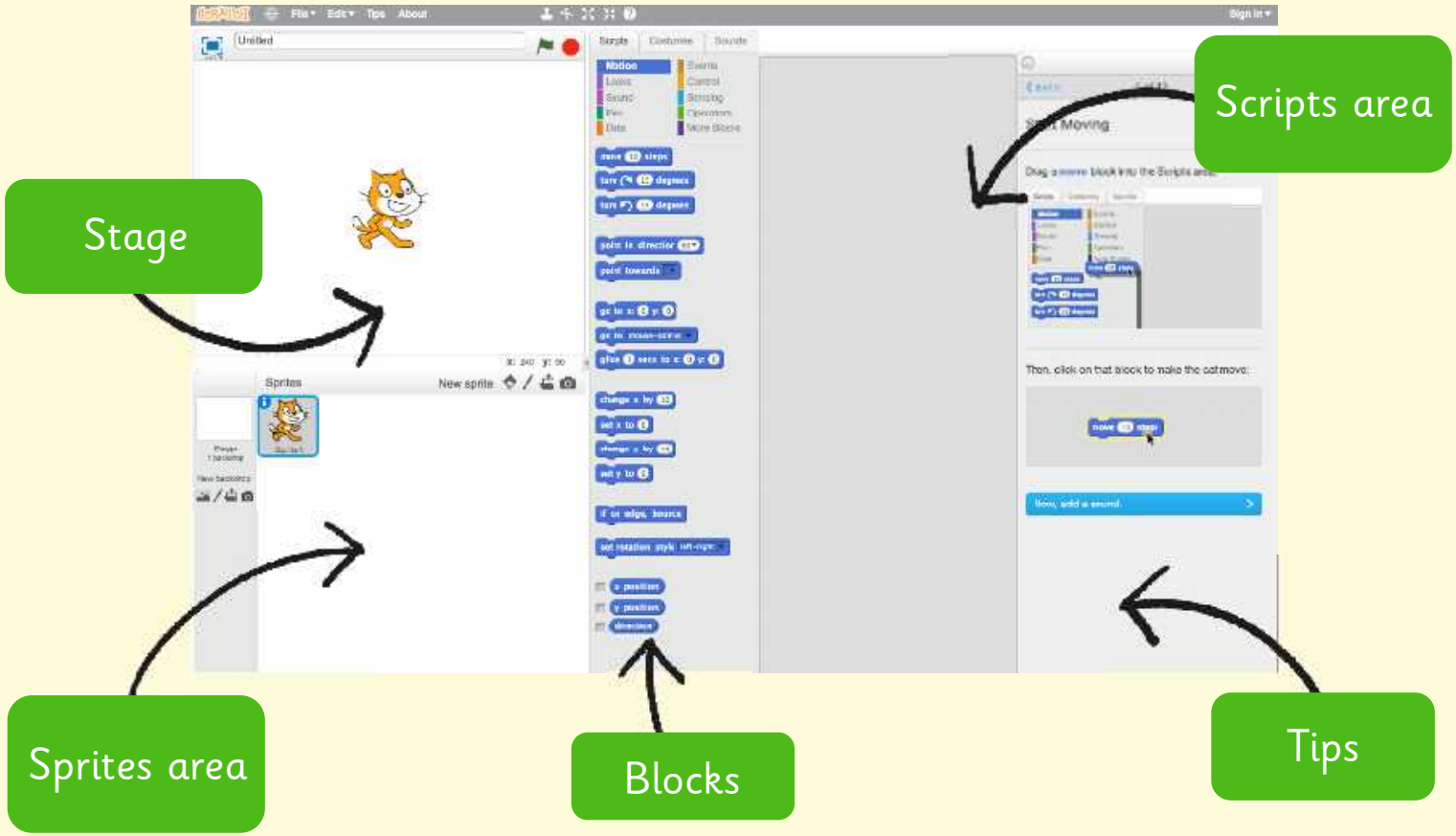
Scratch

Open Scratch to see what the program looks like.



