

A green-bordered square containing a grid of colorful Scratch Jr icons. A central green cloud-like shape contains the text "Scratch Jr Challenge Cards". A white rectangular box is positioned at the bottom center of the grid.

Scratch Jr

Challenge Cards

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Scratch Jr

Challenge Cards

Can you use the background paint editor to create a new background with grass and flowers?



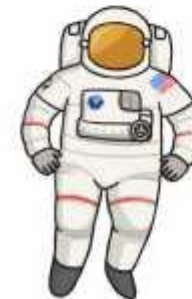
Can you add five matching sprite characters, making each one a different colour?



Create a set of instructions for an animal to move.



Create a set of instructions for a spaceman to disappear, then move on to a new background.



Create a set of instructions for a partner. Ask them to predict what will happen before running them.



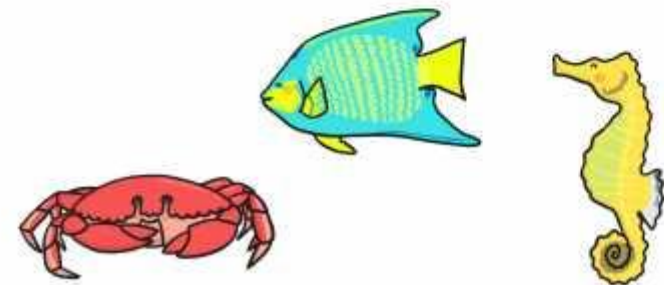
Can you use the WAIT block in a set of instructions?



Can you use the Theatre background and create instructions for actors on stage?



Can you make an underwater scene with instructions for moving sea creatures?



A green-bordered card with a background of colorful Scratch Jr icons. A central green cloud-like shape contains the text "Scratch Jr Challenge Cards".

Scratch Jr

Challenge Cards

A green-bordered card with a background of colorful Scratch Jr icons. A central green cloud-like shape contains the text "Scratch Jr Challenge Cards".

Scratch Jr

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A green-bordered card with a background of colorful Scratch Jr icons. A central green cloud-like shape contains the text "Scratch Jr Challenge Cards".

Scratch Jr

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A green-bordered card with a background of colorful Scratch Jr icons. A central green cloud-like shape contains the text "Scratch Jr Challenge Cards".

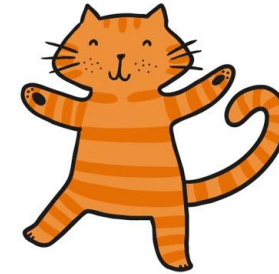
Scratch Jr

Challenge Cards

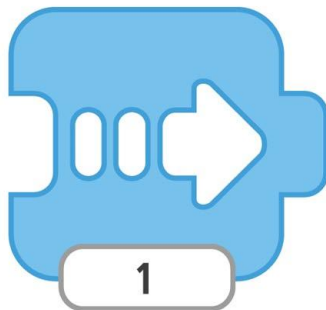
Can you use the background paint editor to create a new background with grass and flowers?



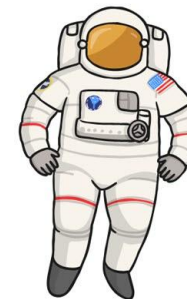
Can you add five matching sprite characters, making each one a different colour?



Create a set of instructions for an animal to move.



Create a set of instructions for a spaceman to disappear, then move on to a new background.



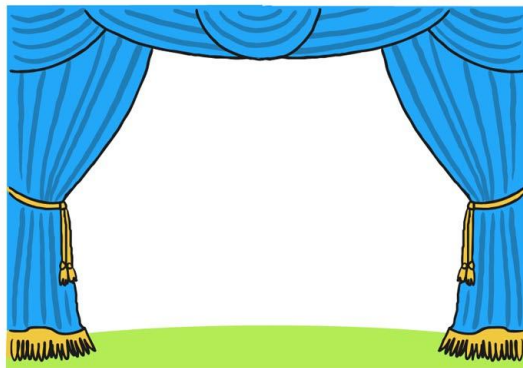
Create a set of instructions for a partner. Ask them to predict what will happen before running them.



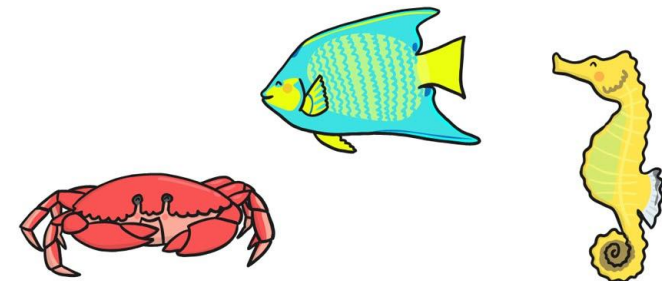
Can you use the WAIT block in a set of instructions?




Can you use the Theatre background and create instructions for actors on stage?



Can you make an underwater scene with instructions for moving sea creatures?





Programm

ing with S

Scratch Jr





Programm

ing with

Scratch Jr



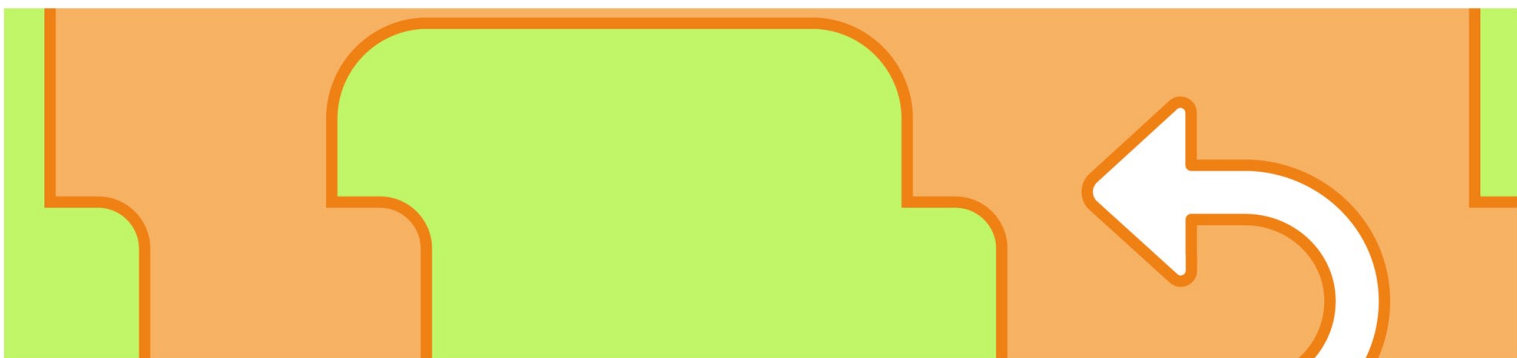
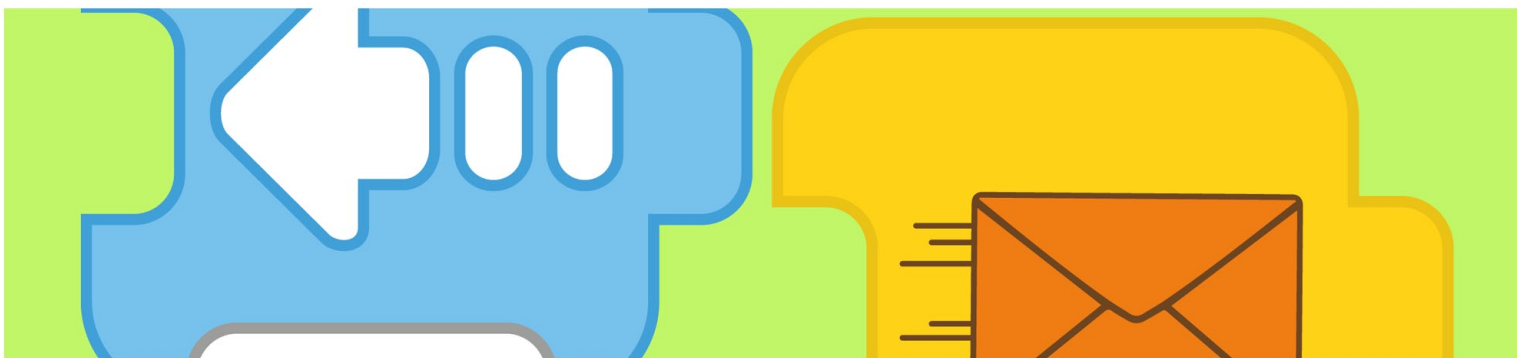
Programm

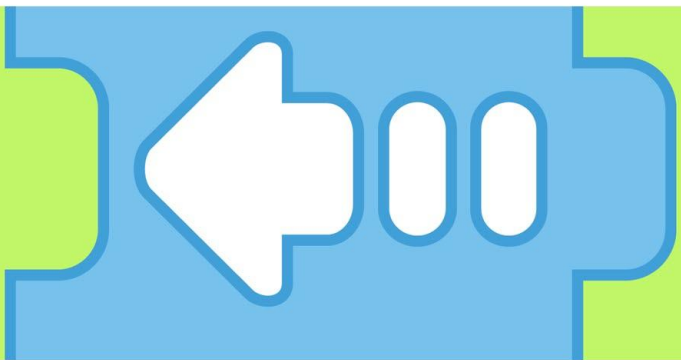
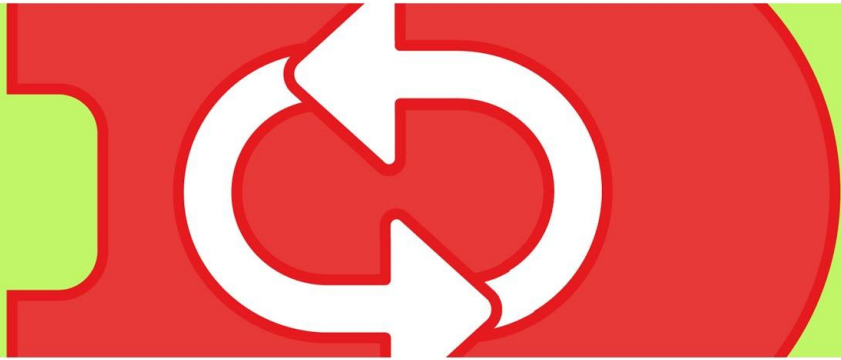
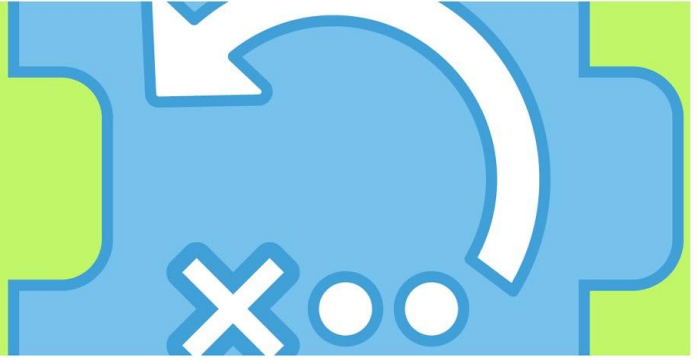
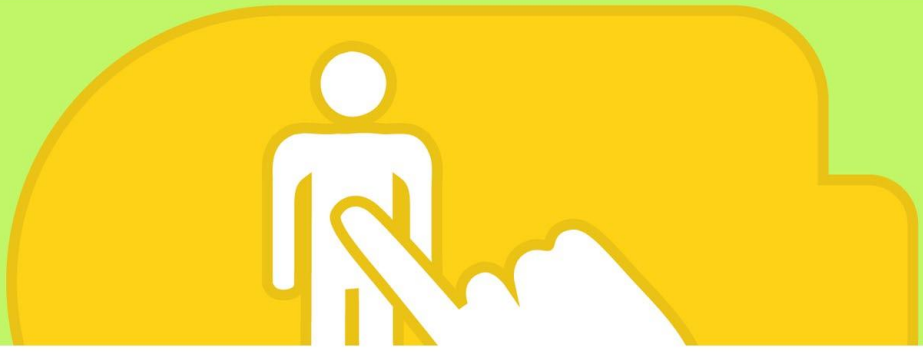


Learning with

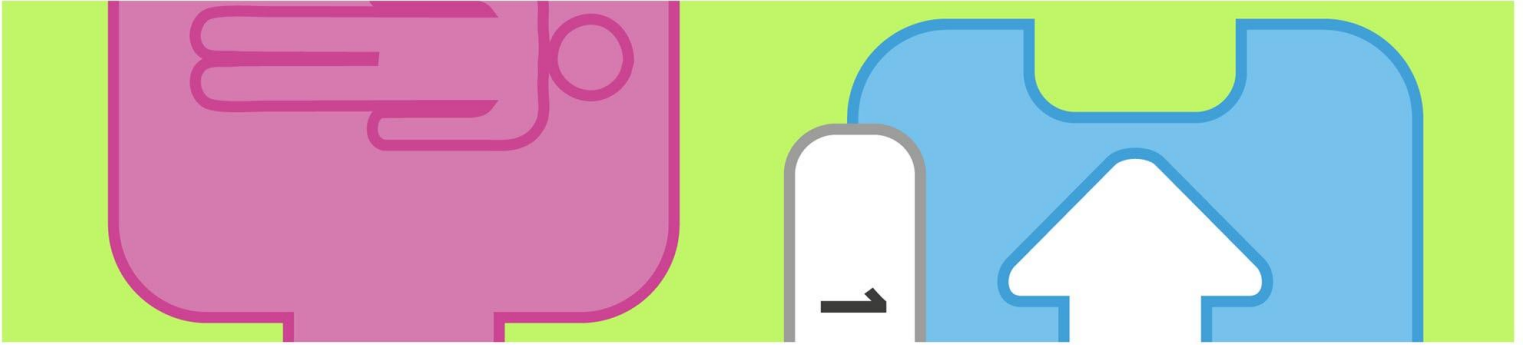
The image features a central illustration of an orange tabby cat with a black outline, looking forward. The cat is wearing a striped orange and white shirt. The background is a light green color with various colorful icons scattered around, including speech bubbles, arrows, and human figures. The text "Scratch Jr" is written in a large, white, rounded font with a thick black outline, positioned across the middle of the image.

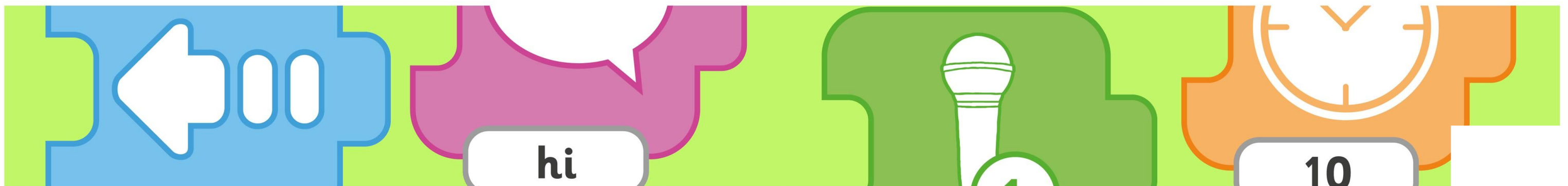
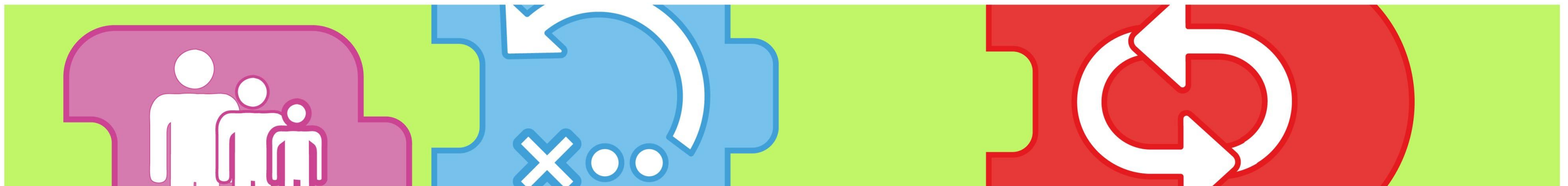
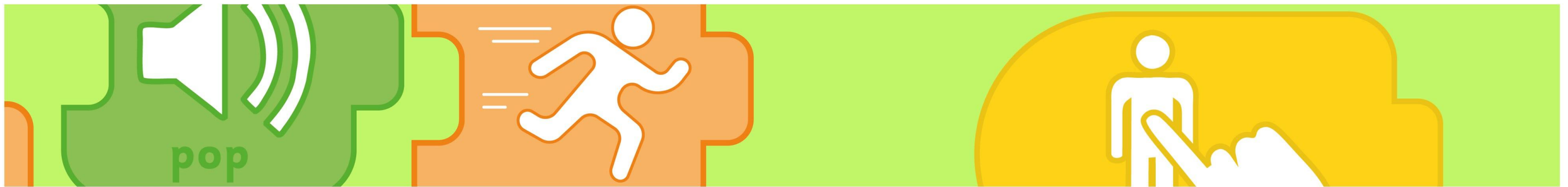
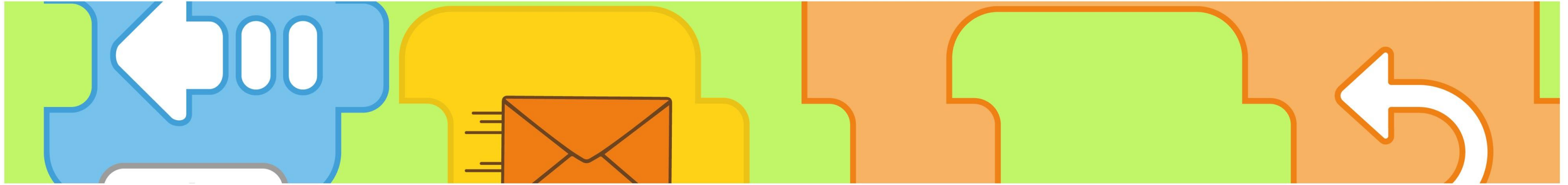
Scratch Jr

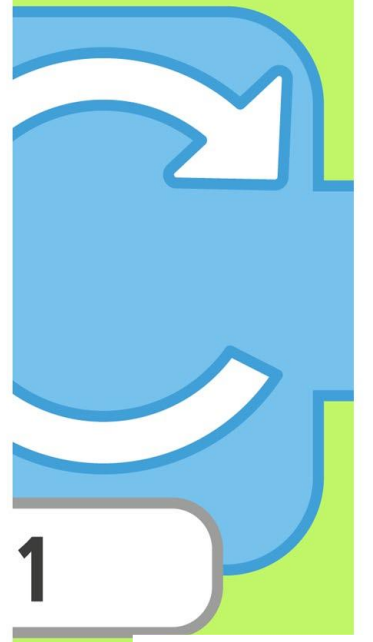
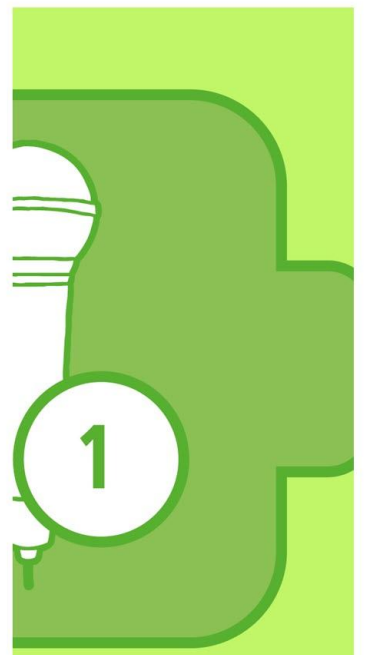
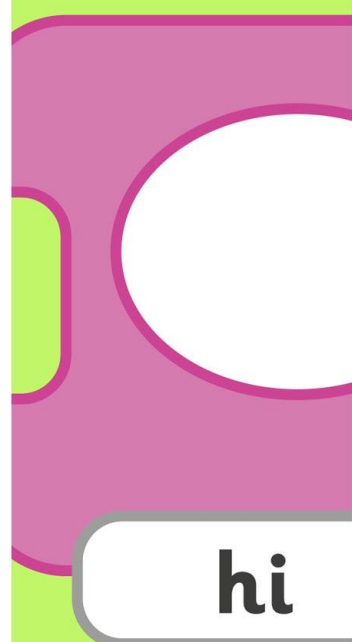
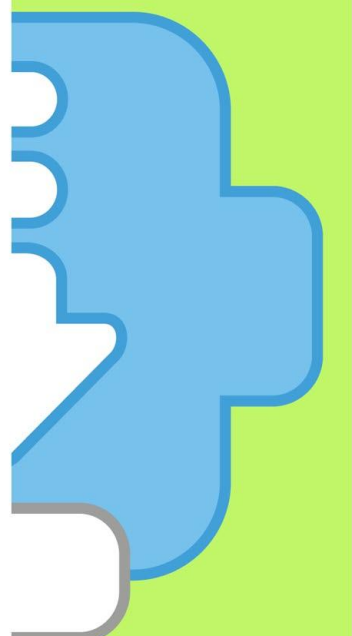
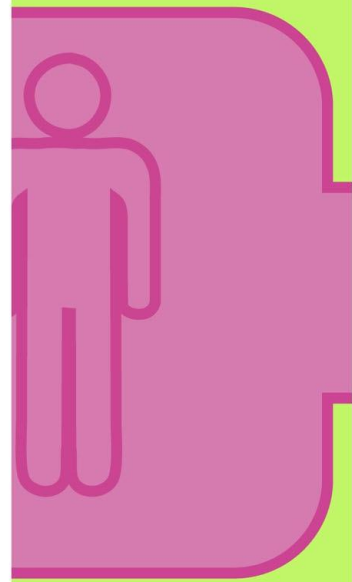
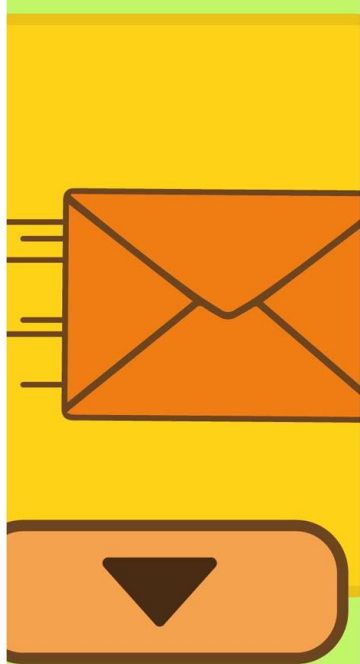
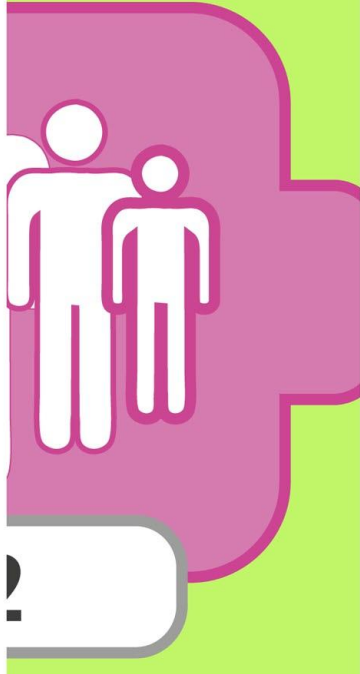
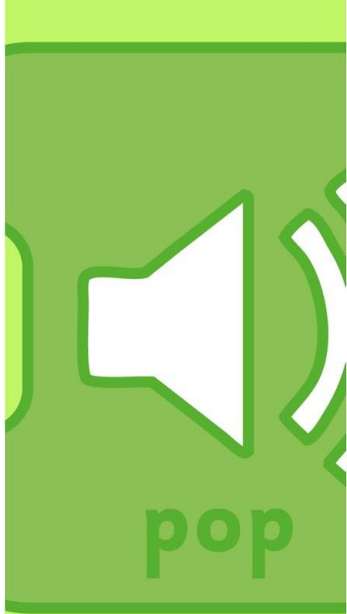
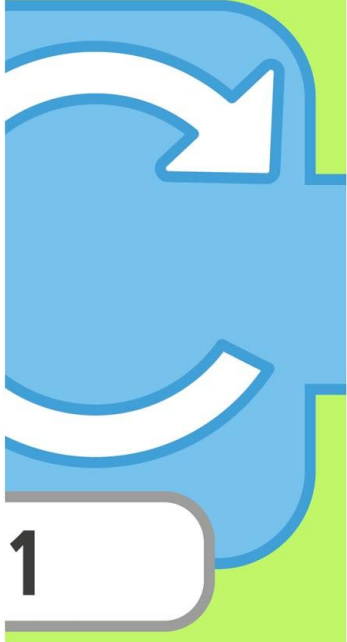
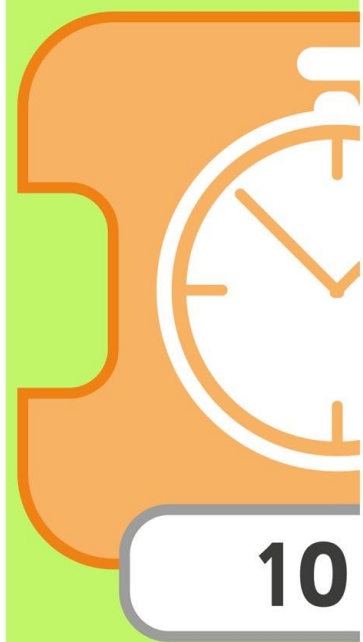
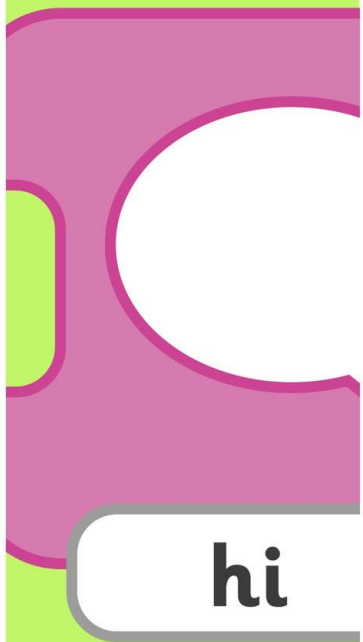
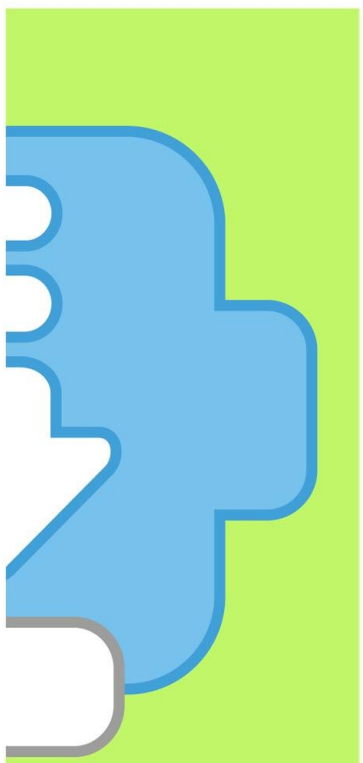












Programm

tablet

background

sprite

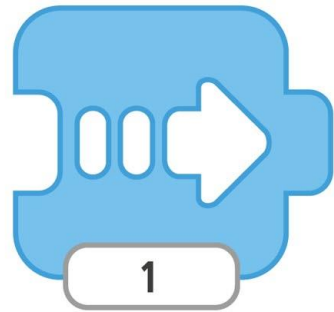
cha

sequence

Learning with Scratch Jr

blocks

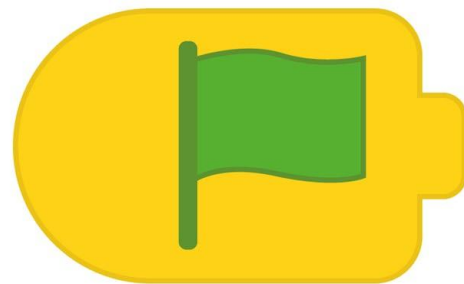
Character



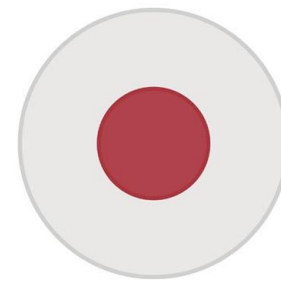
move



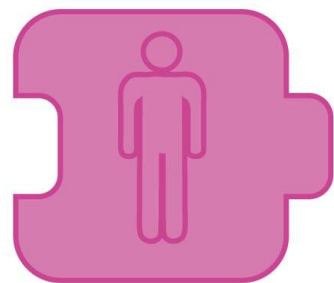
sound



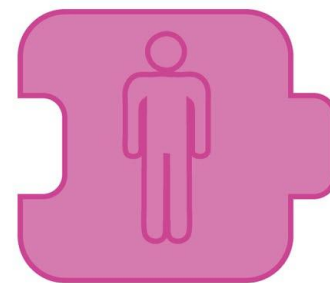
start



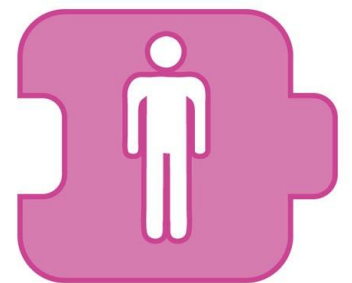
record



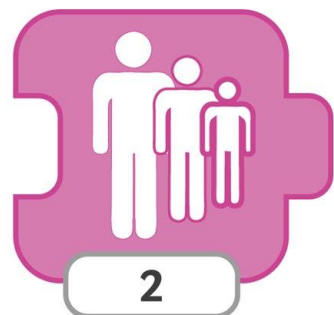
hide



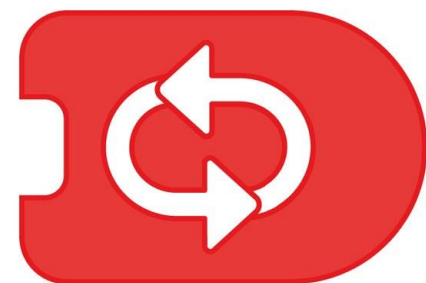
invisible



show



shrink



repeat forever



repeat



wait

Programm

tablet

background

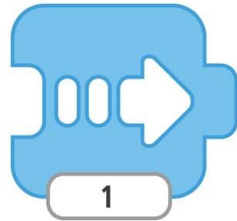
sprite

cha

sequence

Working with Scratch Jr

blocks



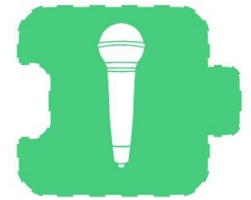
move



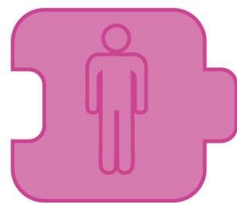
sound



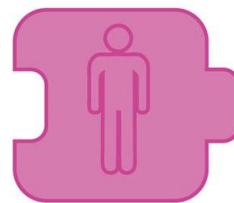
start



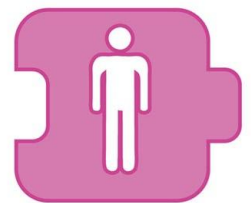
record



hide



invisible



show



shrink



repeat forever



repeat



wait

Programm

tablet

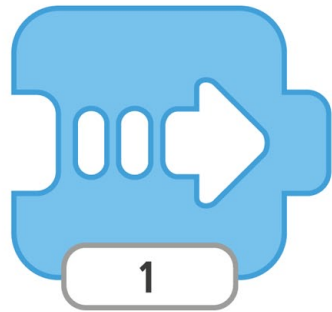
background

sprite

cha

Learning with Scratch Jr

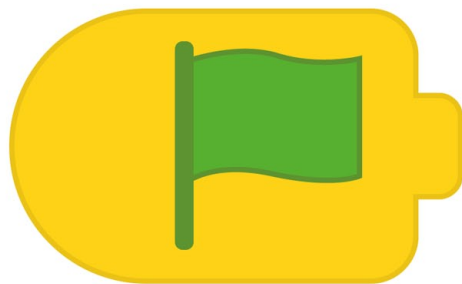
blocks



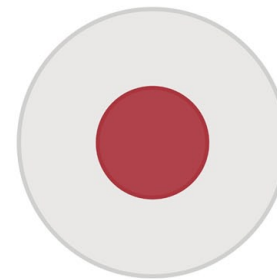
move



sound



start

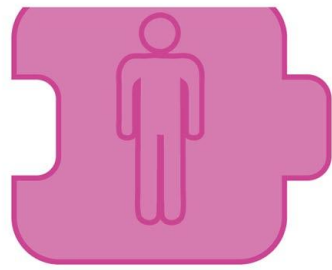


record

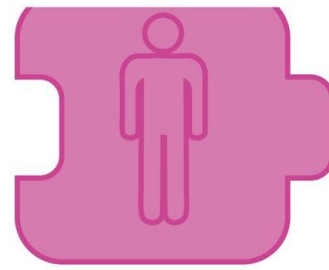
character



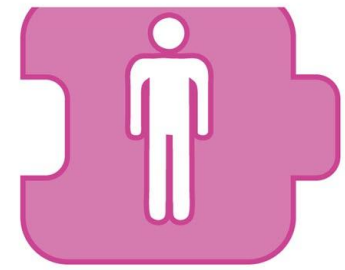
sequence



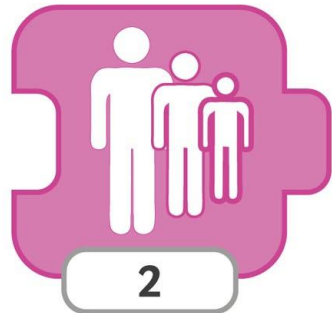
hide



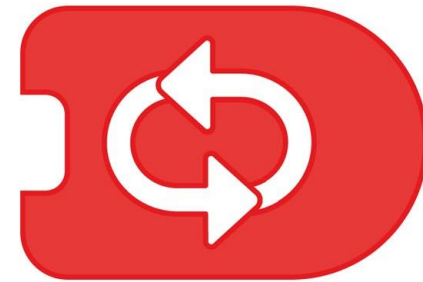
invisible



show



shrink



repeat forever

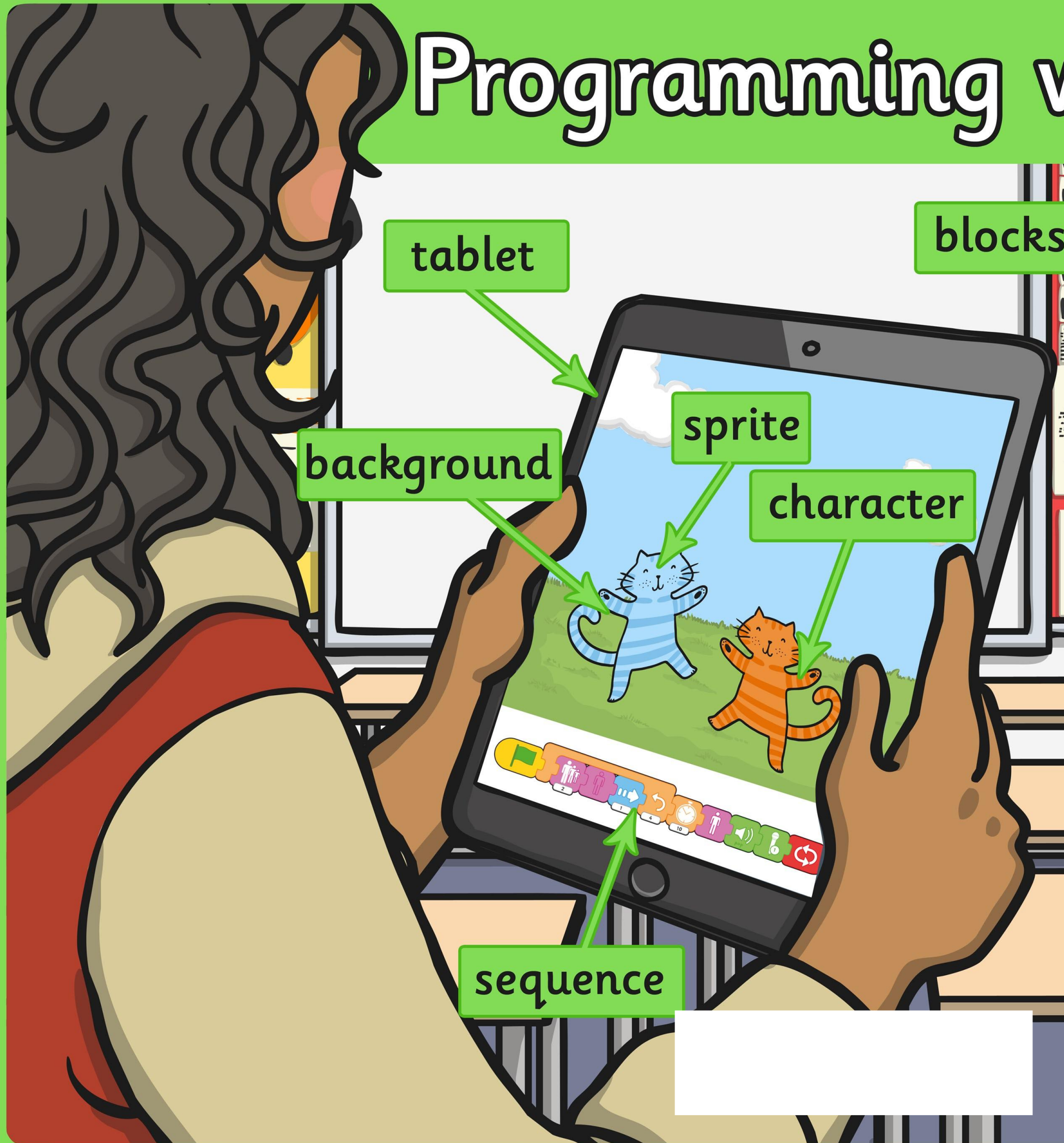


repeat



wait

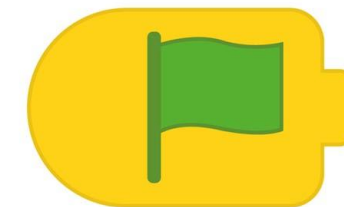
Programming with ScratchJr



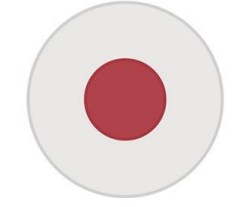
move



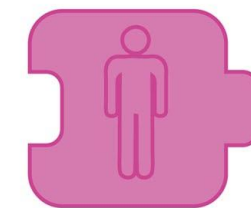
sound



start



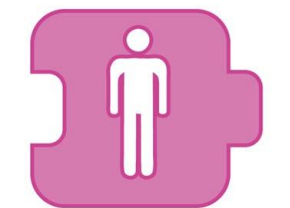
record



hide



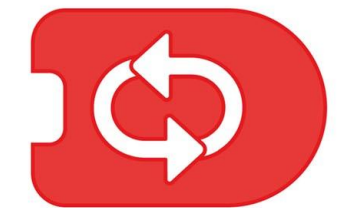
invisible



show



shrink



repeat forever

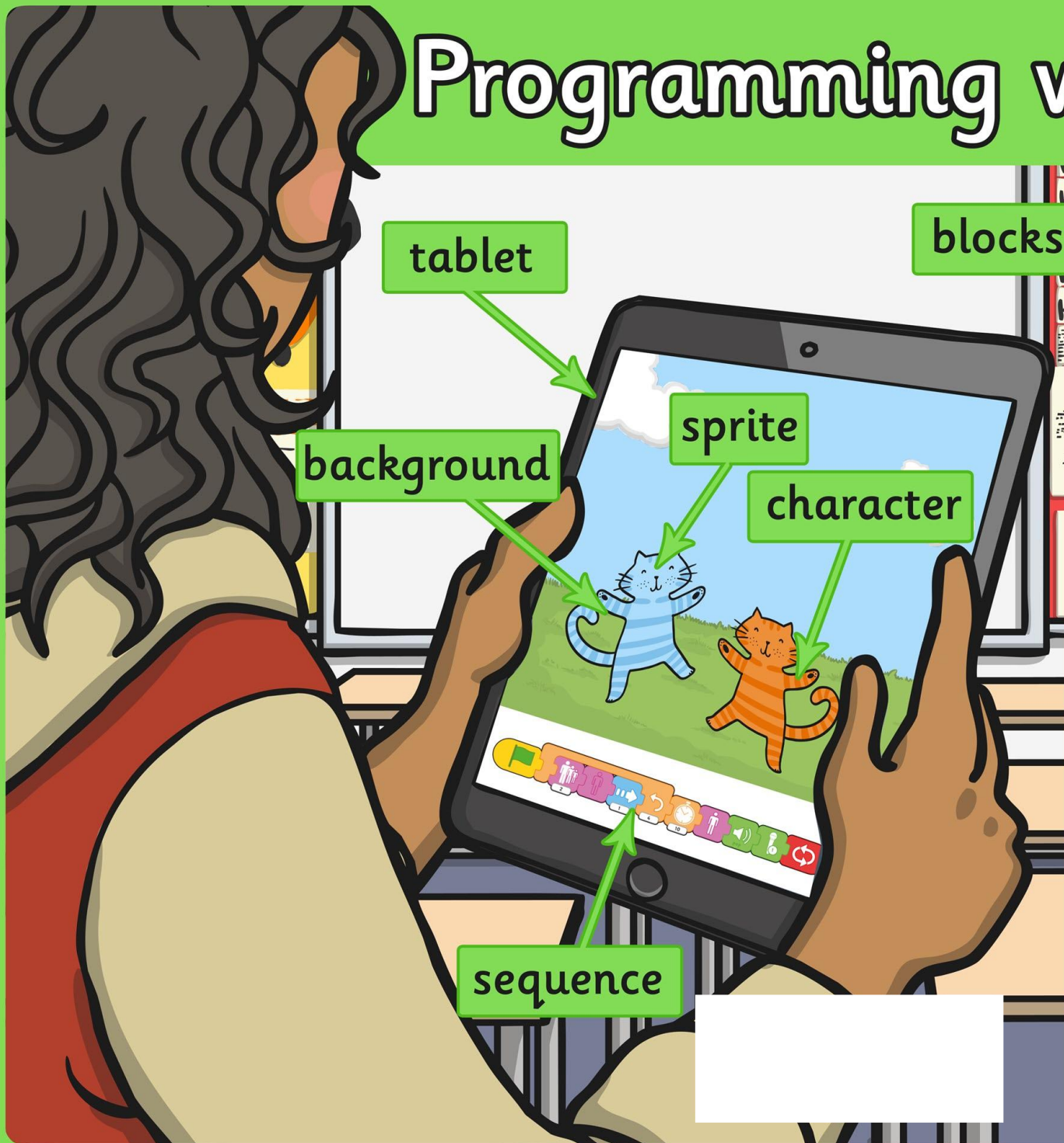


repeat



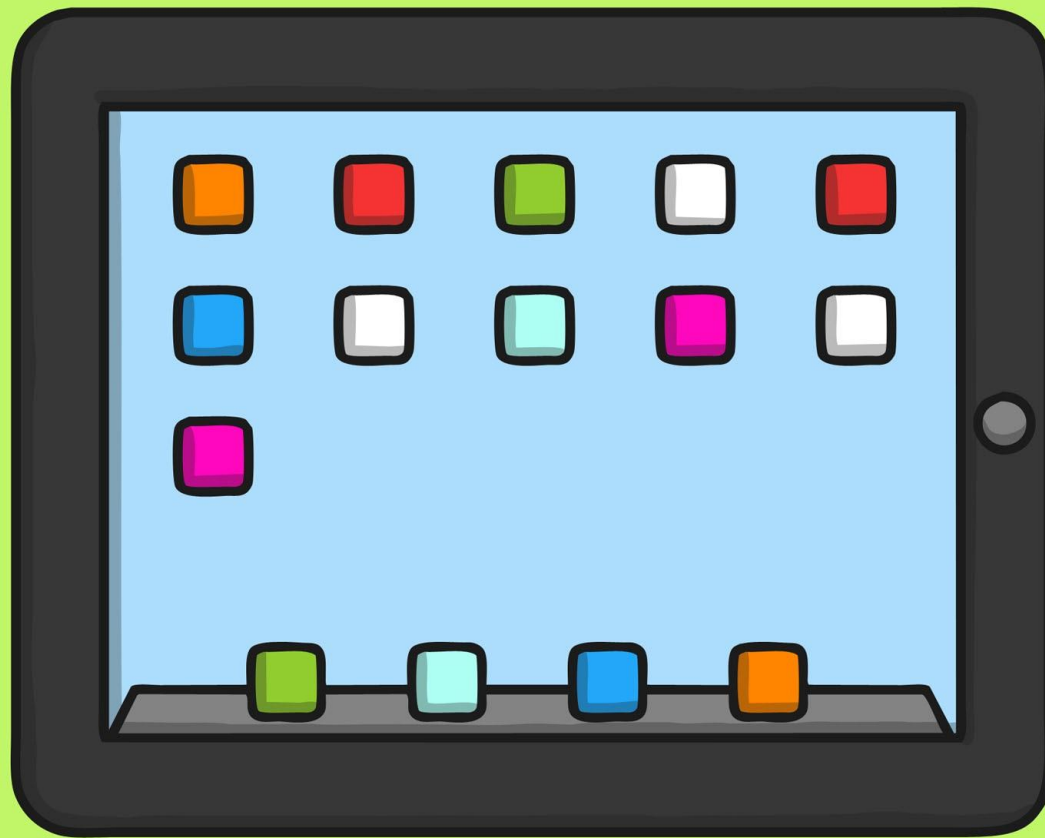
wait

Programming with ScratchJr



 move	  sound	
 start	  record	
 hide	 invisible	 show
 shrink	 repeat forever	
 repeat	 wait	

