Programming with ScratchJr: Cool Characters

Aim:	**Success Criteria:**	**Resources:**
To understand that programs execute by following precise and unambiguous instructions. To use logical reasoning to predict the behaviour of simple programs. Children see a demonstration of a ScratchJr program being created that follows precise instructions. During the sequence, they predict what will happen and afterwards begin adding or editing their own characters and backgrounds. I can describe and use instructions to program a character.	I can open the ScratchJr app and use buttons to navigate. I can add and remove characters and backgrounds. I can edit characters and backgrounds. I can describe the effect of at least three instruction blocks on a character.	**Lesson Pack** Tablets (Apple, Amazon or Android) with ScratchJr app installed.
	Key/New Words: ScratchJr, tablet, blocks, programs, character, background, sequence, project.	**Preparation:** **Watch Demo Activity Sheet** - as required Differentiated **Cool Characters Activity Sheet** - as required

Prior Learning: It would be helpful if children have had prior experience using digital tablets in school.

Learning Sequence

	Introduction to ScratchJr: What is it? ScratchJr is an app available for tablets (such as Apple, Amazon and Android tablets) that allows you to create your own stories and games. It is aimed at children age 5-7 and is free to download, with an adult's permission.	
	Watching the Demo (Pause to Predict): Encourage children to watch the demo on their own (or shared) tablet device, guided by an adult. Pause to predict what blocks might do. Ask what children think the blue arrow blocks do? What will an arrow followed by the invisible block do? Tell children there are many more blocks we can learn about in future lessons to create more complex programs! Use the **Watch Demo Activity Sheet** as a guide.	
	Starting a New Project: Demonstrate starting a new project. Focus on how to add new characters and backgrounds, matching them to each other for suitability.	
	Cool Characters and Brilliant Backgrounds: Children use the differentiated **Cool Characters Activity Sheets** to help them open the app and start working on a new project. Can children use software to create new projects, including adding a suitable character and background? Children open the app and start a new project. They add and remove characters and backgrounds, matching appropriately. Children begin by following the LA guidance. They then move on to the MA sheet, experimenting with dragging and executing blocks. They describe what effect individual instruction blocks will have. Children begin by following the LA guidance, if necessary. They then move on to the MA activity. As an extra challenge, children use the HA sheet to paint backgrounds/draw blocks to match a given sequence of written instructions.	
	Instruction Blocks for Characters: Using the **Lesson Presentation**, show an example charcter on the screen and ask what the effect would be of a range of different blocks. Can children describe the instructions that the blocks have upon the character?	

Task*it*

***Draw*it:** Children try drawing a character or background on paper, then reproducing it on the ScratchJr app using the paint editor.

***Explain*it:** Children challenge each other on what effect instruction blocks will have, by showing or drawing blocks for their partner.

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

Programming with ScratchJr | Cool Characters

I can describe and use instructions to program a character.		
I can open the ScratchJr app and use buttons to navigate.		
I can add and remove characters and backgrounds.		
I can edit characters and backgrounds.		
I can describe the effect of at least three instruction blocks on a character.		

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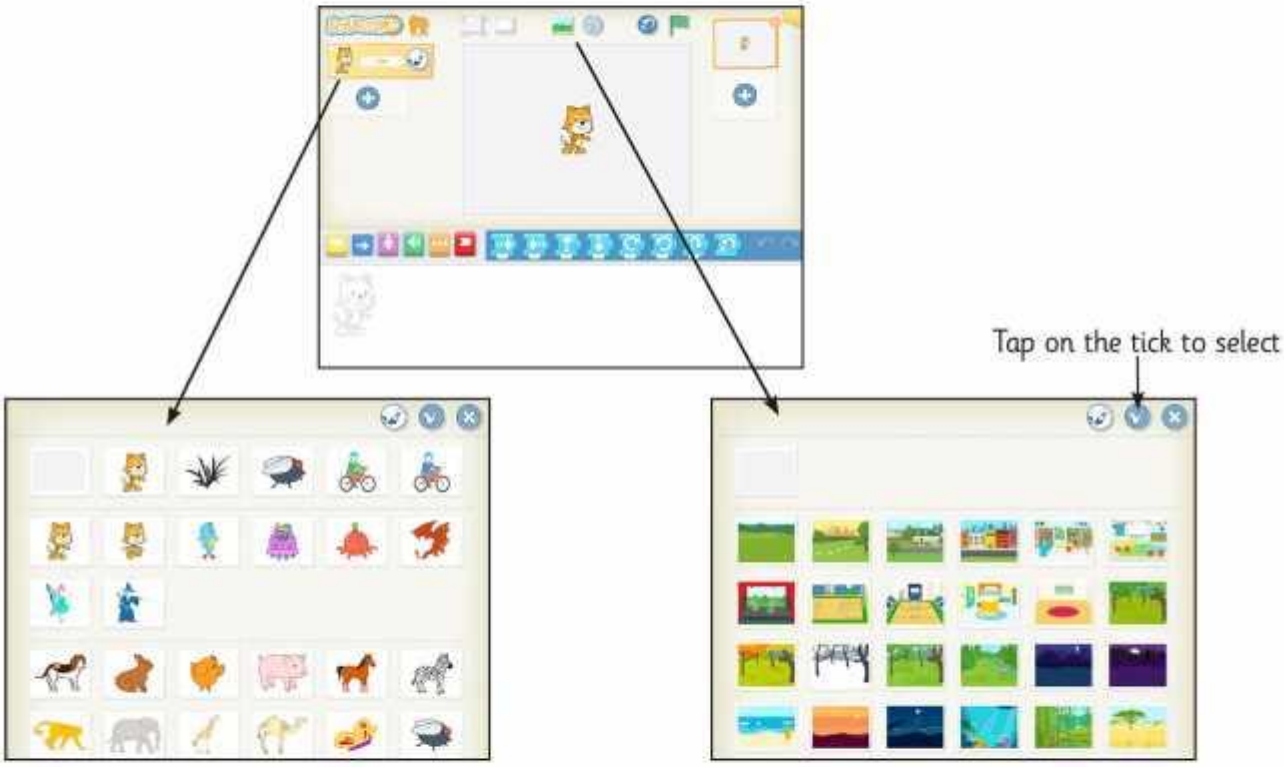
Cool Characters

I can describe and use instructions to program a character.