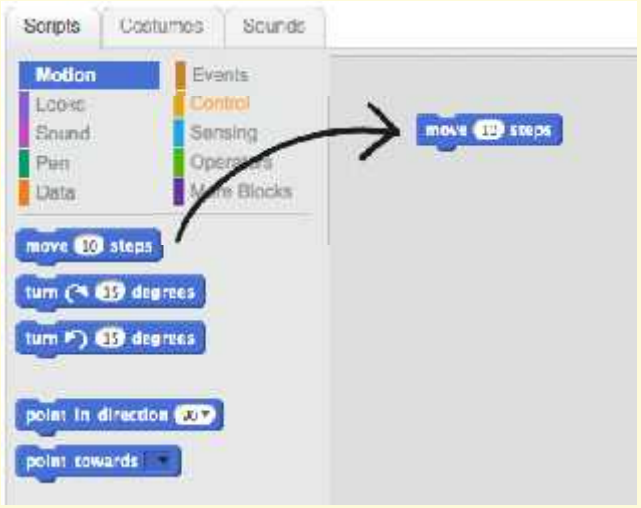
Scratch

Click on the image to load the website.



Start Moving

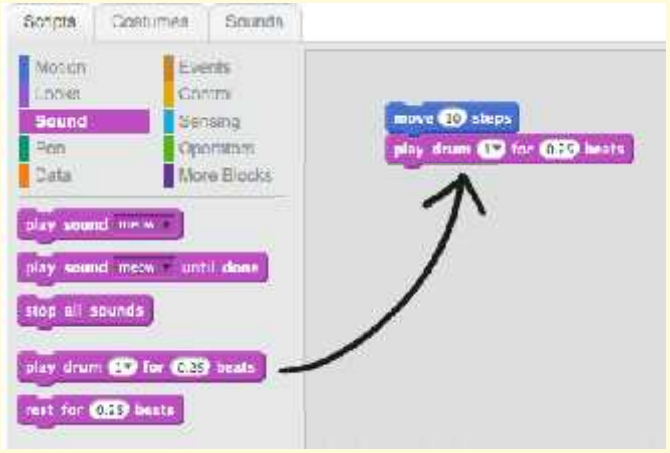
1. Drag a move block into the 'Scripts area'.



2. Click on the block to make the cat move.

Add a Sound

1. Change to ‘Sound blocks’ then drag a ‘Play drum block’ into the ‘Script area’ and snap to the ‘Move block’.

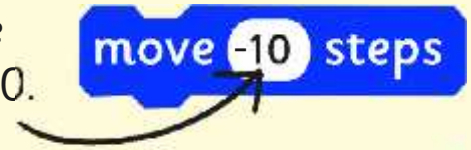


2. Click on the blocks to make the cat move and the drum beat.

Move Back Again

1. Drag another move block into the 'Scripts area' and snap to the existing blocks.

Change the number to -10.



2. Click on the blocks to make the cat dance.

Make a Dance

How to Use Scratch

Moving and adding sound

1.

Drag a 'Move block' into the 'Scripts area'.

2.

Click on the block to make the cat dance.

3.

Drag out a 'Play drum block' and snap it to the 'Move block'

4.

Click on the blocks and listen.

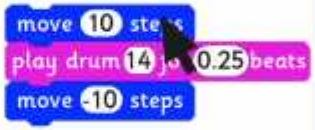
5.

Can you hear the drum? If not, check the computer sound.

6.

Change the drum sound.

7.