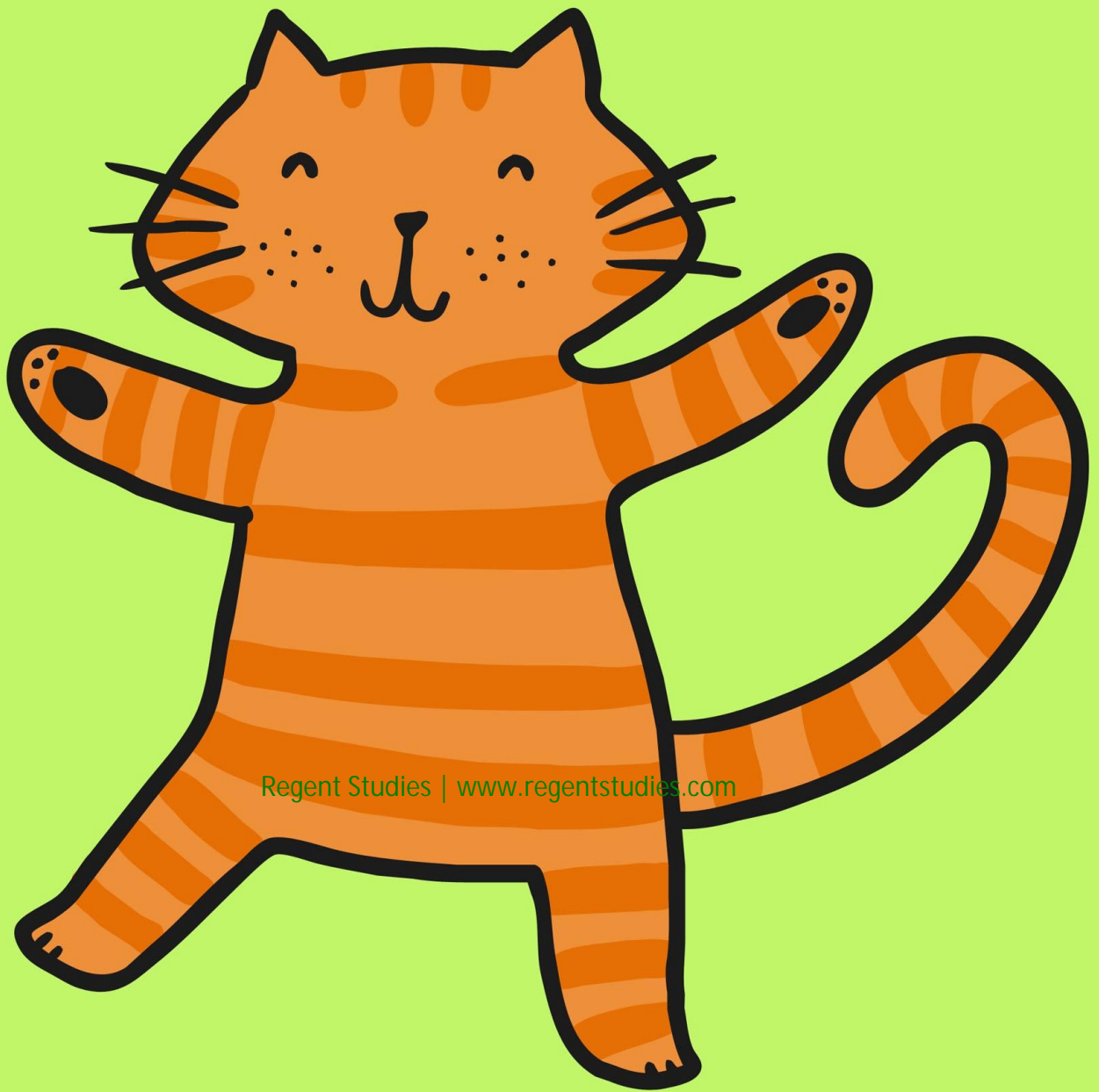
tablet



blocks

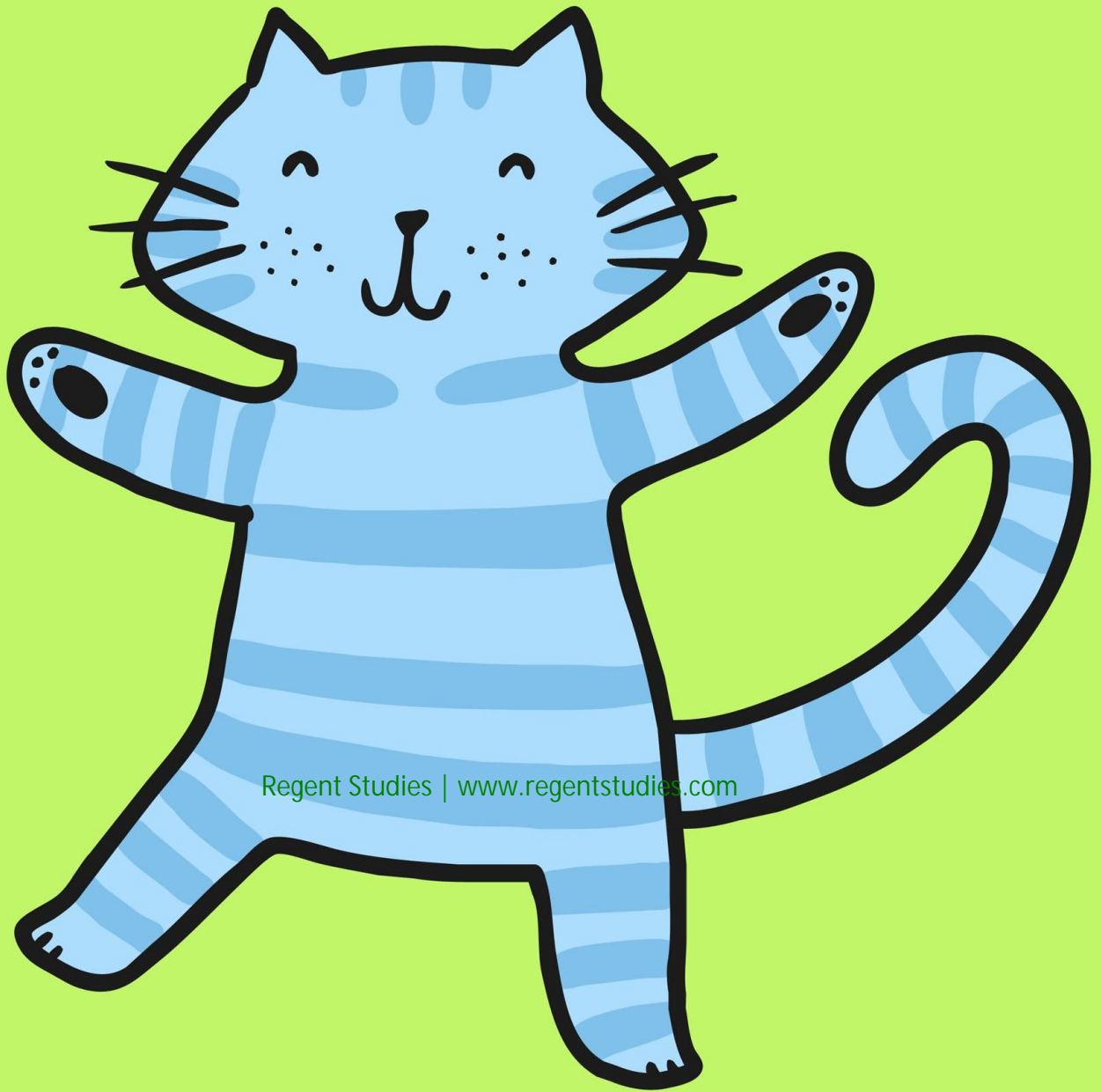


character



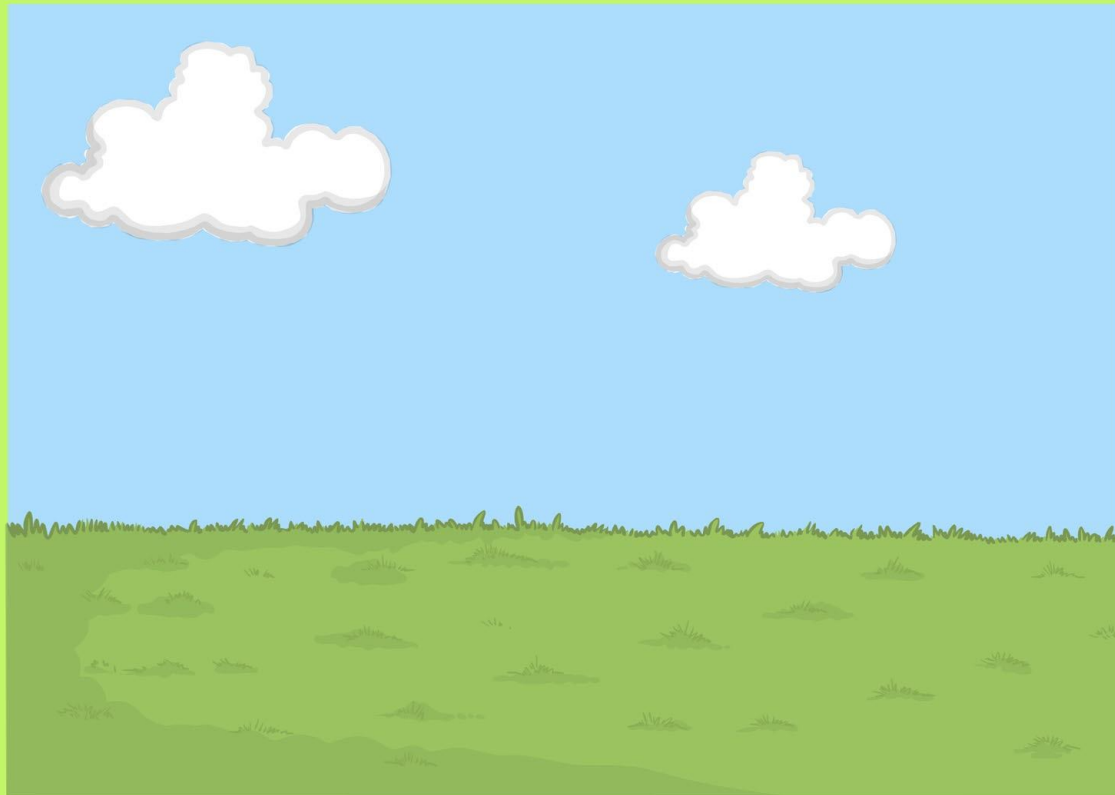
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sprite

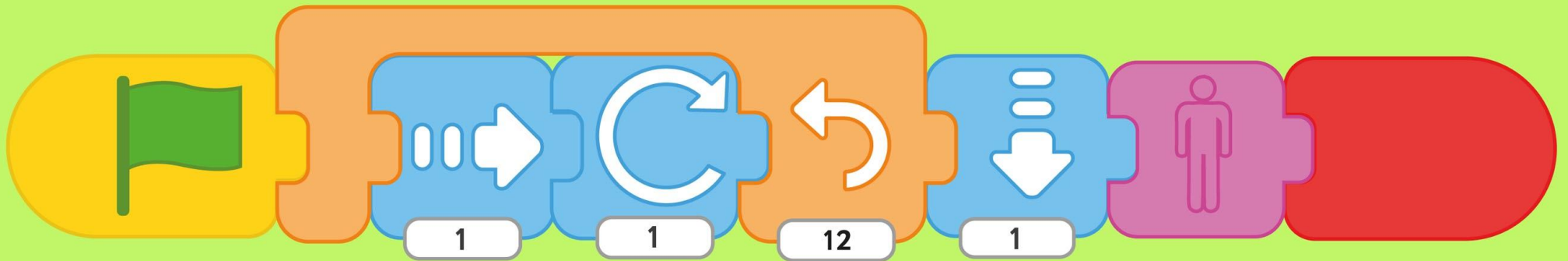


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background



sequence



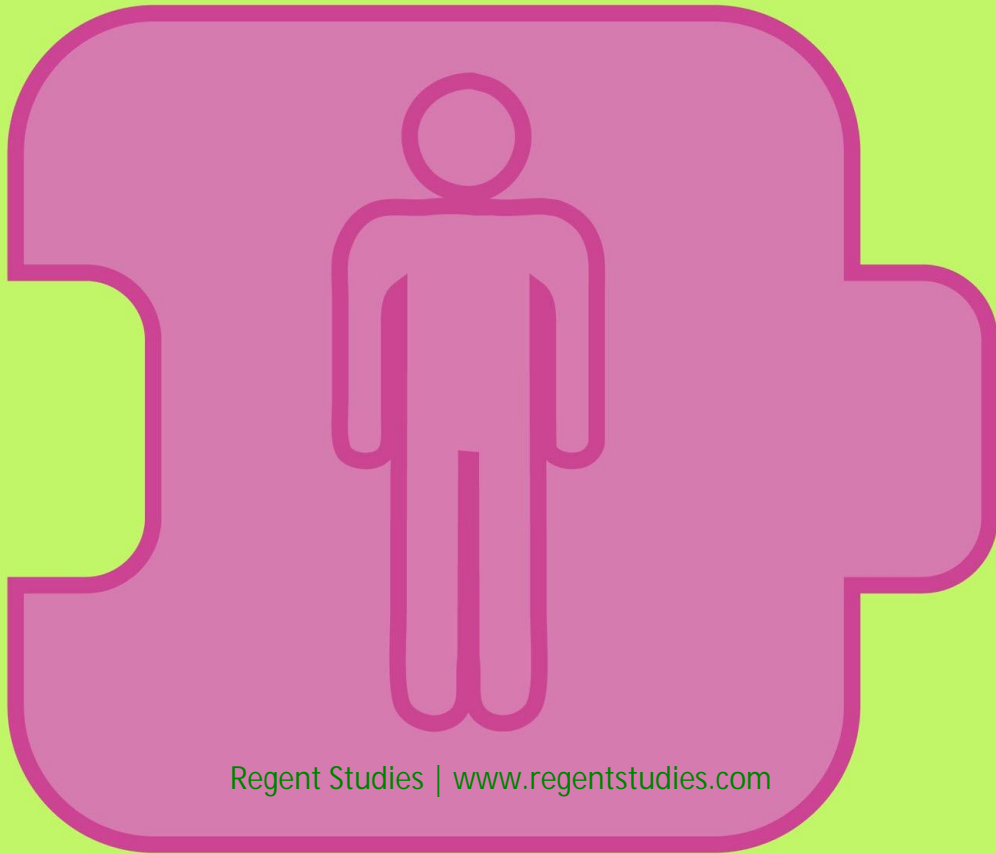
move



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9

invisible

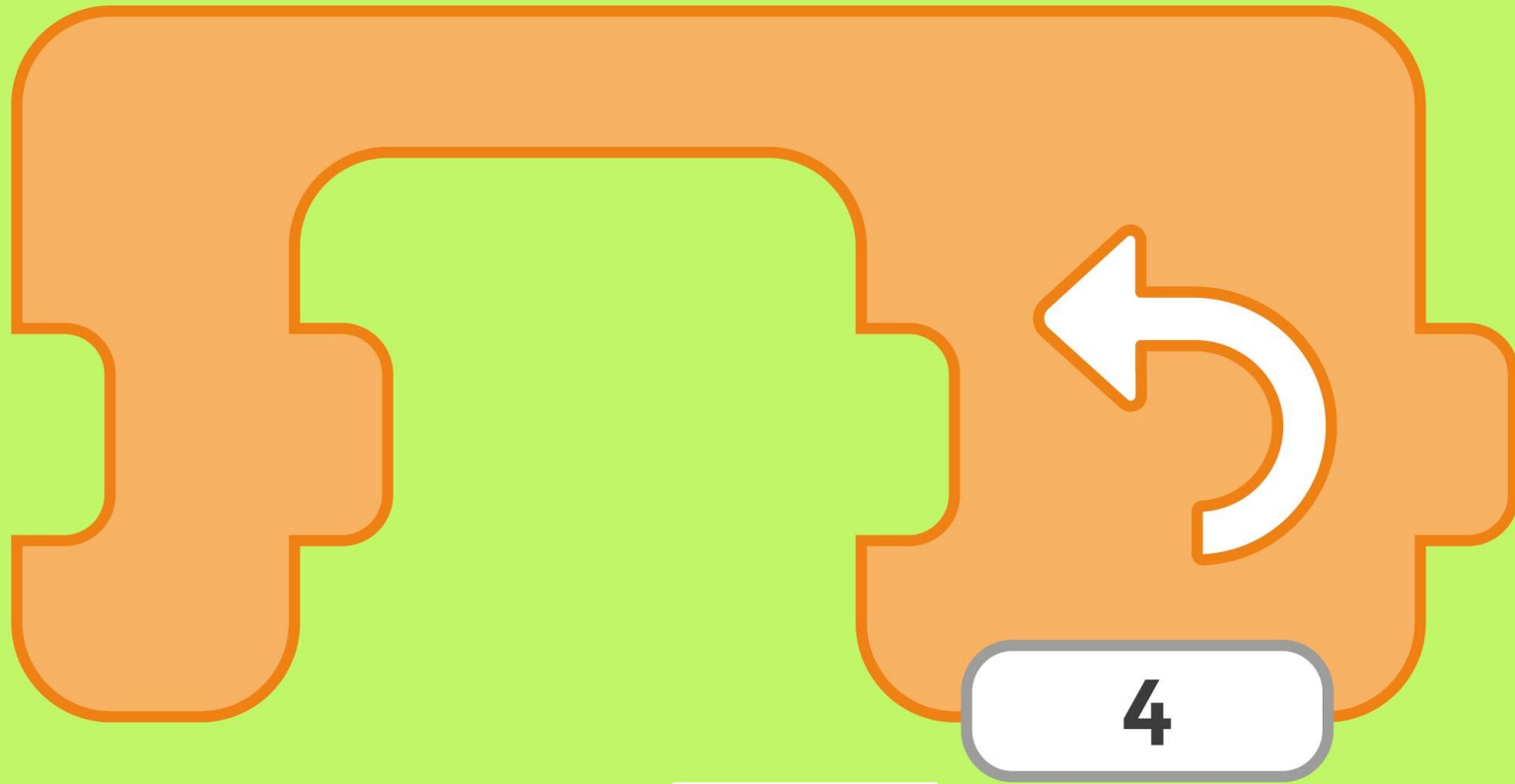


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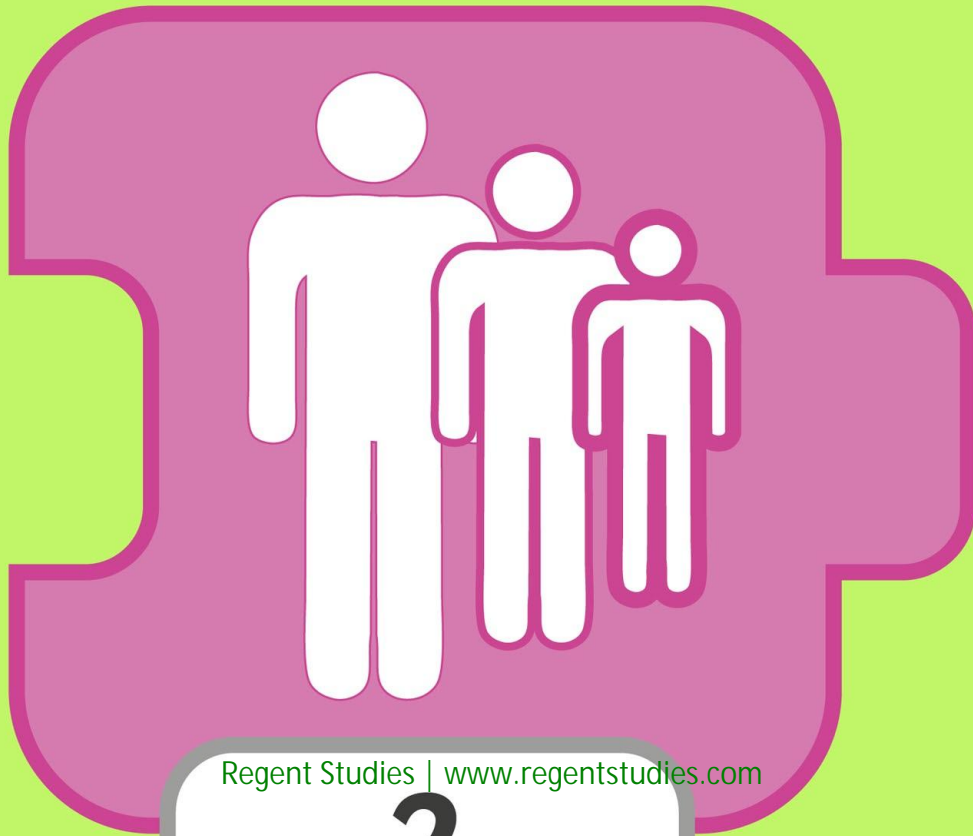
repeat forever



repeat



shrink



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2

sound



pop



wait



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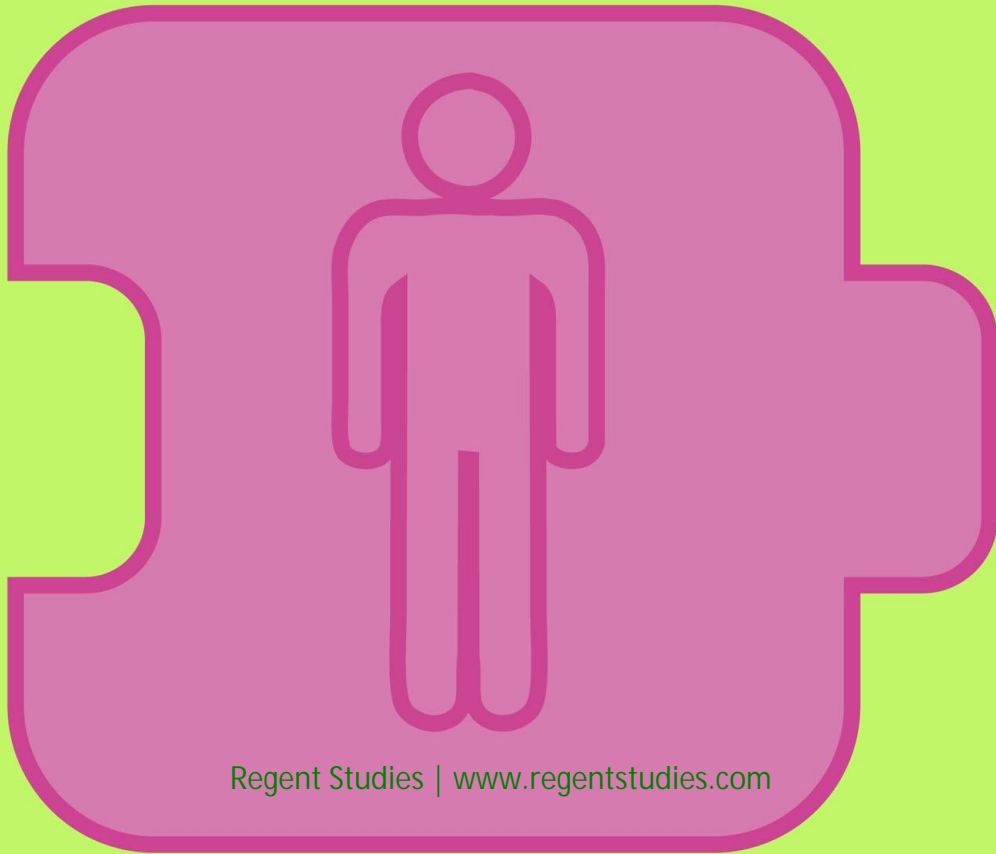
10

show



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hide

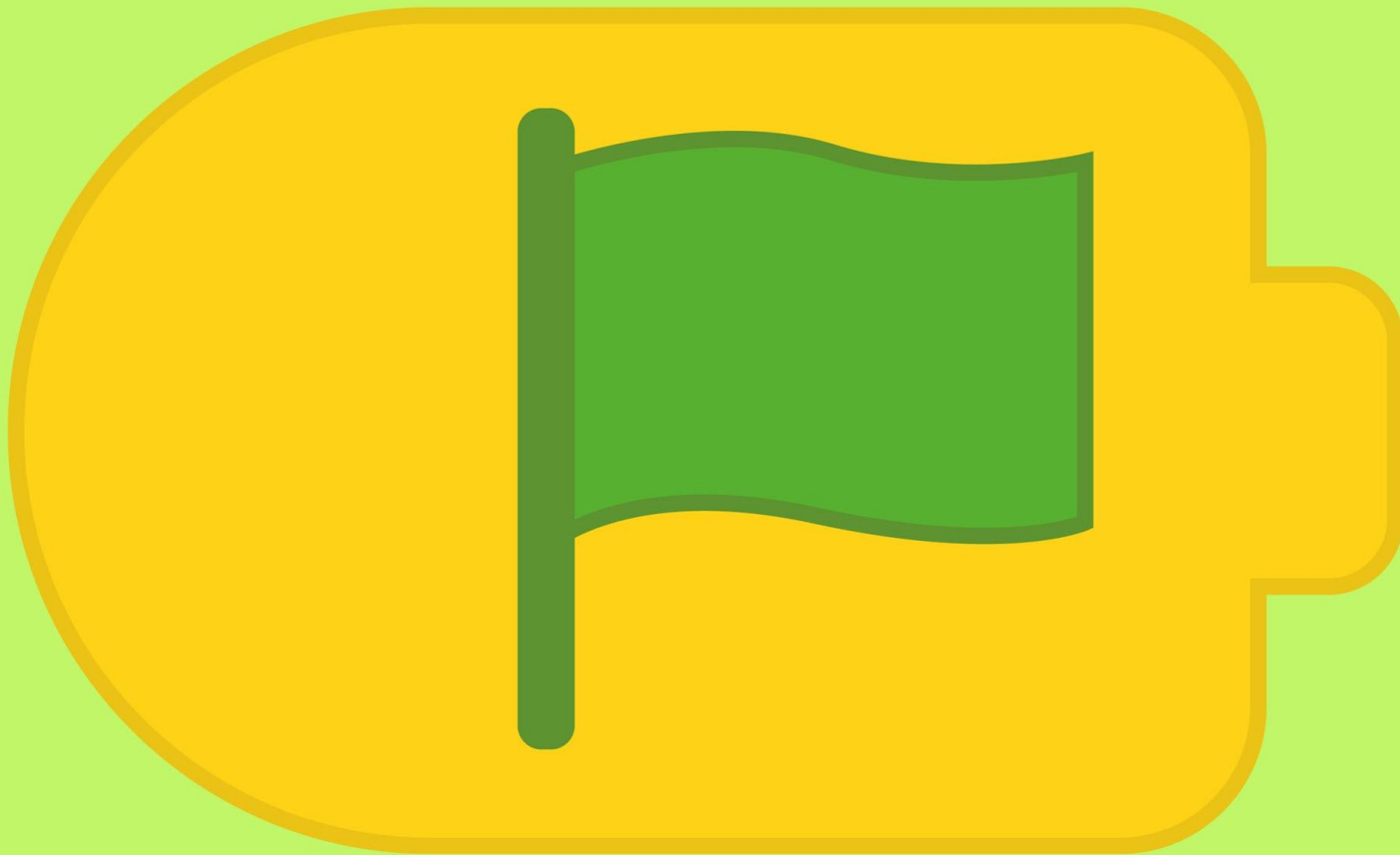


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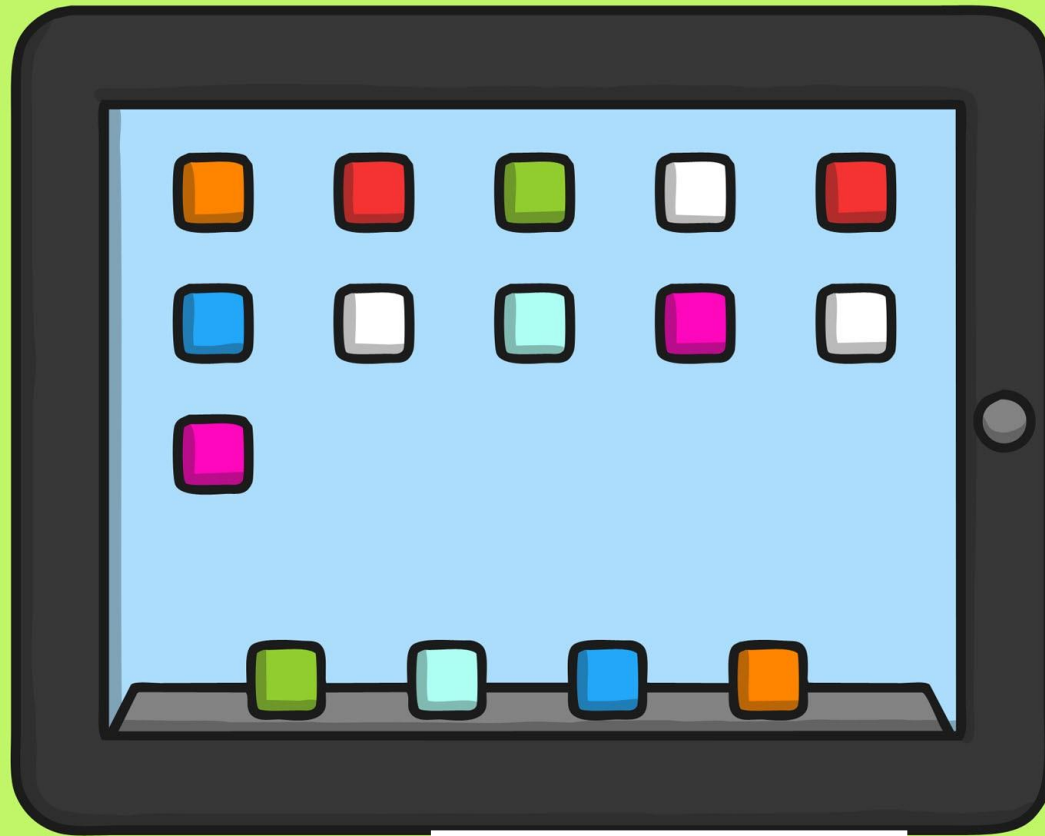
record



start



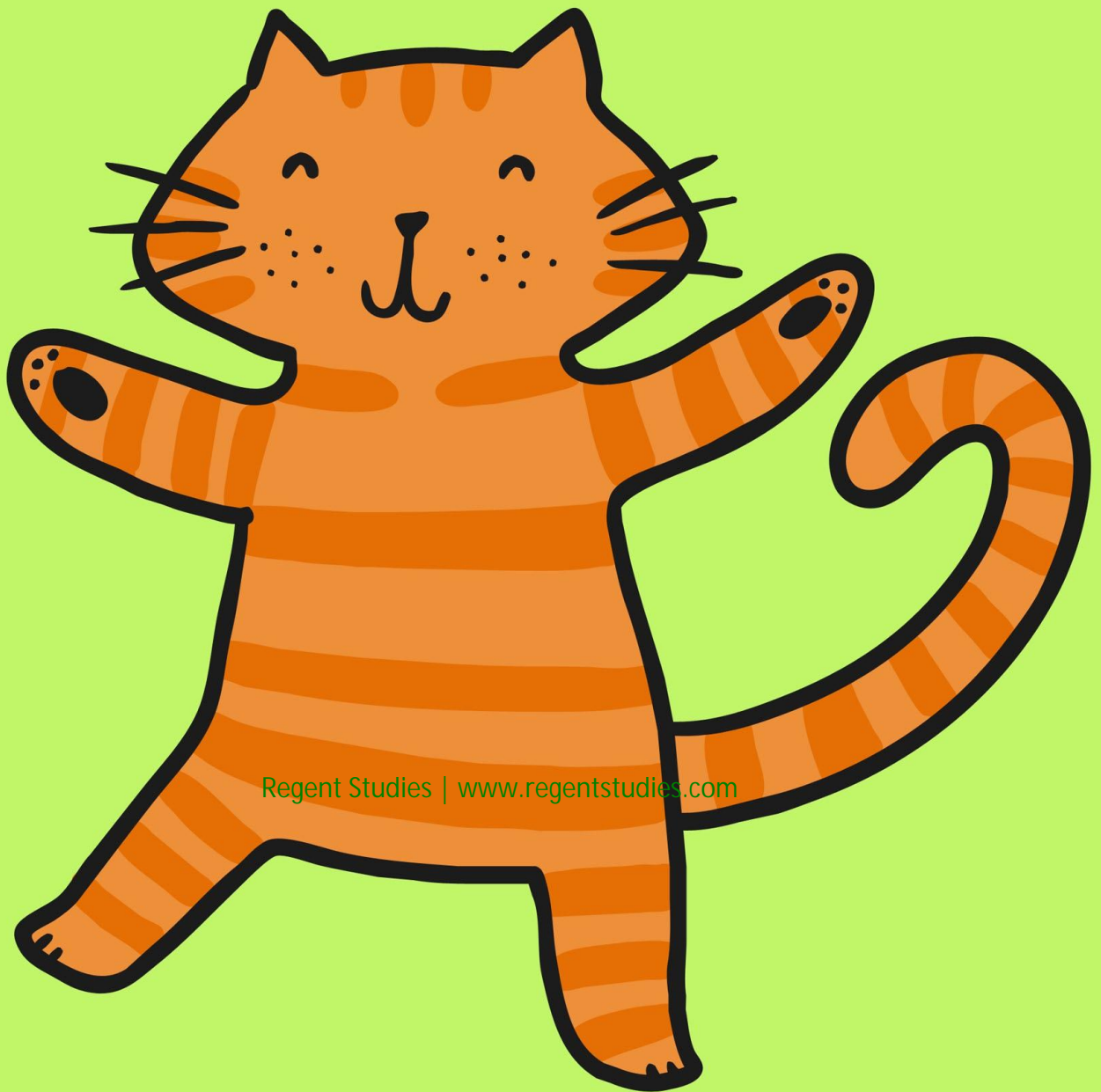
tablet



blocks

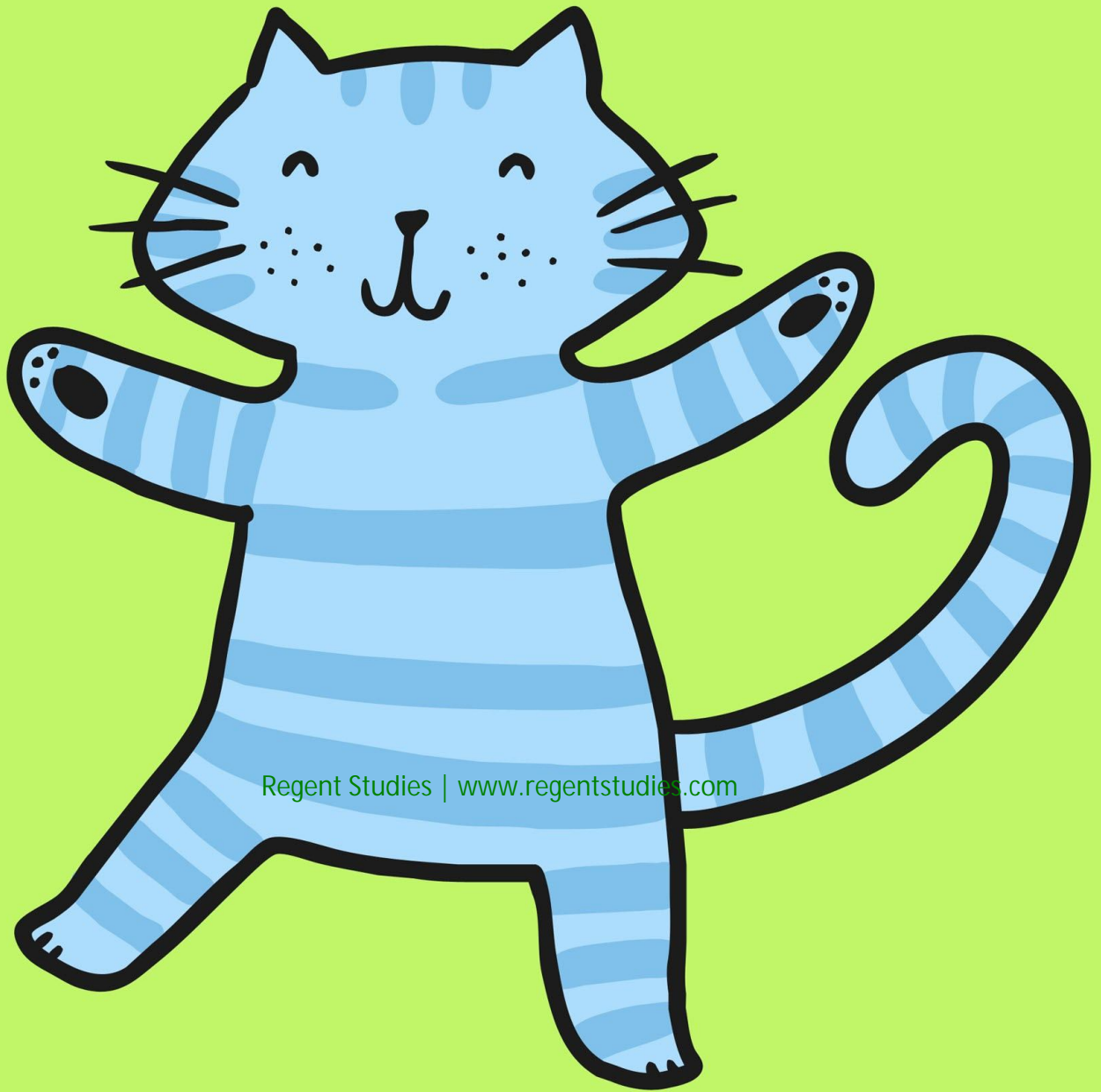


character



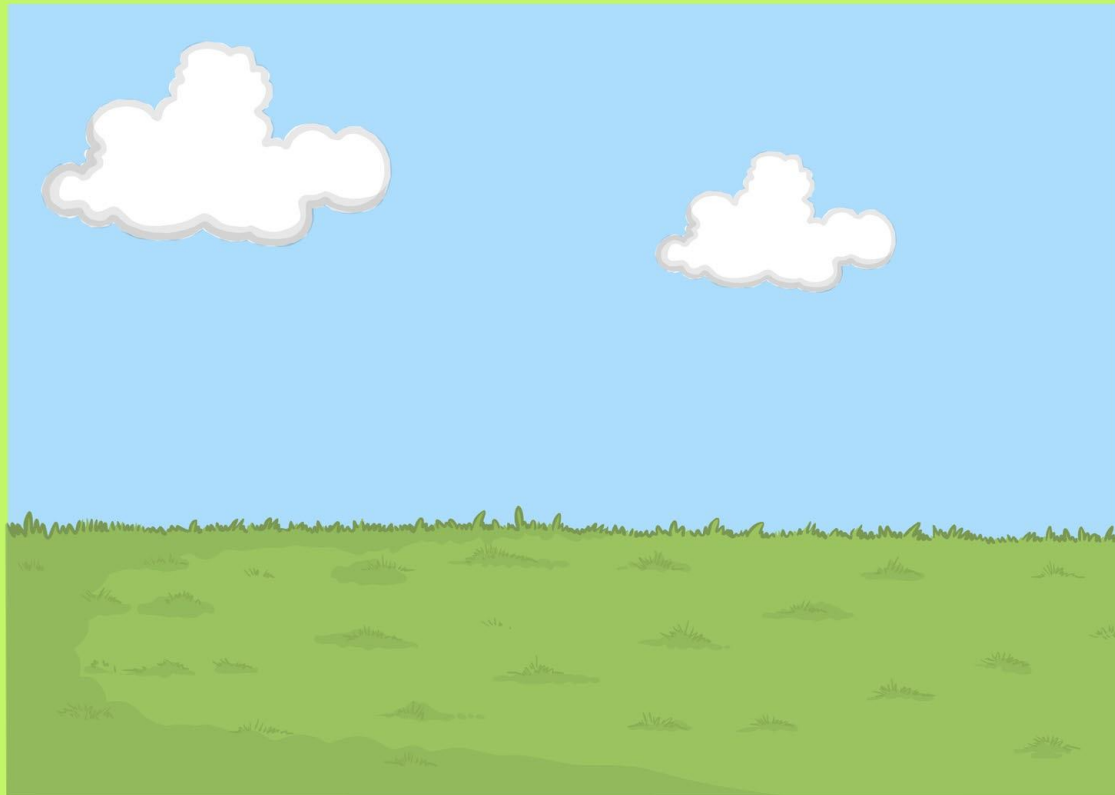
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sprite