Open the ScratchJr app and start a new project in the My Projects screen.

Add a new character and background – select then tap the tick icon.

(You can also delete unwanted characters by pressing and holding until a small red cross appears.)



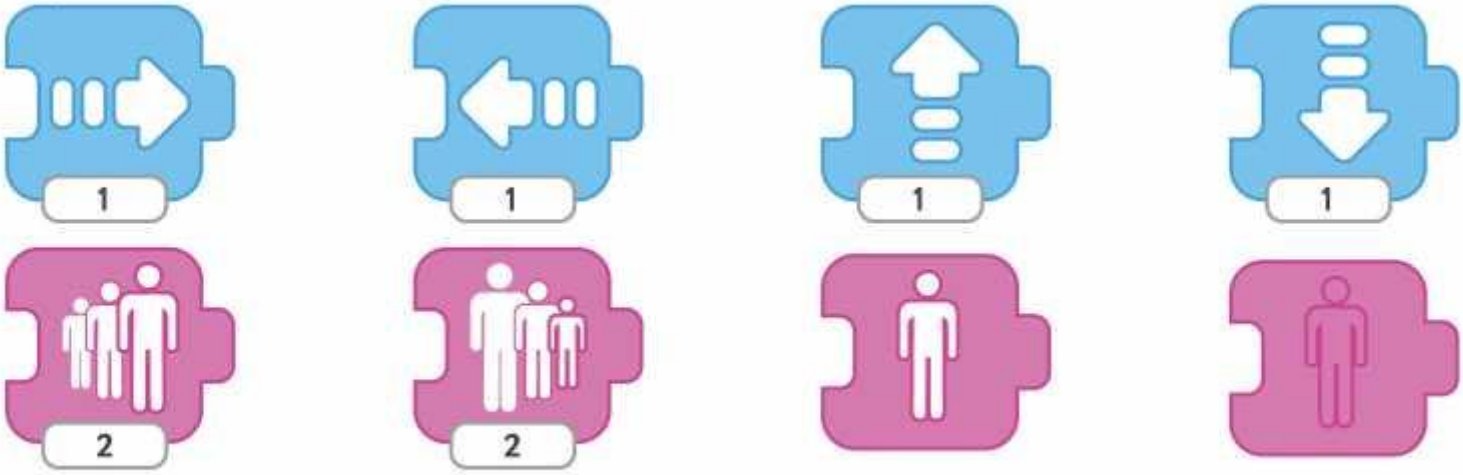
Try to select characters that match your backgrounds!

Next, try dragging some of the instruction blocks to the working area at the bottom and then tap them to see what they do.

Cool Characters

I can describe and use instructions to program a character.

Try dragging these instruction blocks to the working area at the bottom and then tap them to see what they do.



Next, you can try to link two blocks together and tap them to perform two instructions in a sequence, like this:

Can you draw lines to match the blocks with their instructions?

Hide

Jump up

Grow bigger

Move right

Cool Characters

I can describe and use instructions to program a character.

Can you write about what these instruction blocks will do?

Draw a picture of the blocks for these instructions:

Move Left

Show

Move Down

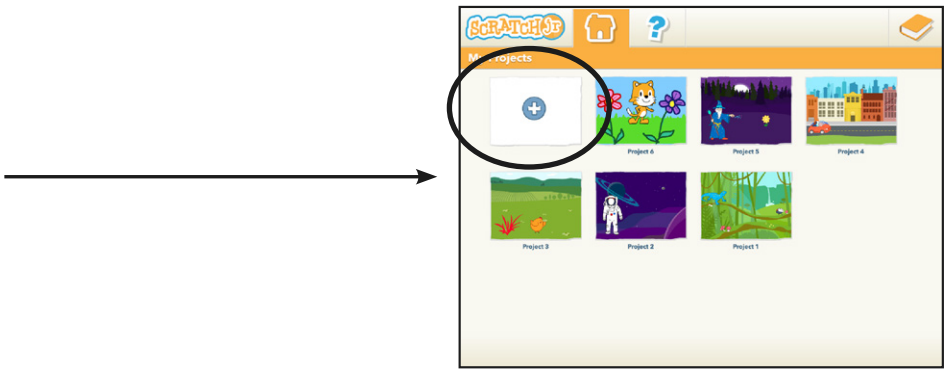
Jump Up

Challenge – tap the paintbrush to try painting your own background!