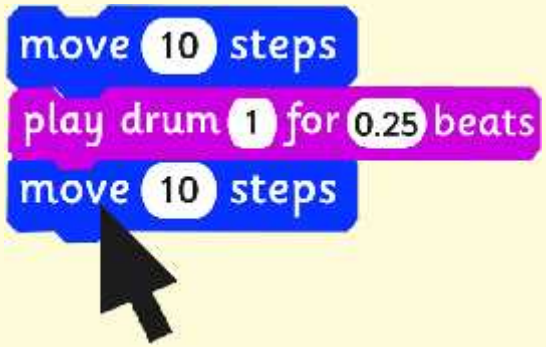
Add another 'Move block' and change the 10 to -10. Click to run.

8.

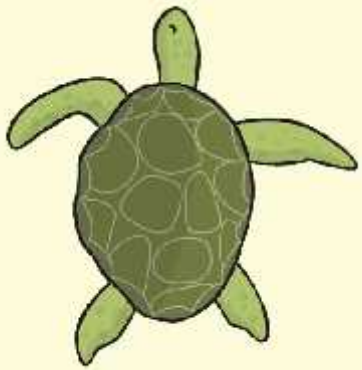
Add another 'Play drum block' and choose a drum sound. Click to run.

Can You...?

Add more 'Move' or 'Sound blocks'.



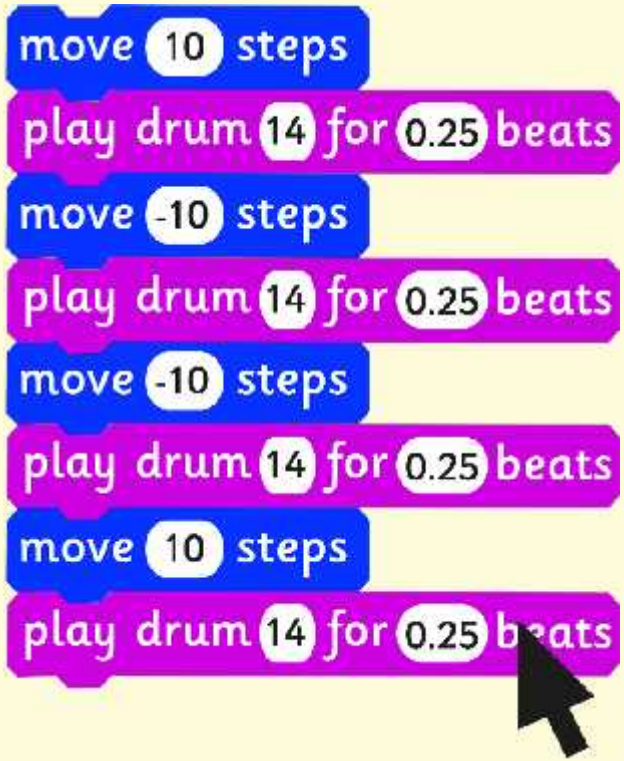
Open the Turtle Logo program you have used before.



Can you make the turtle move back and forth in a similar way?

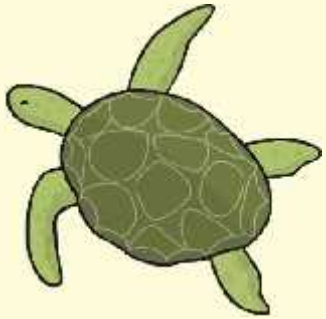
What Will Happen?

What would you expect to happen if you clicked on these blocks?



Compare

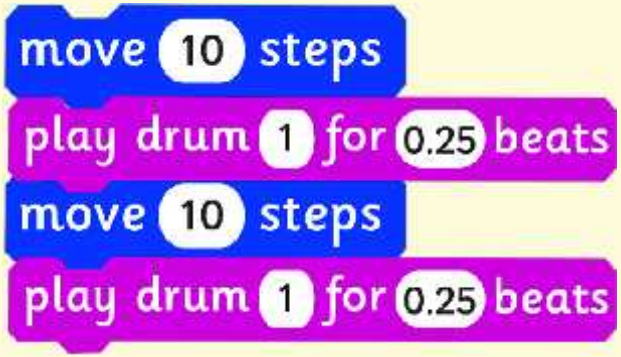
Compare Scratch and Turtle Logo.