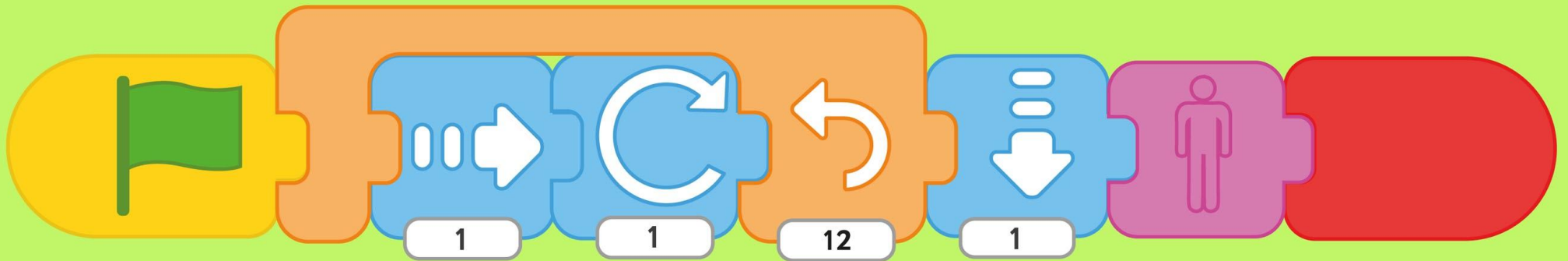


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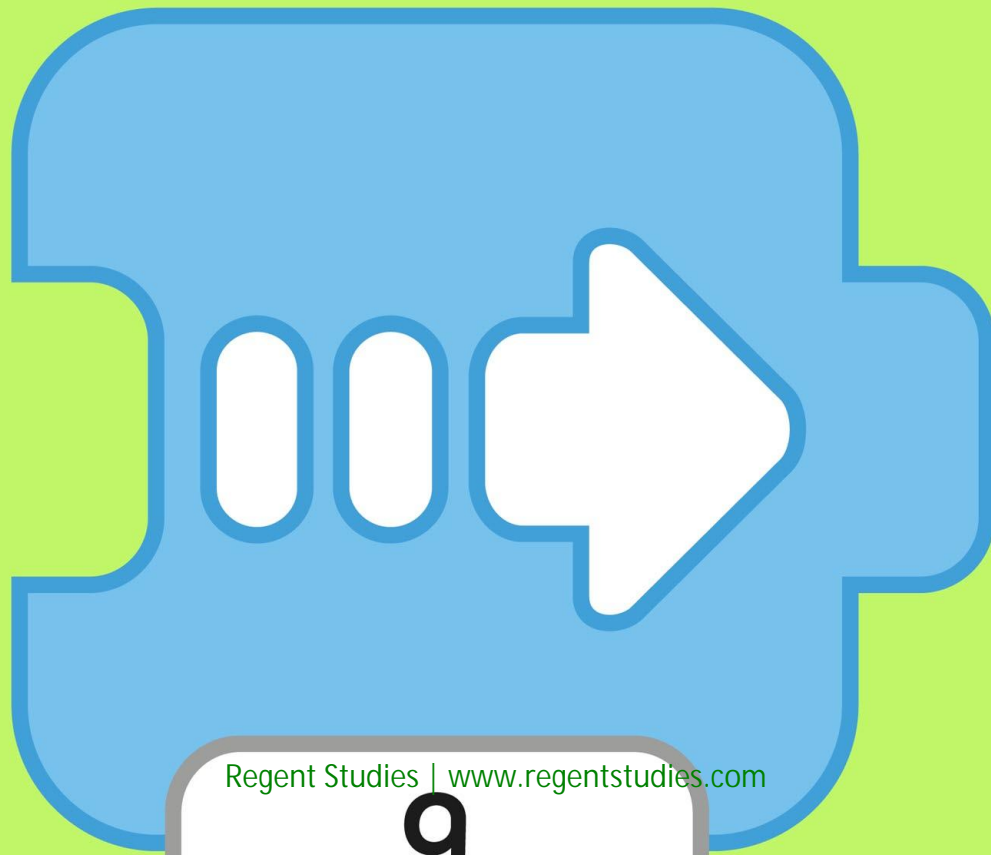
background



sequence



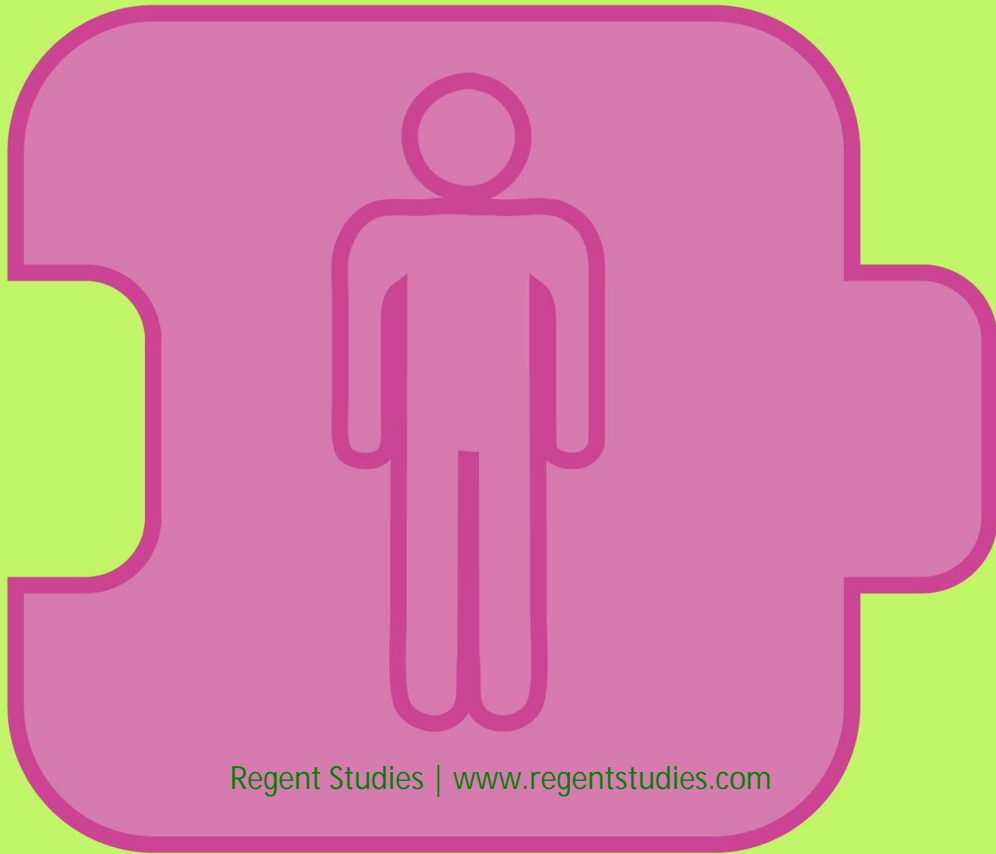
move



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9

invisible



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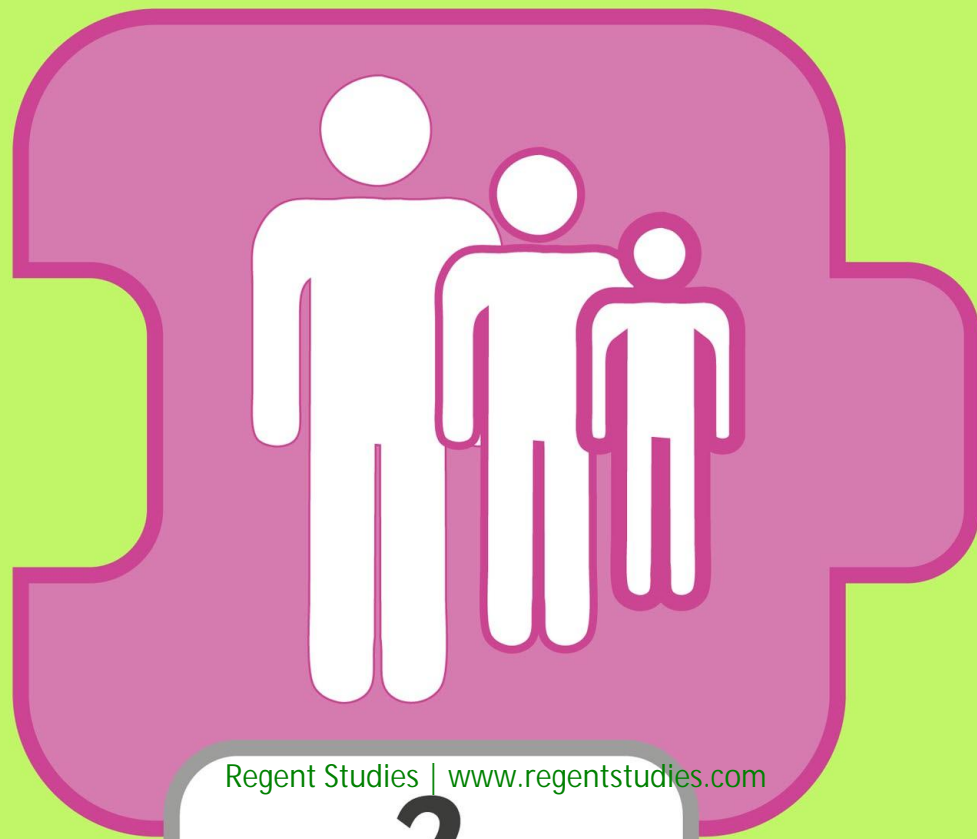
repeat forever



repeat



shrink



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2

sound



pop



wait



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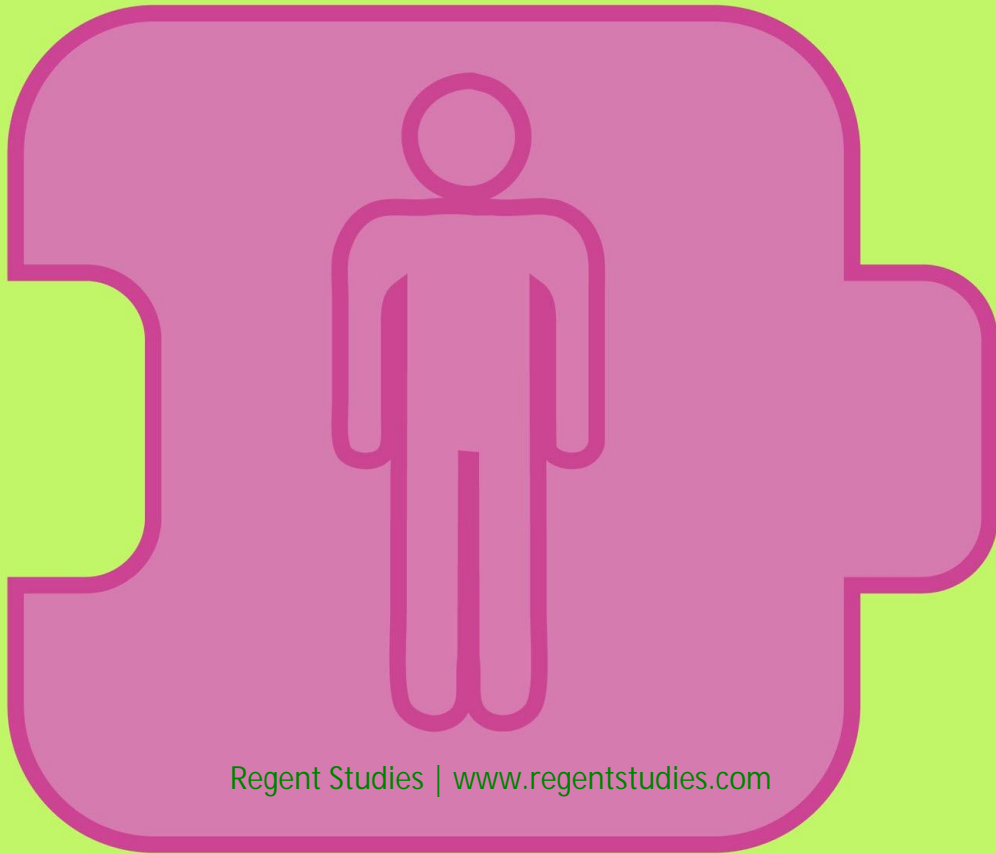
10

show



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hide



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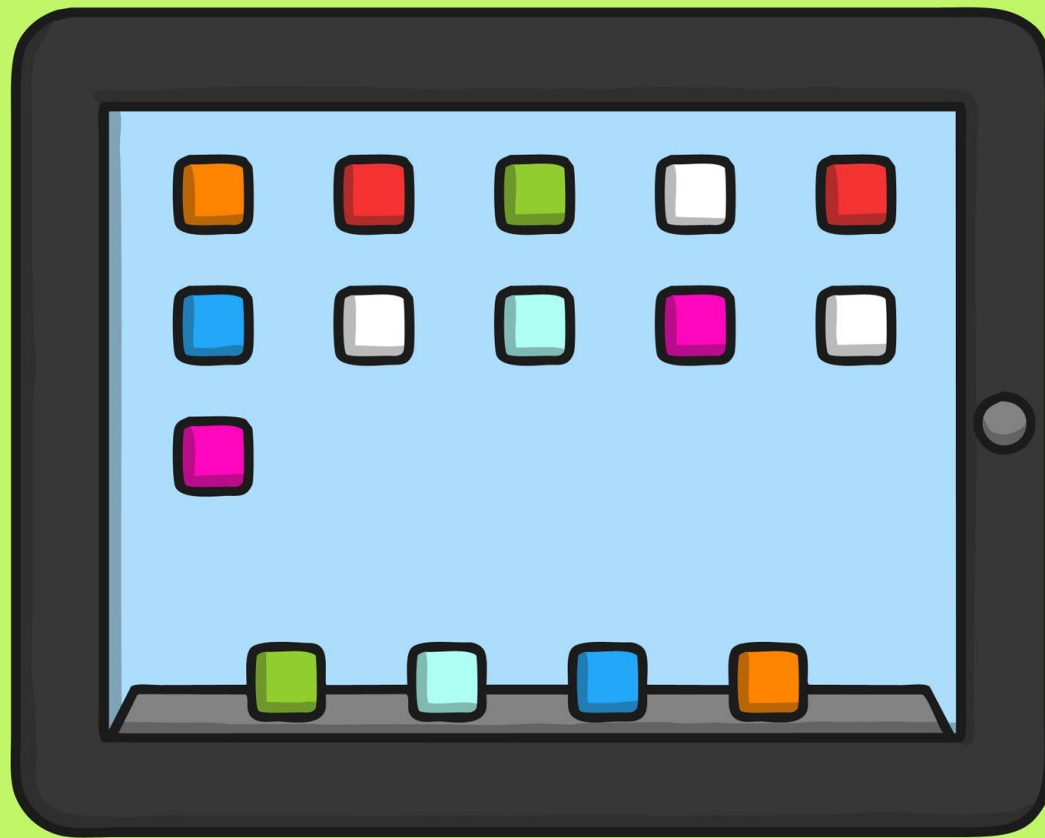
record



start



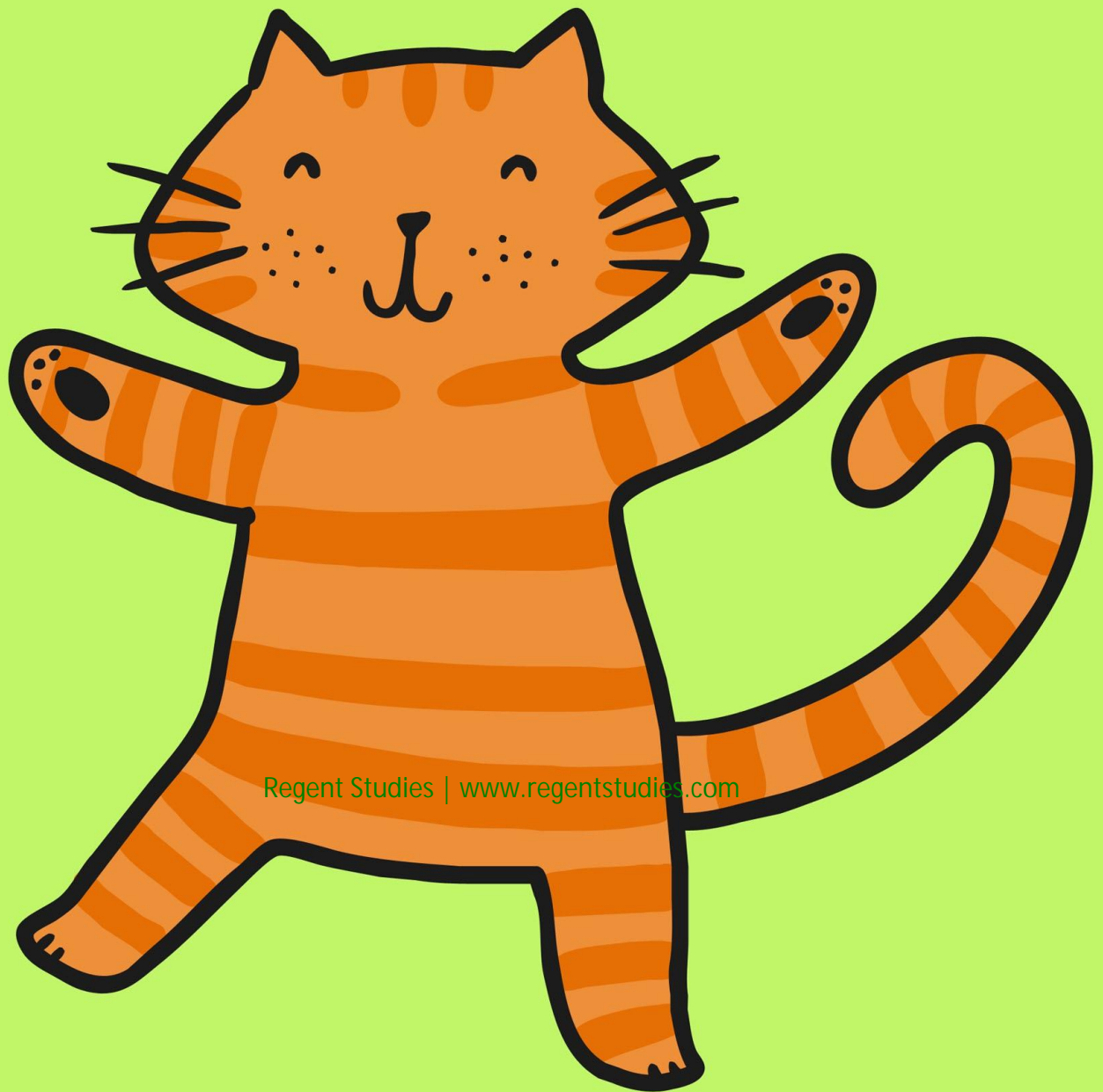
tablet



blocks

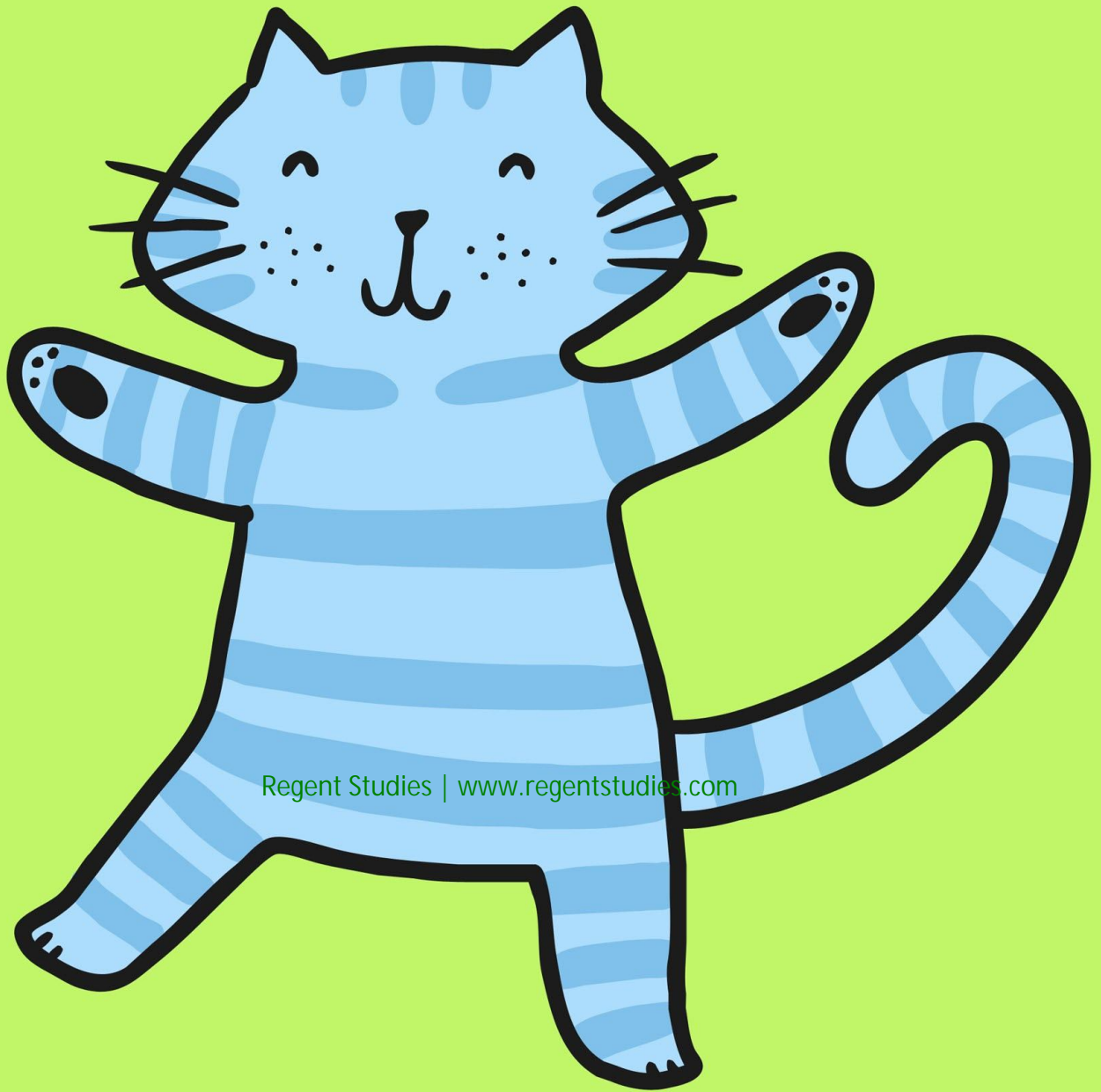


character



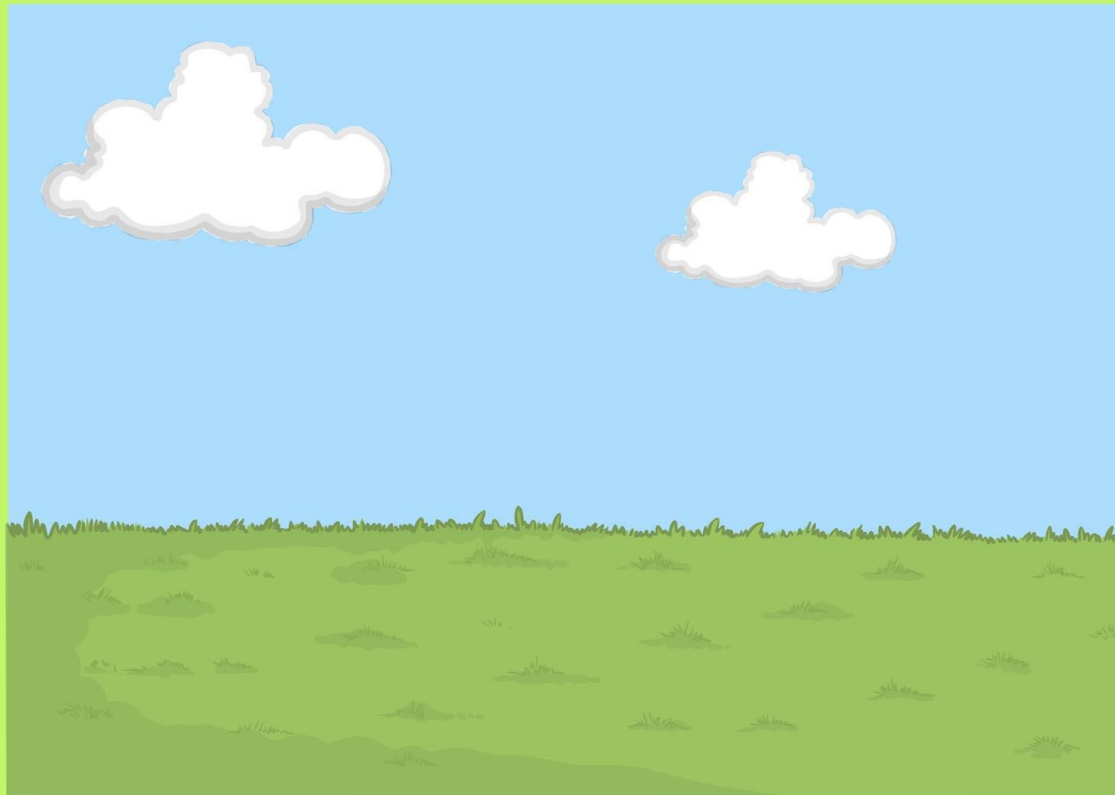
Regent Studies | www.regentstudies.com

sprite

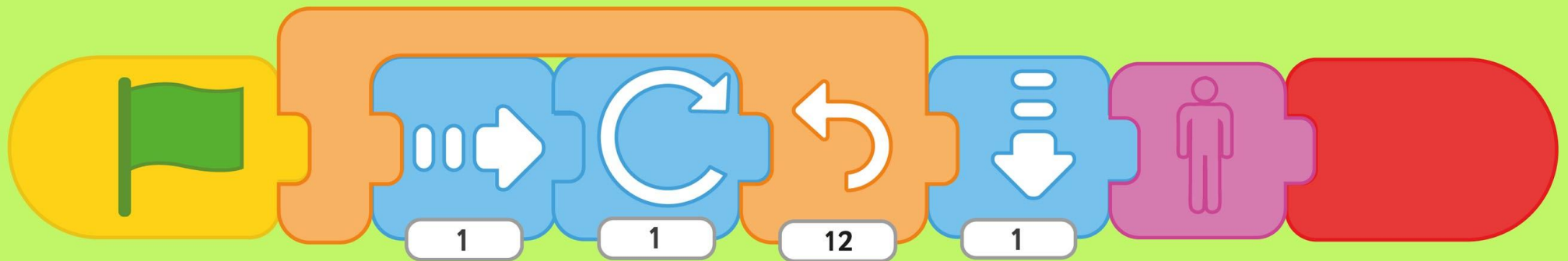


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background



sequence



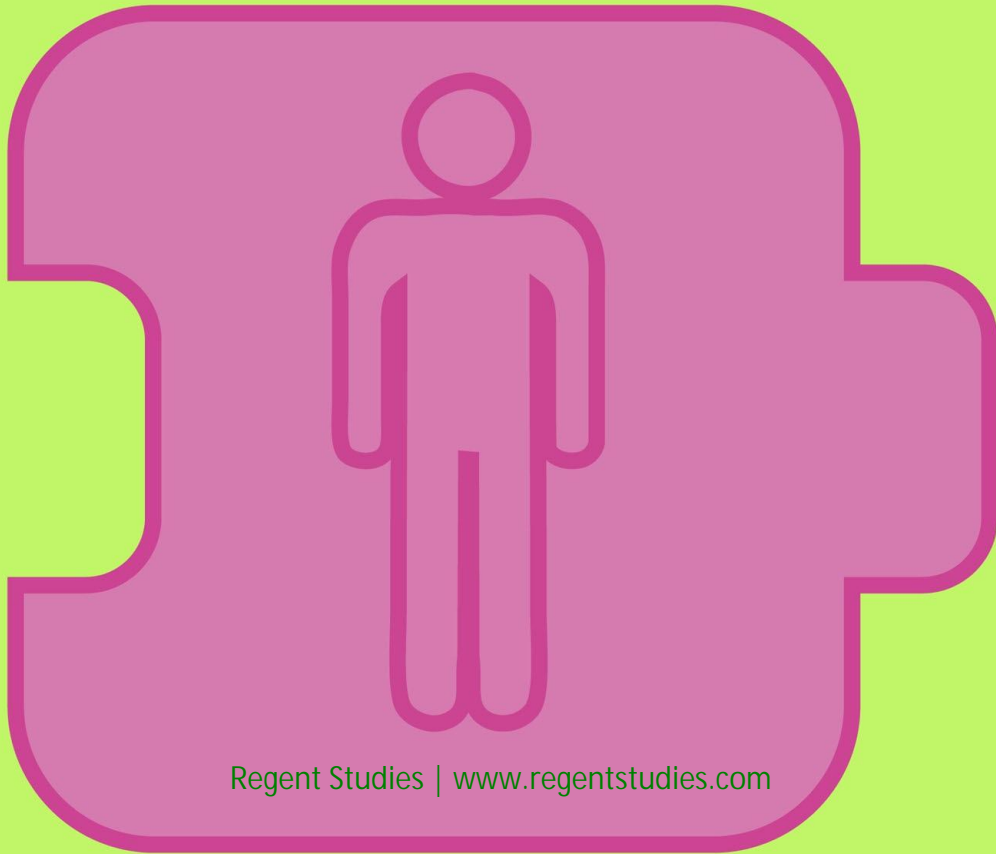
move



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9

invisible



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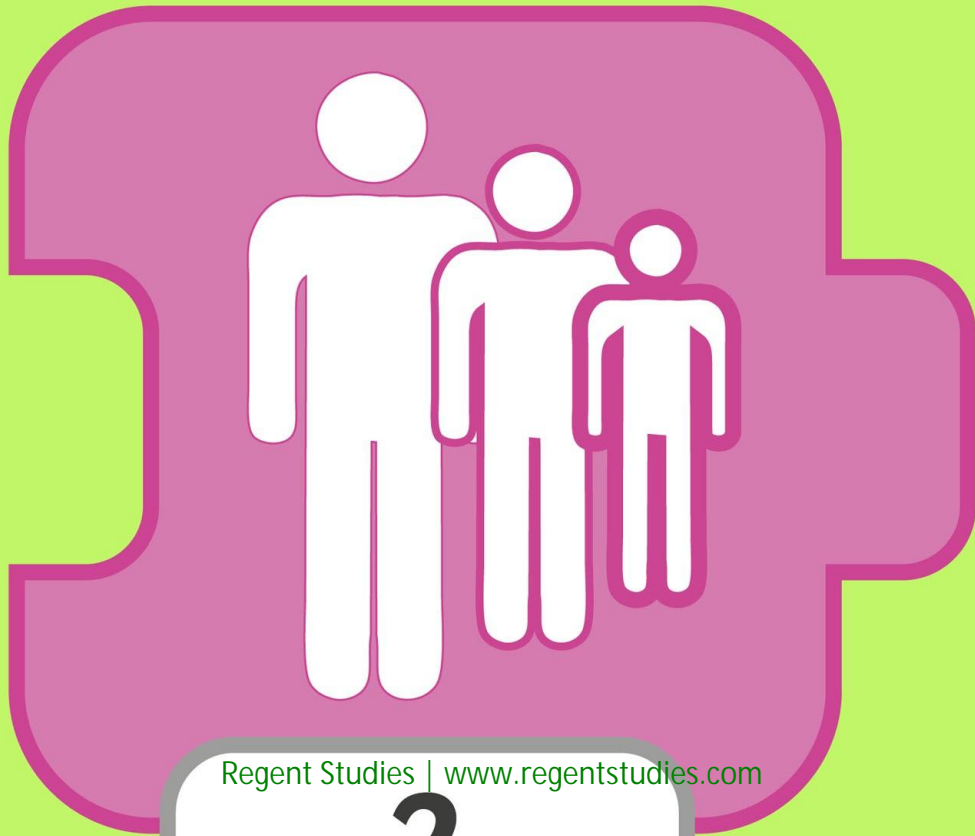
repeat forever



repeat



shrink



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2

sound



pop



wait



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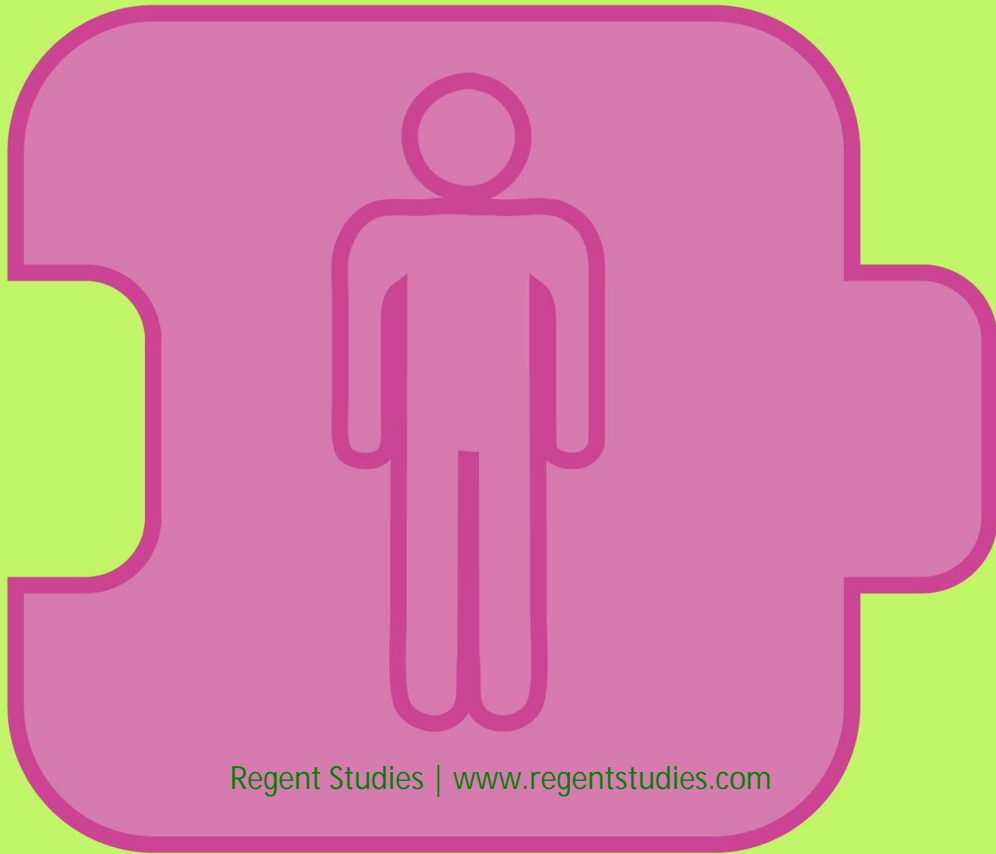
10

show



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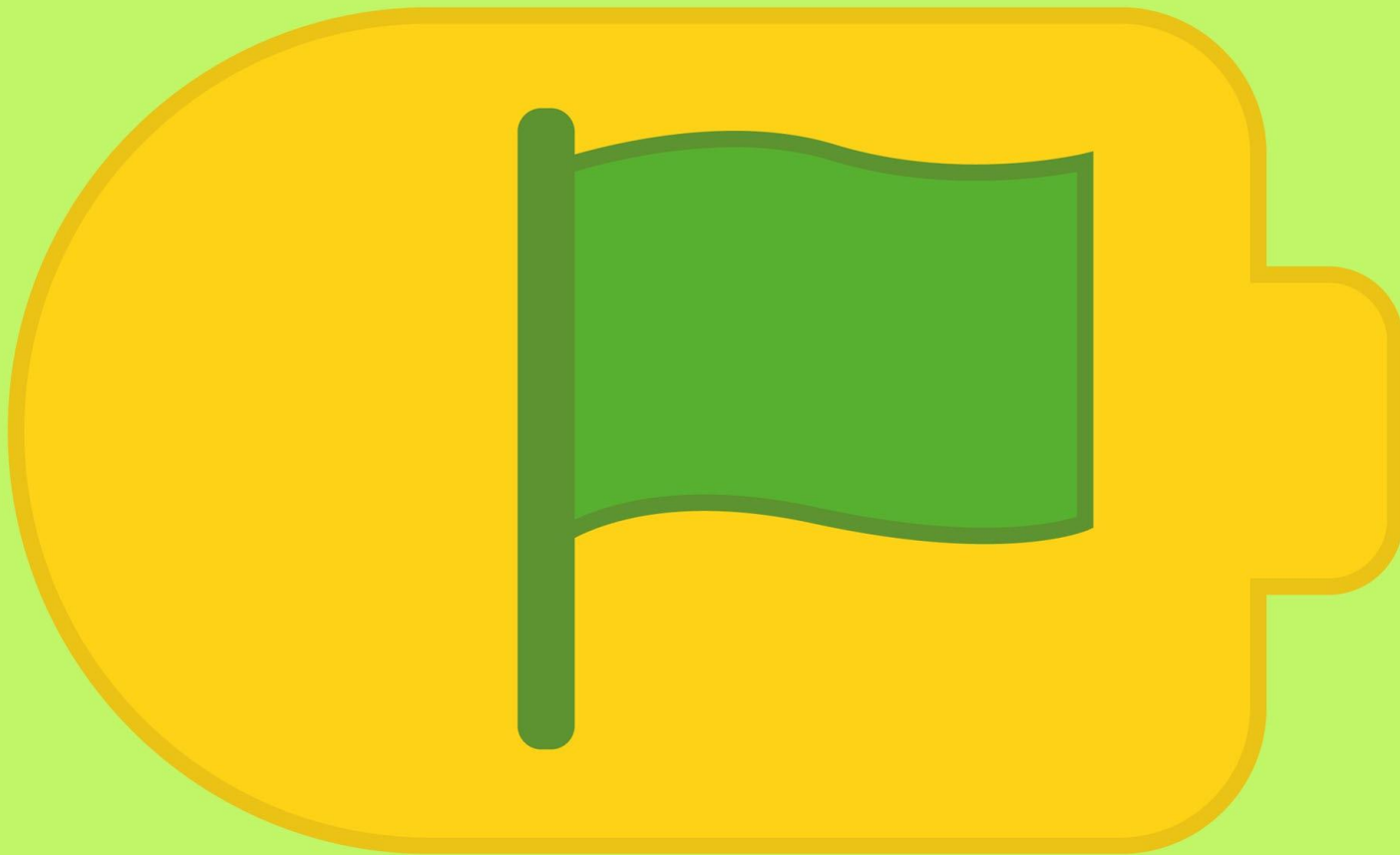
hide



record



start



Insert text here



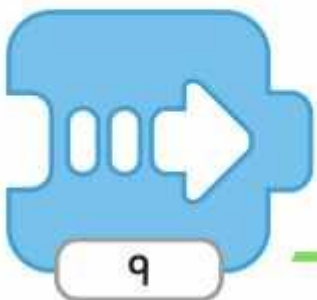


Insert text here



Insert text here

Insert text here

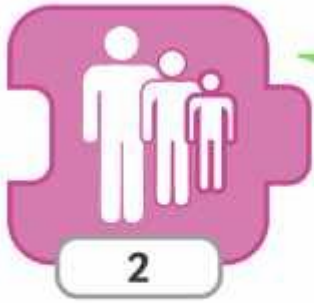




Insert text here

Insert text here





Insert text here

Insert text here



Insert text here



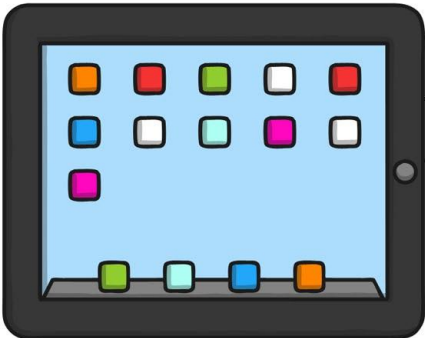


Insert text here

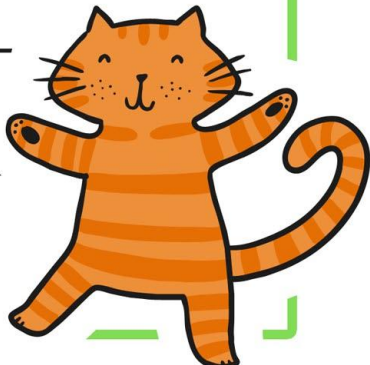


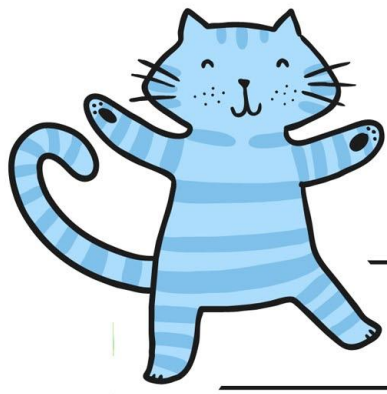
Insert text here

Lined writing area with 20 horizontal lines.

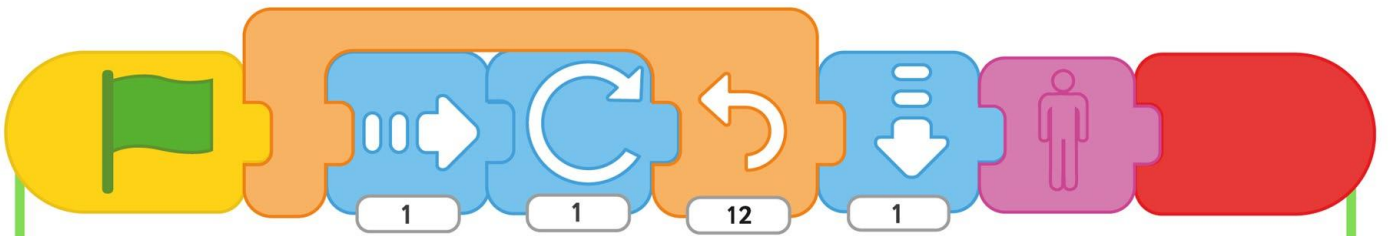


Lined writing area with 25 horizontal lines.



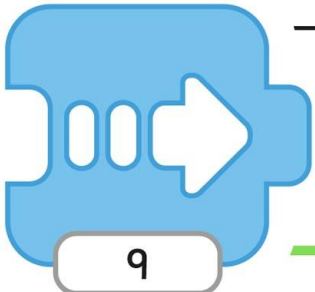


A series of horizontal lines for writing, starting from the top right and extending down the page. The lines are evenly spaced and cover most of the page's width.

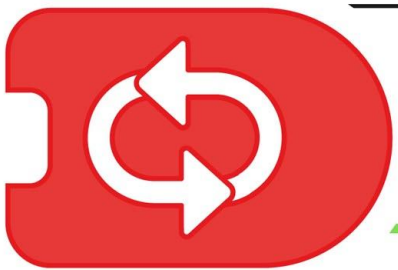


A series of horizontal lines for writing, spanning the width of the page.

Lined writing area with 20 horizontal lines.



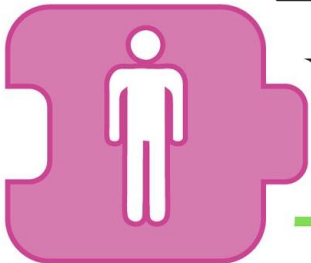
Lined writing area with 25 horizontal lines.

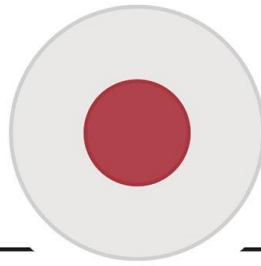


Lined writing area with 28 horizontal lines.

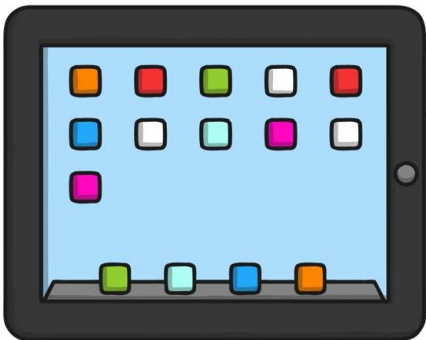


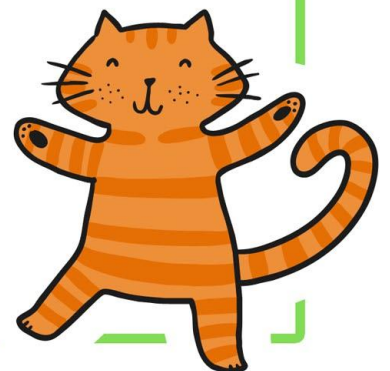
Lined writing area with 25 horizontal lines.

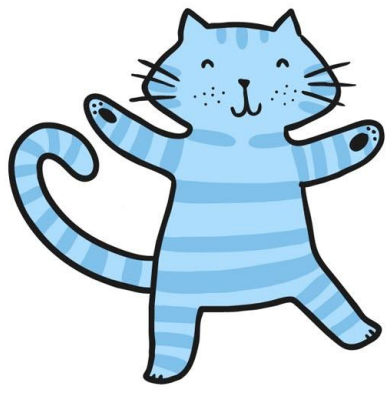


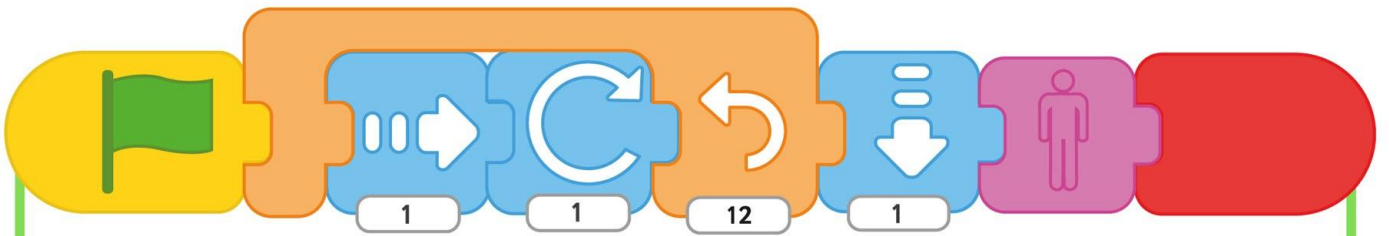


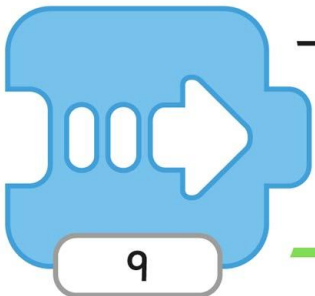
Lined writing area with 25 horizontal lines.

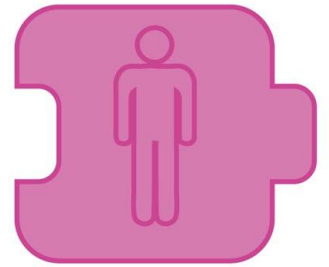


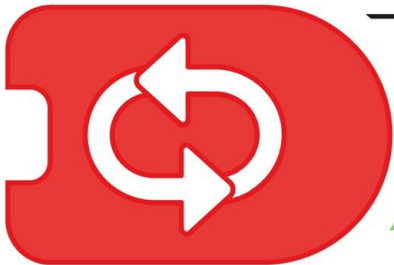


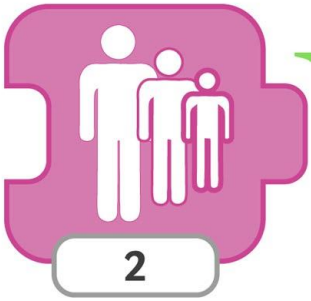




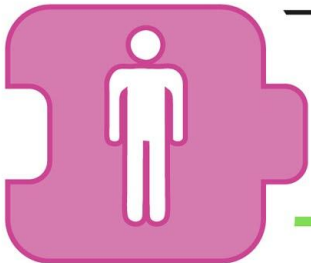


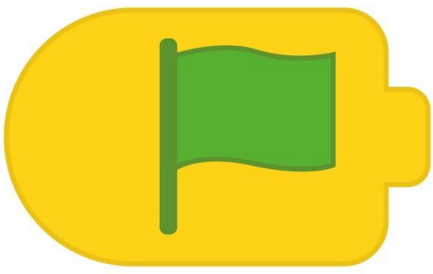


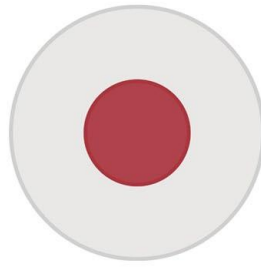




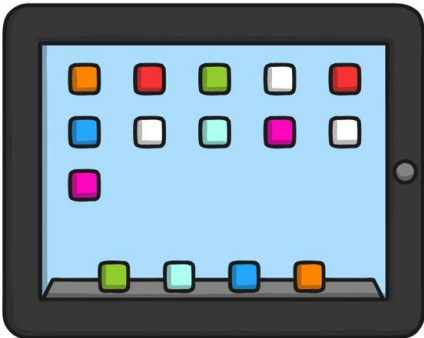


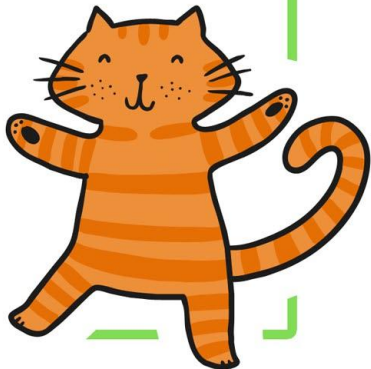


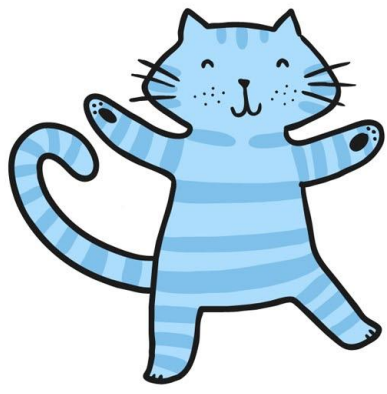




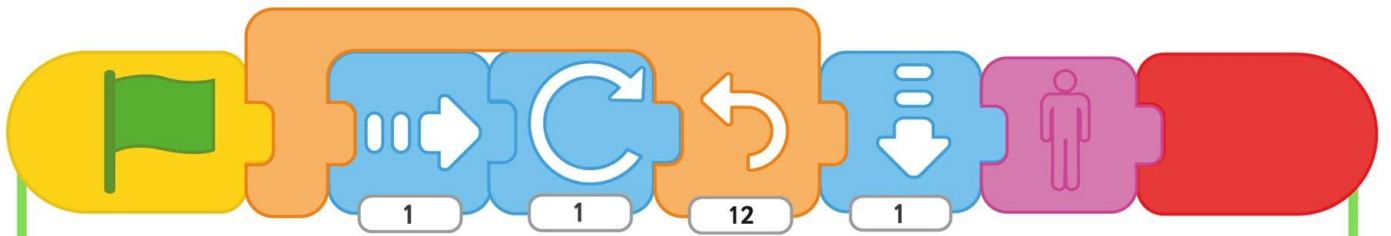
A large rectangular area with a light green border, containing 13 horizontal black lines for writing.



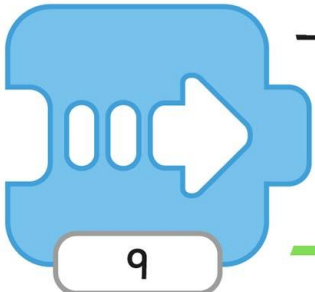


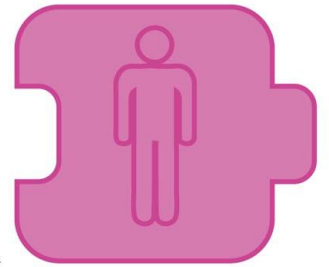


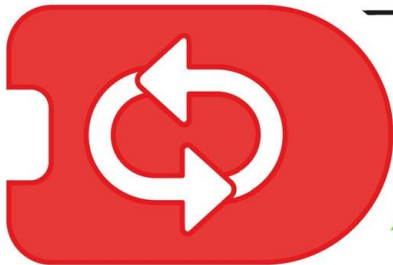
A large rectangular area enclosed by a green border, containing a series of horizontal black lines for writing. The lines are evenly spaced and extend across most of the width of the page.

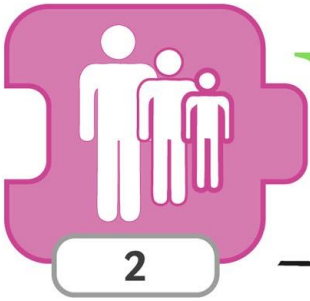


Handwriting practice lines consisting of 14 horizontal black lines on a white background, bounded by a green frame.