Cool Characters

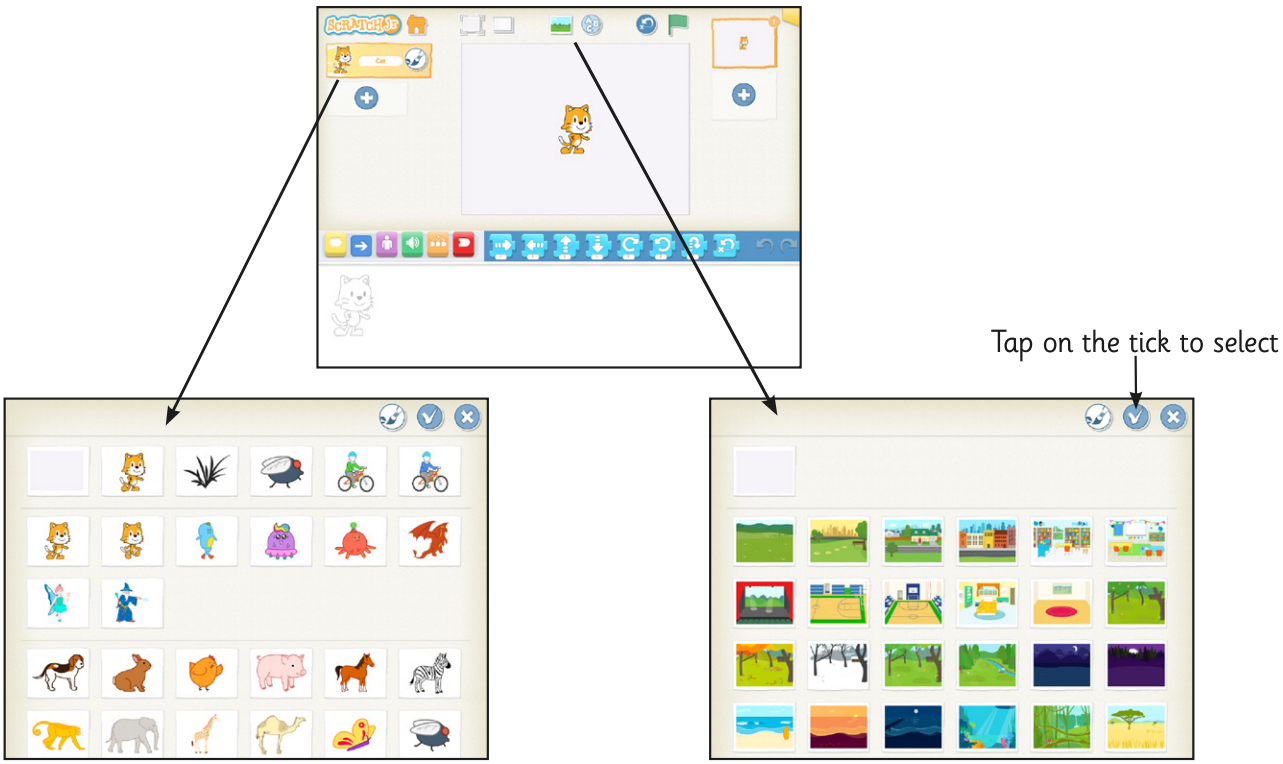
I can describe and use instructions to program a character.

Open the ScratchJr app and start a new project in the My Projects screen.



Add a new character and background – select then tap the tick icon.

(You can also delete unwanted characters by pressing and holding until a small red cross appears.)



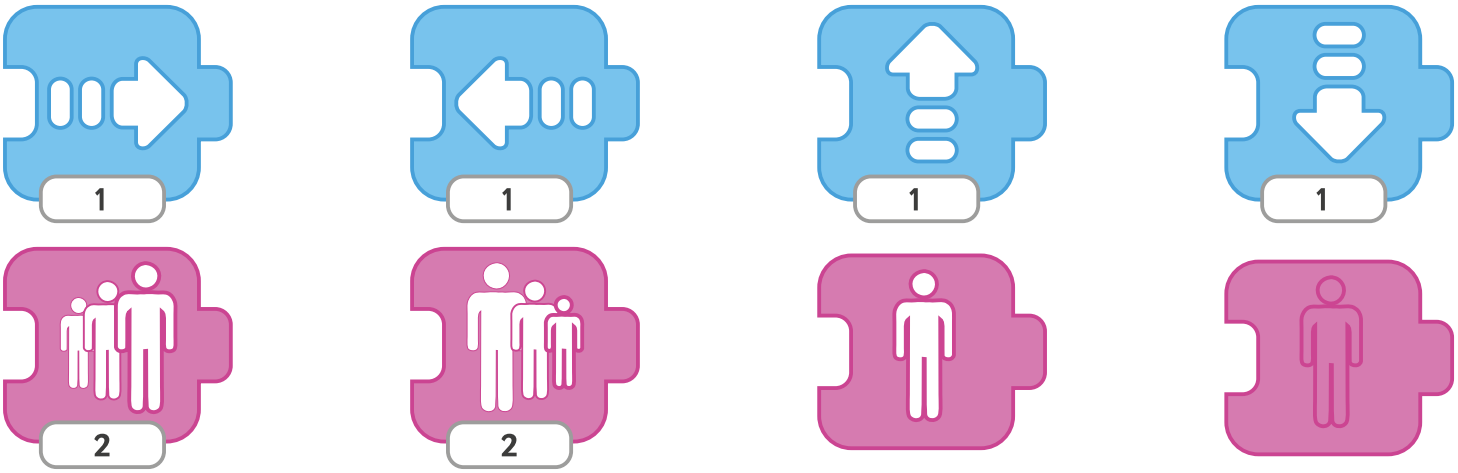
Try to select characters that match your backgrounds!

Next, try dragging some of the instruction blocks to the working area at the bottom and then tap them to see what they do.

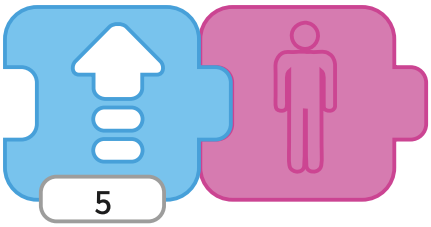
Cool Characters

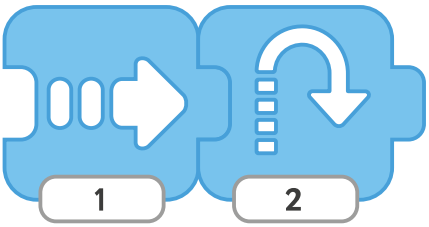
I can describe and use instructions to program a character.

Try dragging these instruction blocks to the working area at the bottom and then tap them to see what they do.



Next, you can try to link two blocks together and tap them to perform two instructions in a sequence, like this:





Can you draw lines to match the blocks with their instructions?