What is the same?

What is different?

How would you get an algorithm in Scratch to repeat?



Aim

- I can create an algorithm that includes movement and sound.

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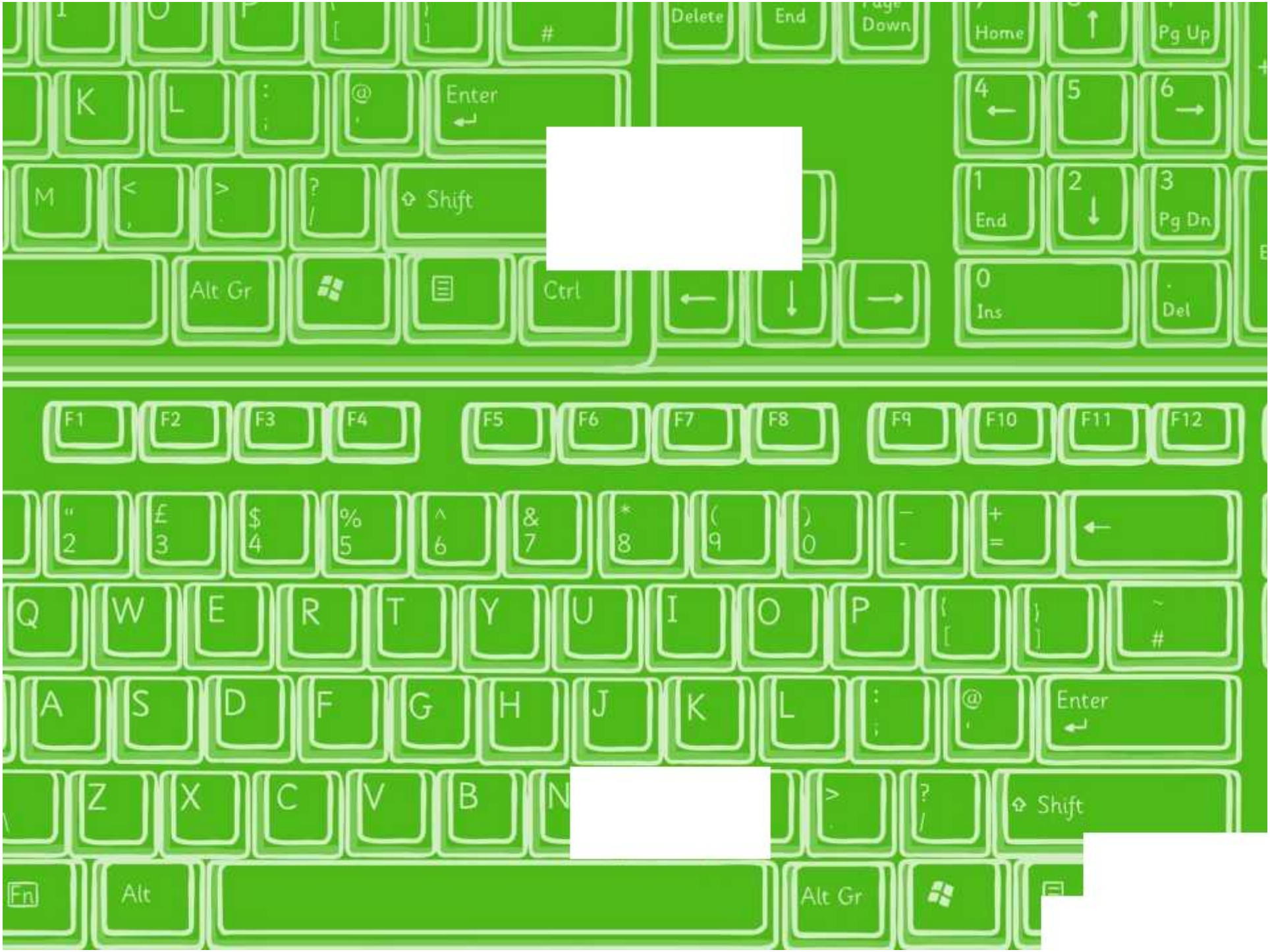
Delete
End
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F6
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How to Use Scratch

Moving and adding sound

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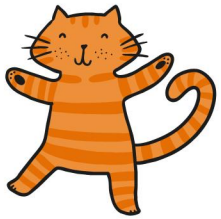
Drag a 'Move block' into the 'Scripts area'.