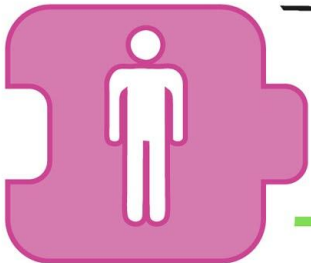


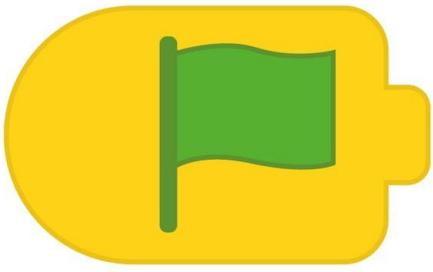


2



Lined writing area with 15 horizontal lines.

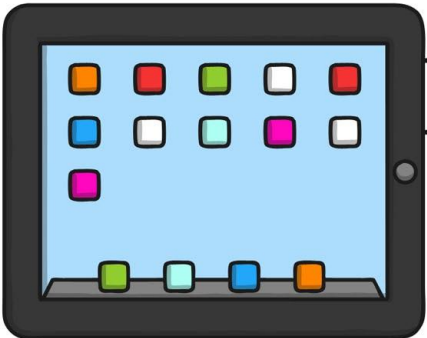




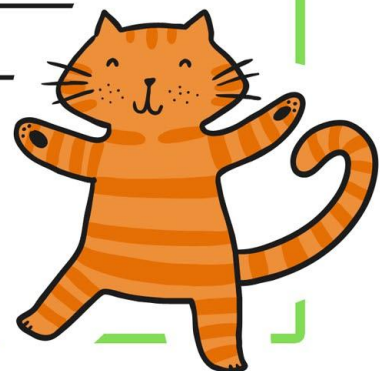
Lined writing area with 15 horizontal black lines.

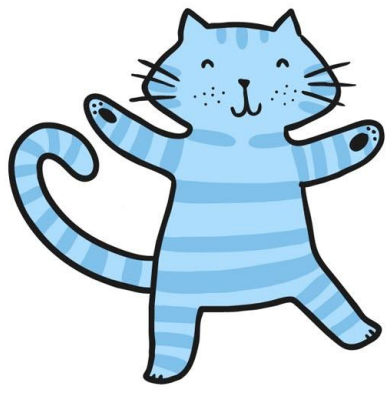


Blank lined writing area with 20 horizontal lines.

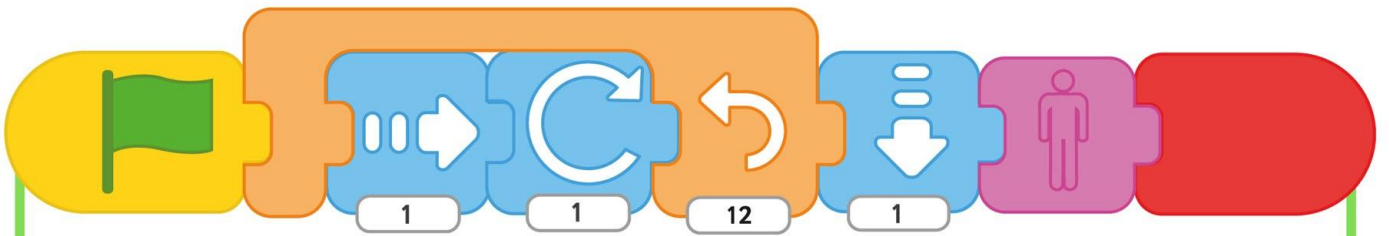


Lined writing area with 26 horizontal lines.



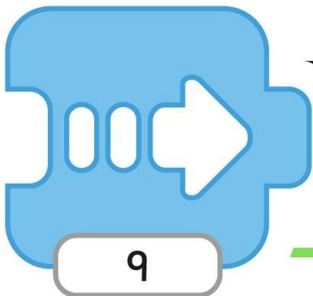


A large writing area enclosed in a green border. It features a series of horizontal lines for writing. The lines are arranged as follows: a top line, followed by two lines, then a gap, then another two-line gap, and finally a series of 18 single lines. The bottom two lines are shorter than the others, ending with small horizontal dashes.

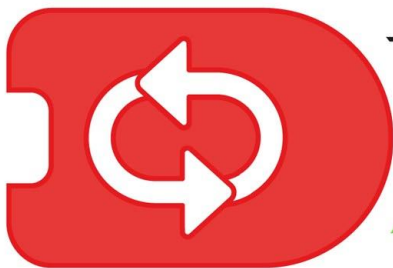


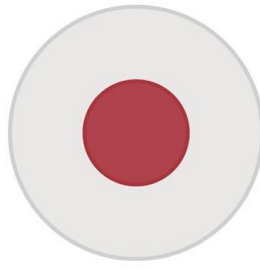
Lined writing area consisting of 20 horizontal black lines.

Lined writing area with 20 horizontal lines.

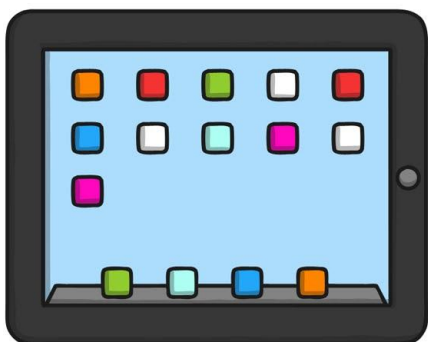


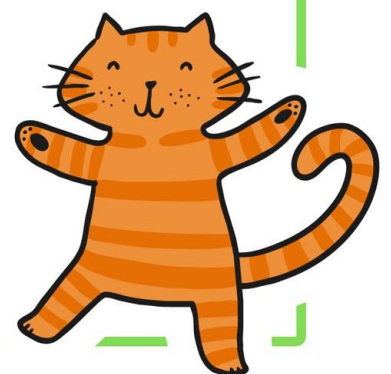
Lined writing area with 27 horizontal lines.

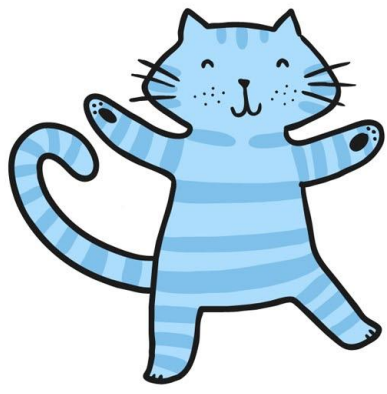


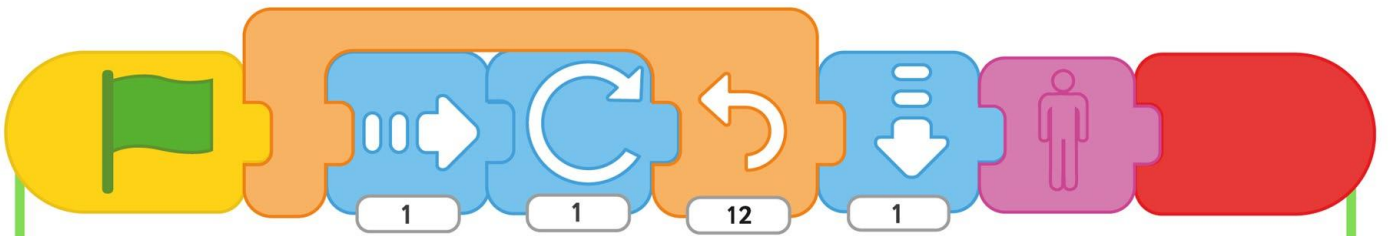


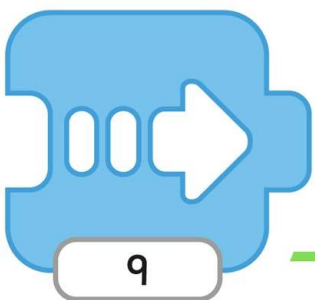
Blank lined writing area for student response.

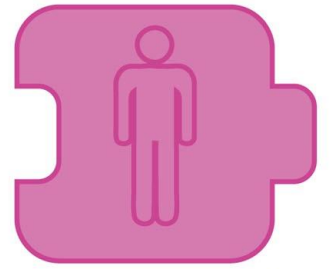


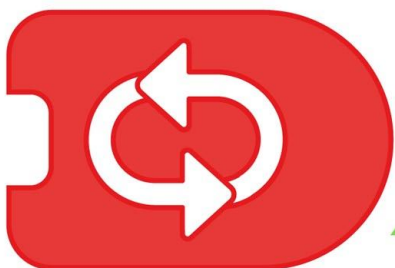


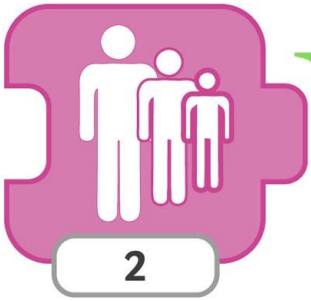


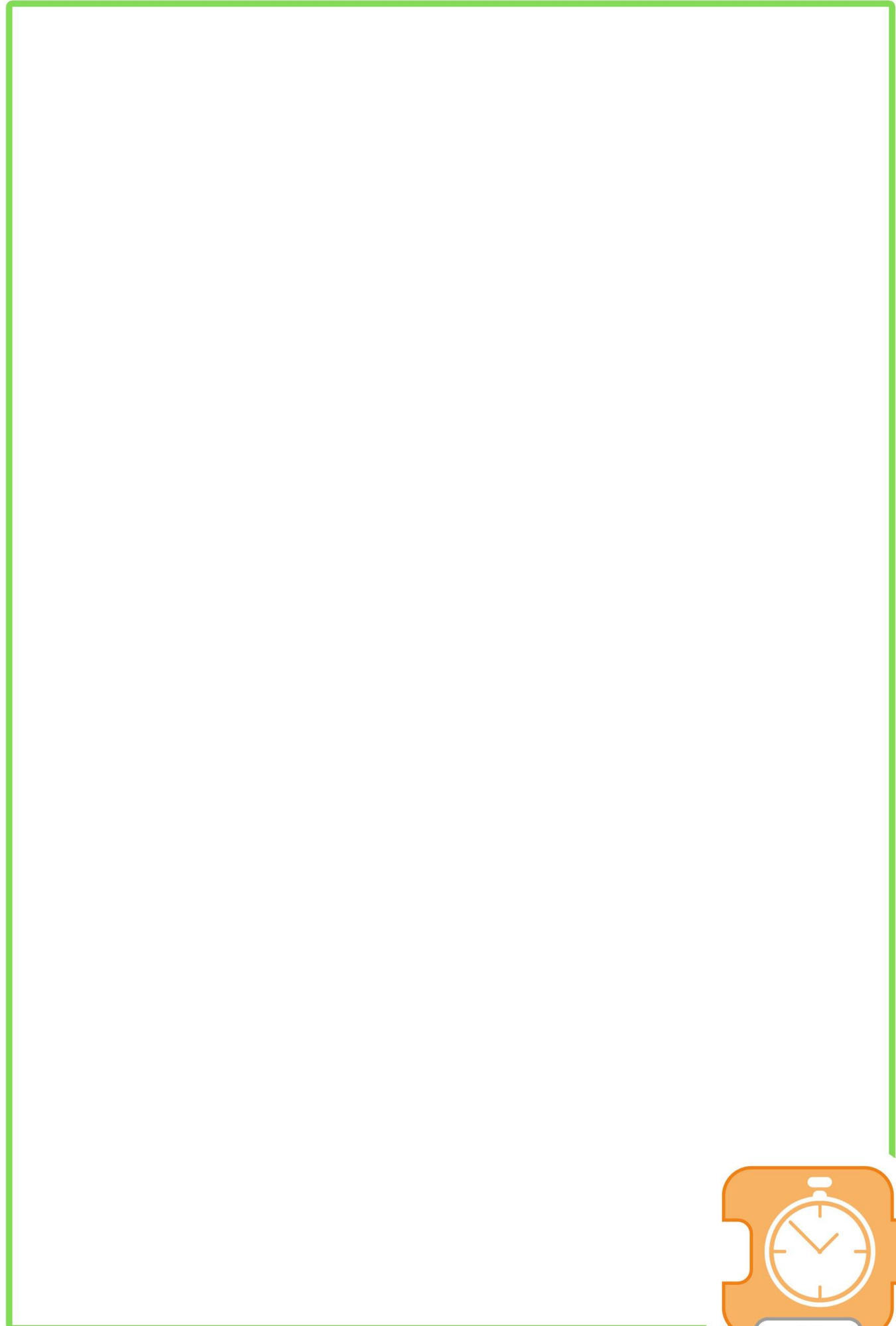


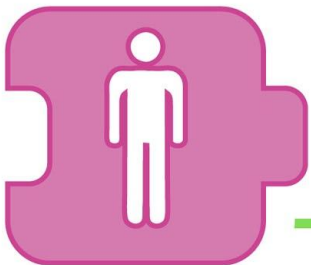


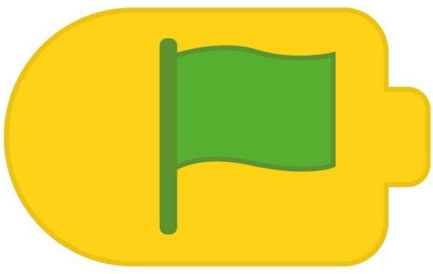


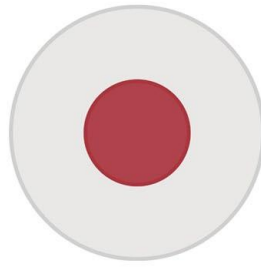


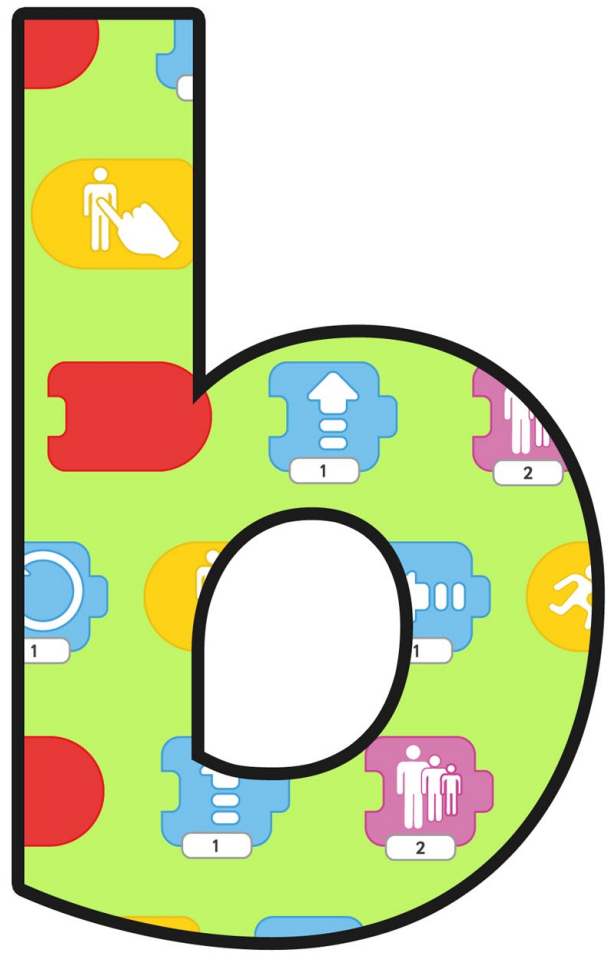
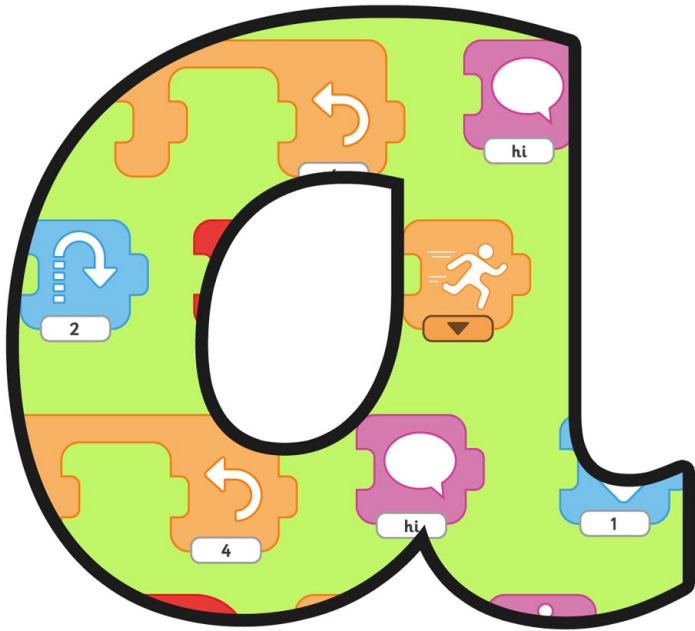


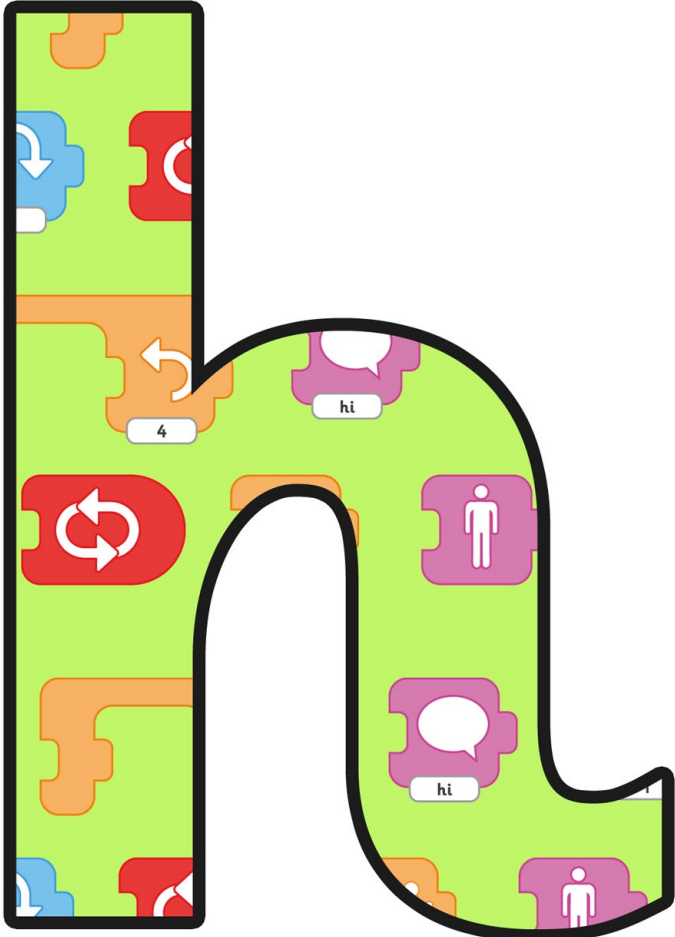
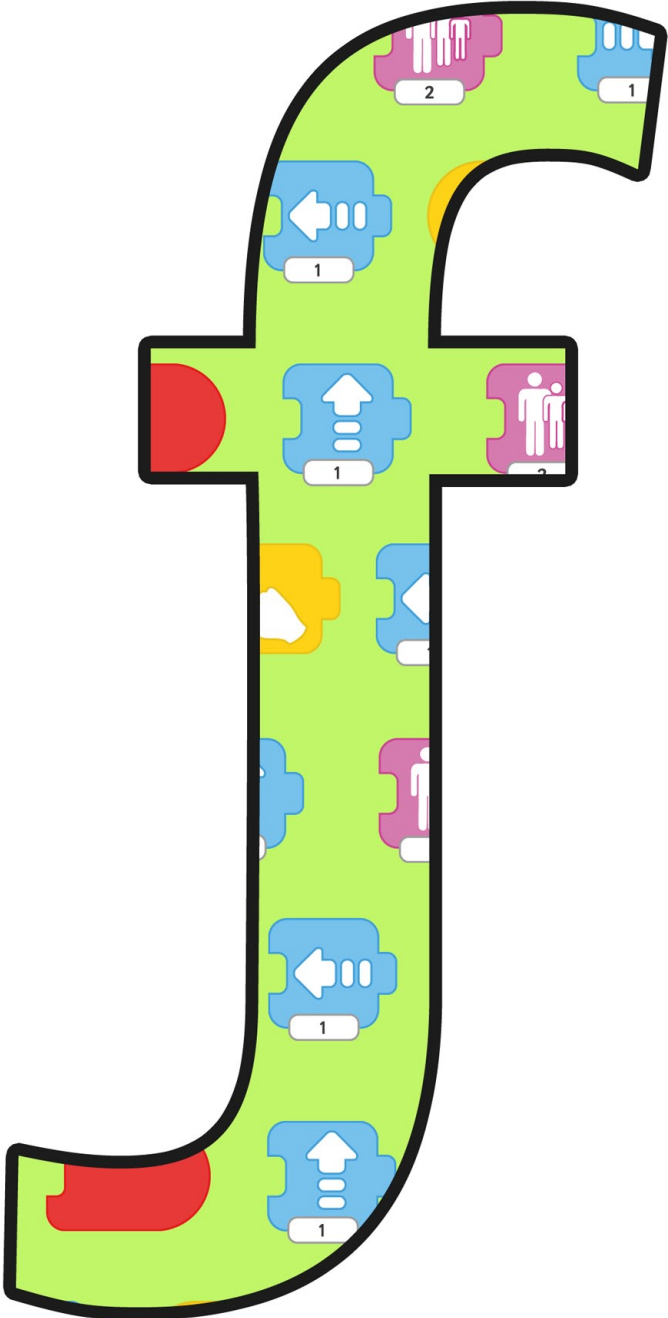
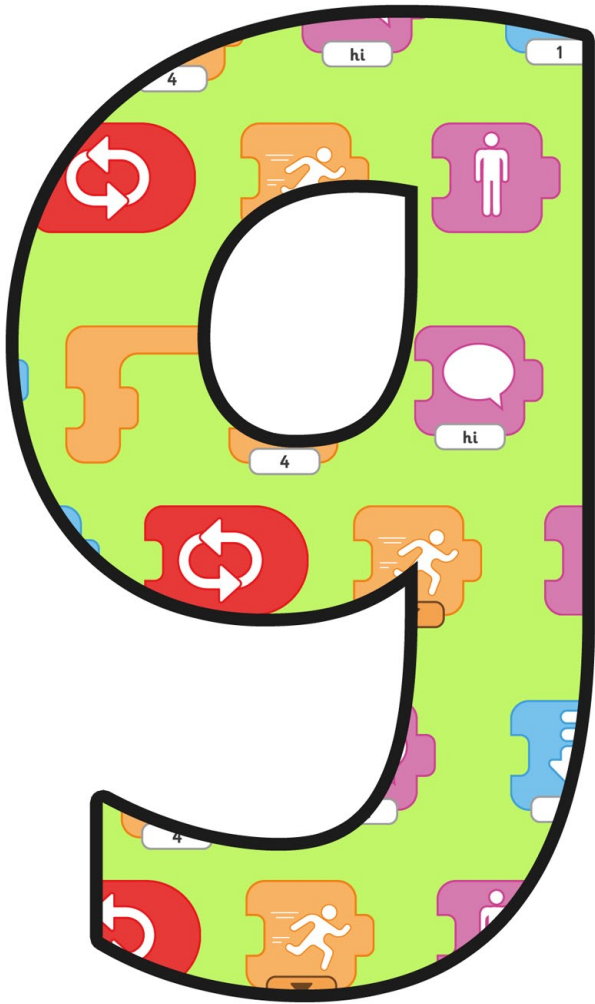


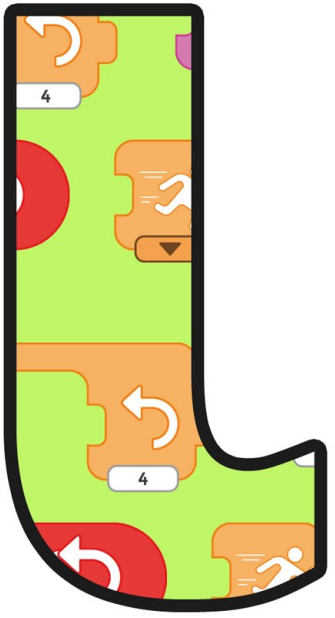
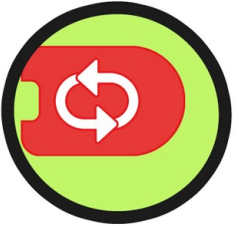
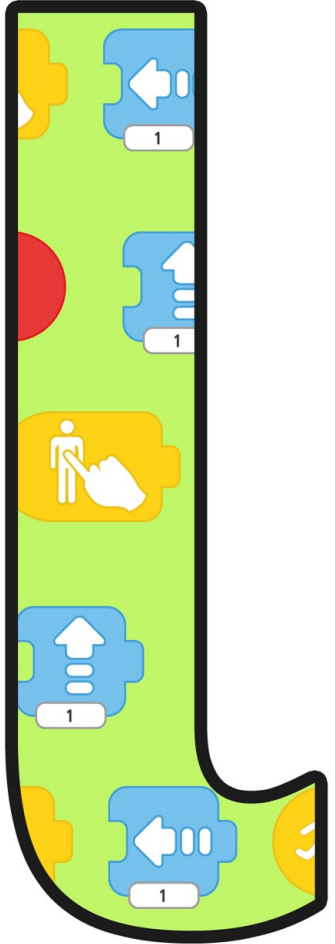
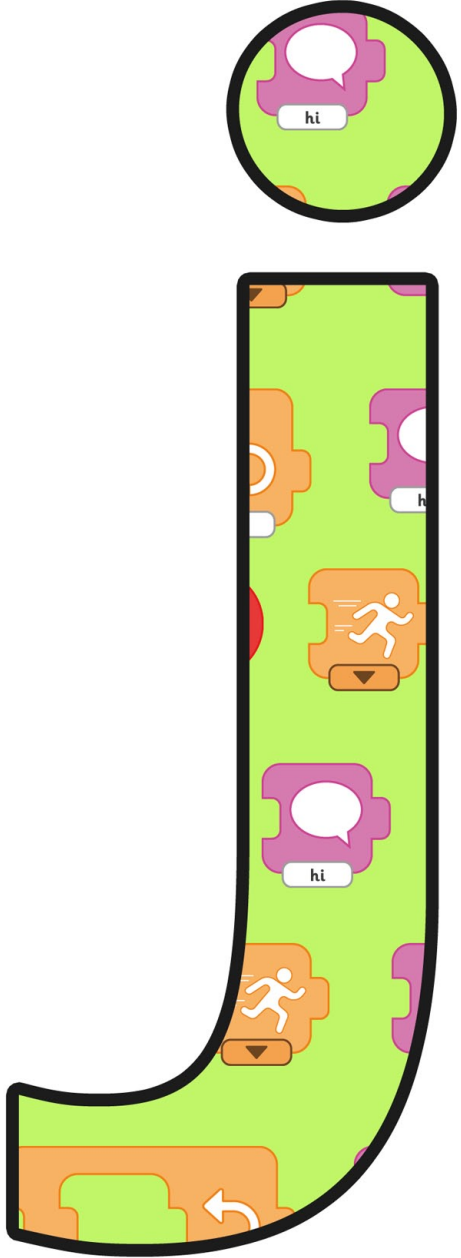


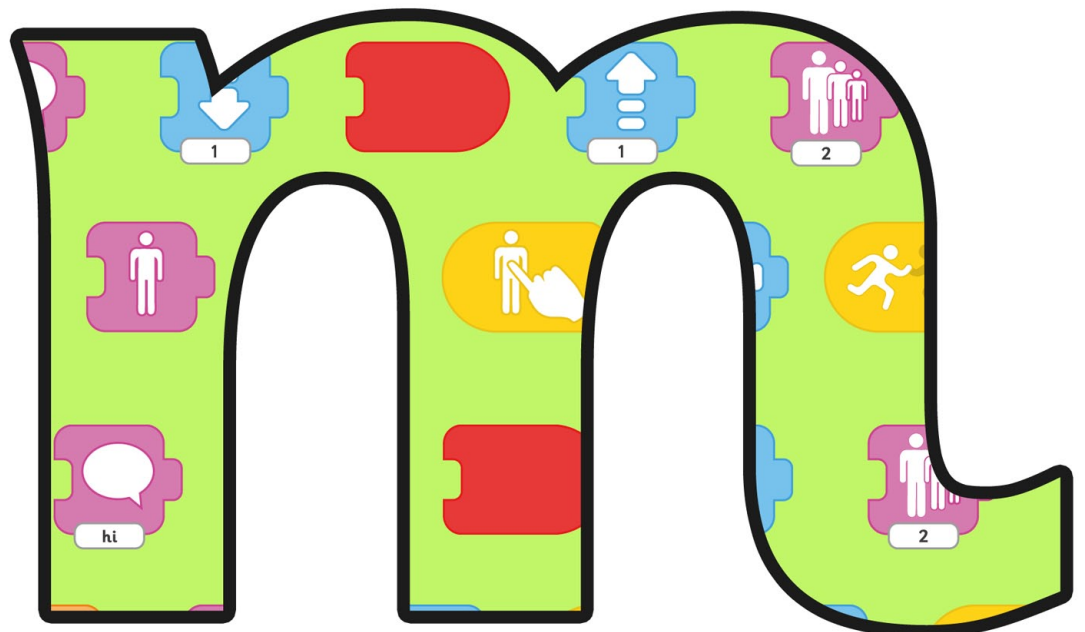
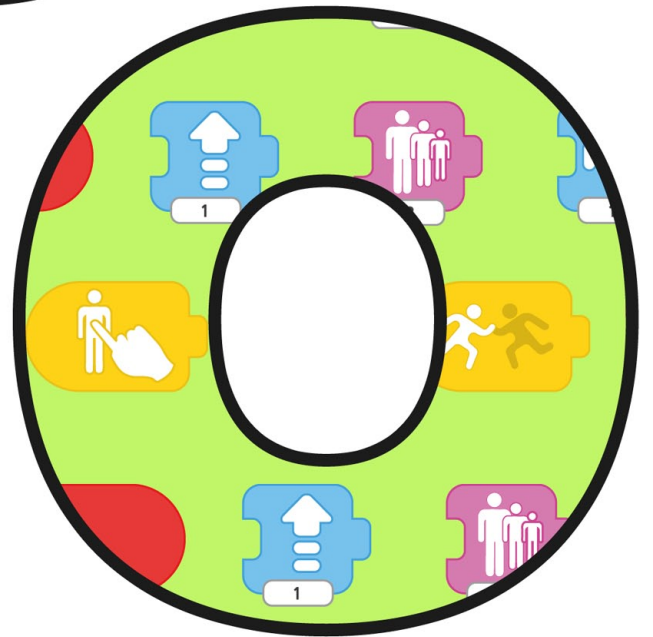
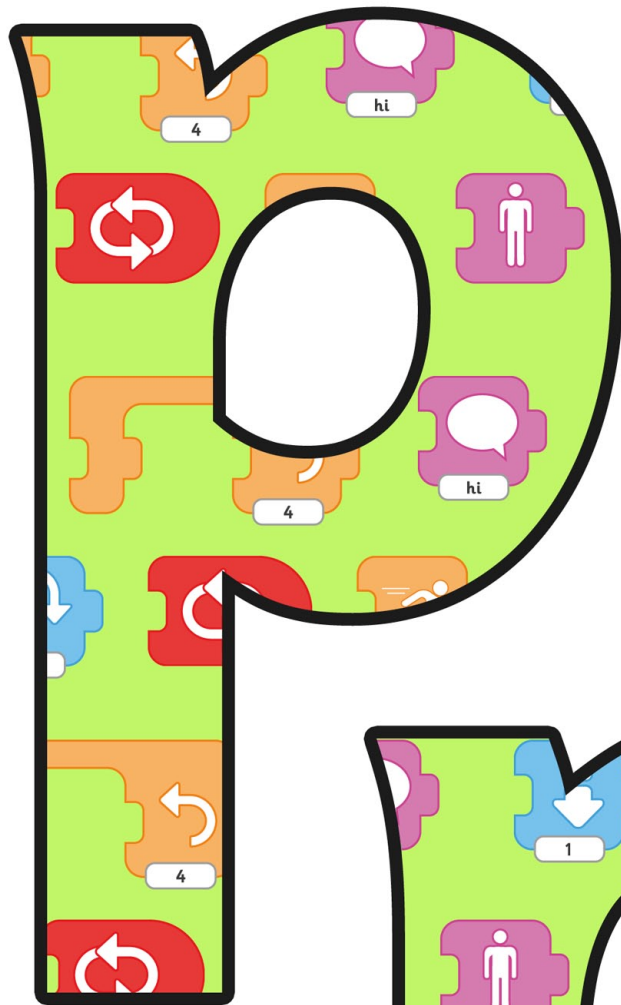


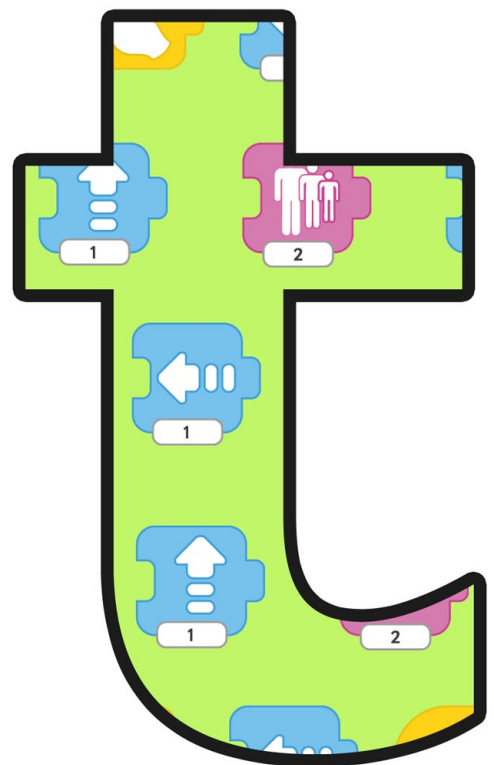
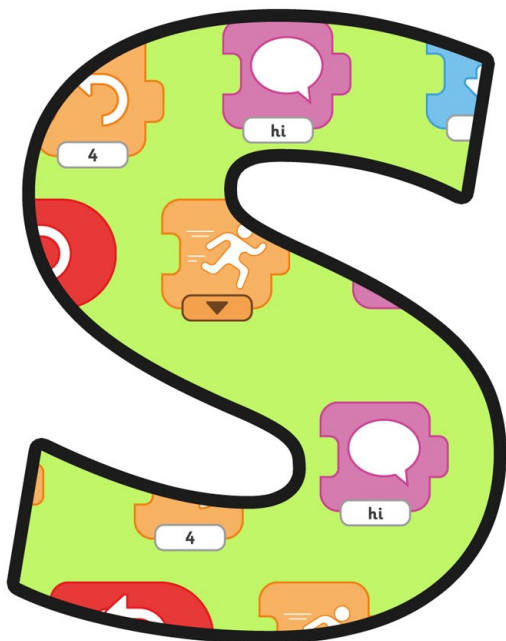
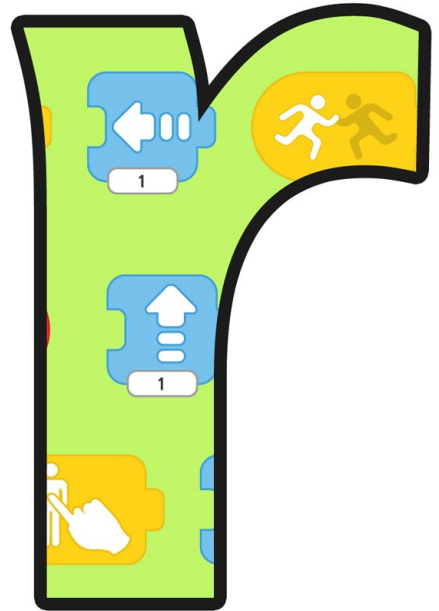
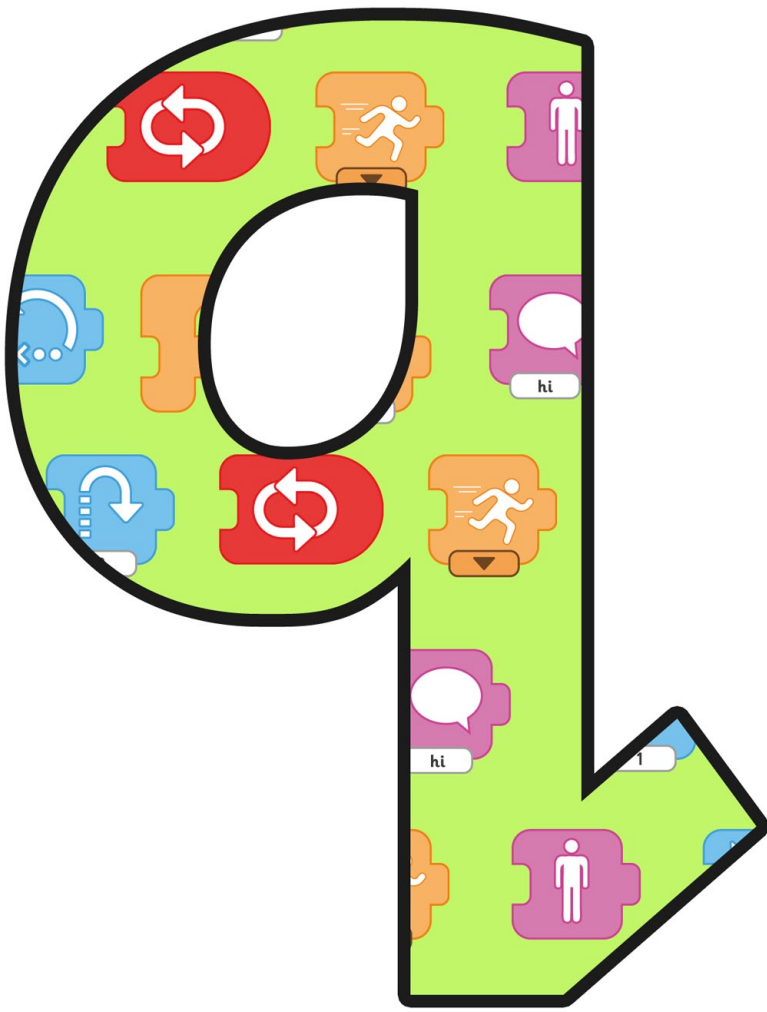


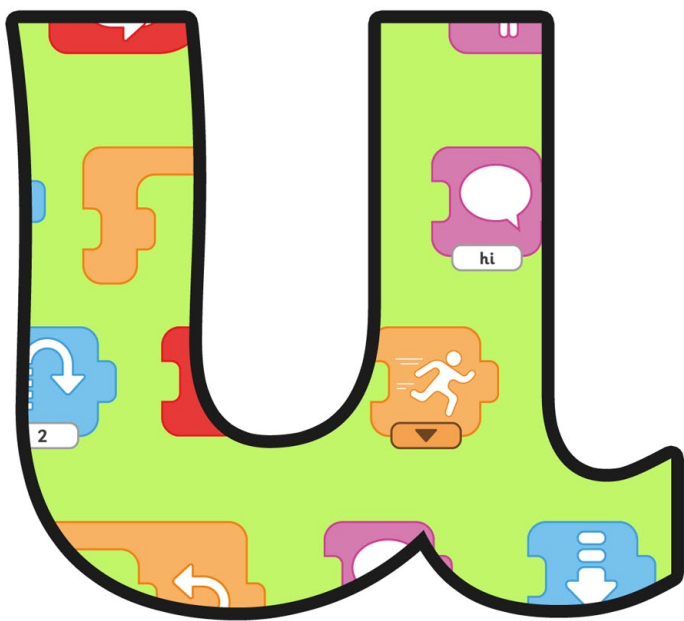


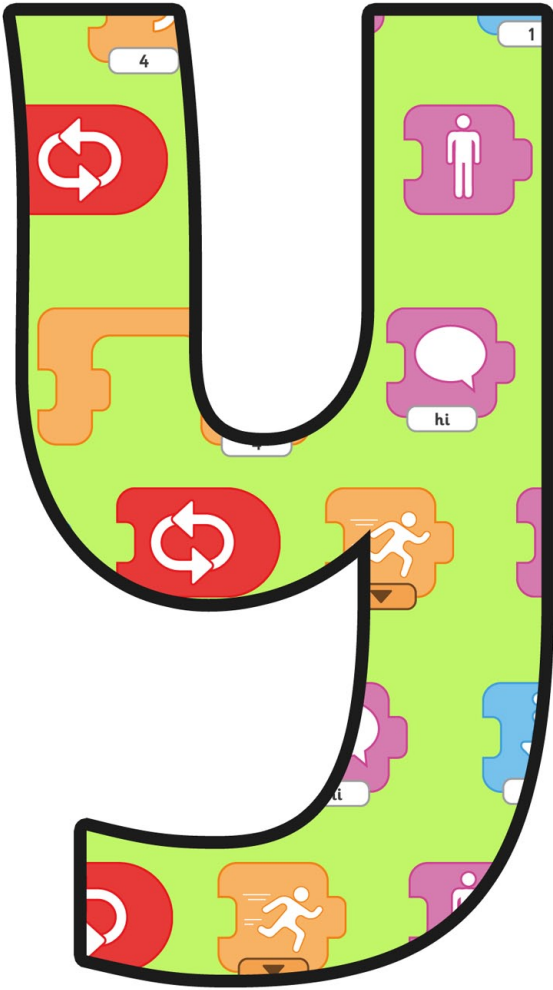


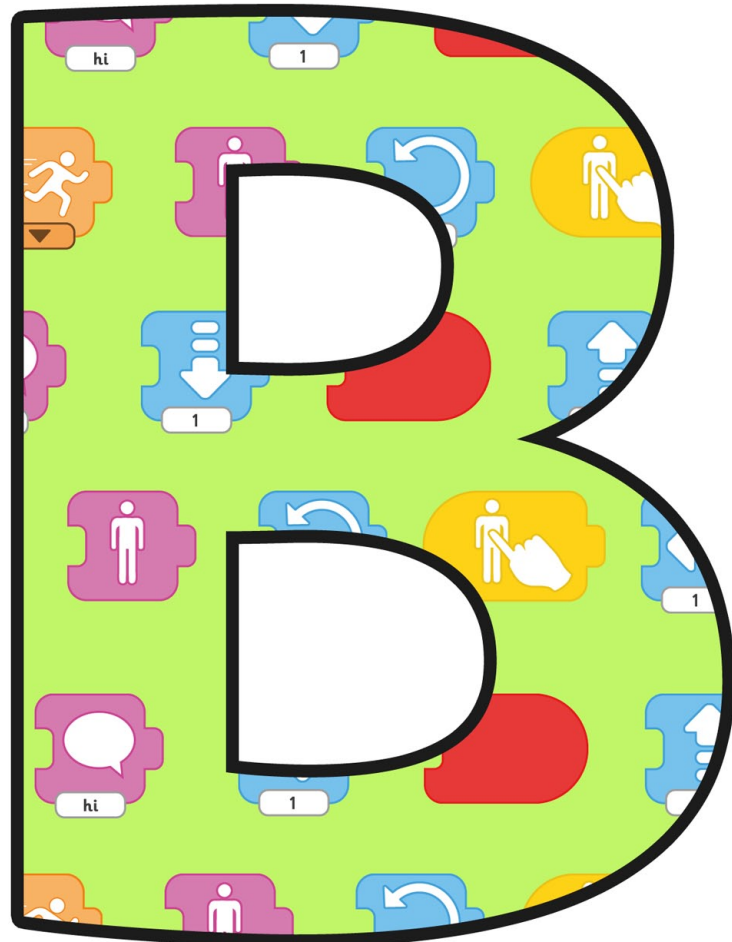


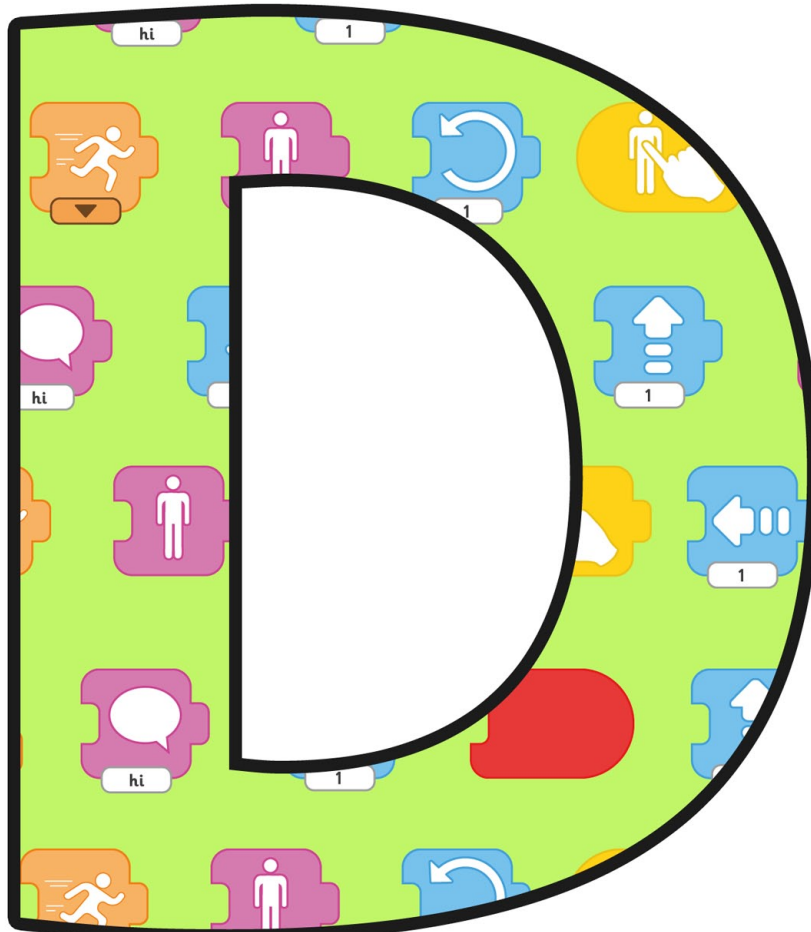
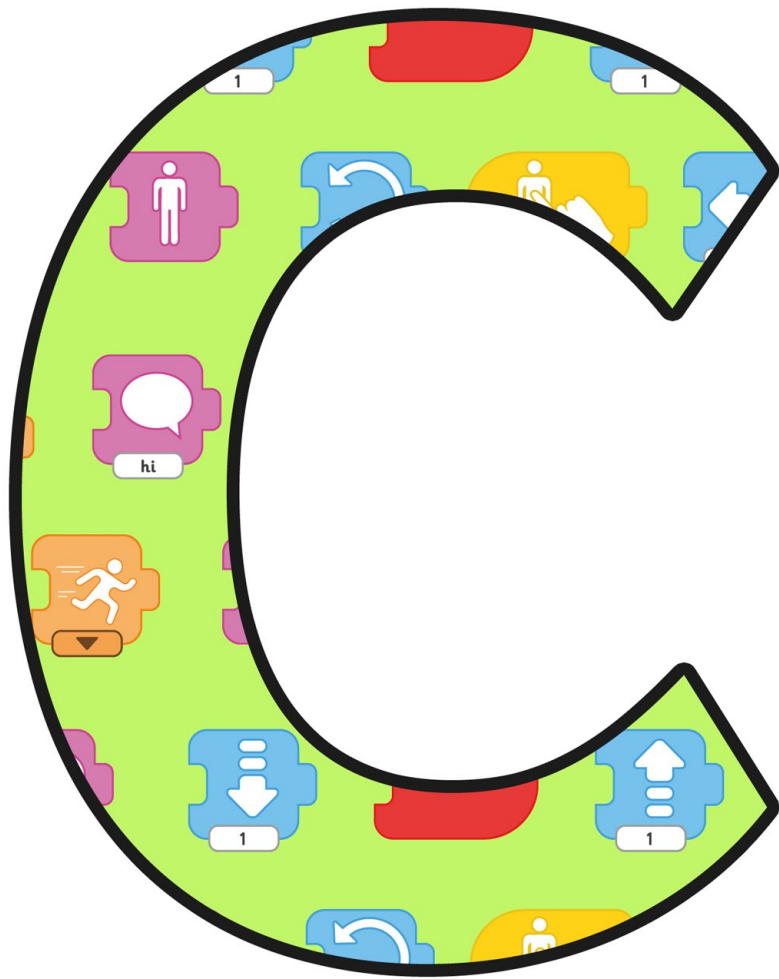