Hide

Jump up

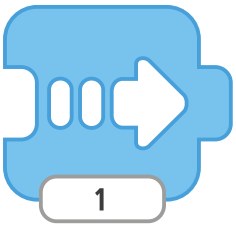
Grow bigger

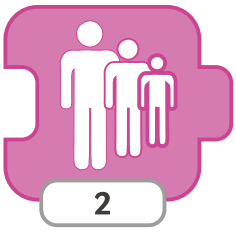
Move right

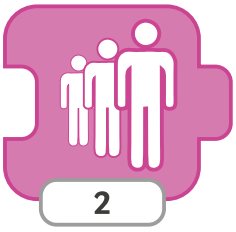
Cool Characters

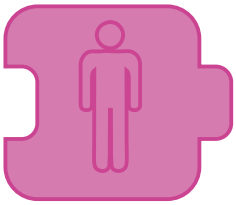
I can describe and use instructions to program a character.

Can you write about what these instruction blocks will do?









Draw a picture of the blocks for these instructions:

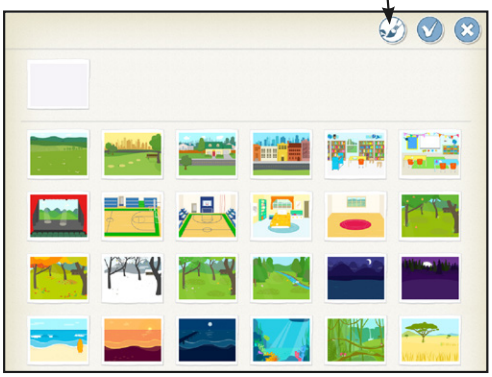
Move Left

Show

Move Down

Jump Up

Challenge – tap the paintbrush to try painting your own background!

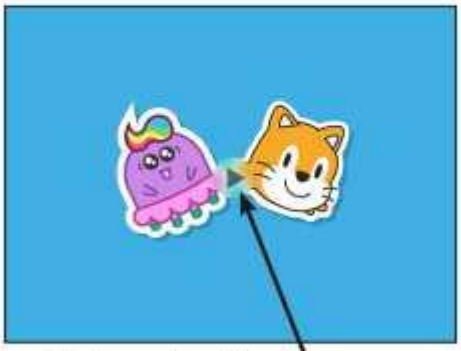


Watch the ScratchJr Demo

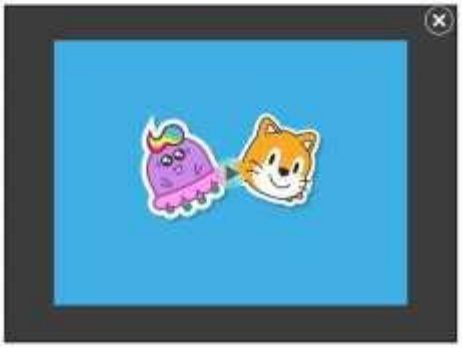
I can describe and use instructions to program a character.

Open the ScratchJr app on your tablet.

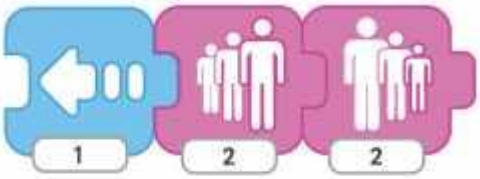
Click on the



Click on the Play button to watch the Demo.



What do you think these blocks will make the character do?



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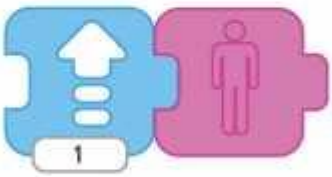


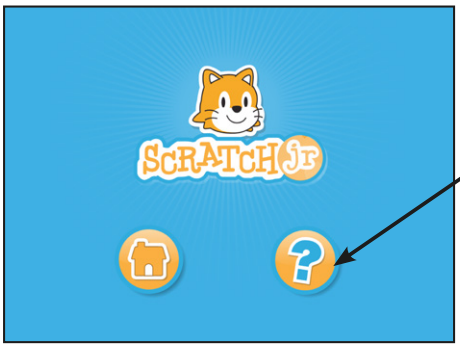
What do you think these blocks will do?

Talk to a partner or group, to discuss some of the things it is possible to do using ScratchJr.

Watch the ScratchJr Demo

I can describe and use instructions to program a character.

Open the ScratchJr app on your tablet.



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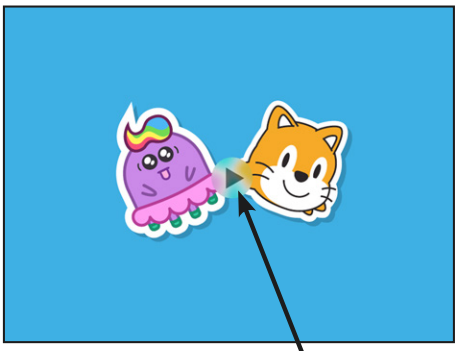

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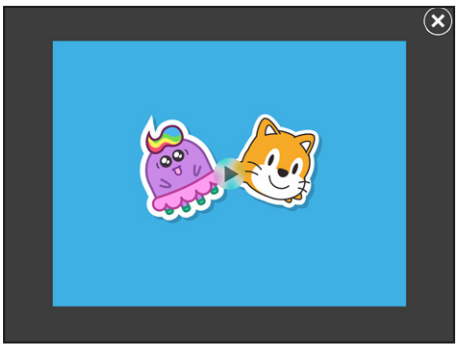
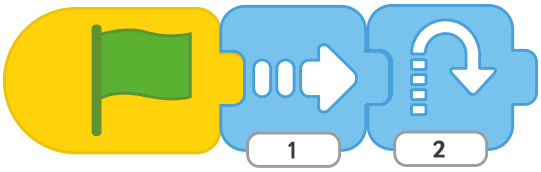
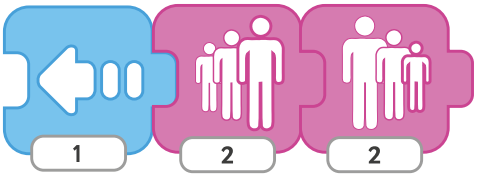




What do you think these blocks will make the character do?