2.

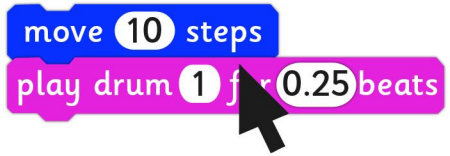


Click on the block to make the cat dance.

3.

Drag out a 'Play drum block' and snap it to the 'Move block'

4.



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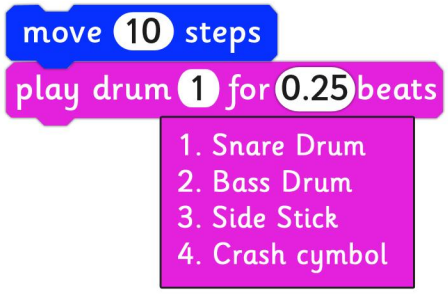
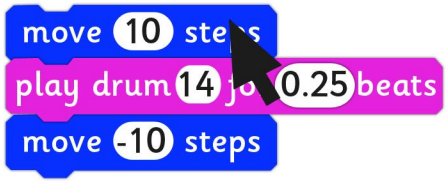


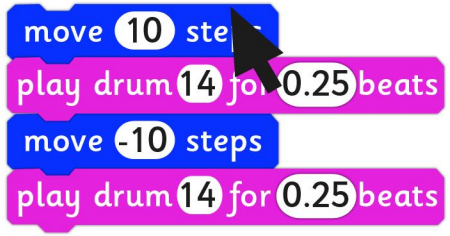
Change the drum sound.

7.



Add another 'Move block' and change the 10 to -10. Click to run.

8.



Add another 'Play drum block' and choose a drum sound. Click to run.

Movement and Sound

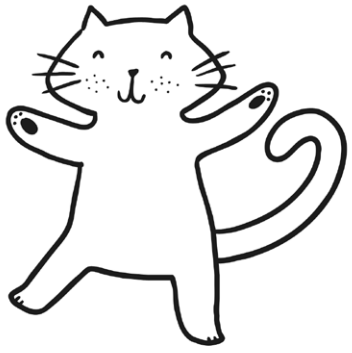
Create the algorithm in Scratch then answer the following questions.

1. What happens if you change the variable (number) in the move block?

2. What happens if you click the down arrow in the play drum block?

3. How would you remove the play drum block from the algorithm in step 7?

4. How can you get rid of a block from the scripts area?



Movement and Sound

Create the algorithm in Scratch then answer the following questions.

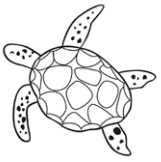
1. How could you change the dance? Record your algorithm in the space below.

2. How would you remove the play drum block from this algorithm?

3. How can you get rid of a block from the scripts area?

Now try...

- Adding some more blocks to your dance.
- Creating a similar algorithm in Turtle Logo.



Movement and Sound

Create the algorithm in Scratch then answer the following questions.

1. How would you remove the play drum block from this algorithm?

2. How can you get rid of a block from the scripts area?

Now try...

- Introducing a second sprite that performs a different dance.
- Creating a similar algorithm in Turtle Logo.

Record your algorithm in the space below.

Avery Template: Name Badge Label, 8 per sheet | **Compatible Products**:15395, 25395, 42395, 45395, 48395, 5395, 8395, 88395, 85395.

Programming Turtle Logo and Scratch | Movement and Sound

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