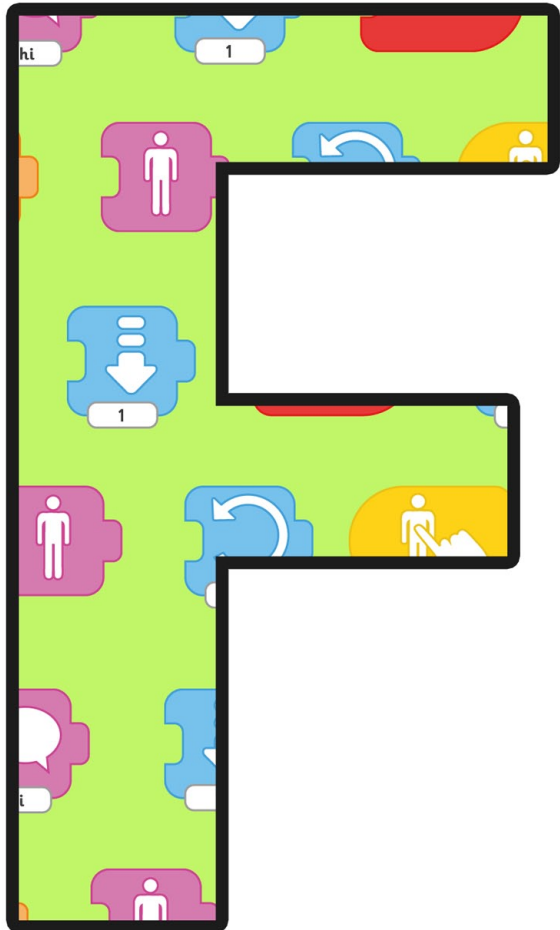
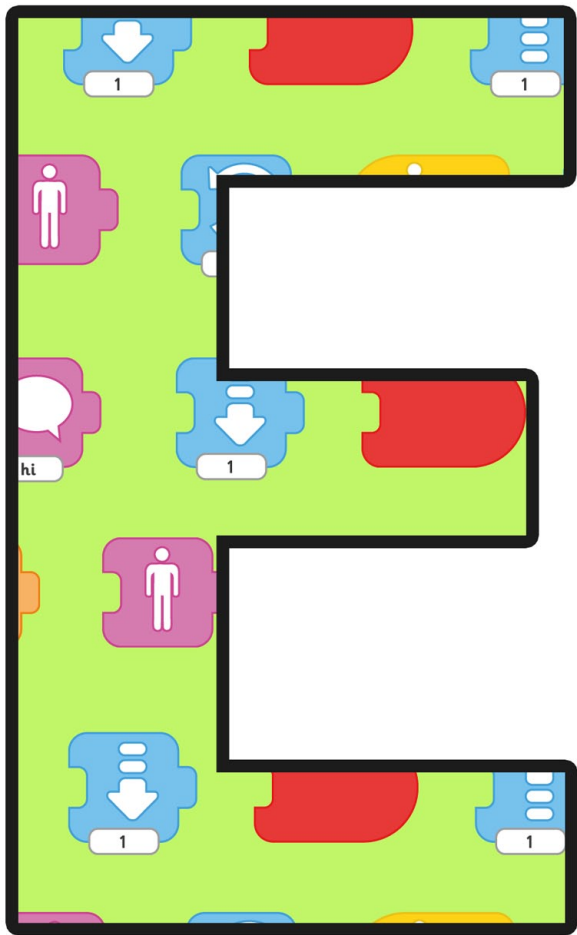


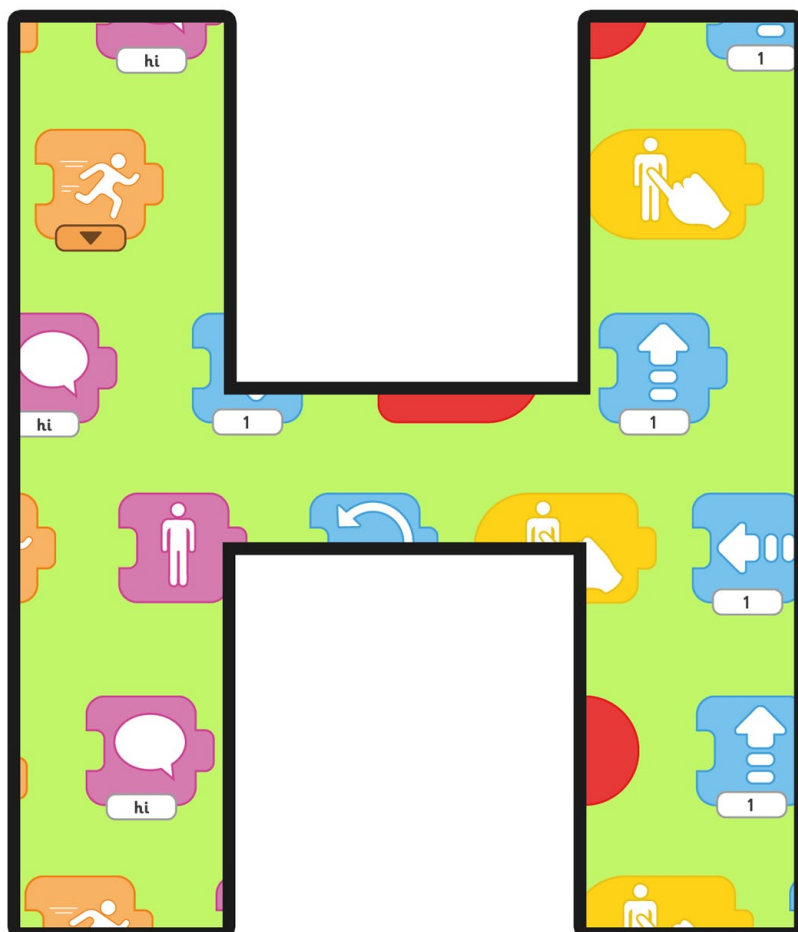


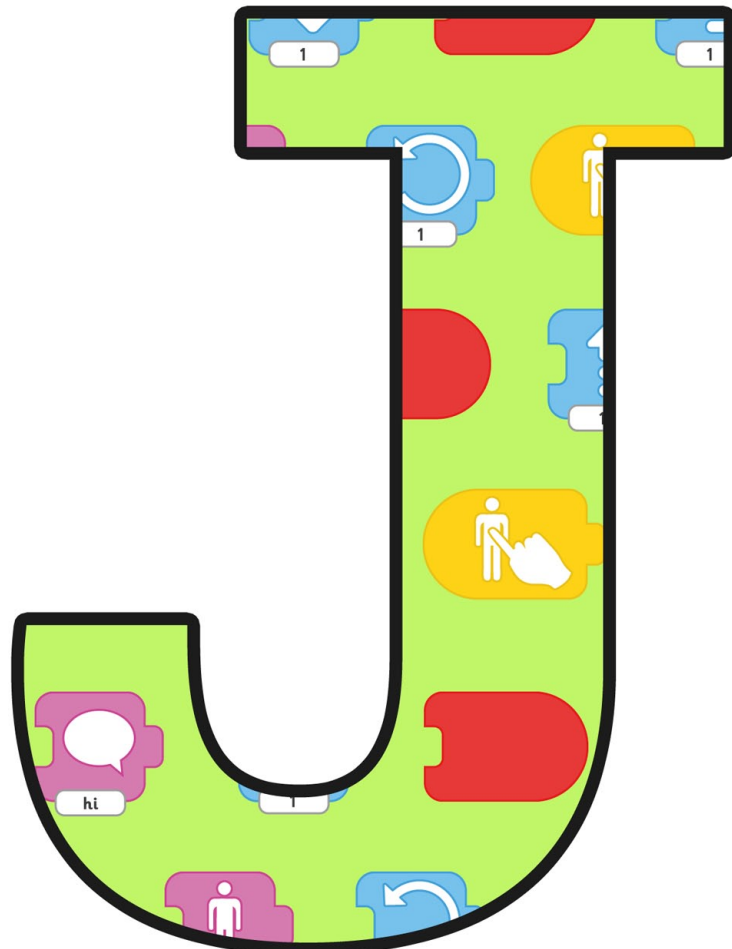
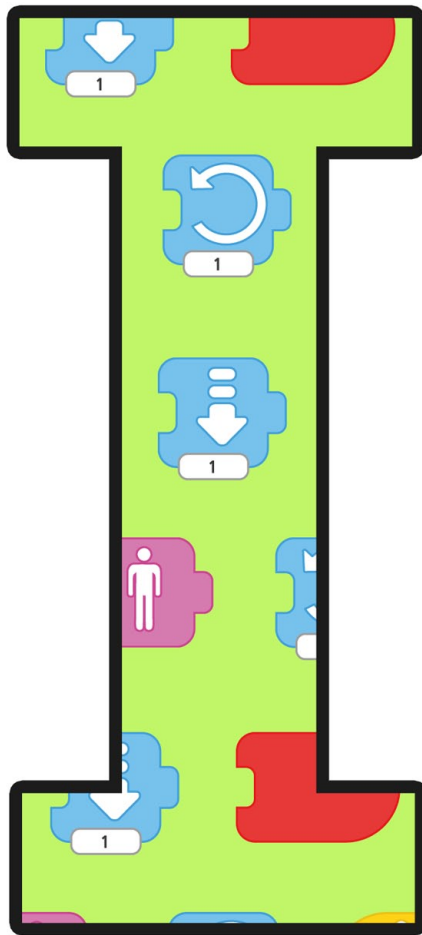


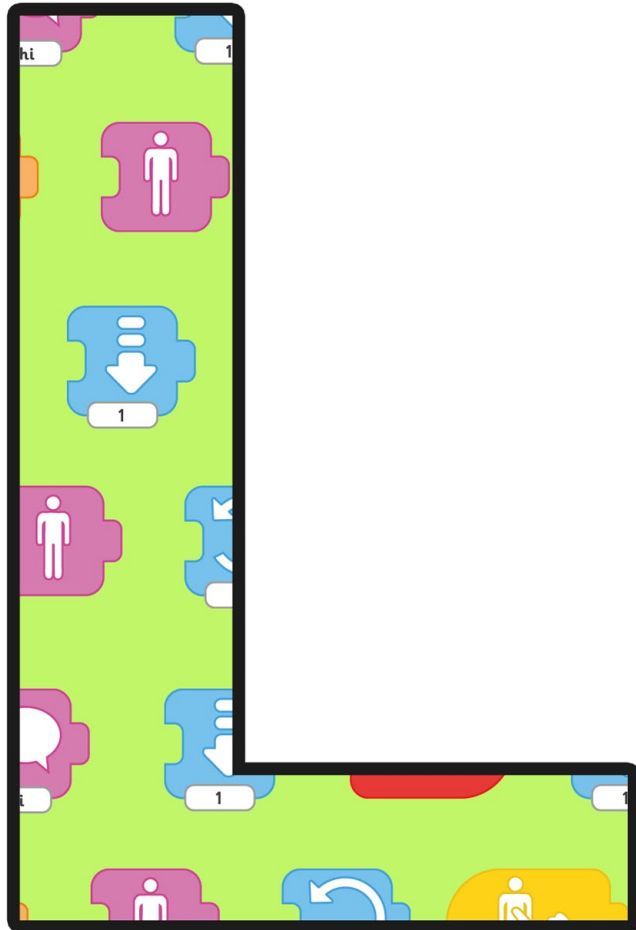
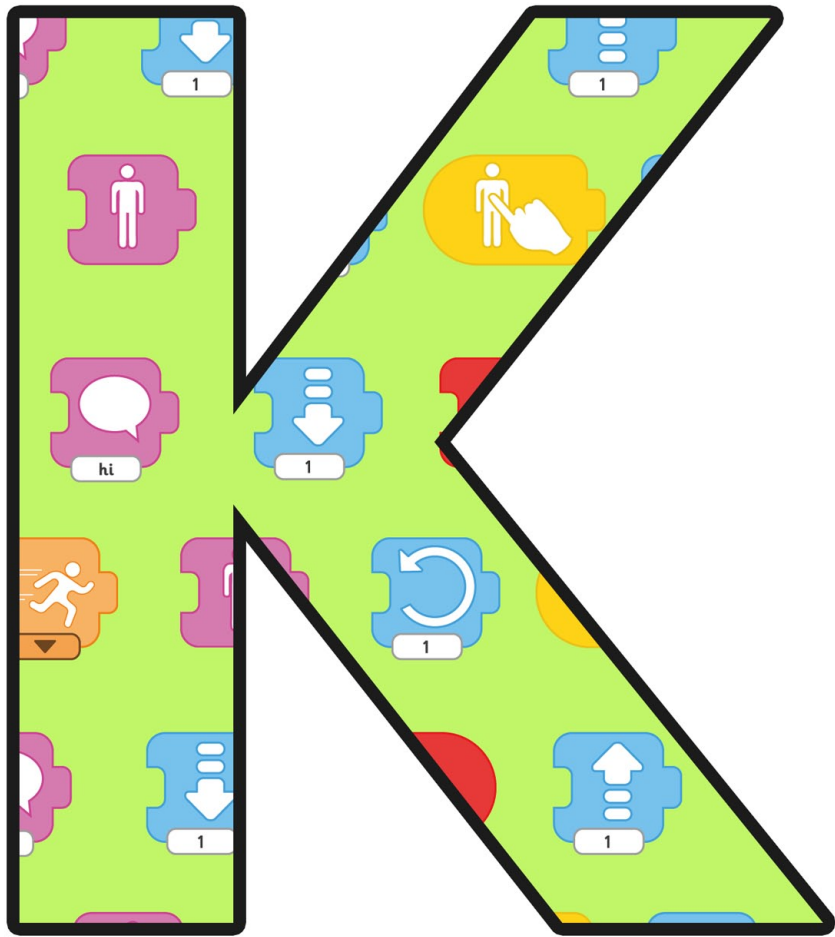




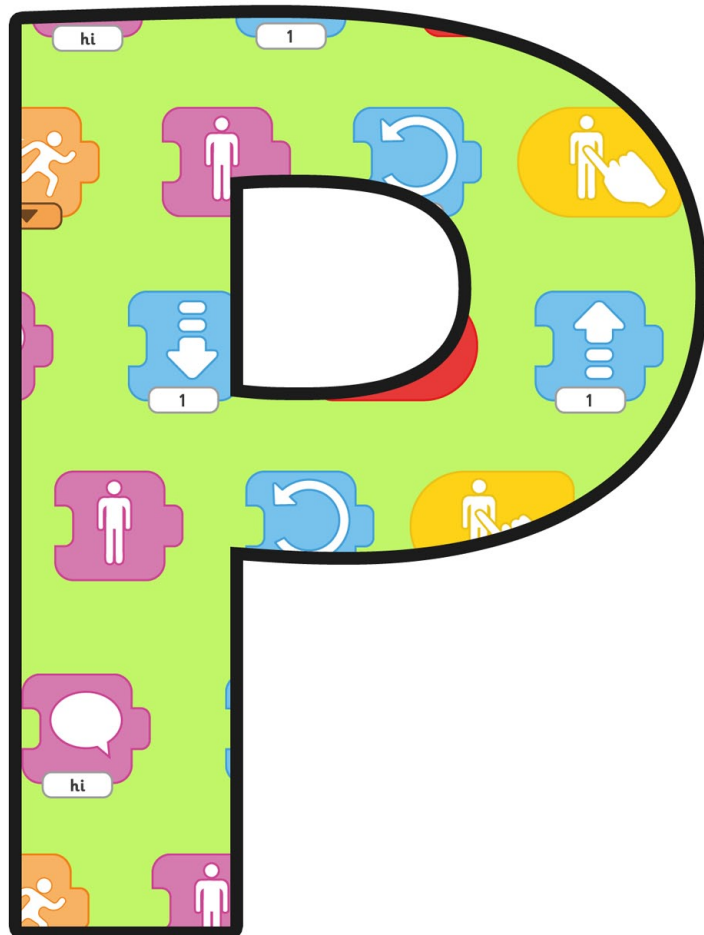




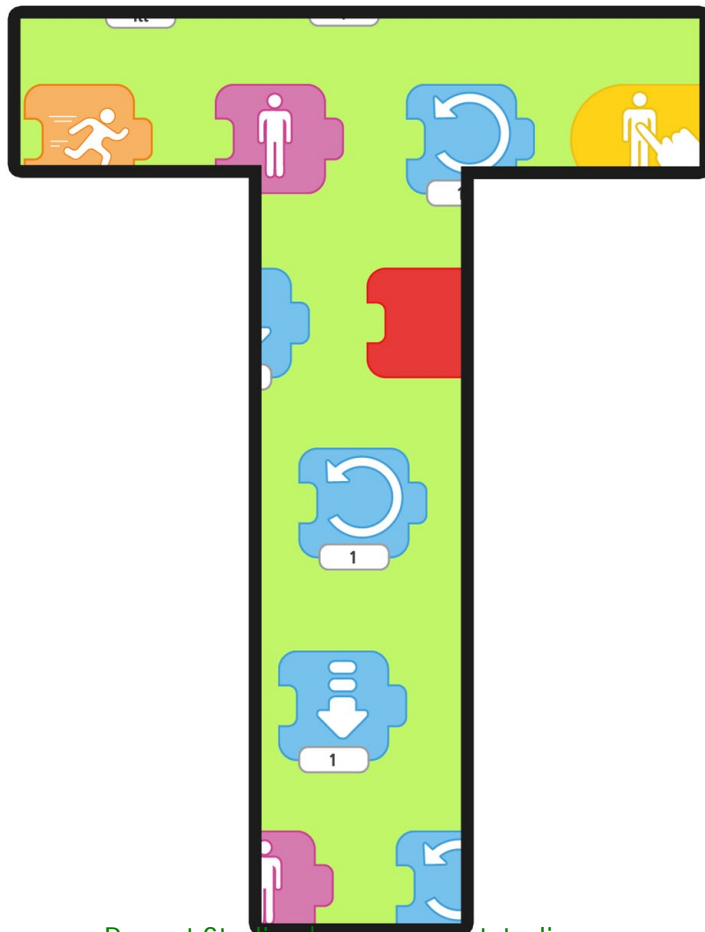


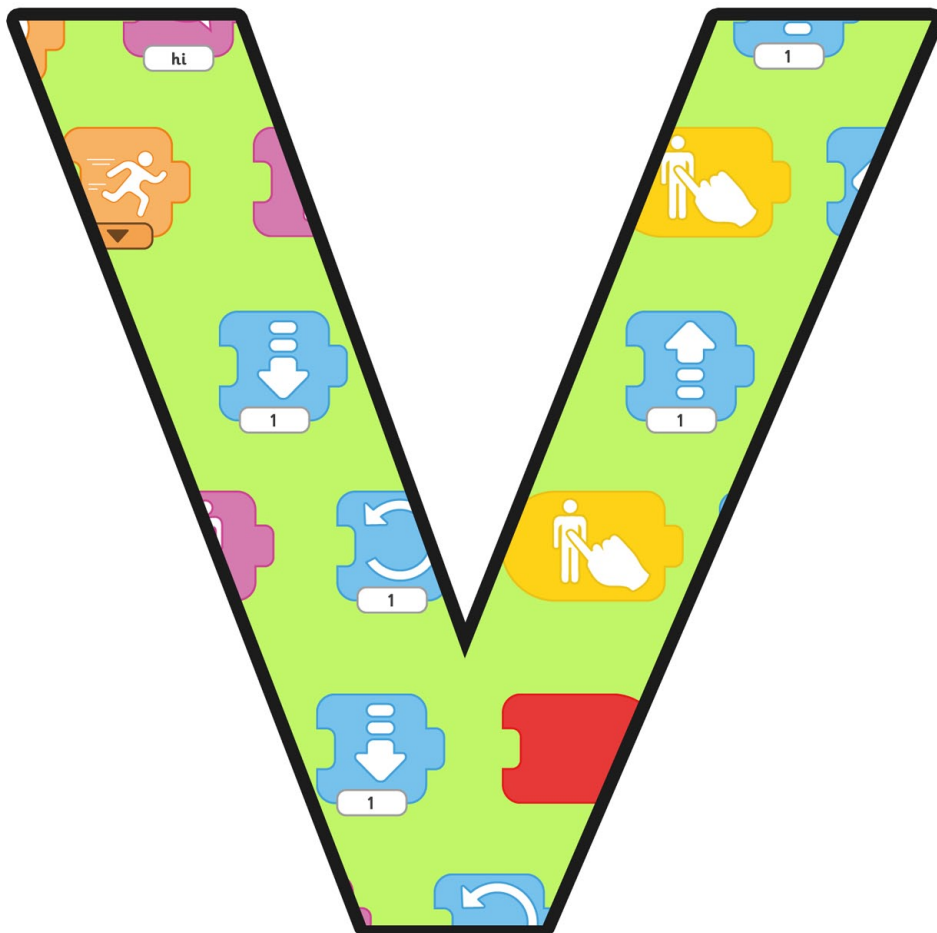
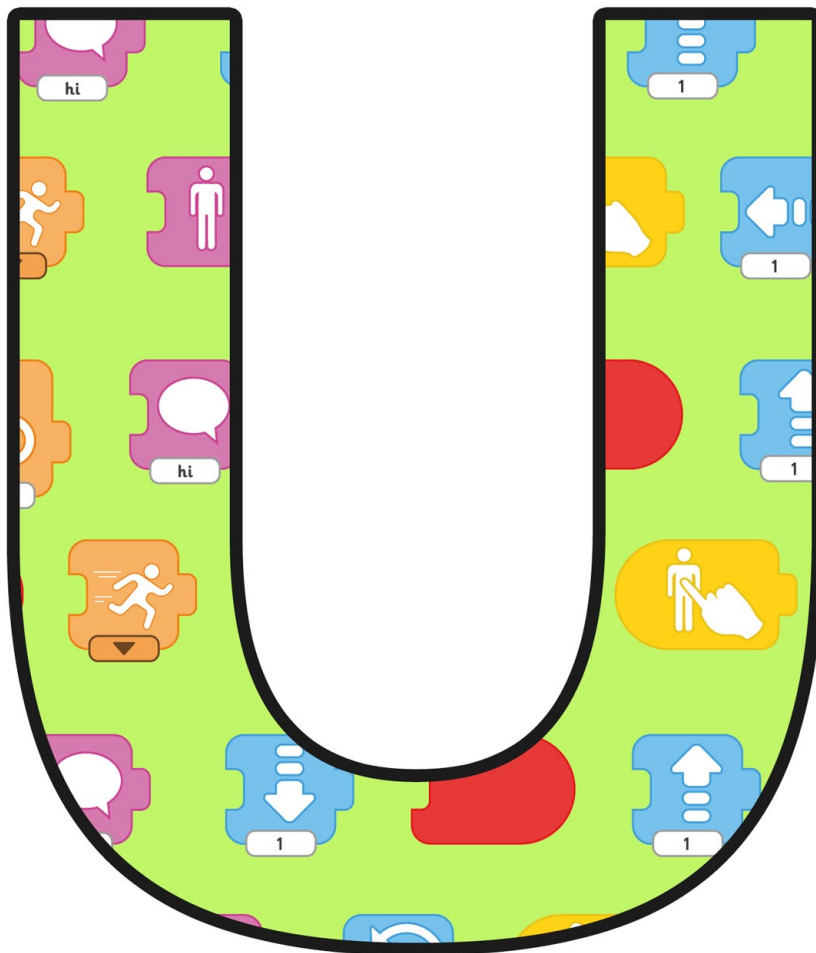




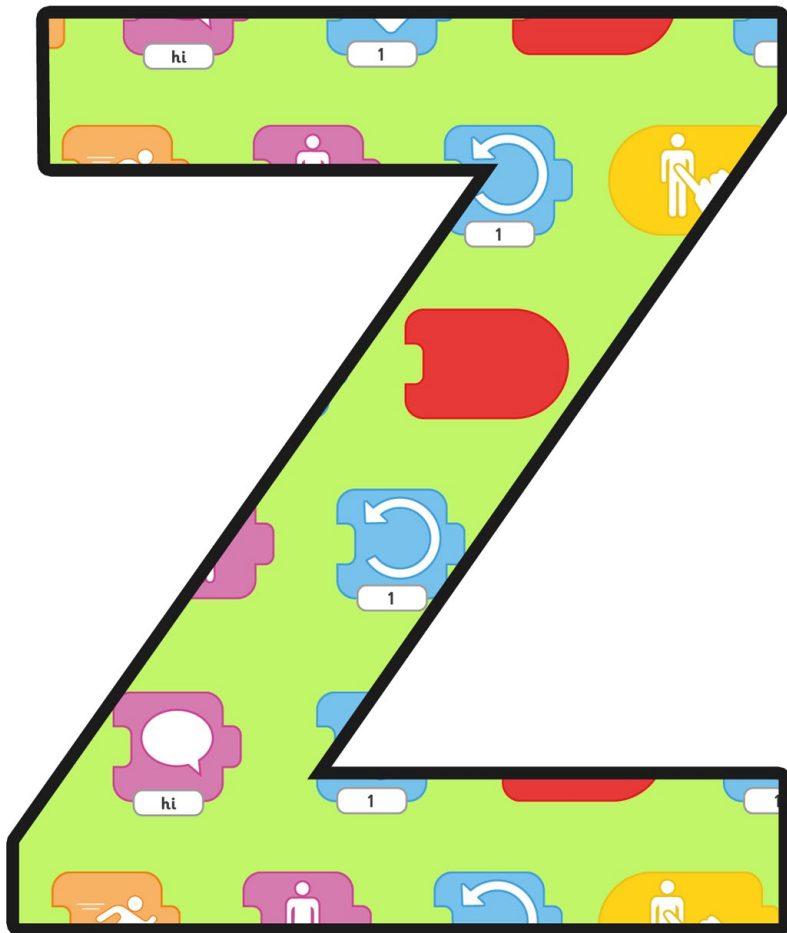


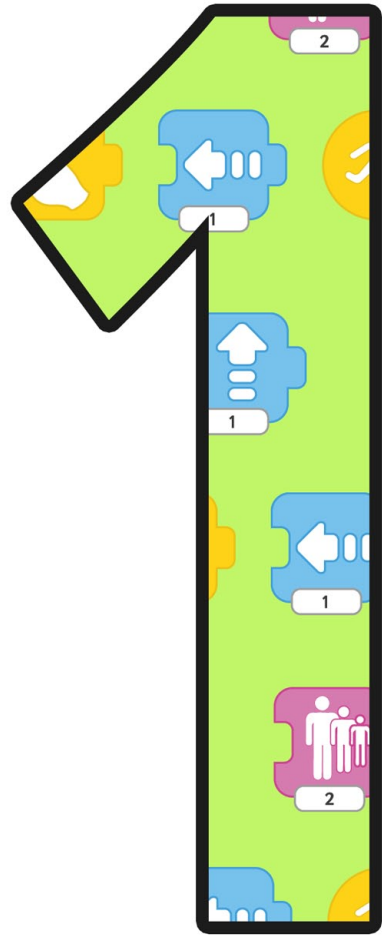
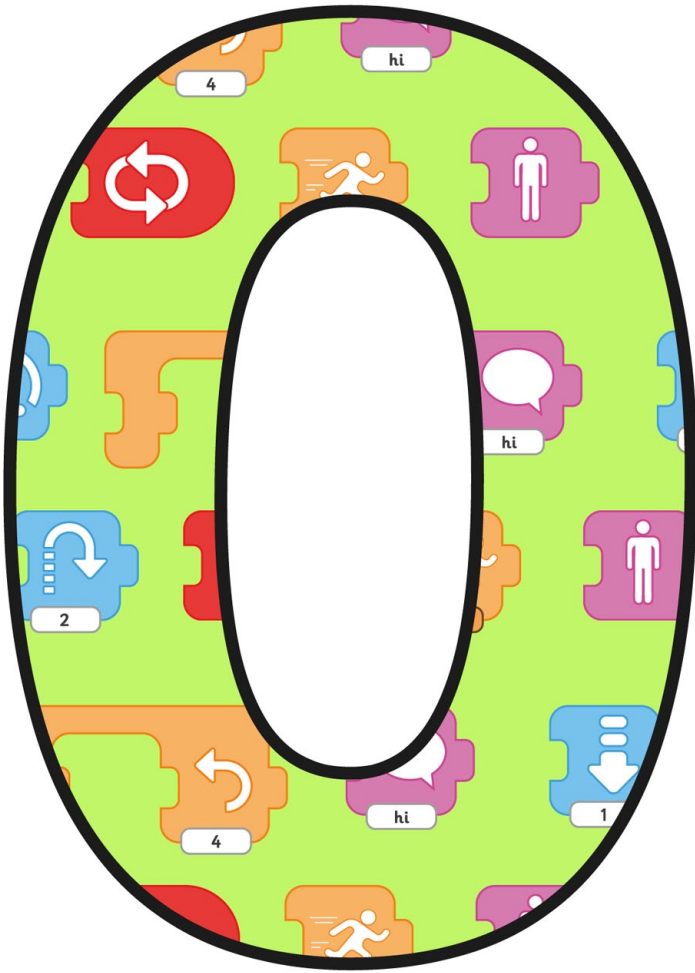


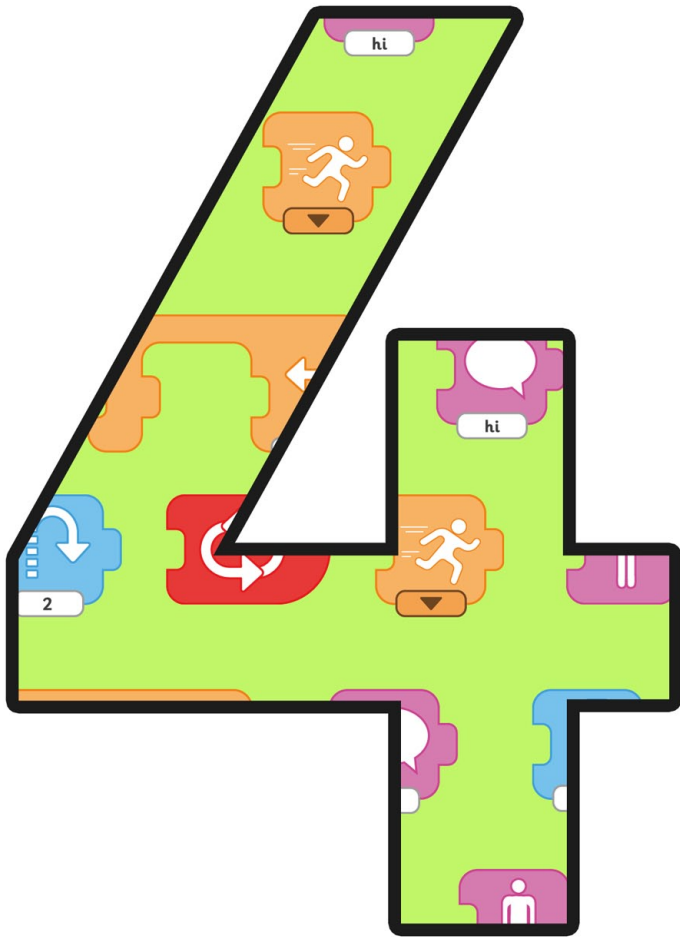


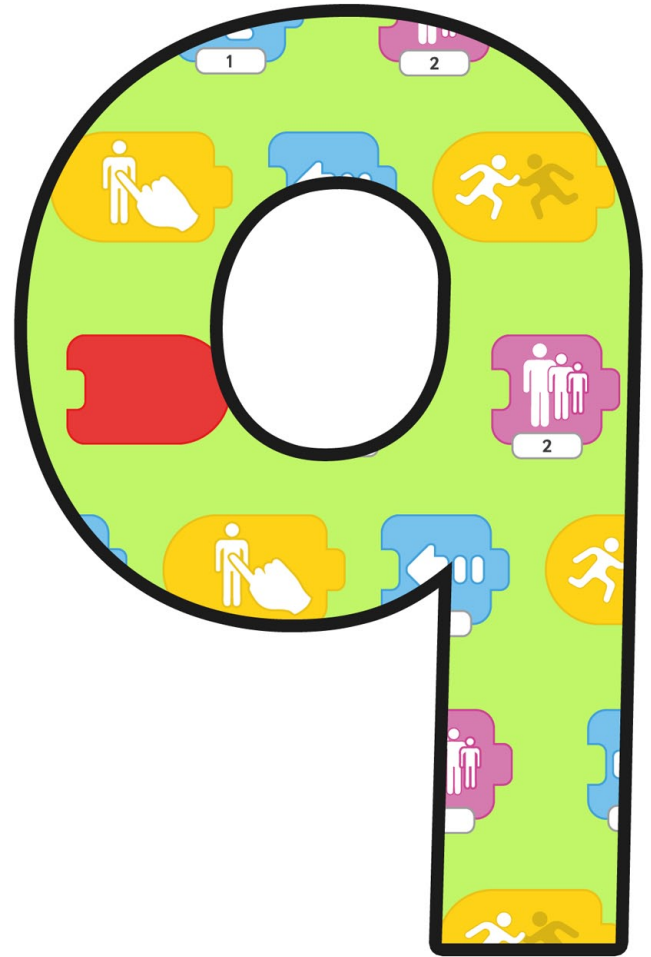
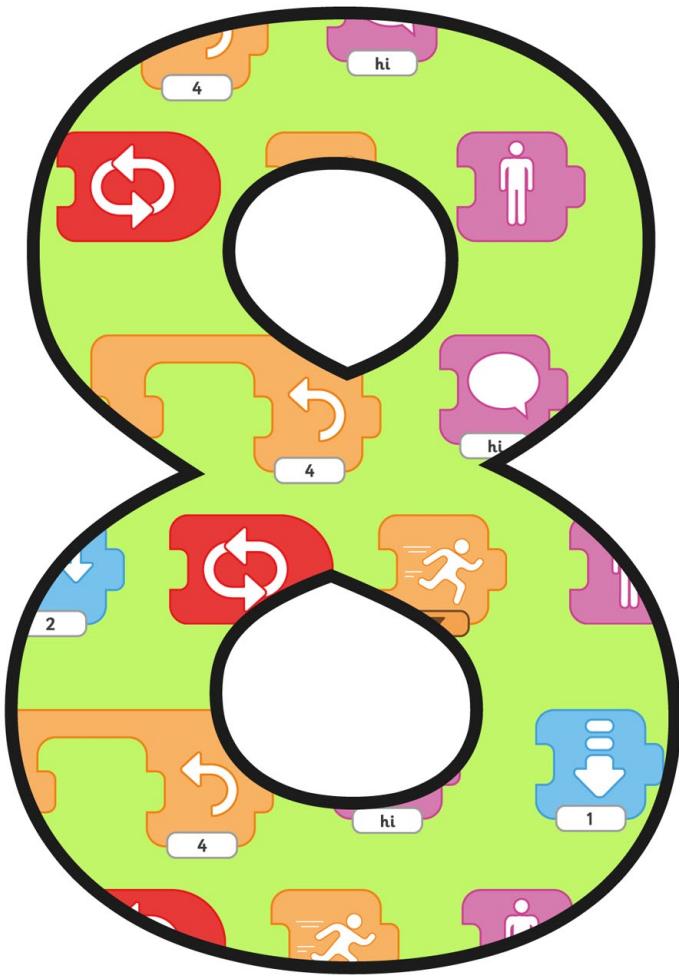


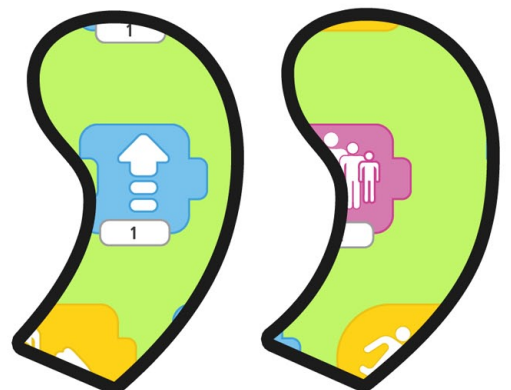
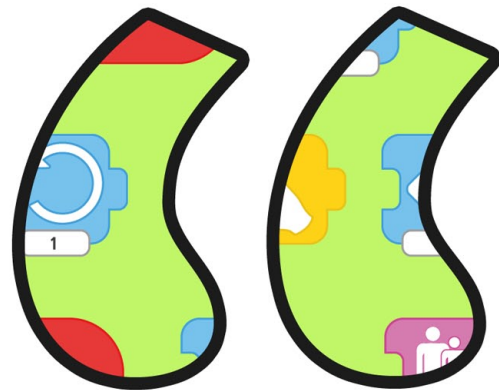
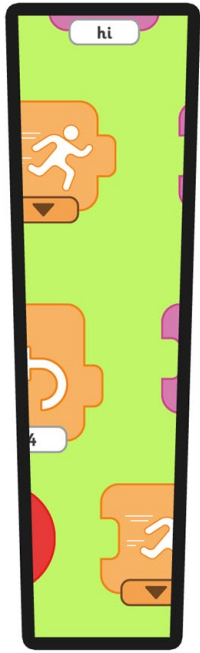


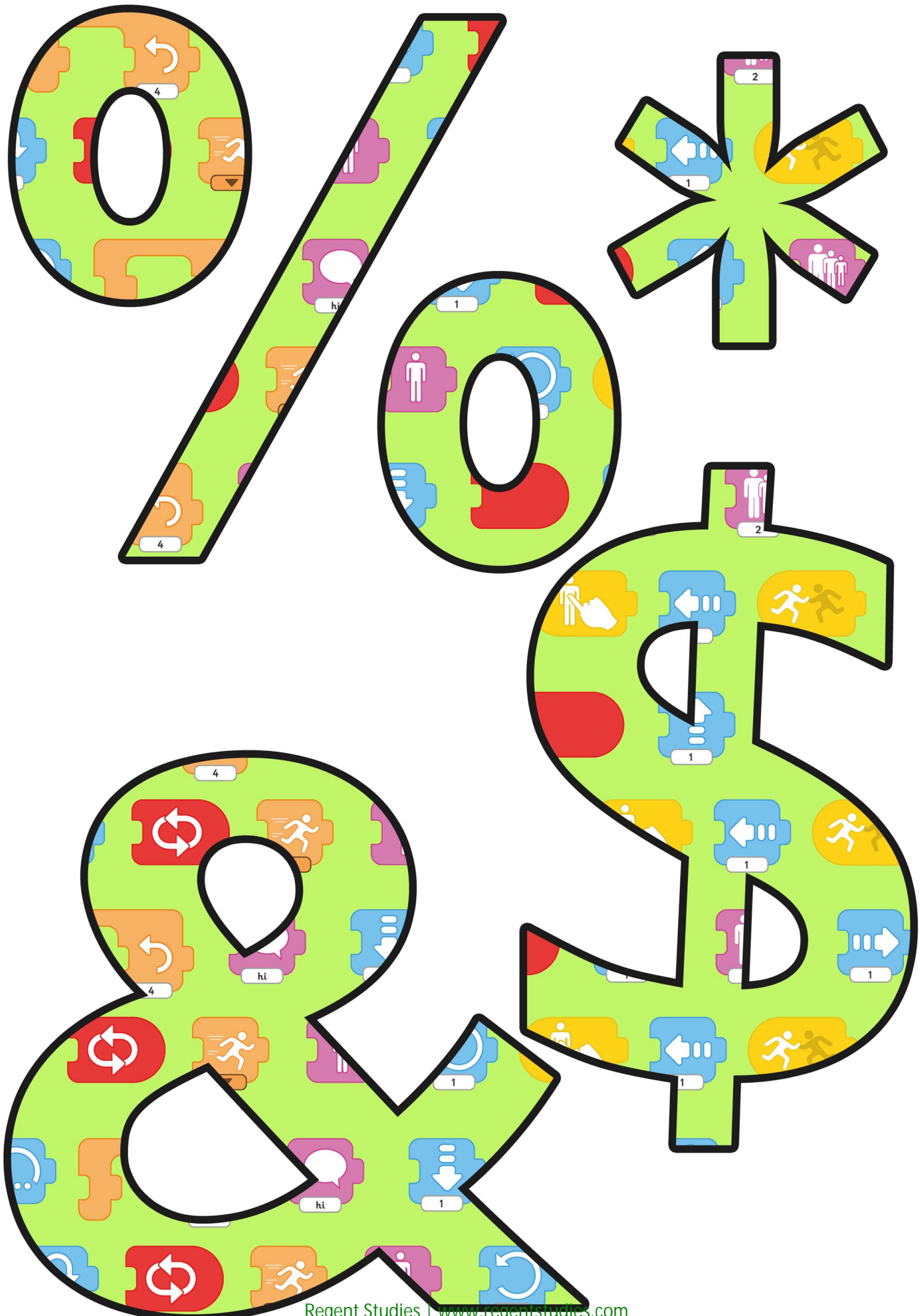


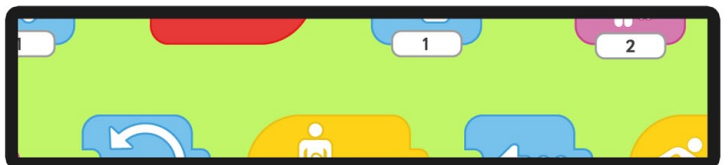
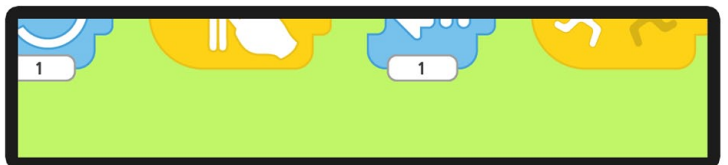
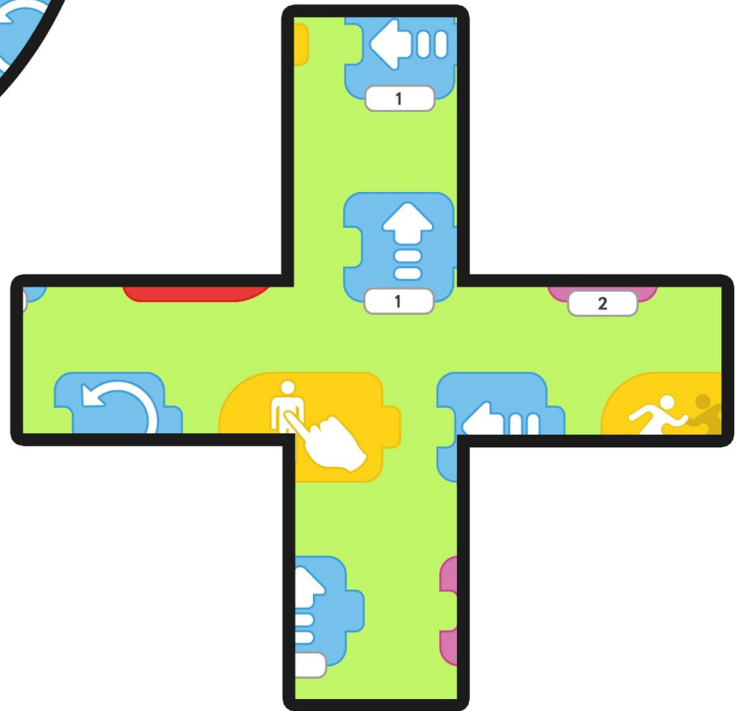
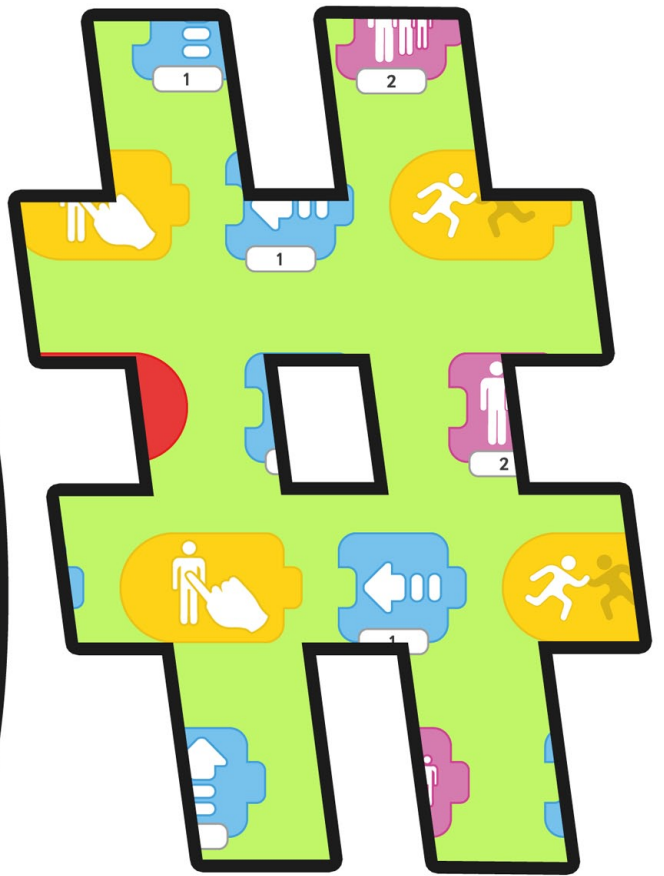
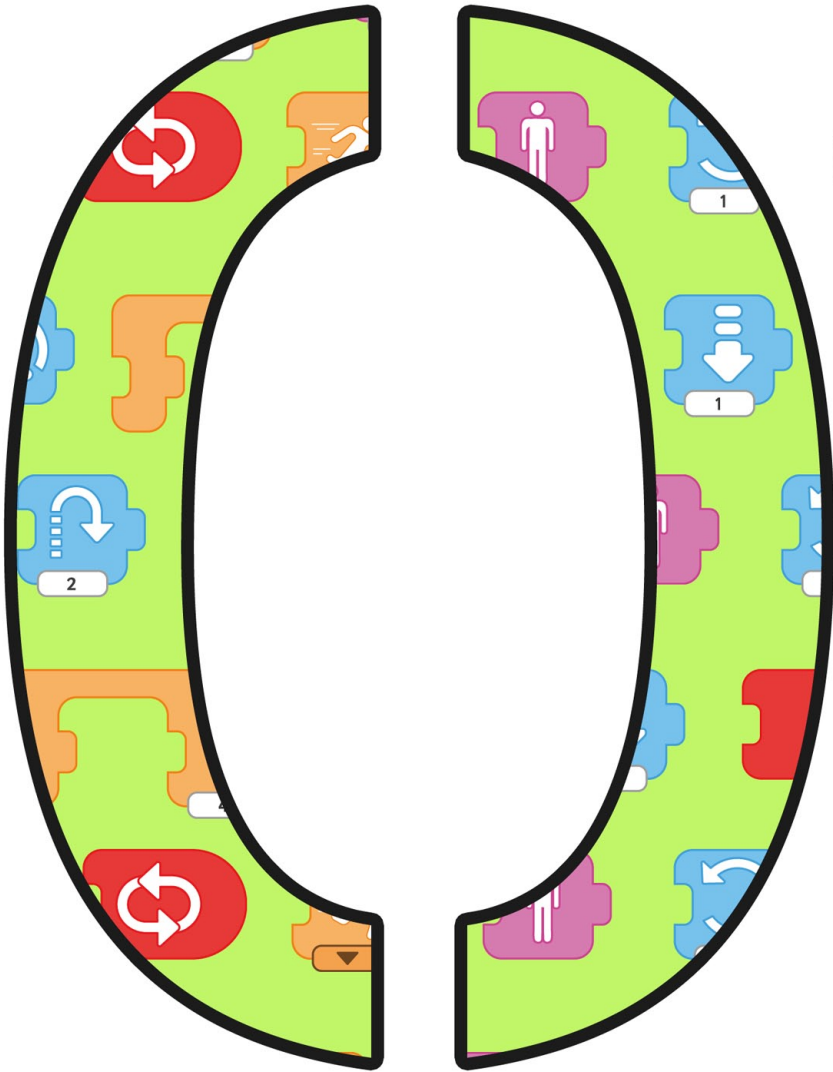