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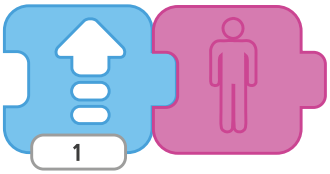


What do you think these blocks will do?

Talk to a partner or group, to discuss some of the things it is possible to do using ScratchJr.

Lesson 1: Cool Characters

Format of the Lessons

It is recommended that most activities in the lesson are carried out with small groups of children. As ScratchJr is available only on tablet devices, it is not necessary to use a computer suite setting. Some parts of the lesson may be delivered using a whole class and a lesson presentation is provided to facilitate this

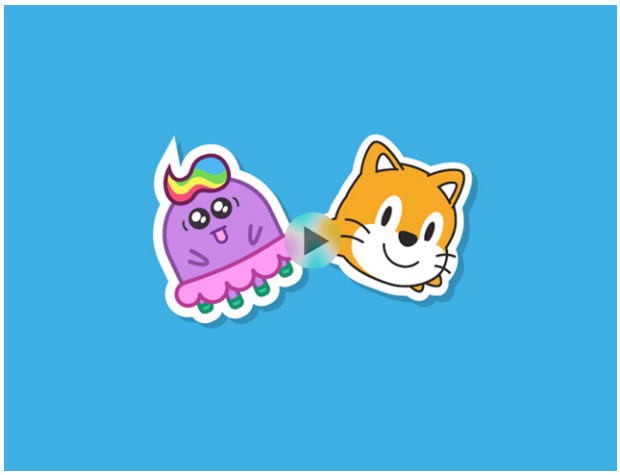
Introducing ScratchJr

The main purpose of the first lesson is to introduce children to the ScratchJr app, then increase familiarity with actively using it. Whilst also experimenting with changing characters and backgrounds (necessary skills for future lessons), children also begin to experiment with the effects of instruction blocks on a character. By testing these and describing them either verbally or in writing, they are beginning to understand that programs are executed by following precise instructions - the characters will respond exactly as the block tells them to.

Watching the Demo

As an introduction to ScratchJr, children should be guided through the Demonstration Video by an adult. This may be best facilitated in small groups. An Activity Sheet is provided for additional prompts and reference.

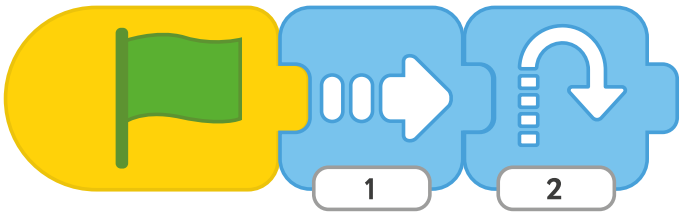
The Demo is opened by selecting the icon on the first screen, then clicking on the Play button.



The Demo lasts for approximately three and a half minutes, but for best effect it is recommended to pause at intervals, to ask children to predict what effect the selected blocks will have. This introduces logical reasoning to predict the behaviour of the programs. The Watch Demo Activity Sheet can be used as guidance either for an adult leading a group or provided as one per child.

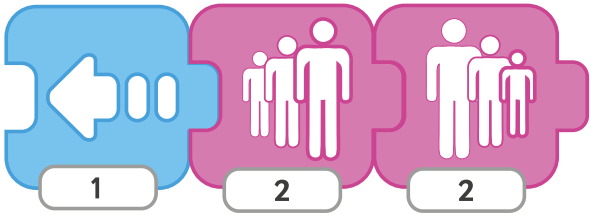
Some of these blocks and sequences are explained on the following page:

Lesson 1



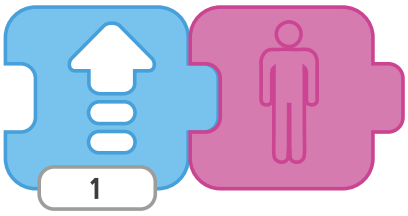
Children may notice that the green flag starts the sequence.

The first arrow moves the character to the right, then the second arrow makes the character jump up.



In this sequence, the arrow makes the character move to the left.

The next block makes the character 'grow' or get bigger, while the final block makes it 'shrink' again.



The arrow in this sequence makes the character move in an upward direction.

The second block makes the character disappear or become 'invisible'.