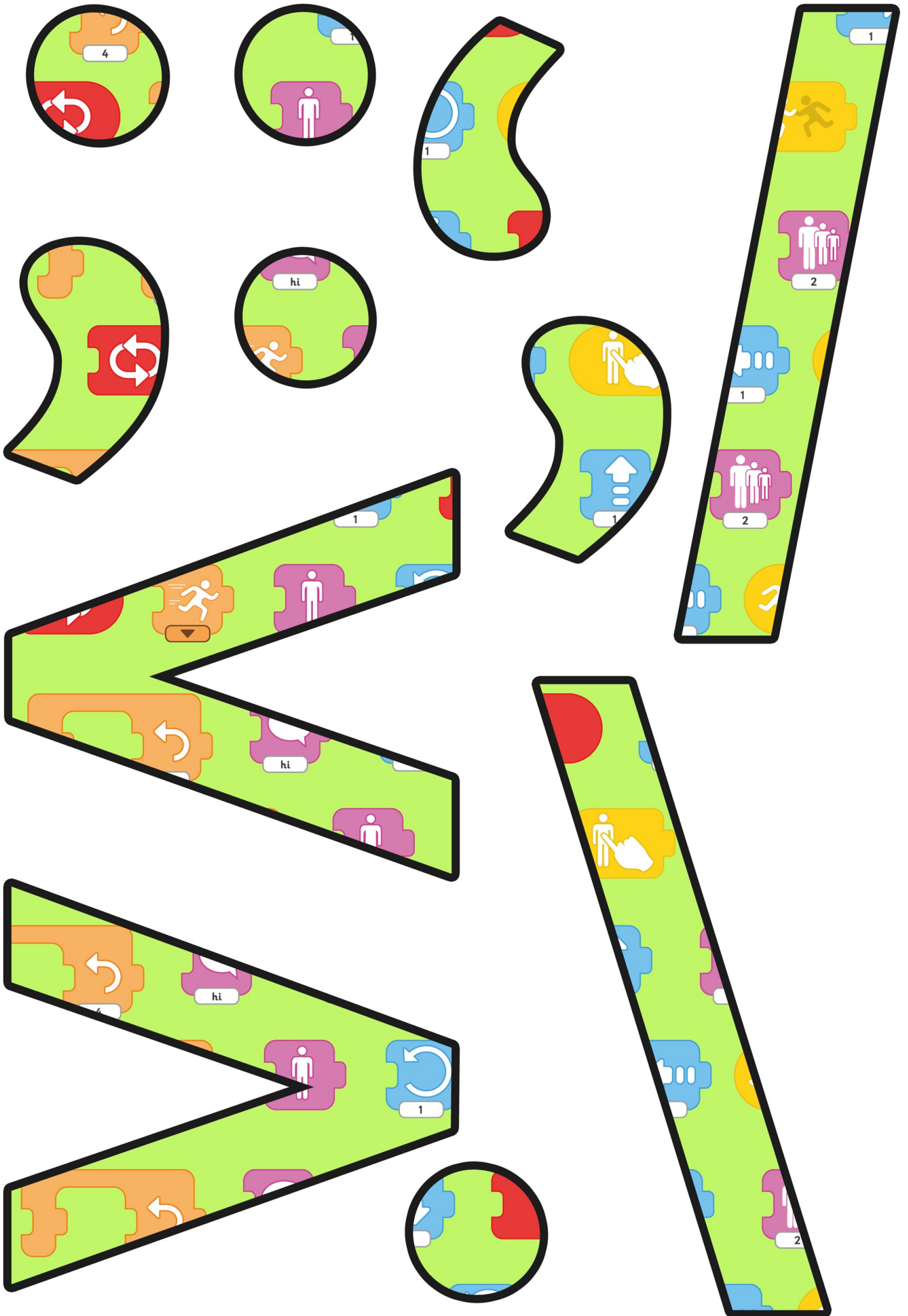


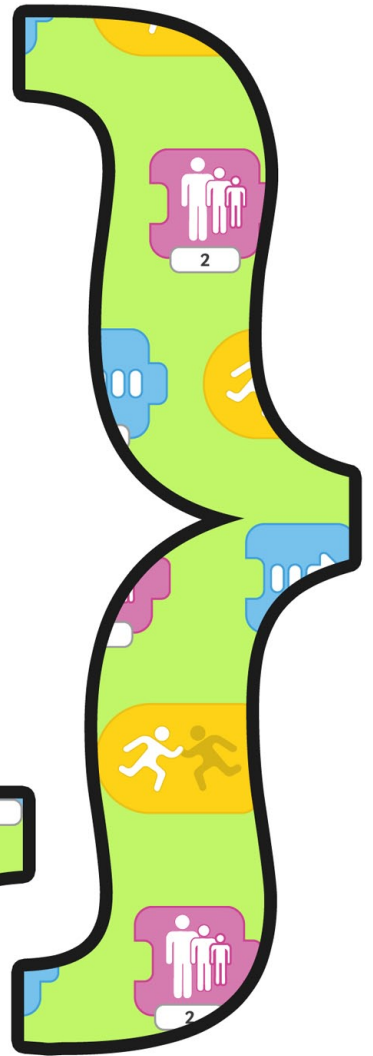
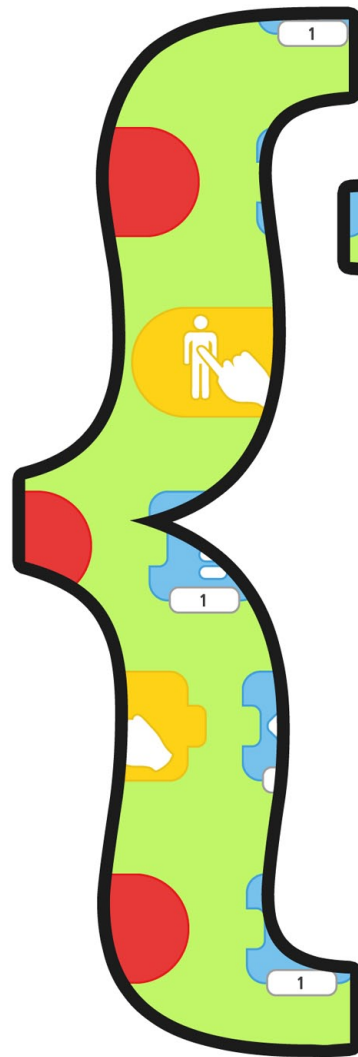
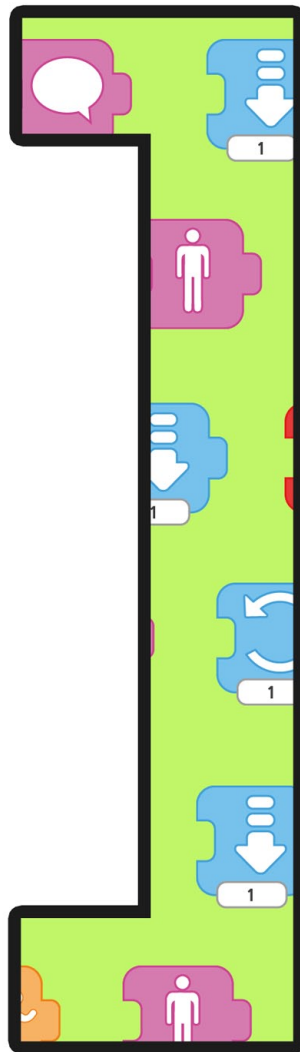
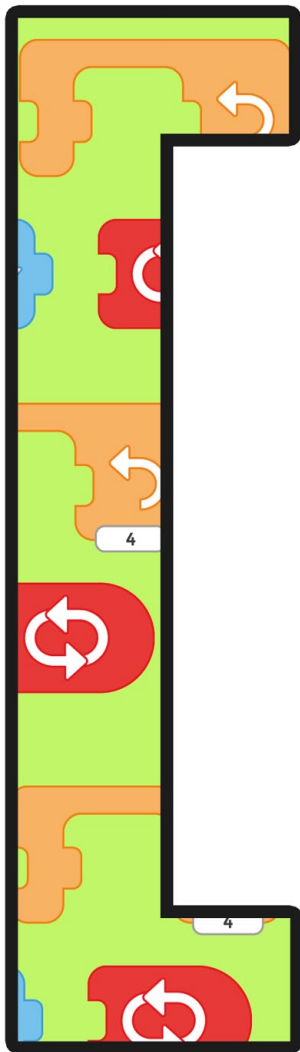
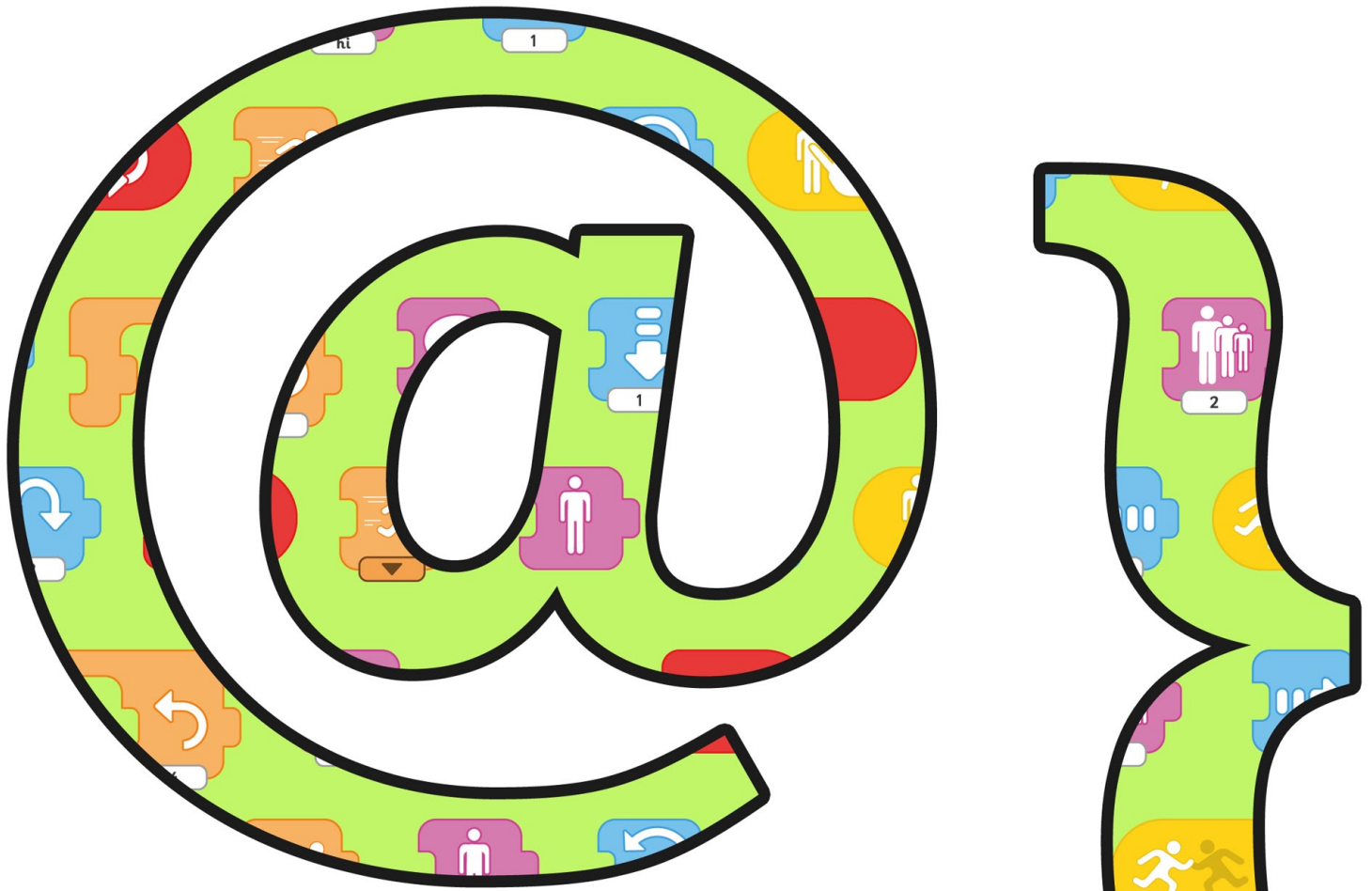


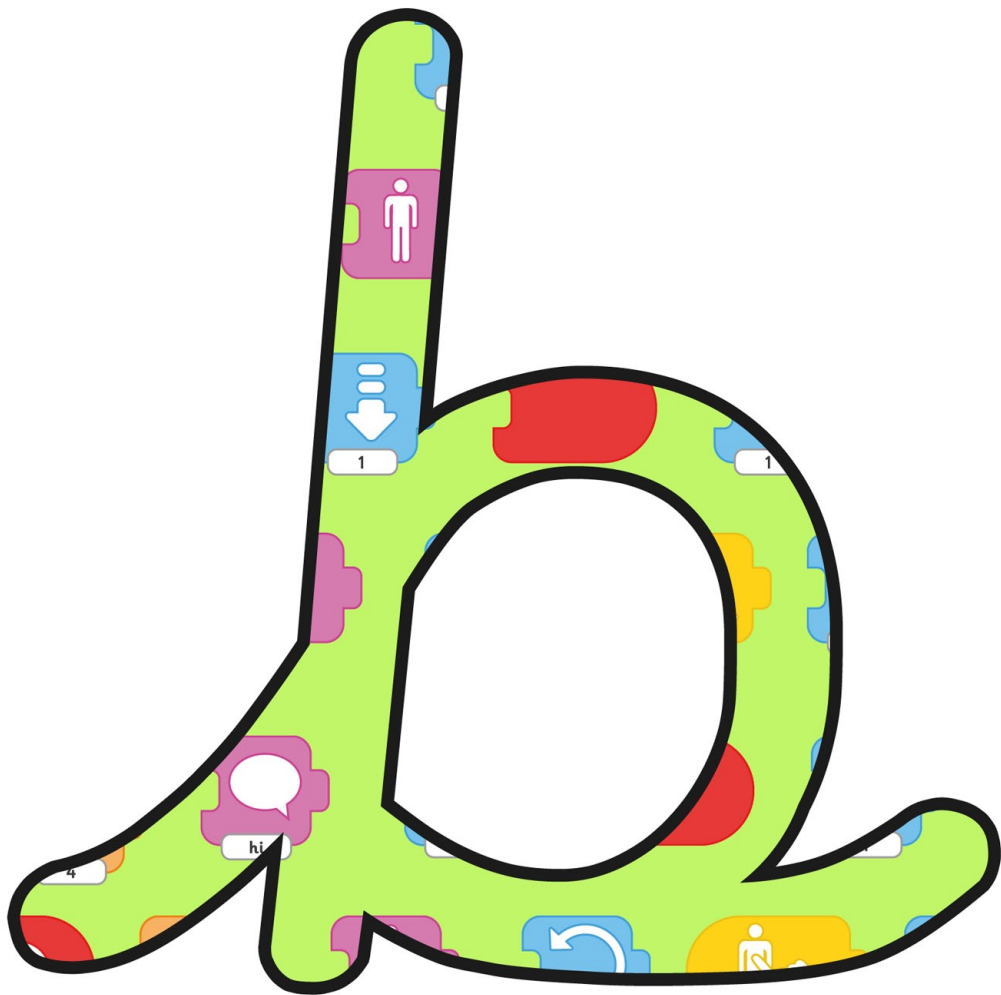
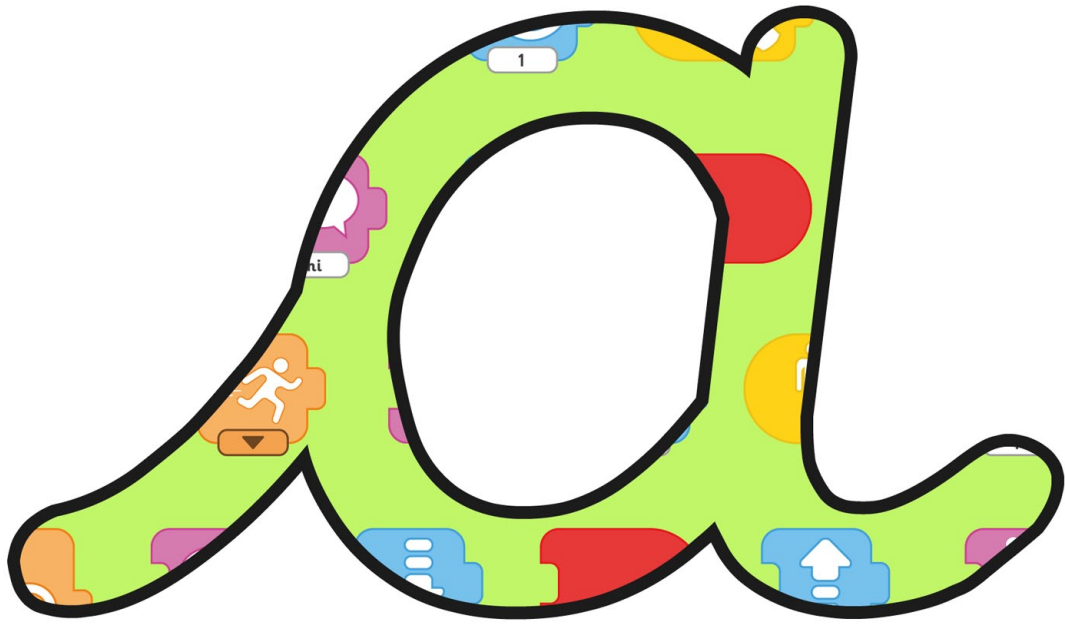


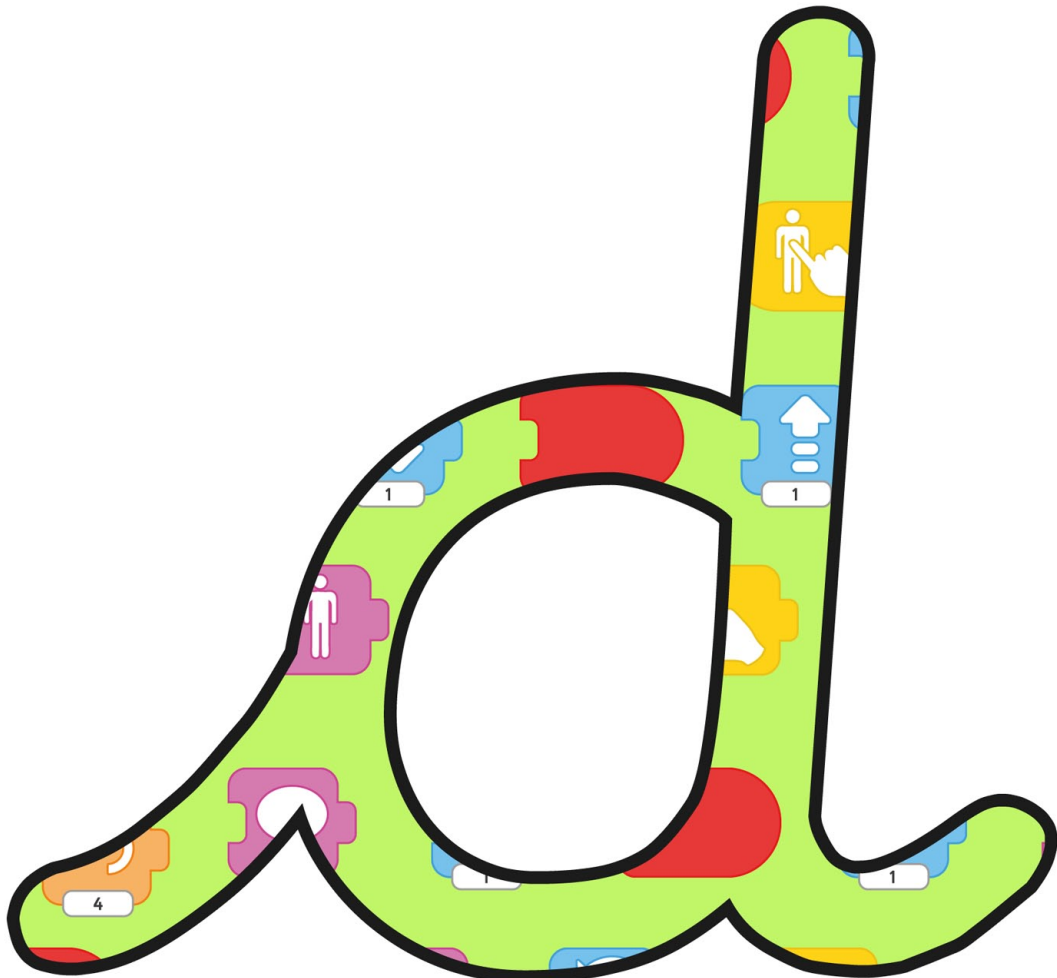
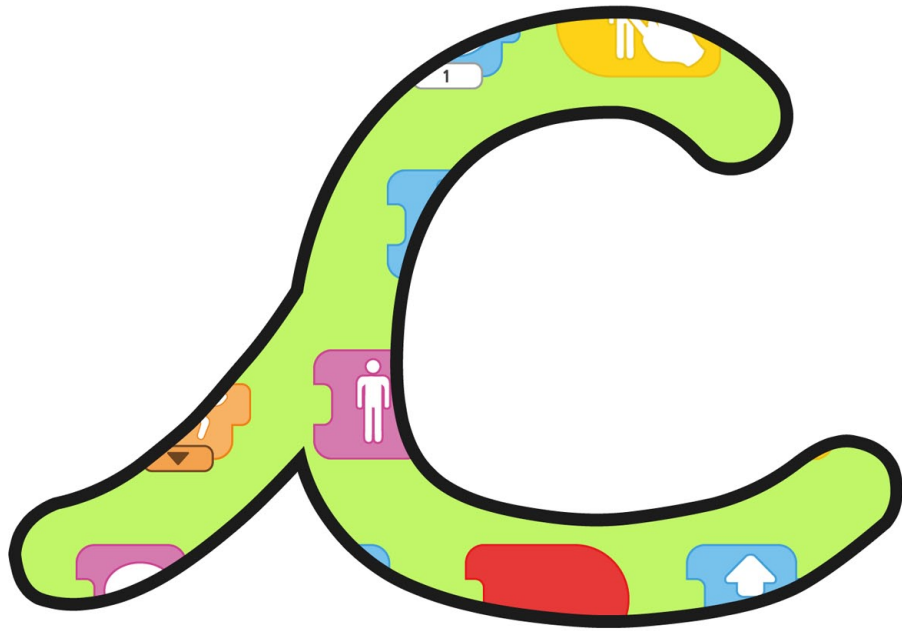


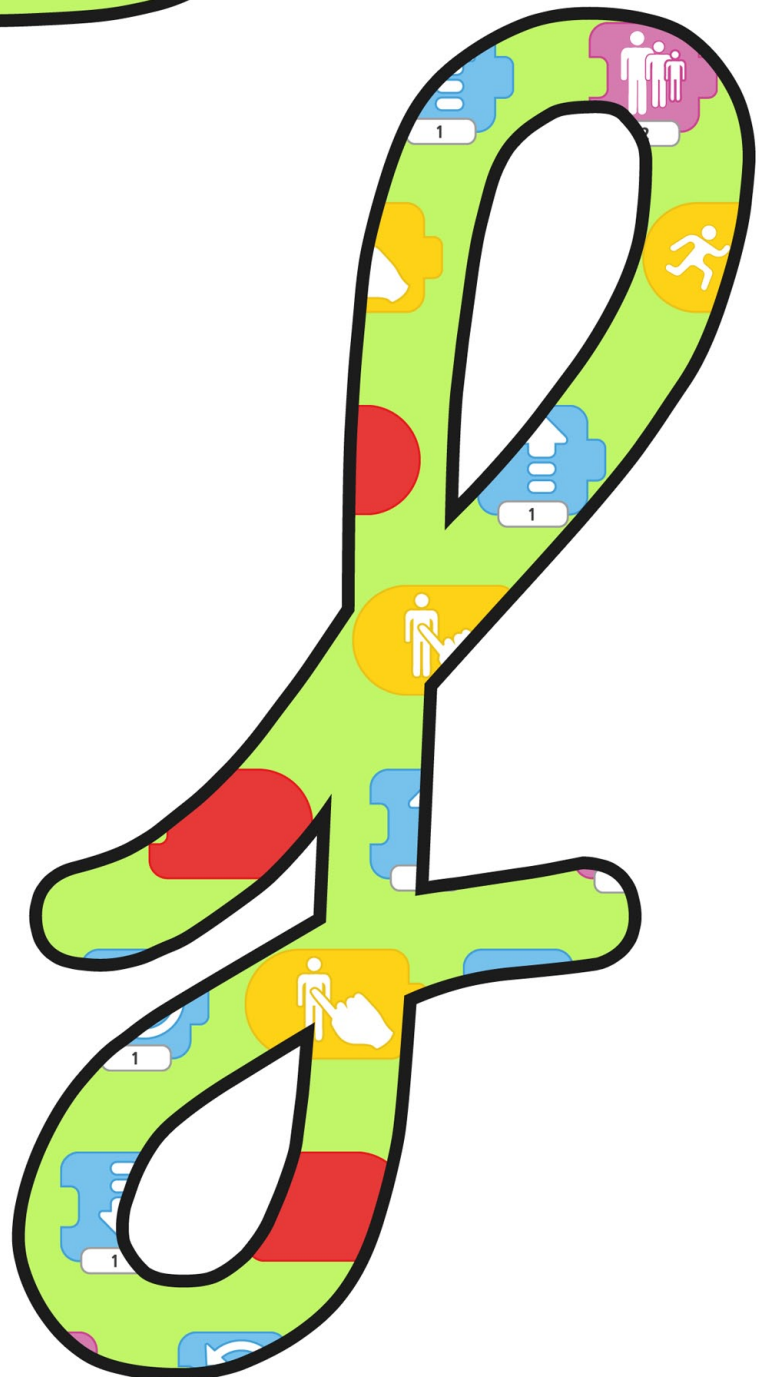


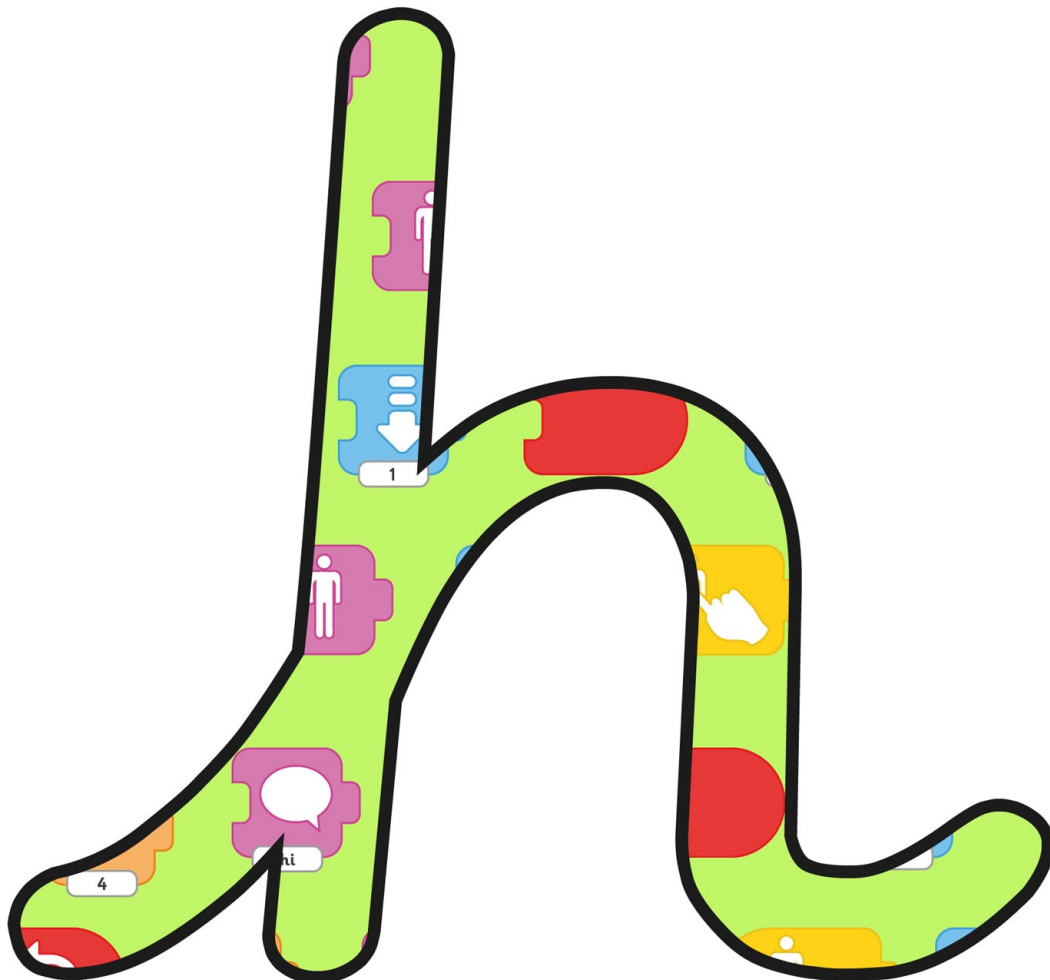
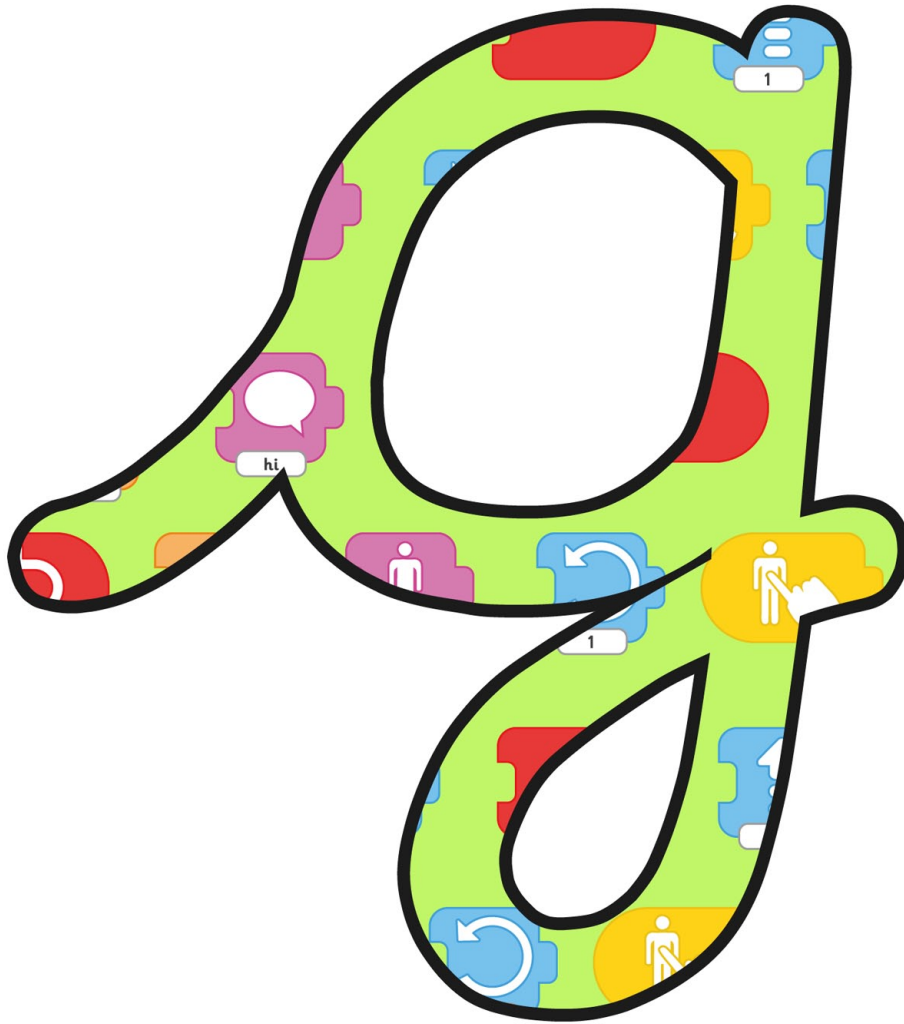


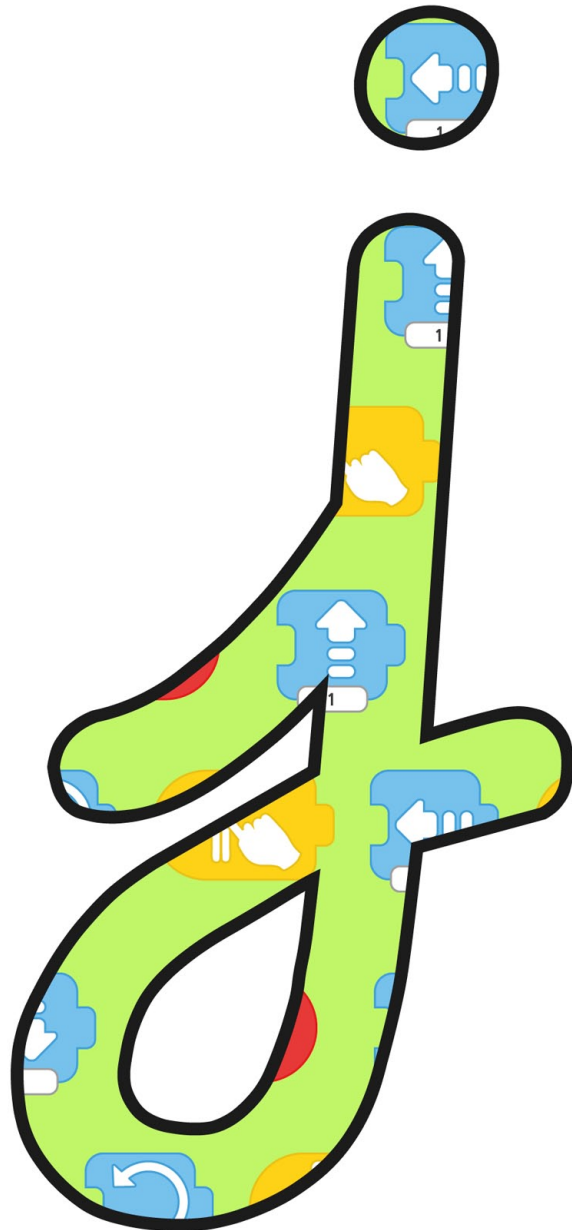
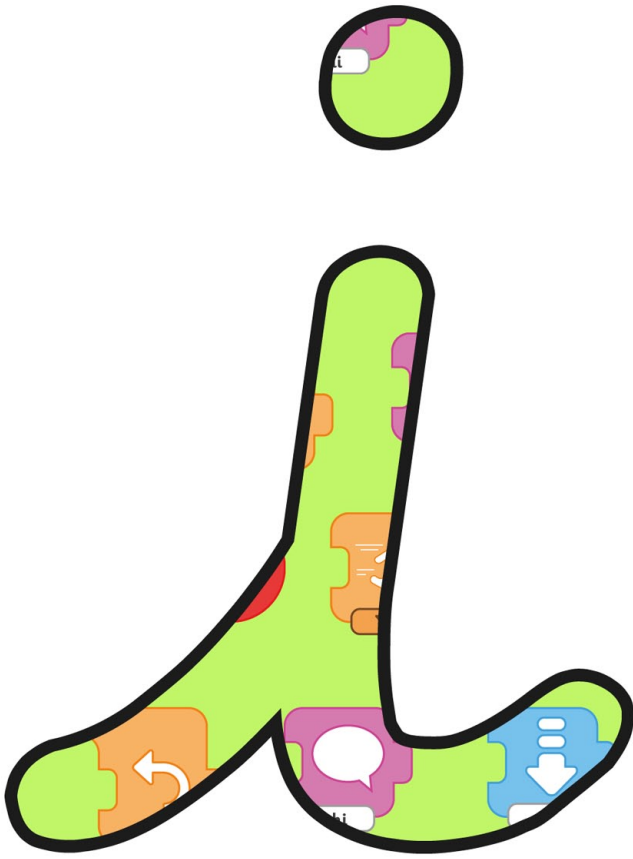


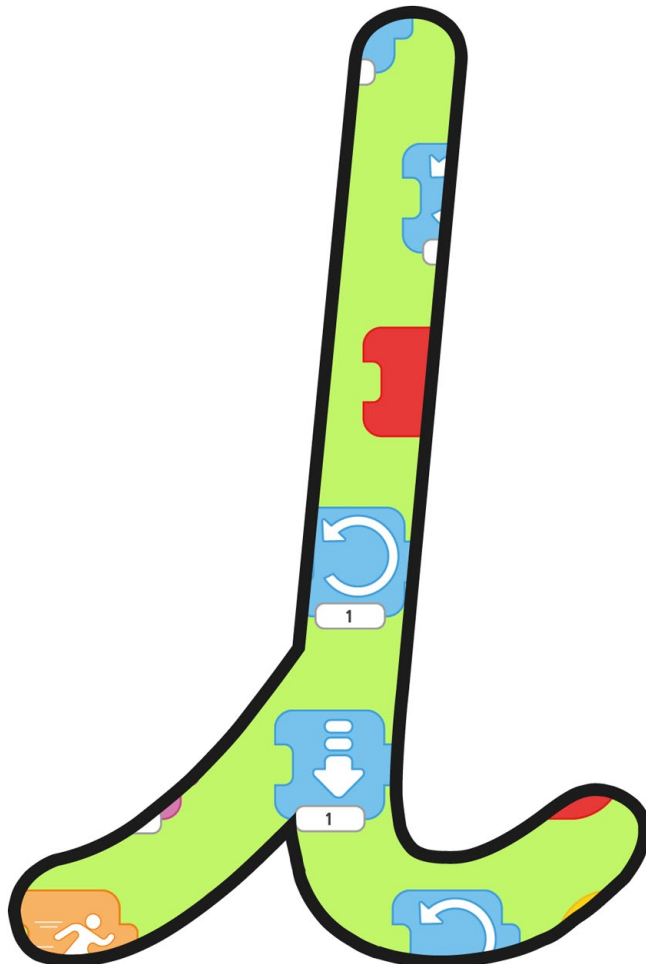
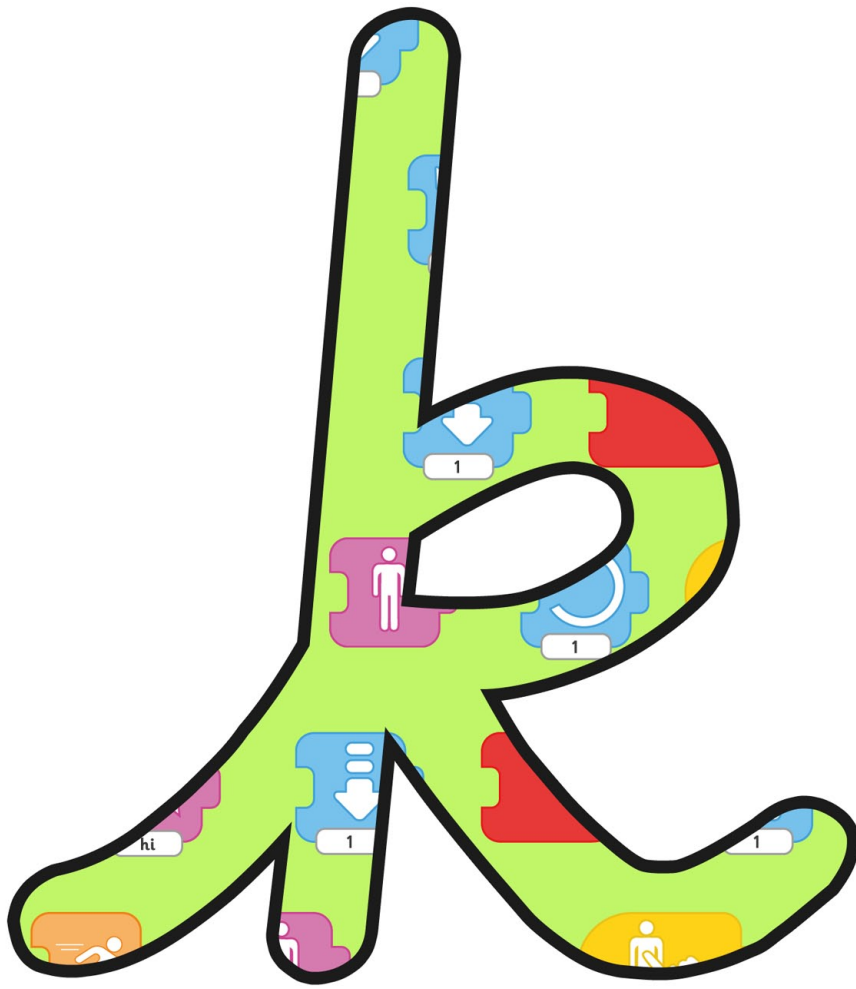


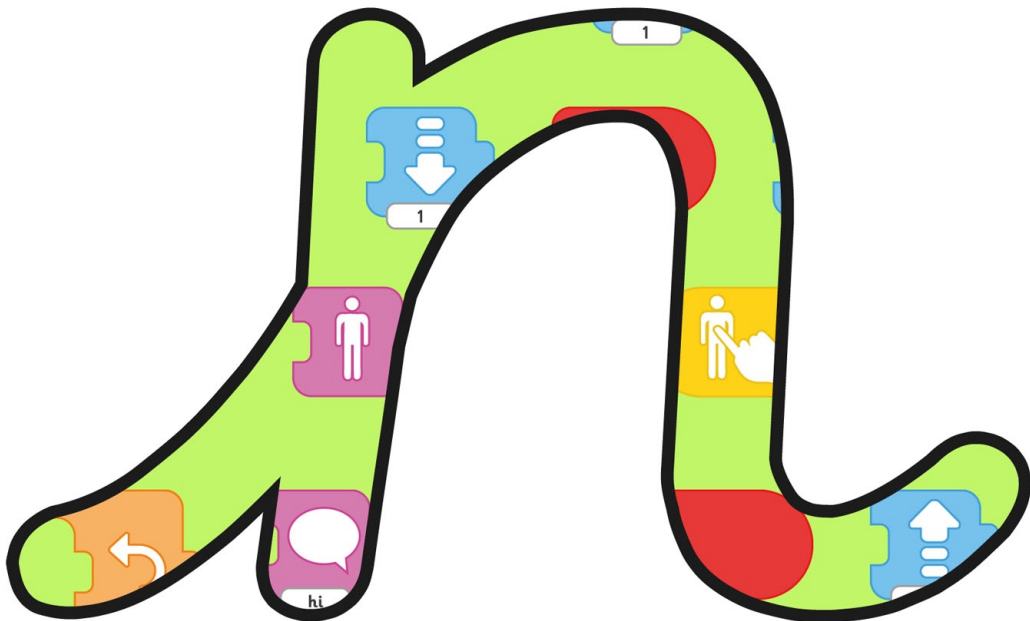
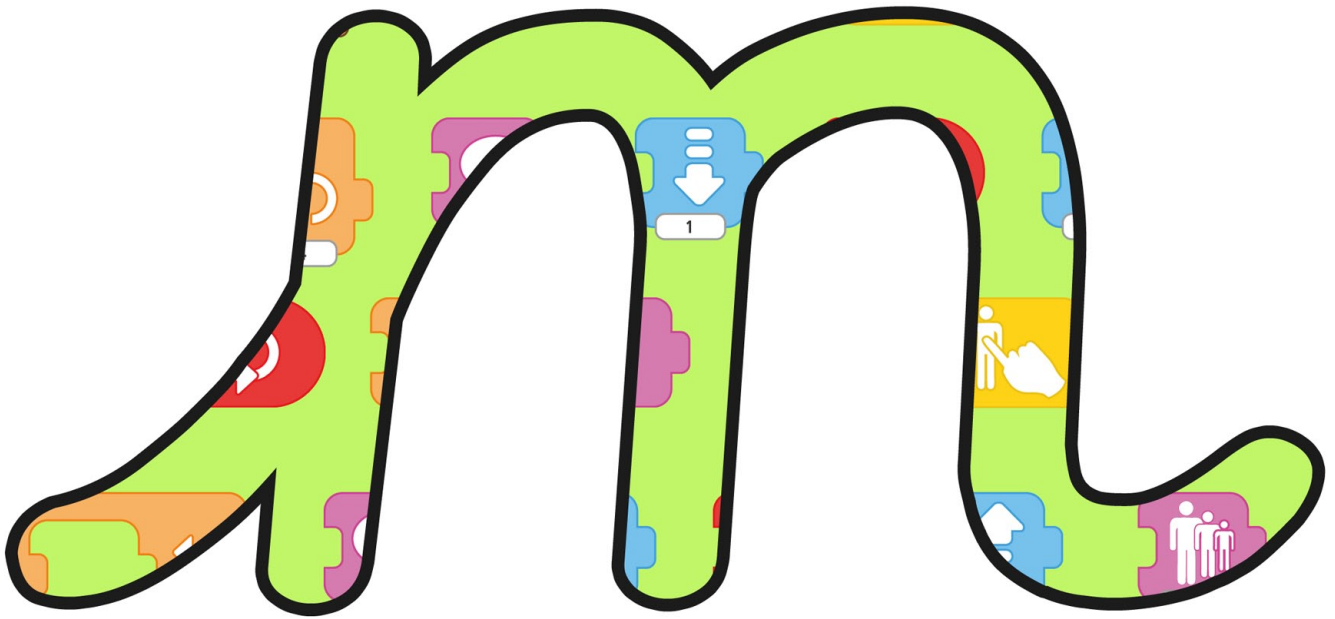


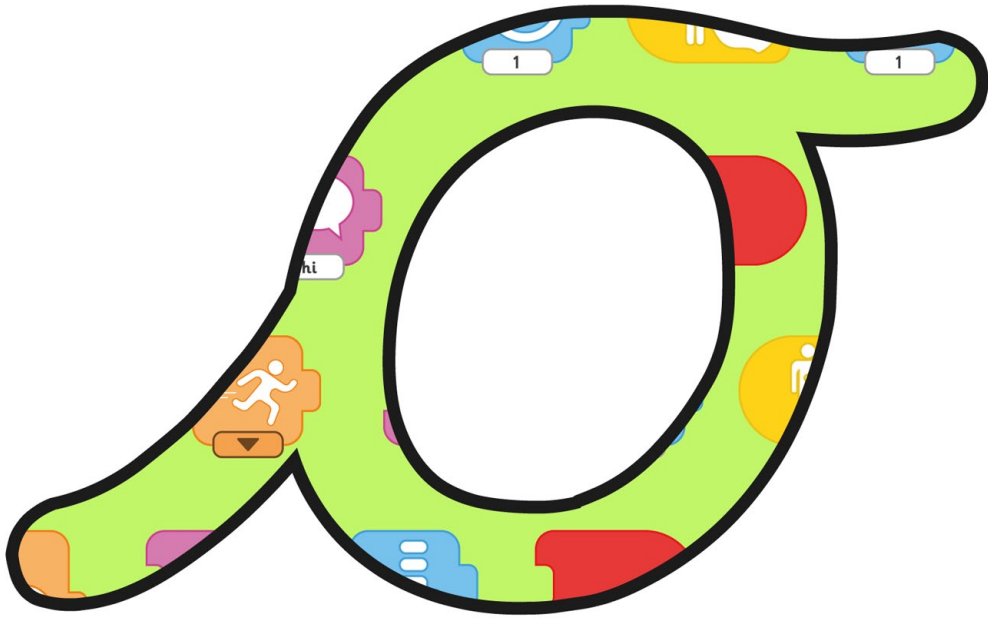


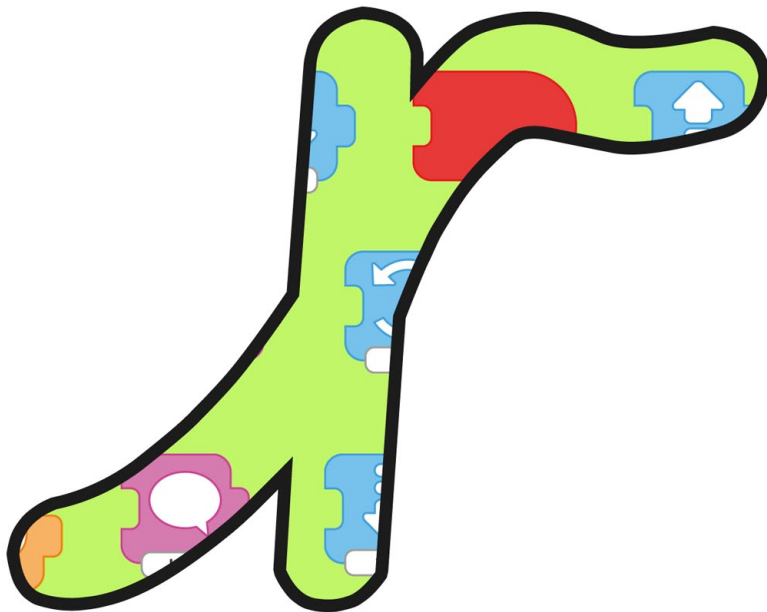


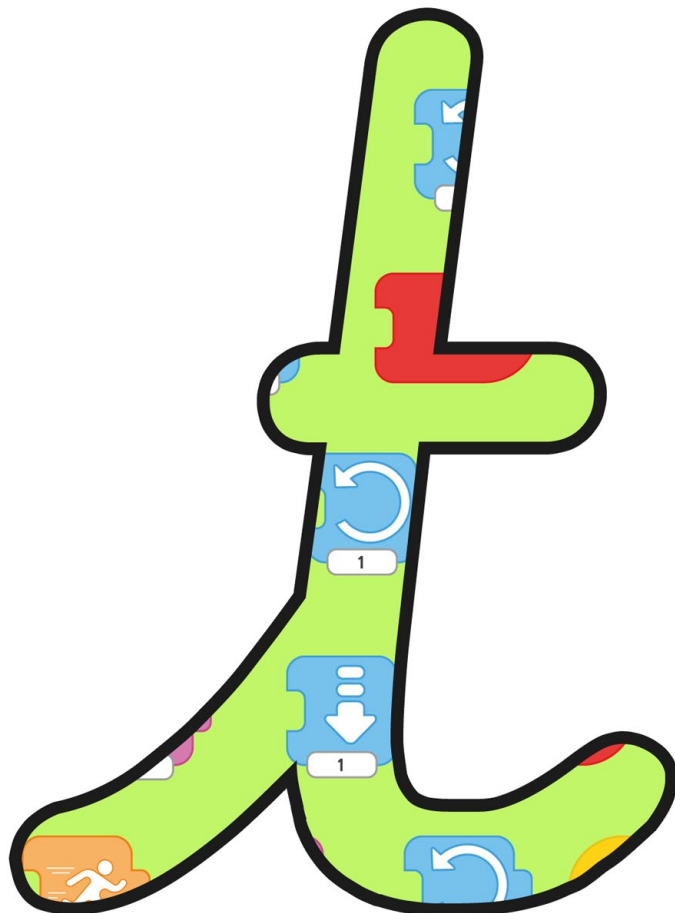


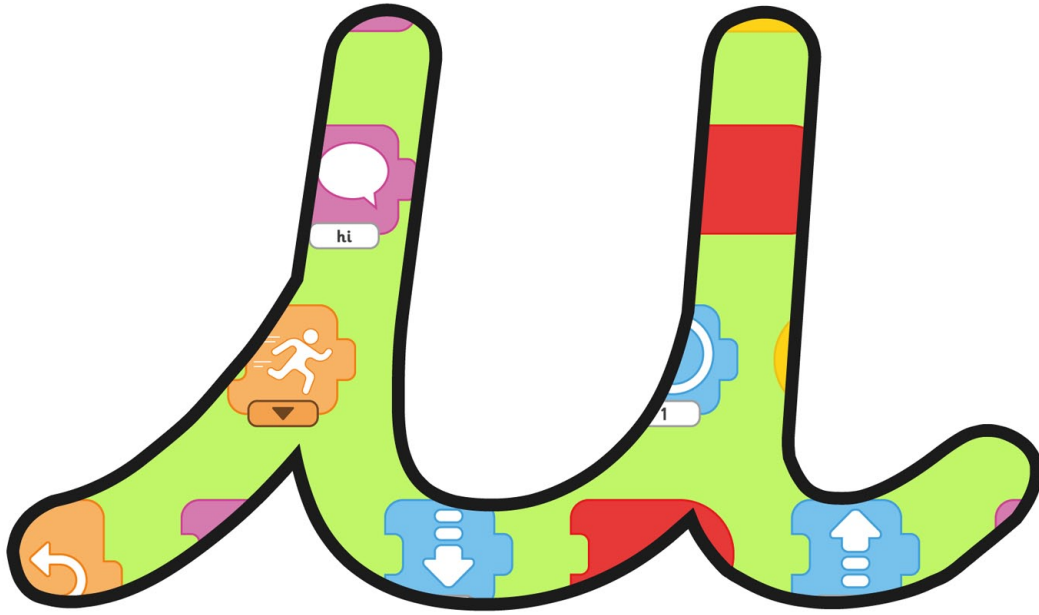


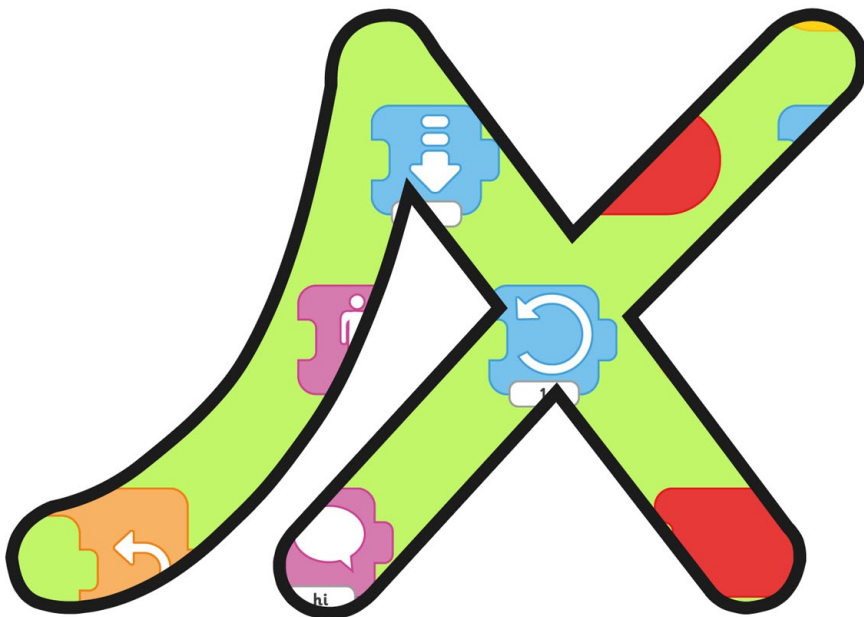


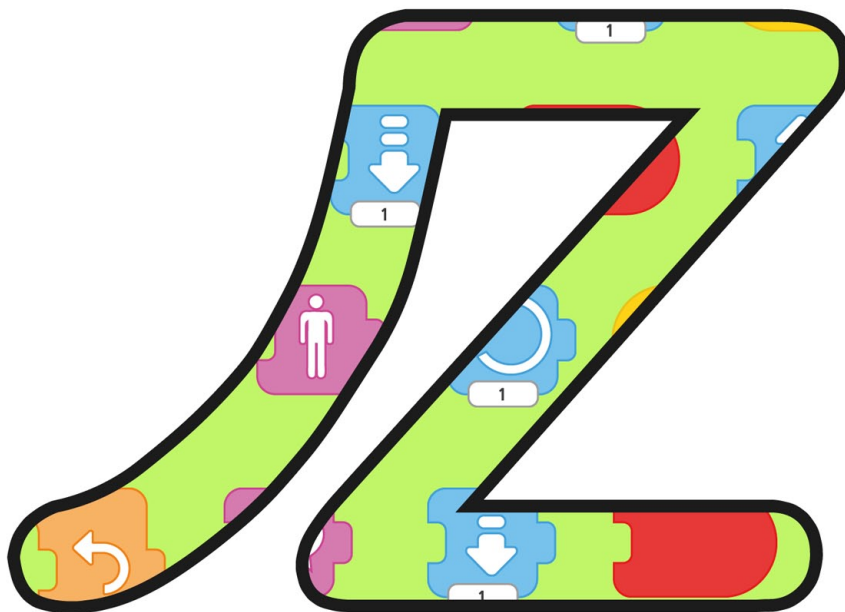
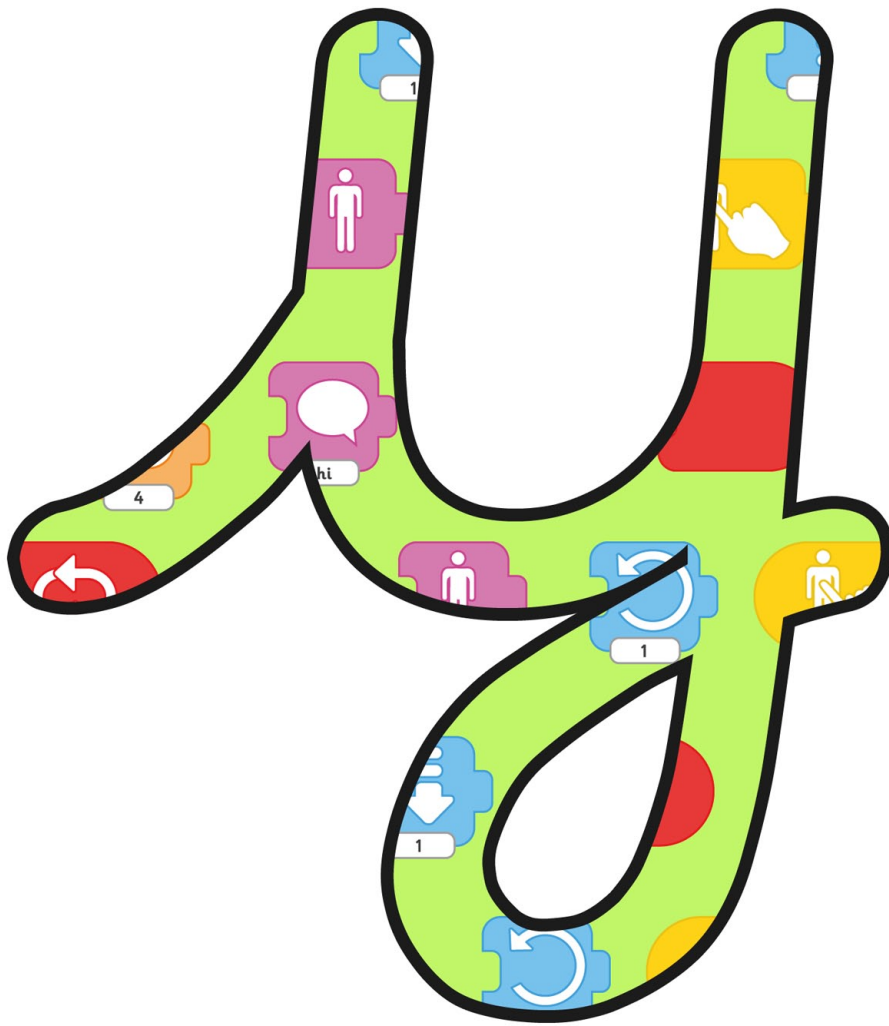


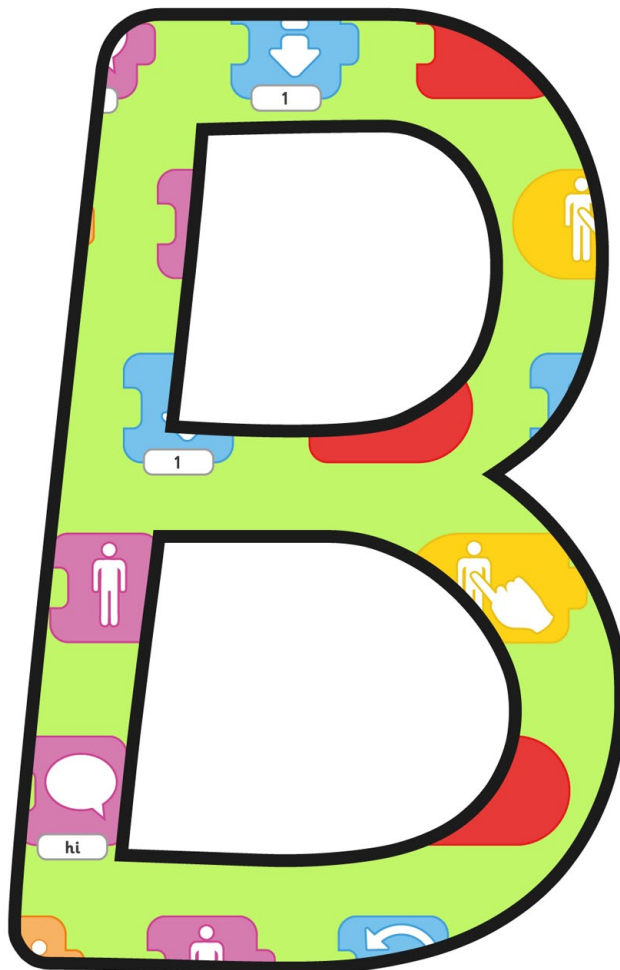
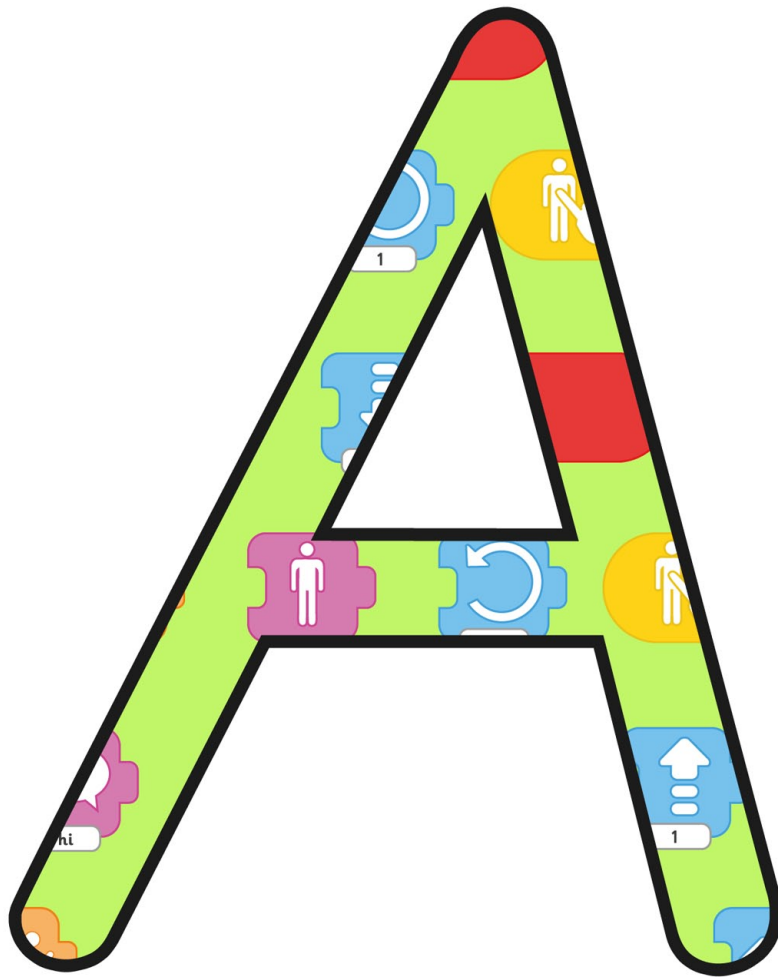


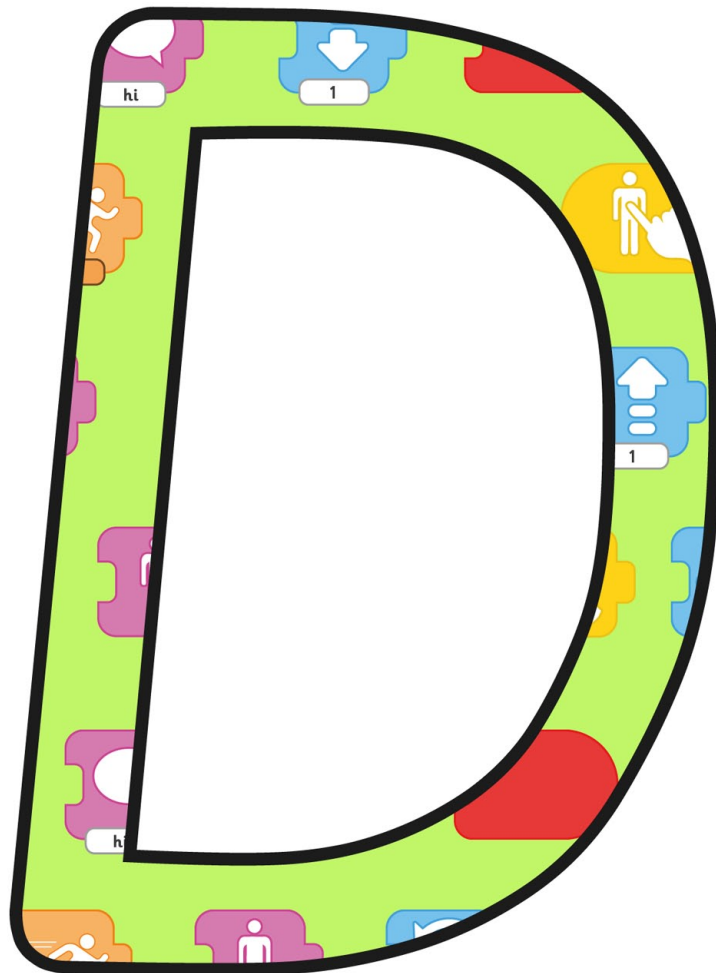
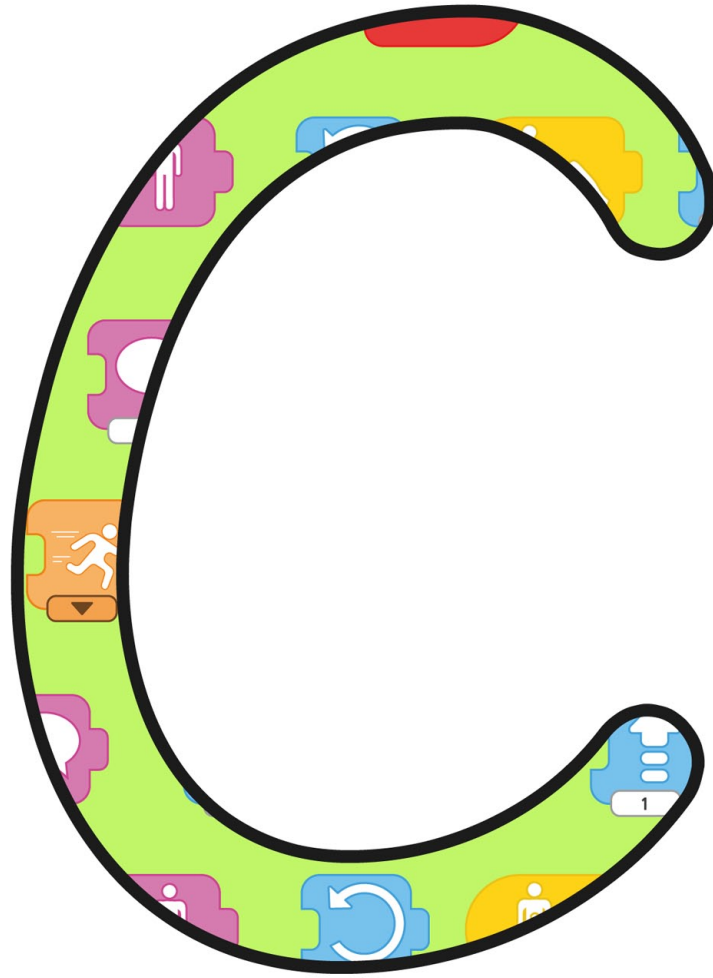


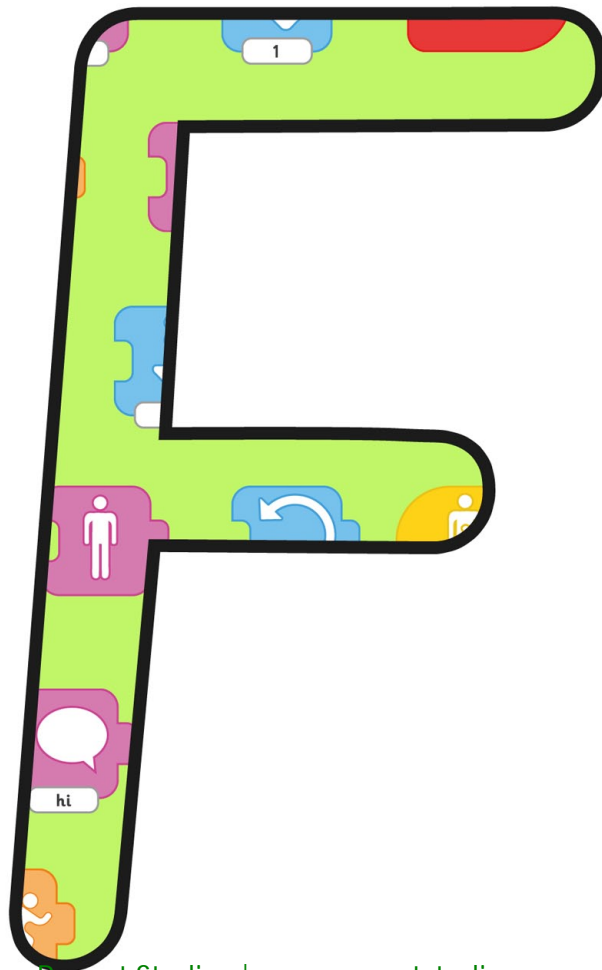
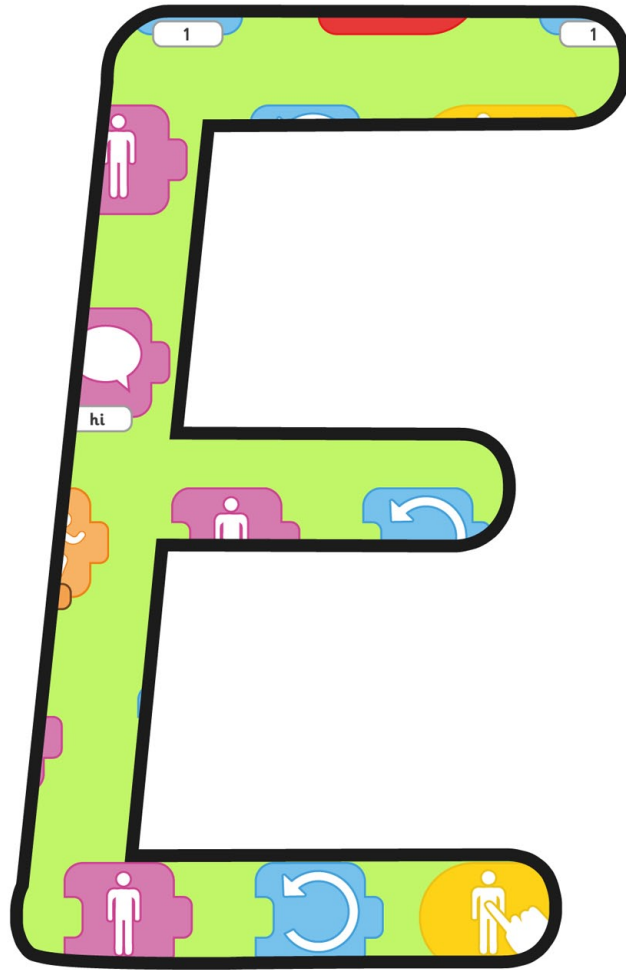


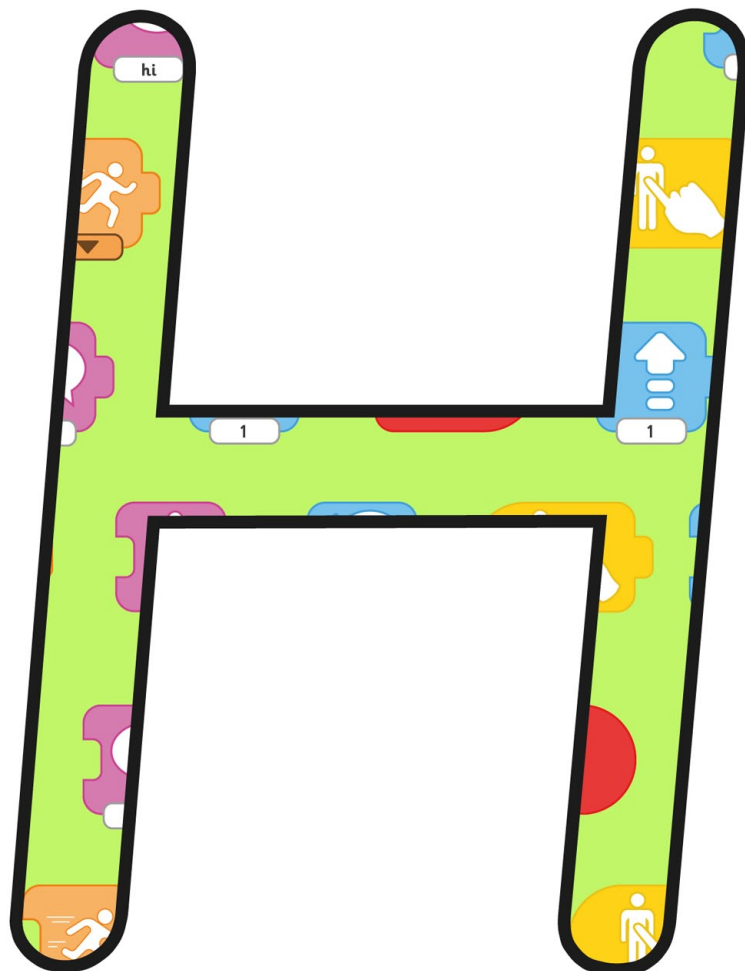
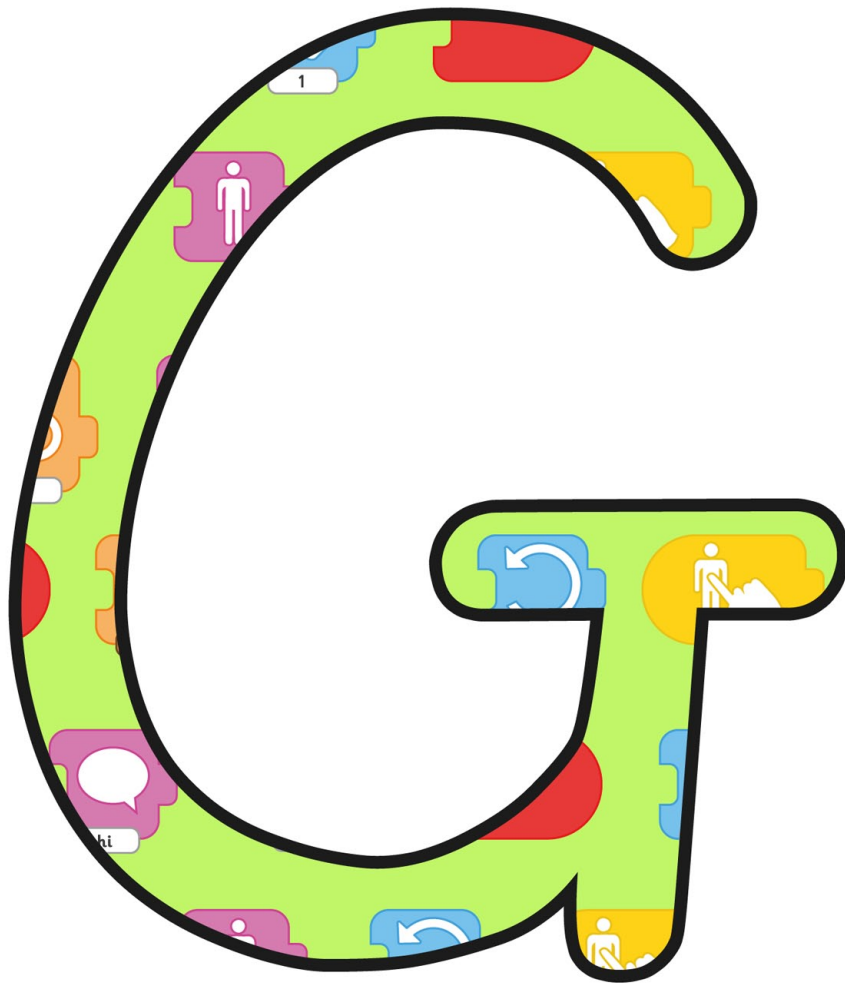


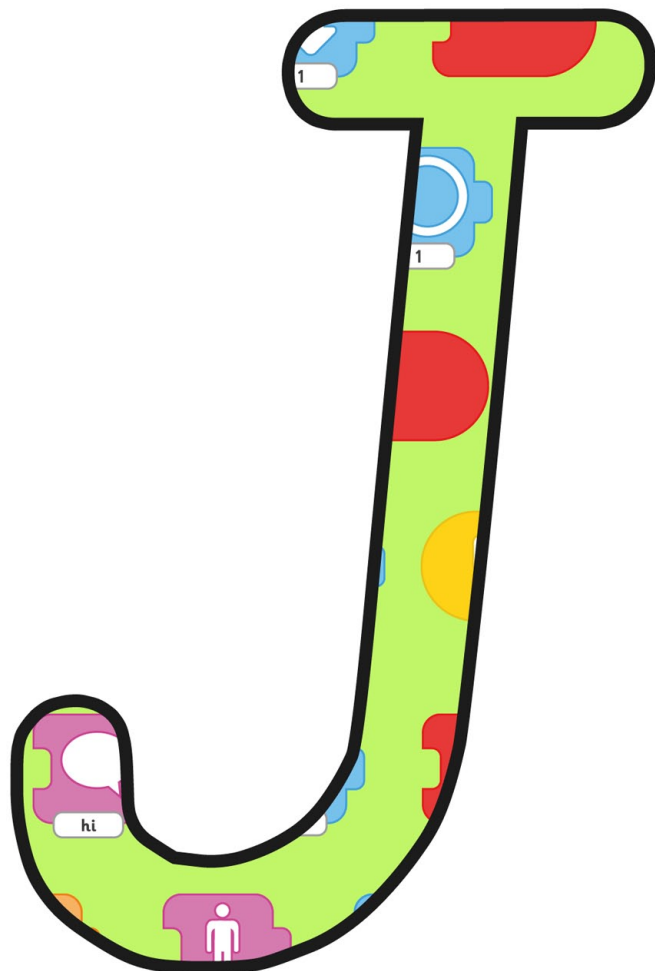
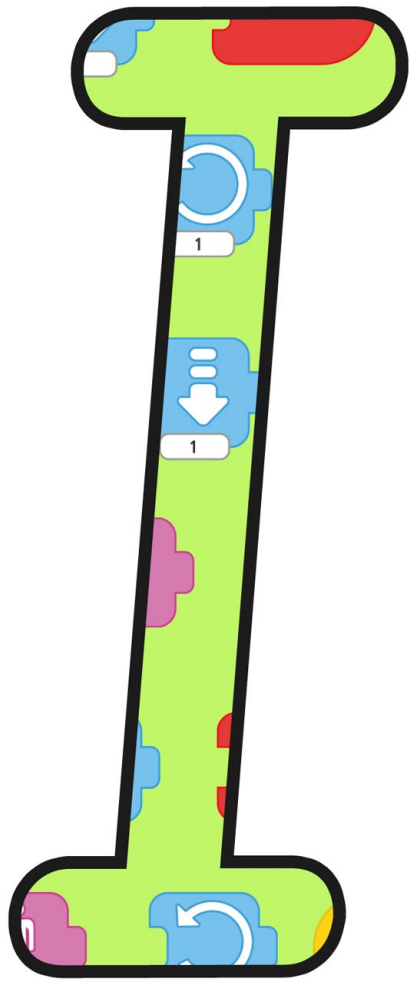


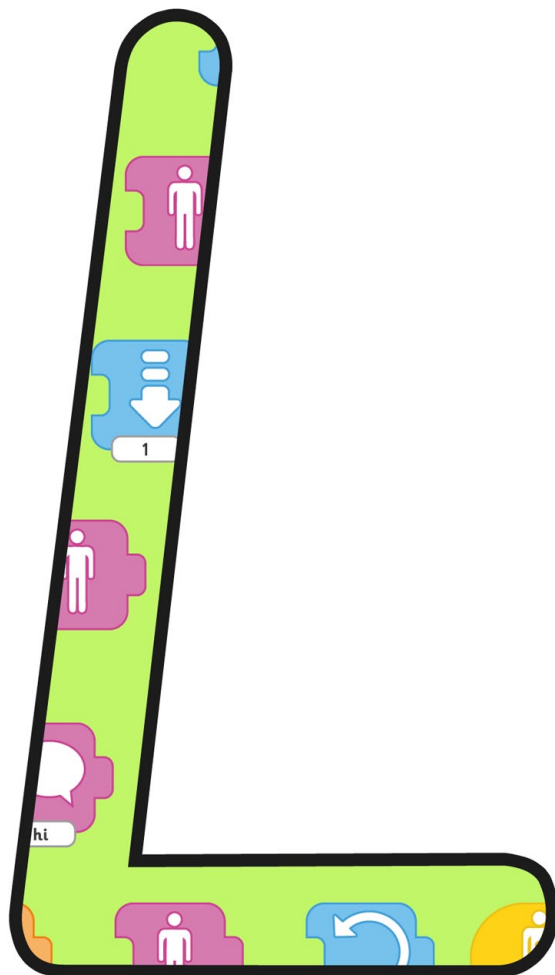
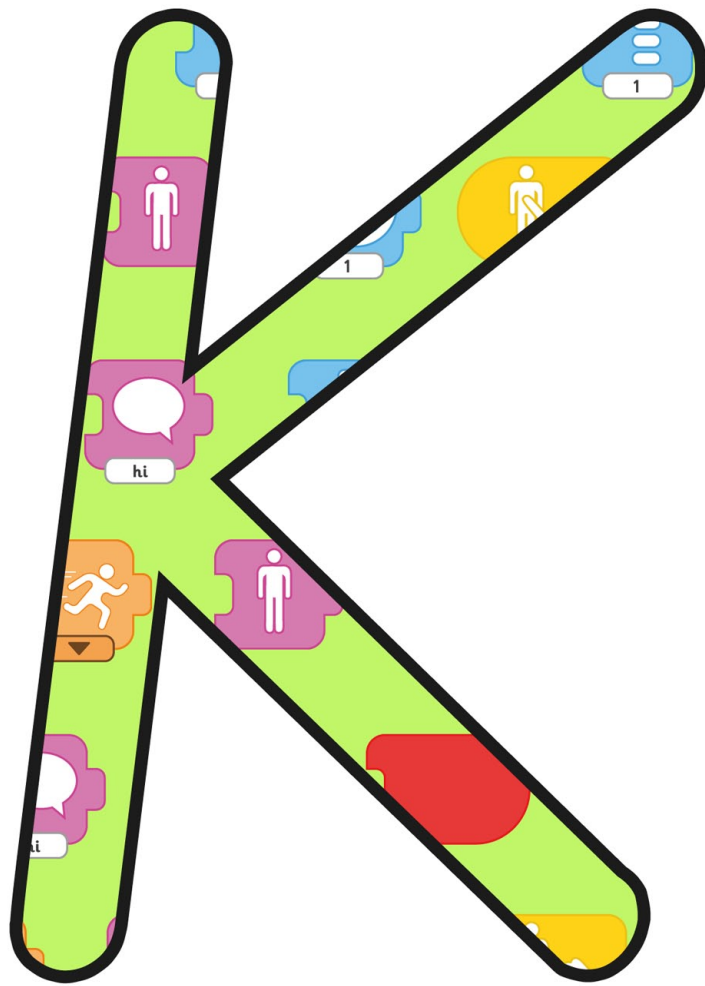


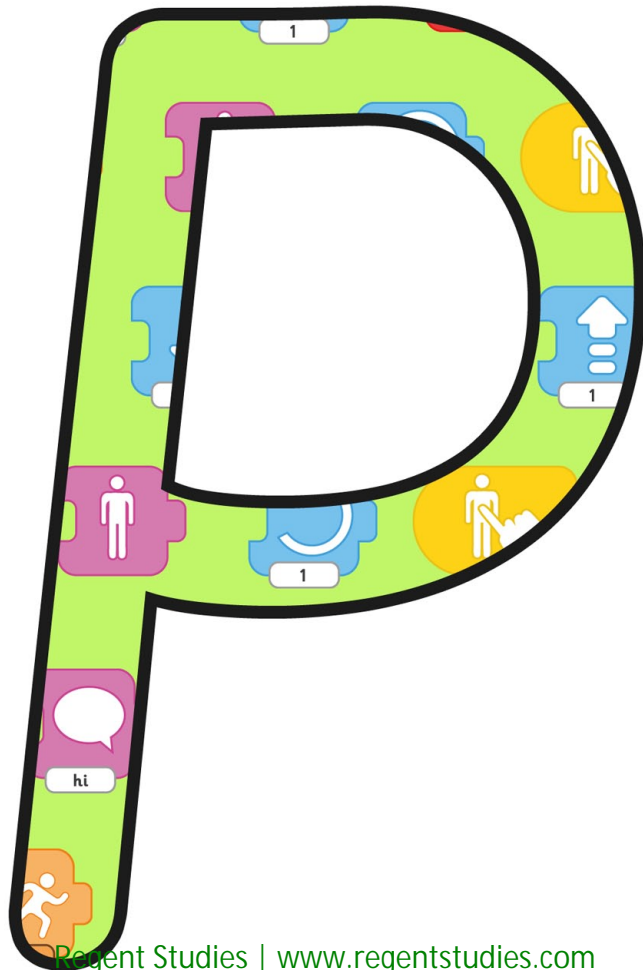
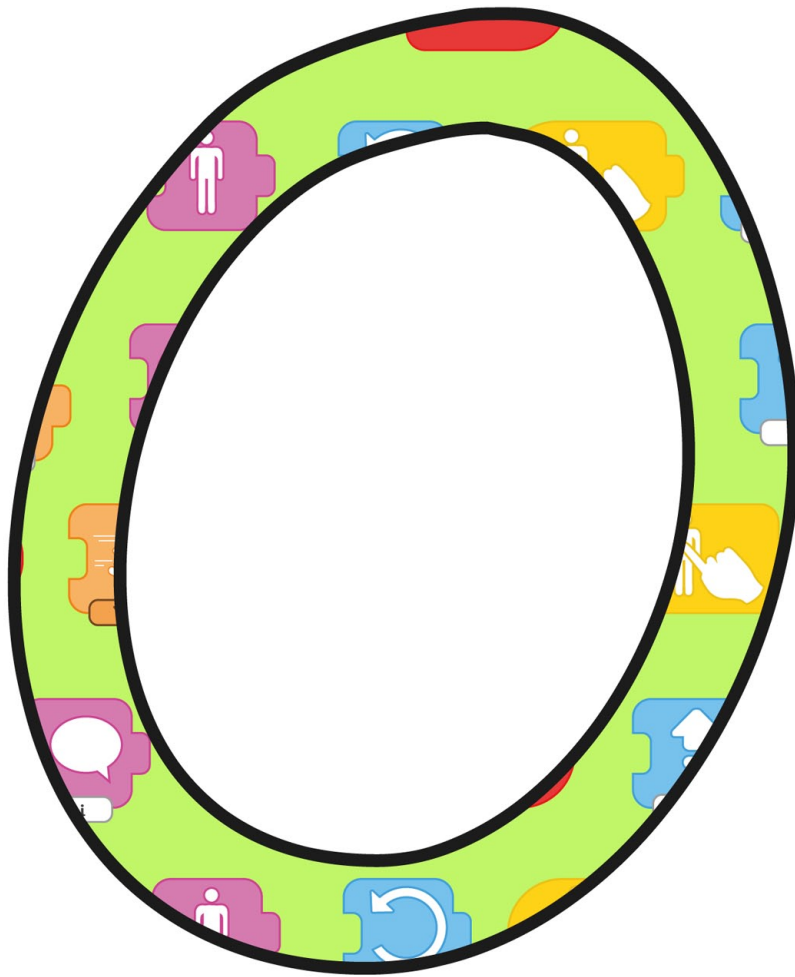