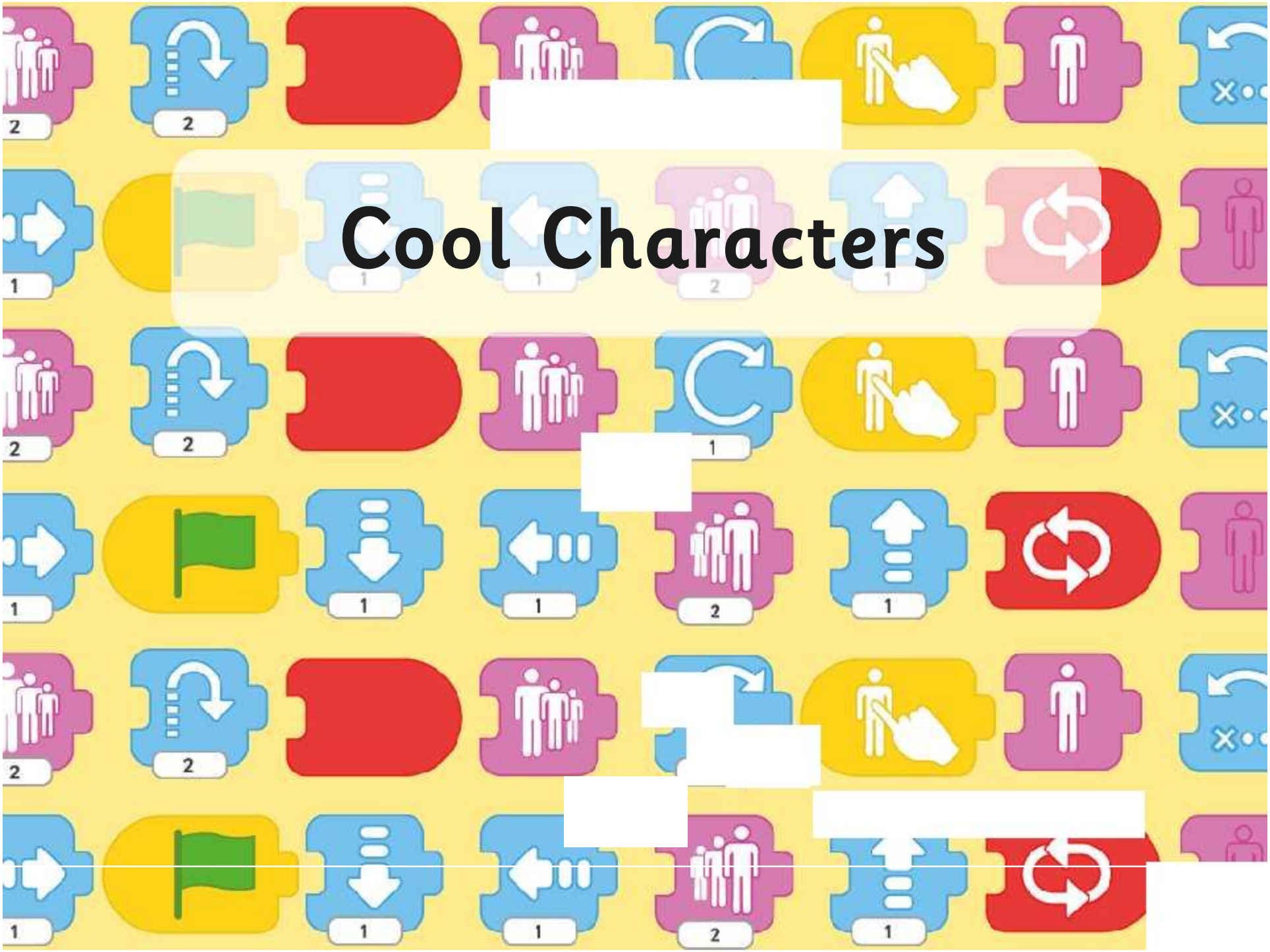
Children may also notice that the number underneath the block gives a value to how far or how much the character is moved or changed.

Cool Characters Activity Sheets

All three Activity Sheets are designed to be followed and used in order, rather than a separate differentiated sheet per ability group.

Computing

Programming with ScratchJr


Cool Characters

Aim

I can describe and use instructions to program a character.

Success Criteria

- I can open the ScratchJr app and use buttons to navigate.
- I can add and remove characters and backgrounds.
- I can edit characters and backgrounds.
- I can describe the effect of at least three instruction blocks on a character.

Introduction to ScratchJr

ScratchJr (or Scratch Junior) is an app available for tablets (such as Apple, Amazon and Android tablets) that allows you to create your own stories and games.

It is aimed at children age 5-7 and is free to download, with an adult's permission.

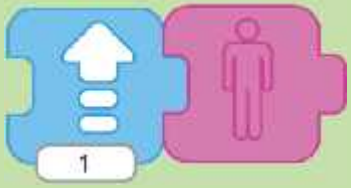
After learning how to code with ScratchJr, you can progress to using the original Scratch programming app.

Watching the Demo

When first opening the app, clicking on the **?** icon will take us to a short demo of some things that ScratchJr can do.

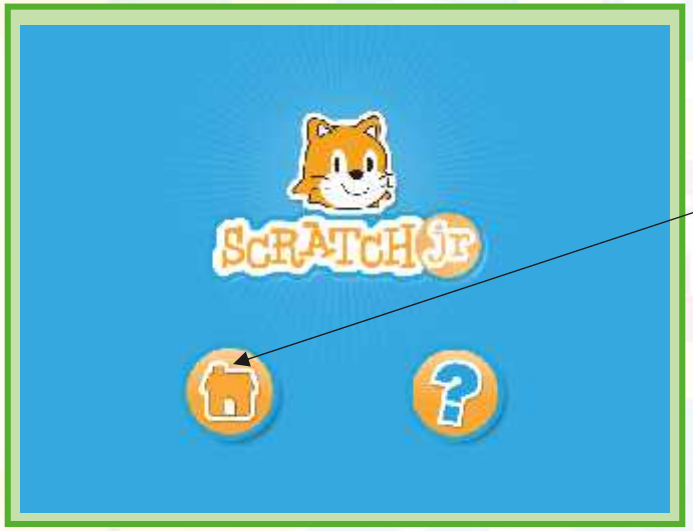
We are going to watch and pause to predict what some of the blocks might do.

What do you think the blue arrow blocks do? What will an arrow followed by the invisible block do?



There are many more blocks we can learn about in future lessons to create more complex programs!

Starting a New Project

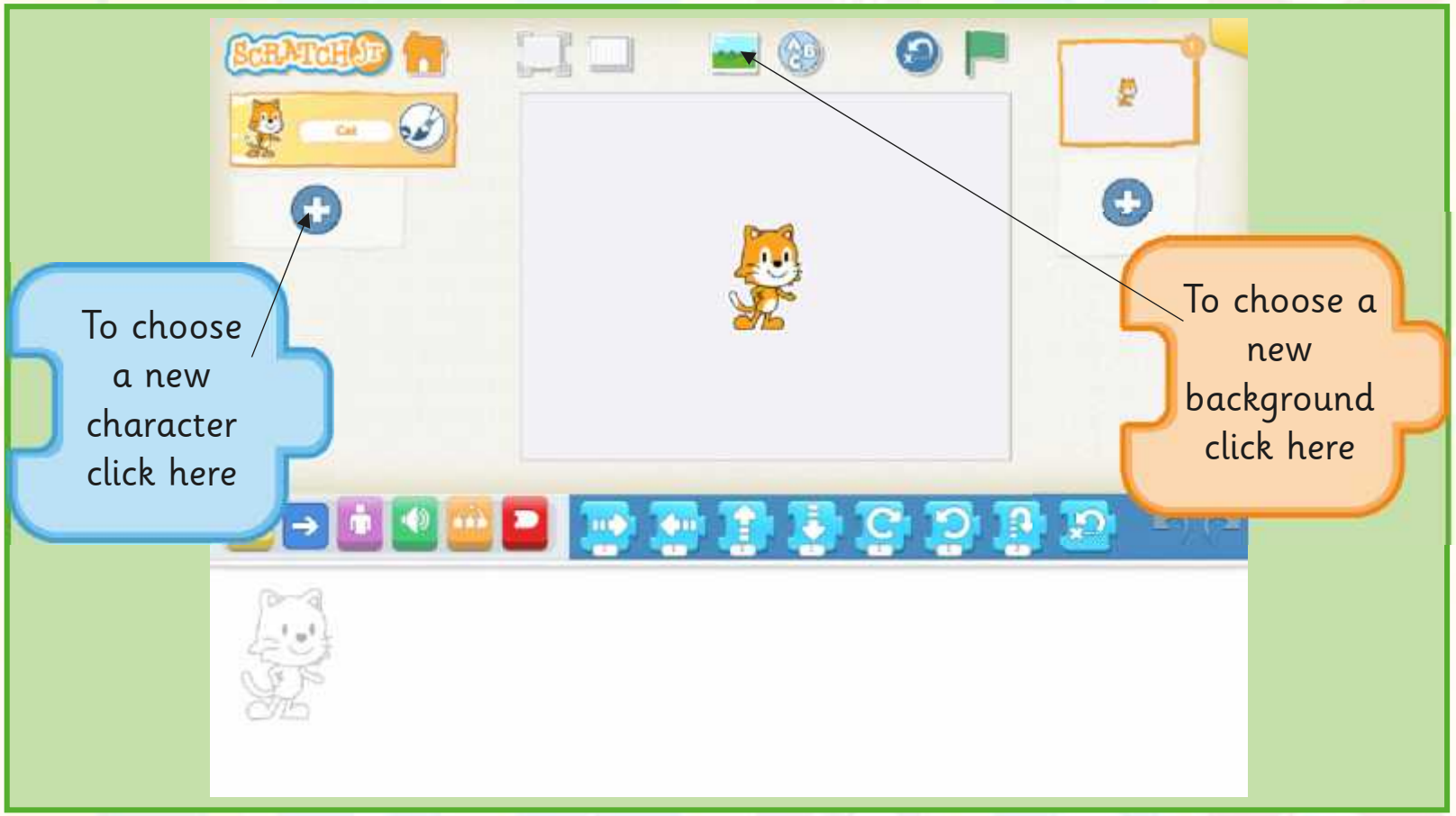


Clicking on the Home icon takes you to 'My Projects'.

Clicking on the + symbol starts a new project.

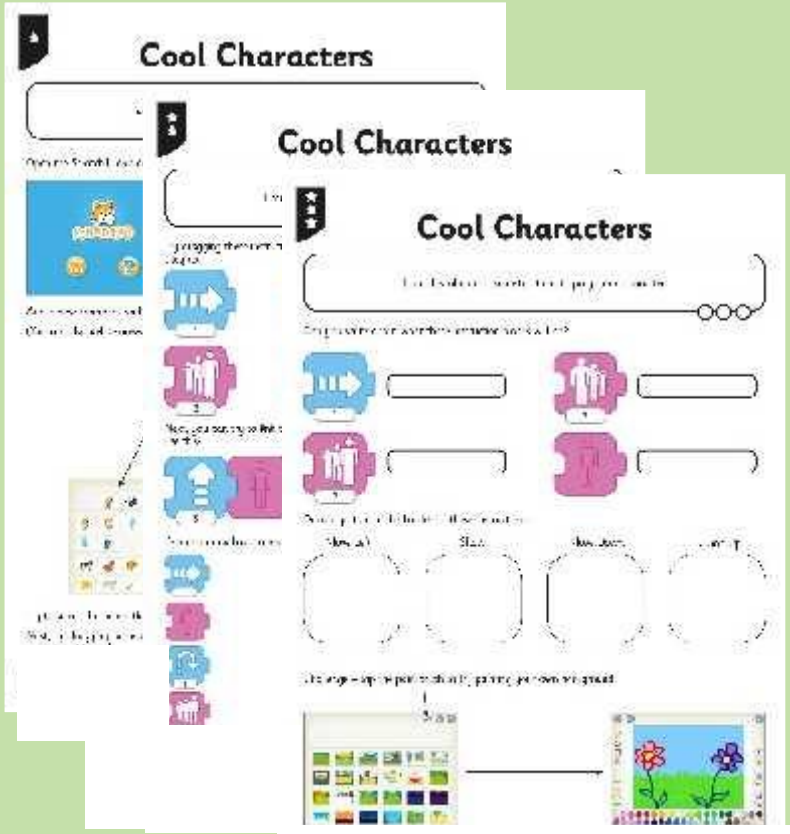
Starting a New Project

(Changing Characters and Backgrounds)



Cool Character and Brilliant Backgrounds

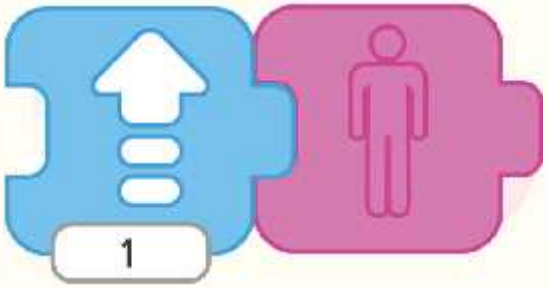
Your challenge is to open the app and start a new project.
Then choose a new character and background to add.

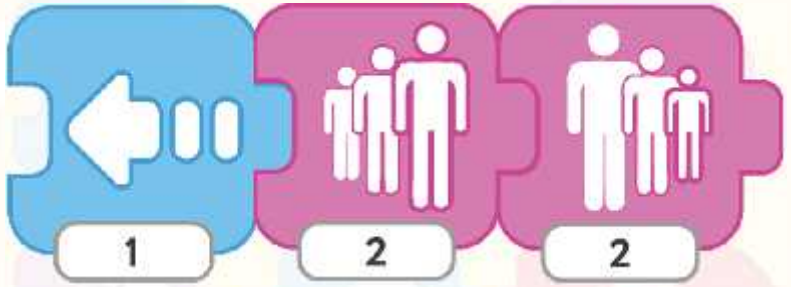


The Cool Characters Activity Sheet has some other challenges for you to try afterwards.

Instruction Blocks for Characters

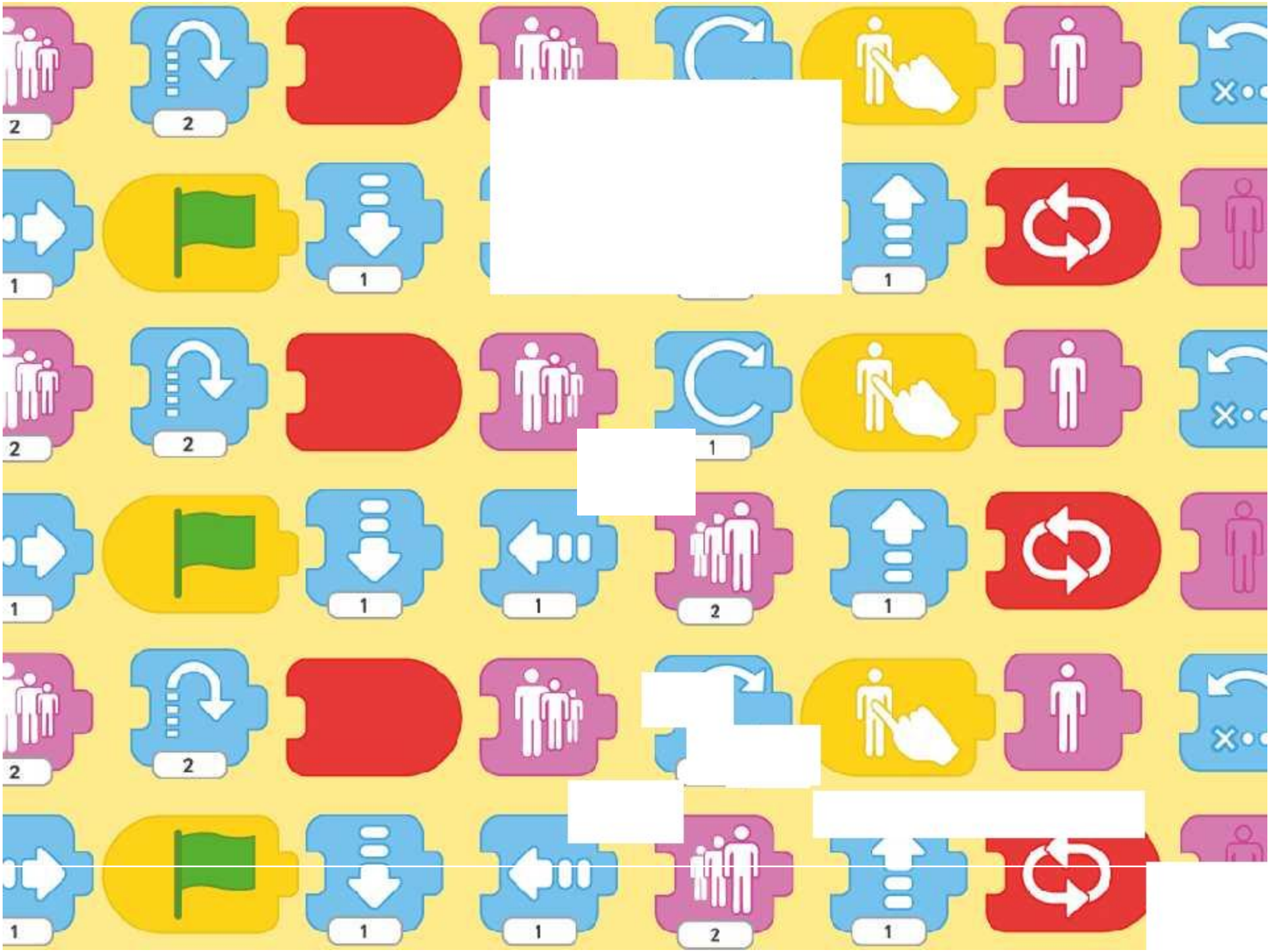
Can you remember what effect these blocks would have on a character?





Aim

I can describe and use instructions to program a character.

Success Criteria

- I can open the ScratchJr app and use buttons to navigate.
- I can add and remove characters and backgrounds.
- I can edit characters and backgrounds.
- I can describe the effect of at least three instruction blocks on a character.