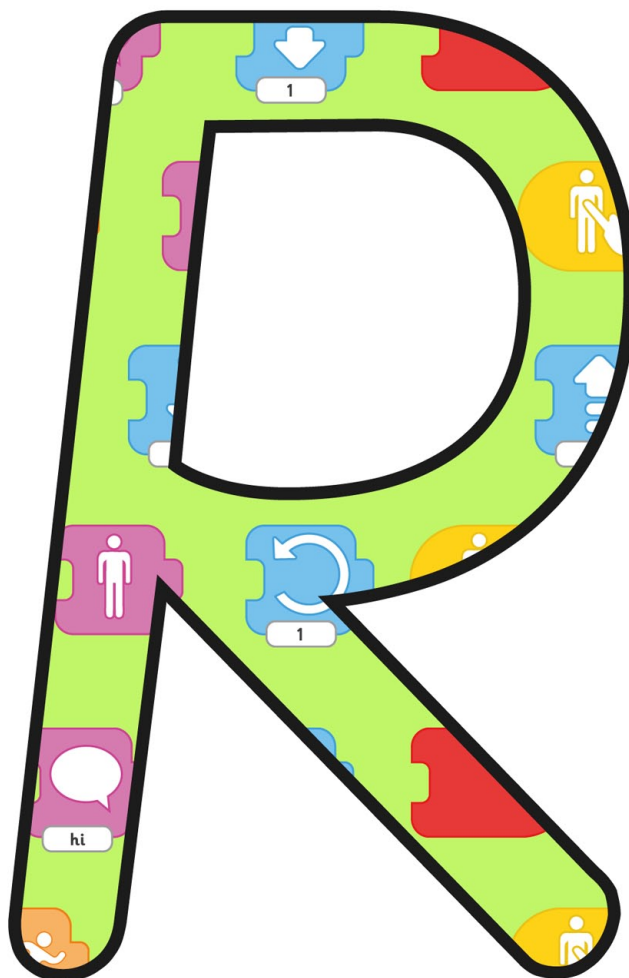
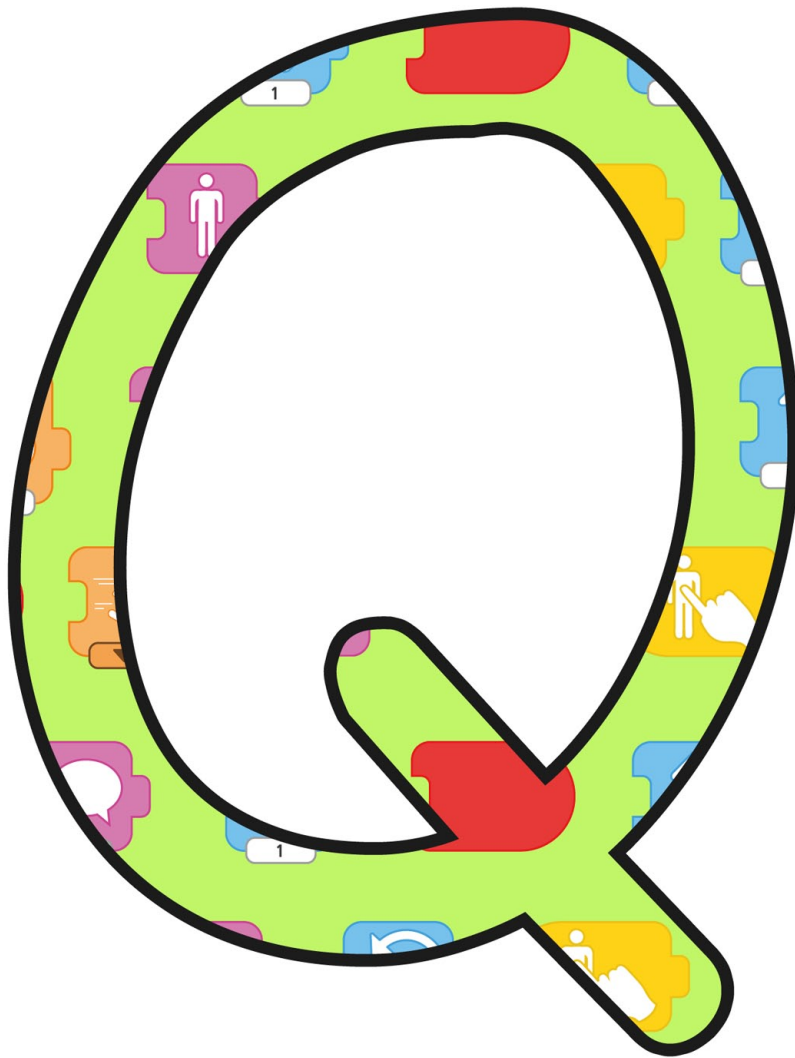


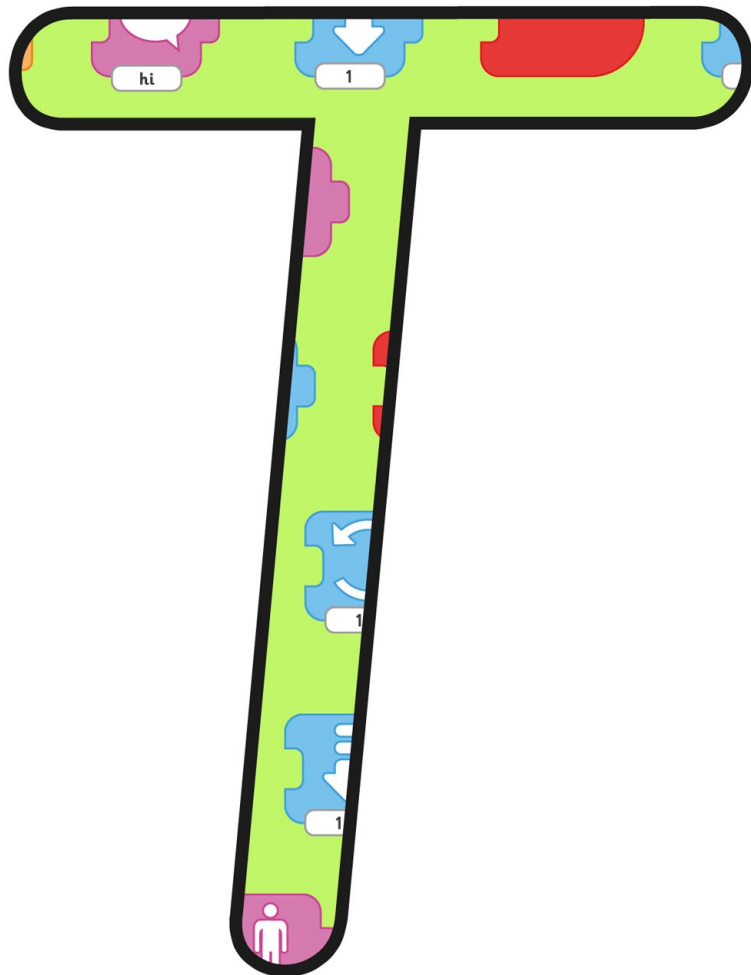
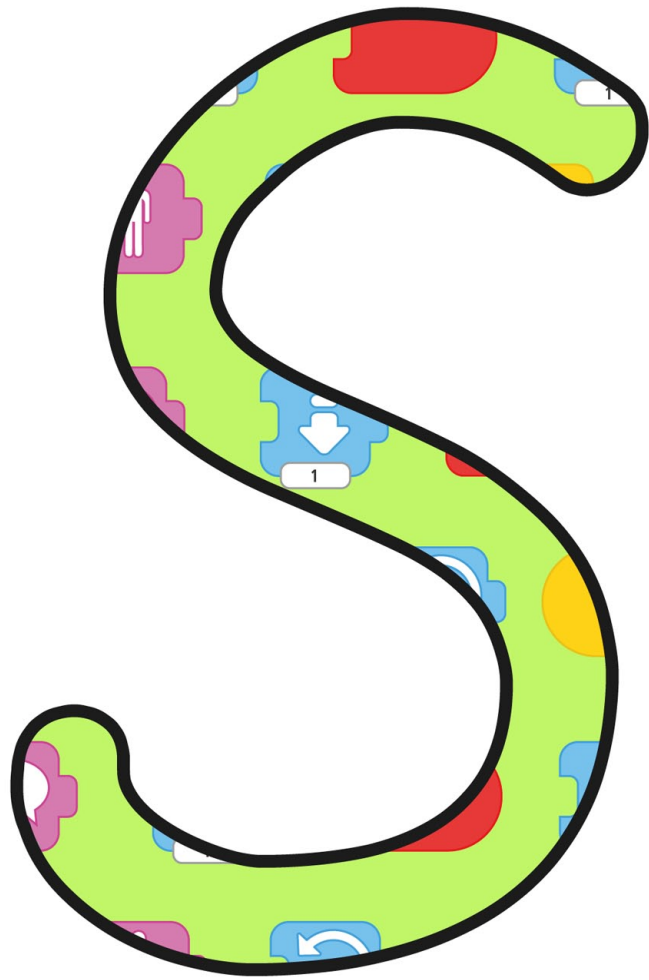


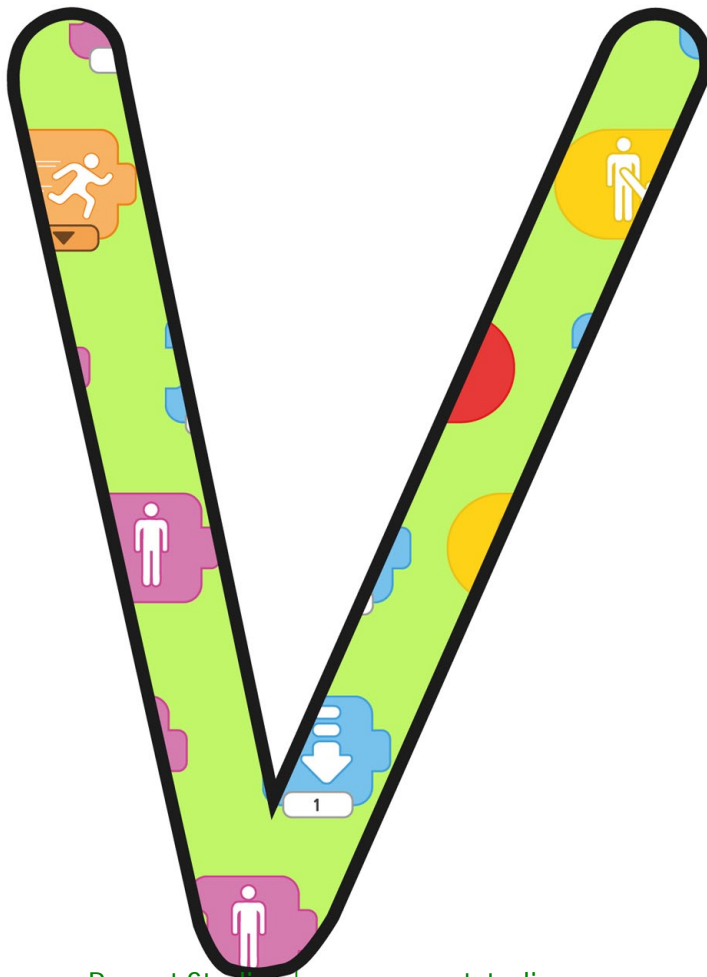
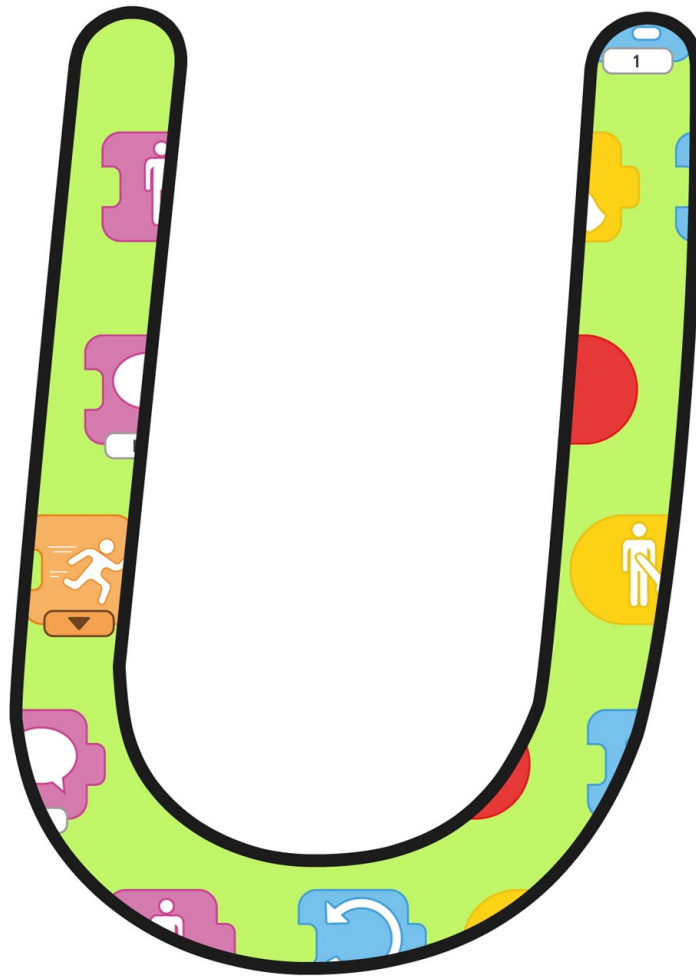


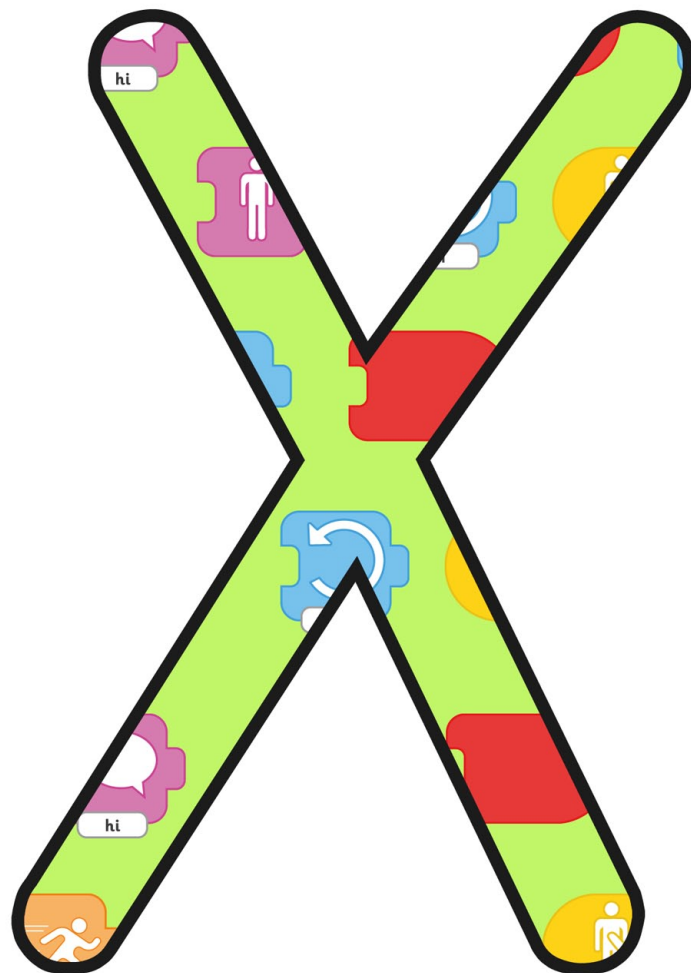


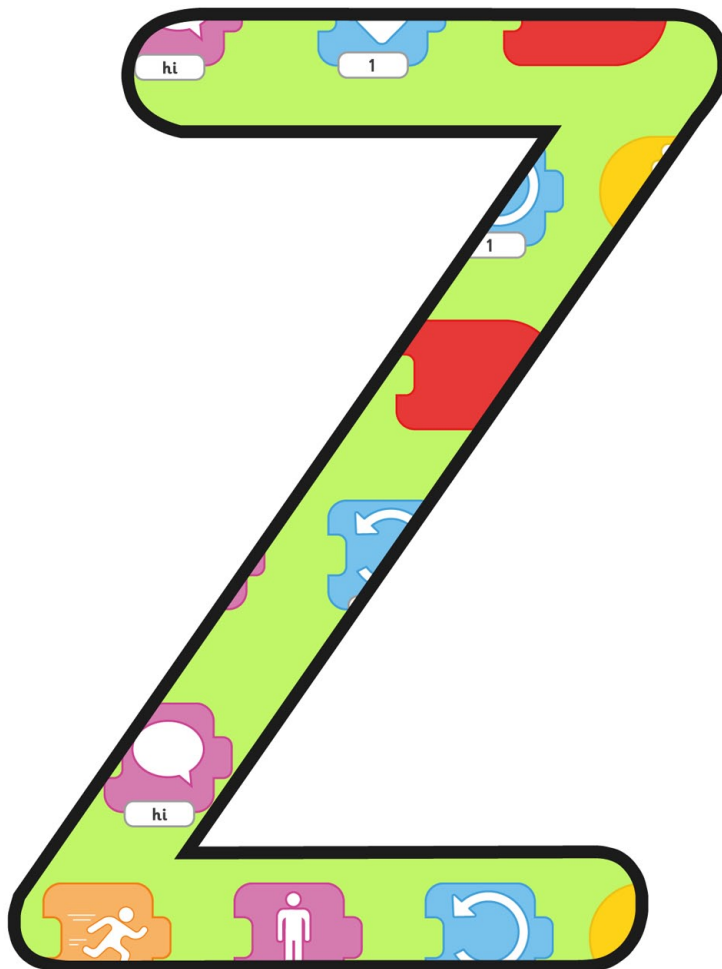
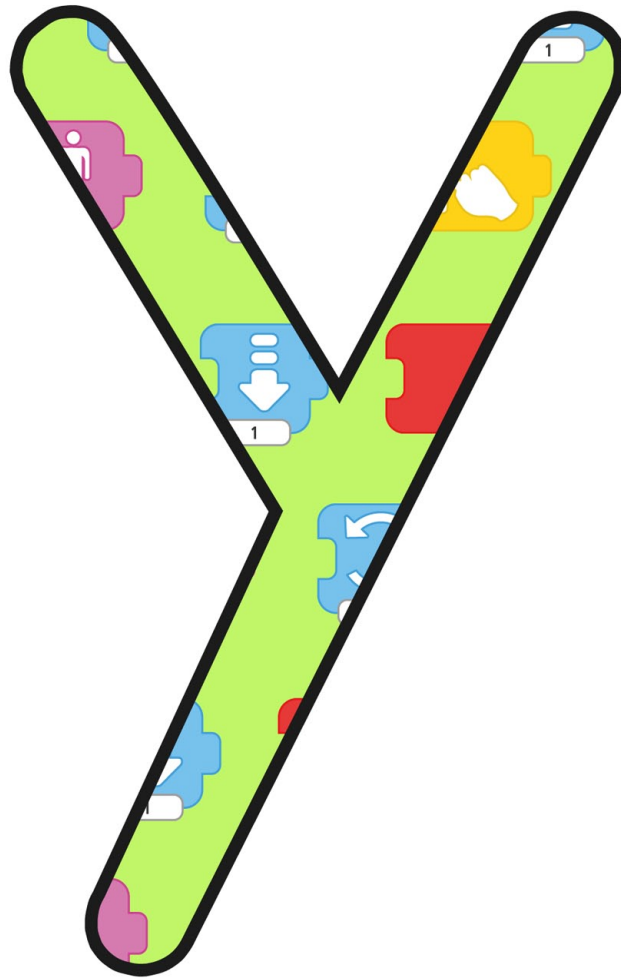




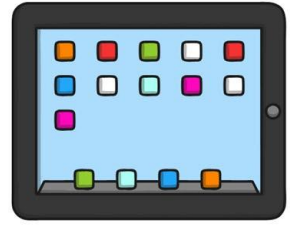








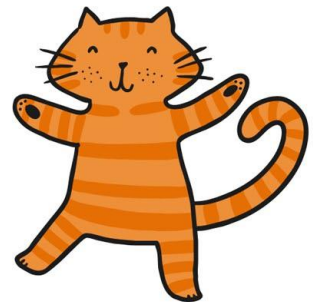
tablet



blocks



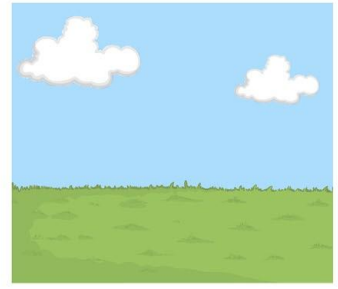
character



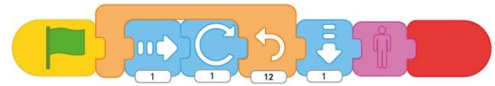
sprite



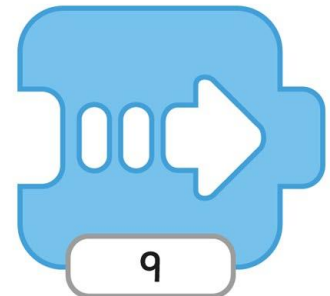
background



sequence



move



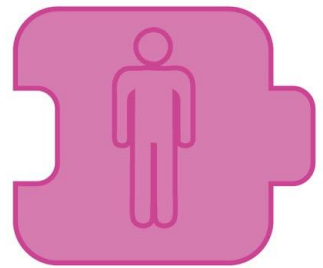
repeat



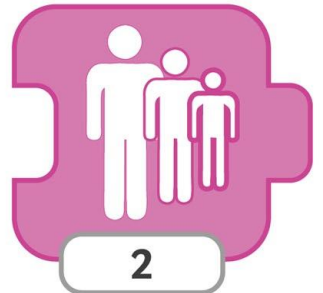
repeat forever



invisible



shrink



sound



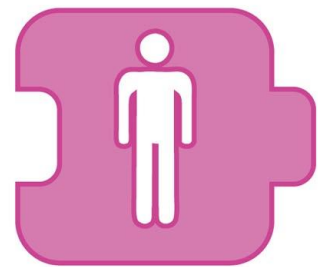
record



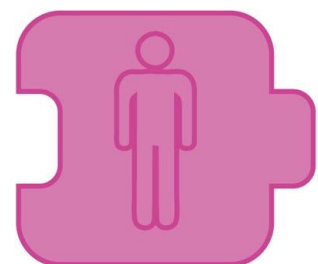
wait



show



hide



start

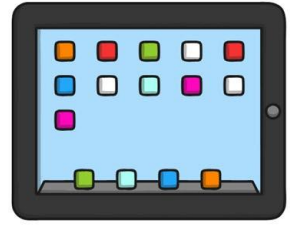


programs

project

predict

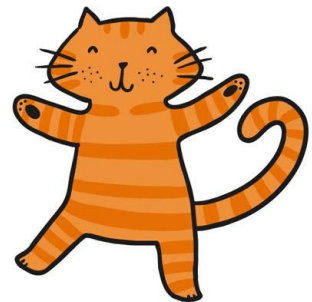
tablet



blocks



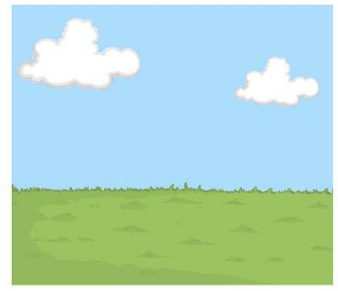
character



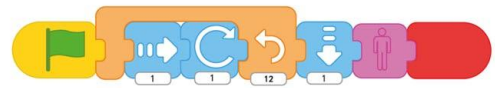
sprite



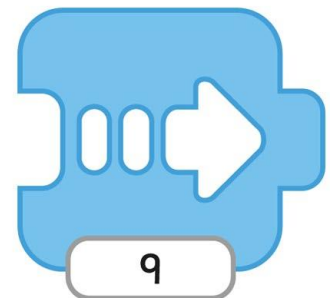
background



sequence



move



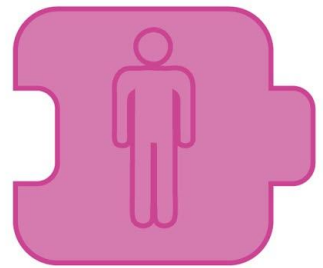
repeat



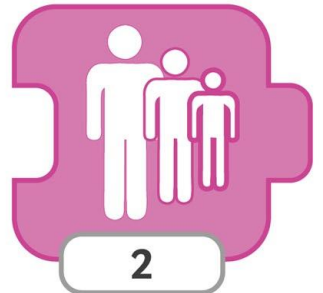
repeat
forever



invisible



shrink



sound



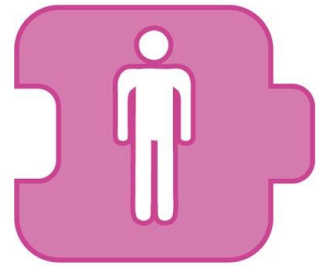
record



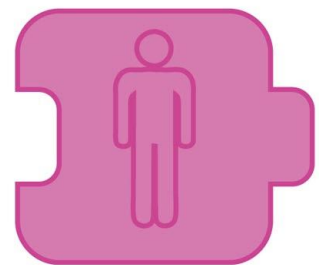
wait



show



hide



start

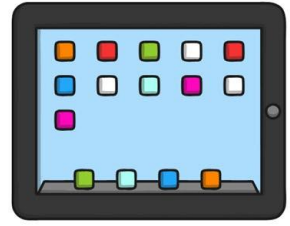


programs

project

predict

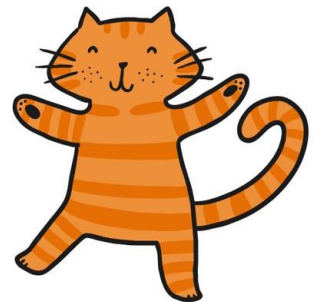
tablet



blocks



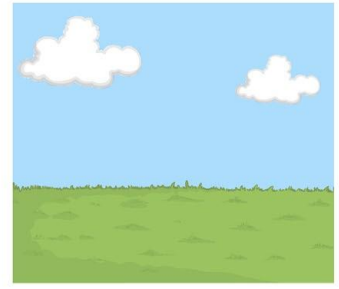
character



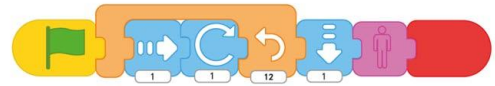
sprite



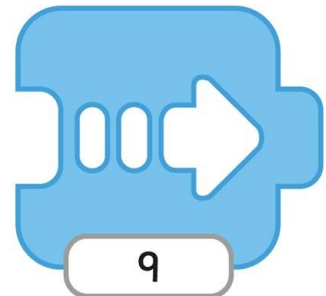
background



sequence



move



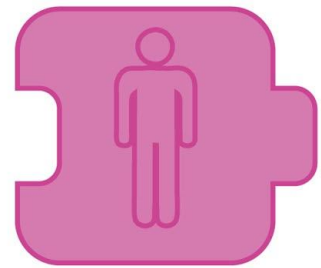
repeat



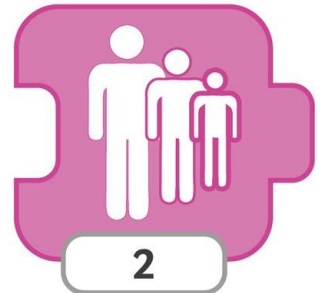
repeat forever



invisible



shrink



sound



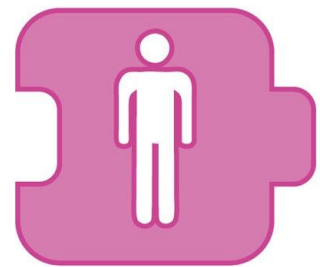
record



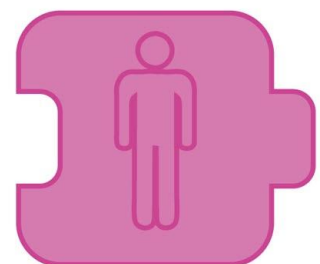
wait



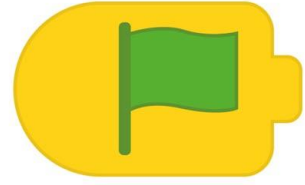
show



hide



start

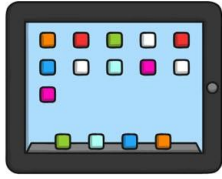


programs

project

predict

Programming with Scratch Jr



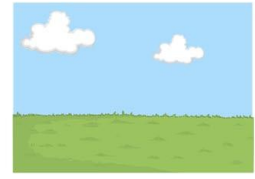
tablet



blocks



character



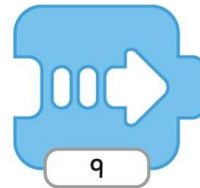
background



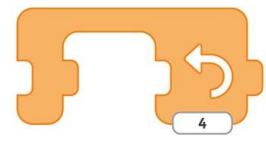
sprite



sequence



move



repeat



repeat forever



invisible



shrink



sound



wait



show



hide



record



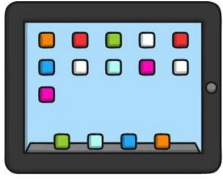
start

programs

project

predict

Programming with Scratch Jr



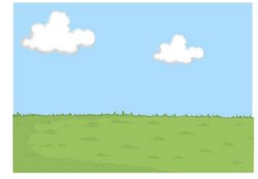
tablet



blocks



character



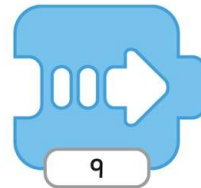
background



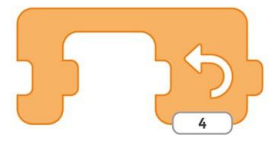
sprite



sequence



move



repeat



repeat forever



invisible



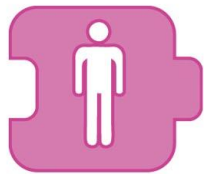
shrink



sound



wait



show



hide



record



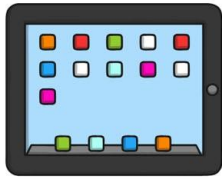
start

programs

project

predict

Programming with ScratchJr



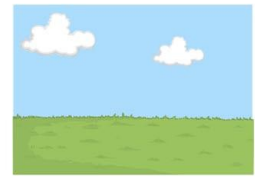
tablet



blocks



character



background



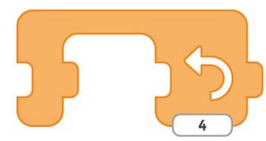
sprite



sequence



move



repeat



repeat forever



invisible



shrink



sound



wait



show



hide



record



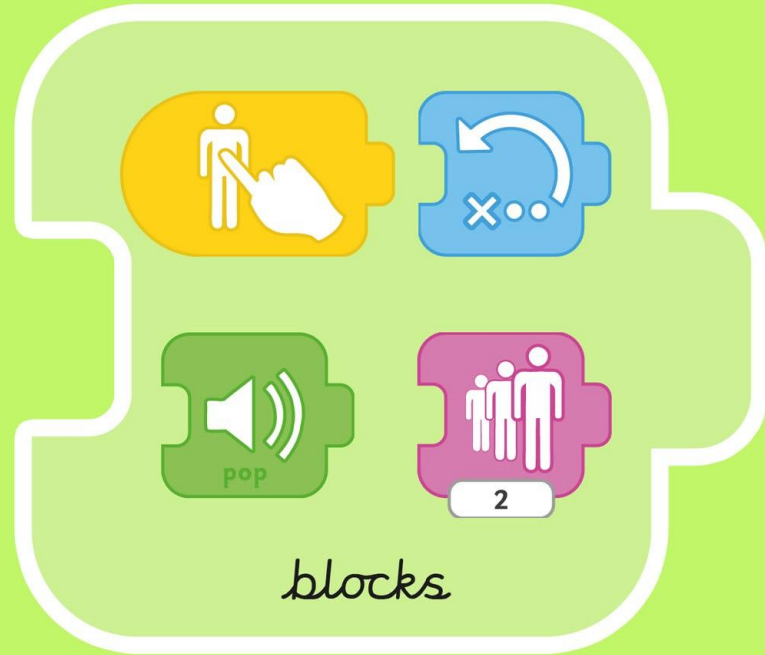
start

programs

project

predict

Programming with Scratch Jr



blocks



invisible



shrink



sprite



wait



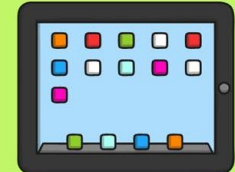
show



hide



repeat forever



tablet



sound



record



character



move



repeat



start

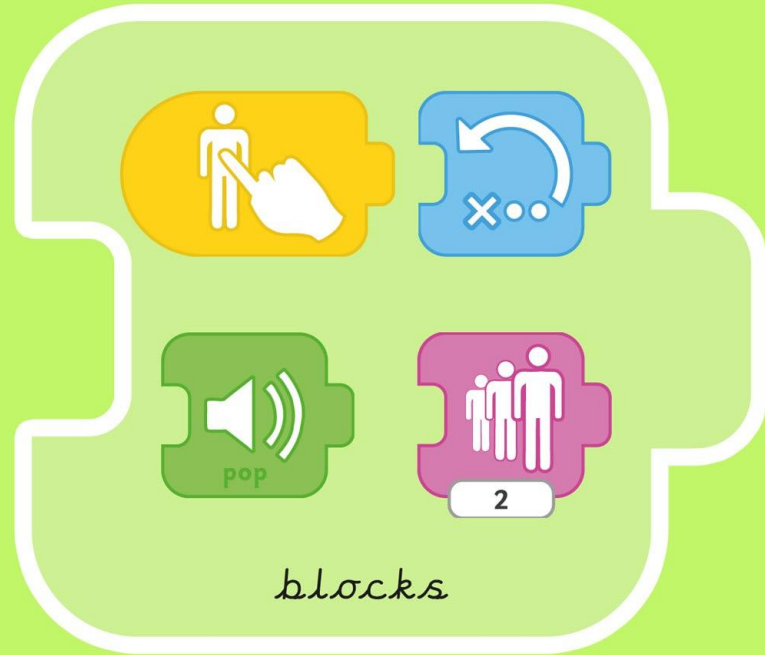


background



sequence

Programming with Scratch Jr



blocks



invisible



shrink



sprite



wait



pop



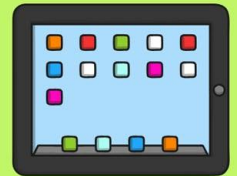
show



hide



repeat forever



tablet



sound



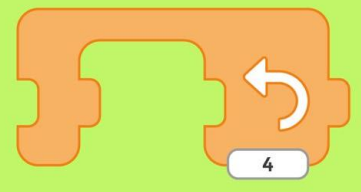
record



character



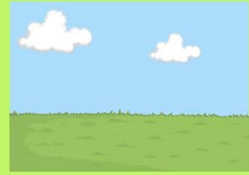
move



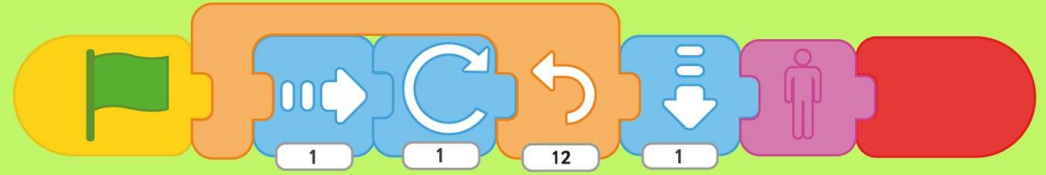
repeat



start

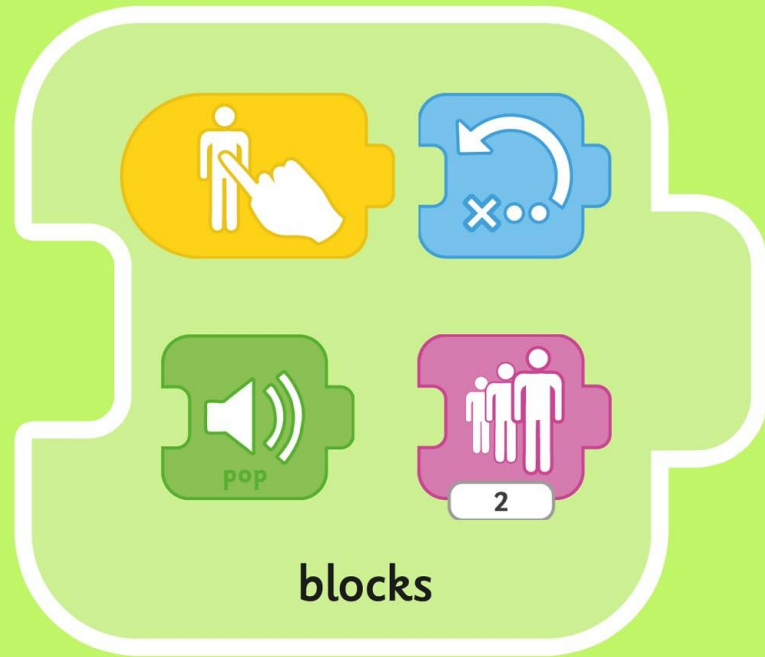


background



sequence

Programming with ScratchJr



blocks



invisible



shrink



sprite



wait



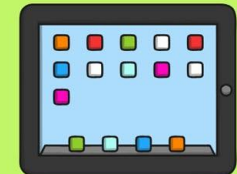
show



hide



repeat forever



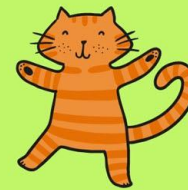
tablet



sound



record



character



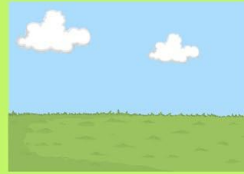
move



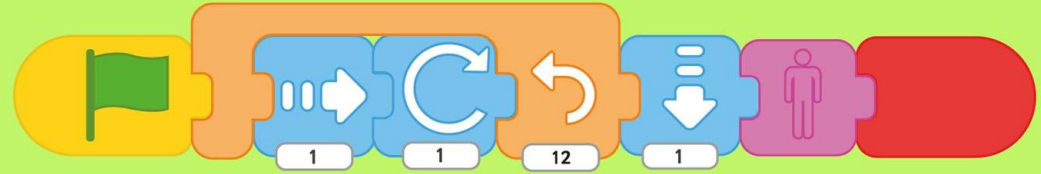
repeat



start



background



sequence

Programming with Scratch Jr

s e q u e n c e o a a c
t b n m r t k h l h s h
a a s d k j z g p i s a
r e p e a t y c p d d r
t i j z x q b w o e f a
c t a b l e t z c v g c
q g i b l o c k s v t t
a v l j w e f v o x m e
d p r o j e c t u a y r
j b v d y u m n n i o n
c s h r i n k j d f g y
m o v e x a w w a i t n

tablet
blocks
character
sequence
sound
start

move
project
shrink
repeat
hide
wait

Programming with Scratch Jr

A Scratch Jr workspace containing a grid of letters. The letters are arranged in 10 rows and 12 columns. The first row contains 's e q u e n c e o a a c'. The second row contains 't b n m r t k h l h s h'. The third row contains 'a a s d k j z g p i s a'. The fourth row contains 'r e p e a t y c p d d r'. The fifth row contains 't i j z x q b w o e f a'. The sixth row contains 'c t a b l e t z c v g c'. The seventh row contains 'q g i b l o c k s v t t'. The eighth row contains 'a v l j w e f v o x m e'. The ninth row contains 'd p r o j e c t u a y r'. The tenth row contains 'j b v d y u m n n i o n'. The eleventh row contains 'c s h r i n k j d f g y'. The twelfth row contains 'm o v e x a w w a i t n'. The workspace is surrounded by various Scratch Jr blocks, including sound blocks labeled 'pop', a '4' block, a '10' block, a '2' block, and a 'hi' block.

tablet
blocks
character
sequence
sound
start

move
project
shrink
repeat
hide
wait

A row of Scratch Jr blocks including a 'pop' sound block, a 'hi' speech bubble block, a '4' block, and a 'hi' speech bubble block.

Programming with Scratch Jr

s p r i t e z p s
r e p e a t x r o
n k u a b p s e u
m o v e l c h d n
s y w i e u o i d
s t a r t v w c d
j f i h g q k t s
r e t b a n c c s
s e z b l o c k s

predict
sprite
move
wait
show

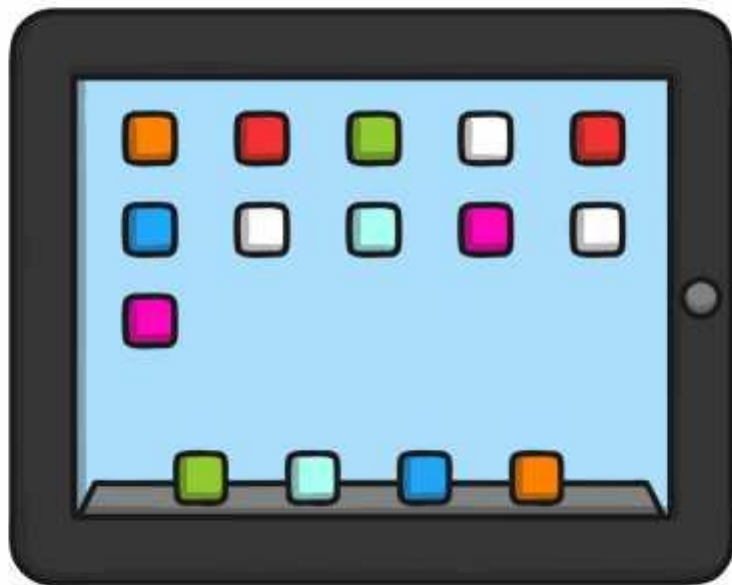
tablet
start
repeat
blocks
sound

Programming with Scratch Jr

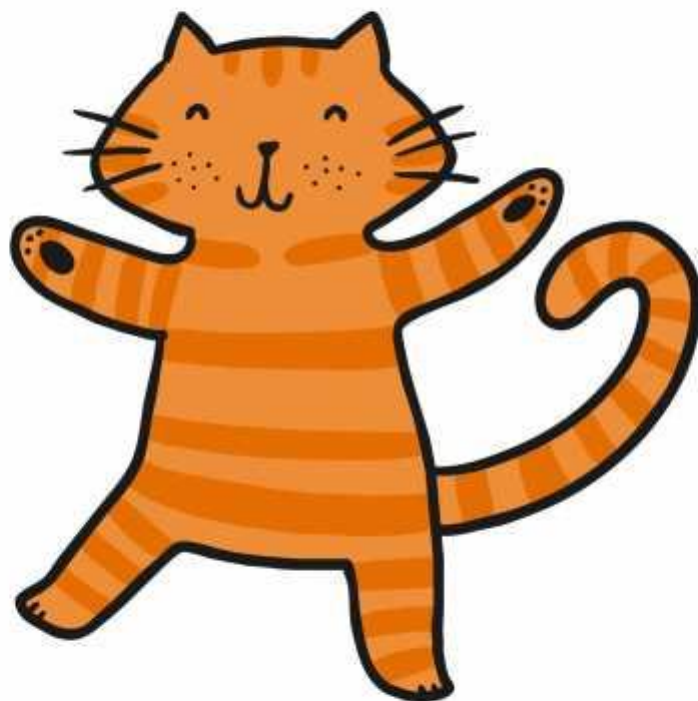
s p r i t e z p s
r e p e a t x r o
n k u a b p s e u
m o v e l c h d n
s y w i e u o i d
s t a r t v w c d
j f i h g q k t s
r e t b a n c c s
s e z b l o c k s

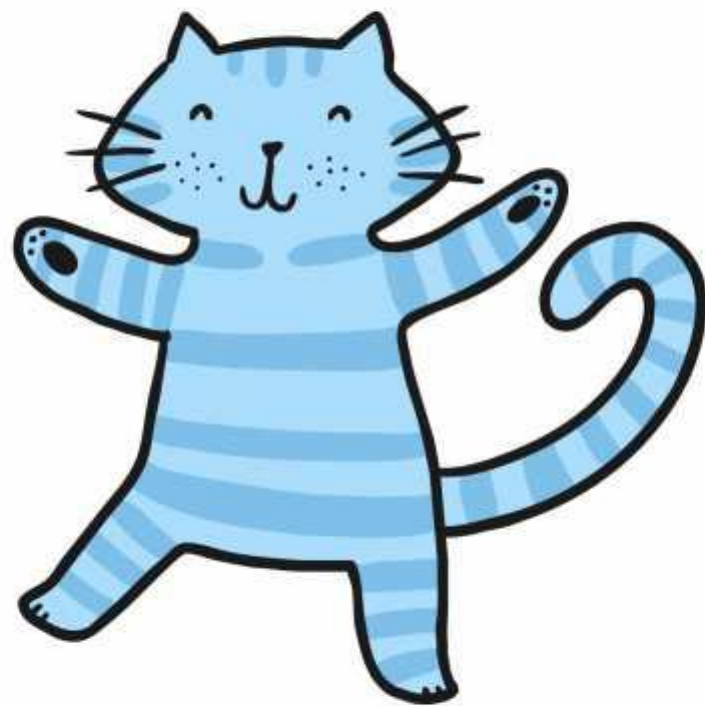
predict
sprite
move
wait
show

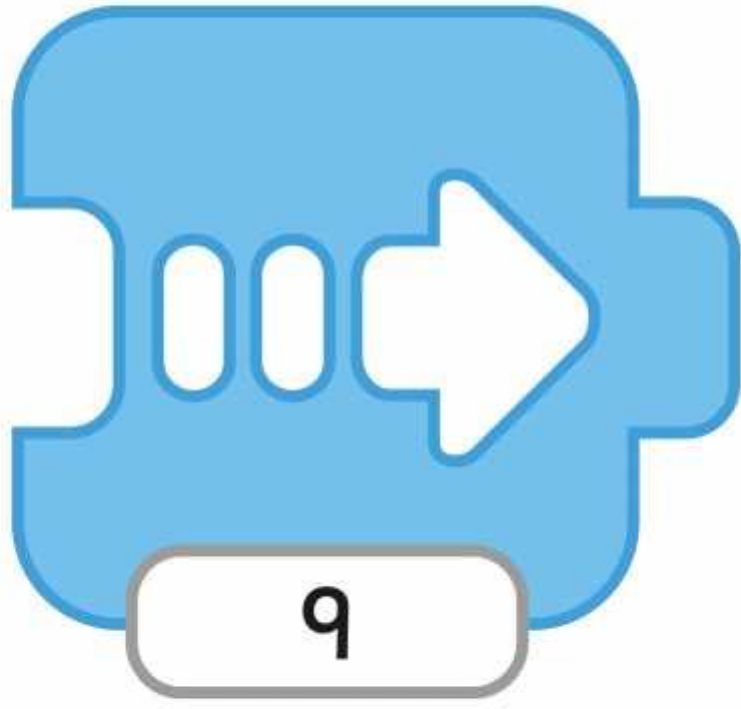
tablet
start
repeat
blocks
sound

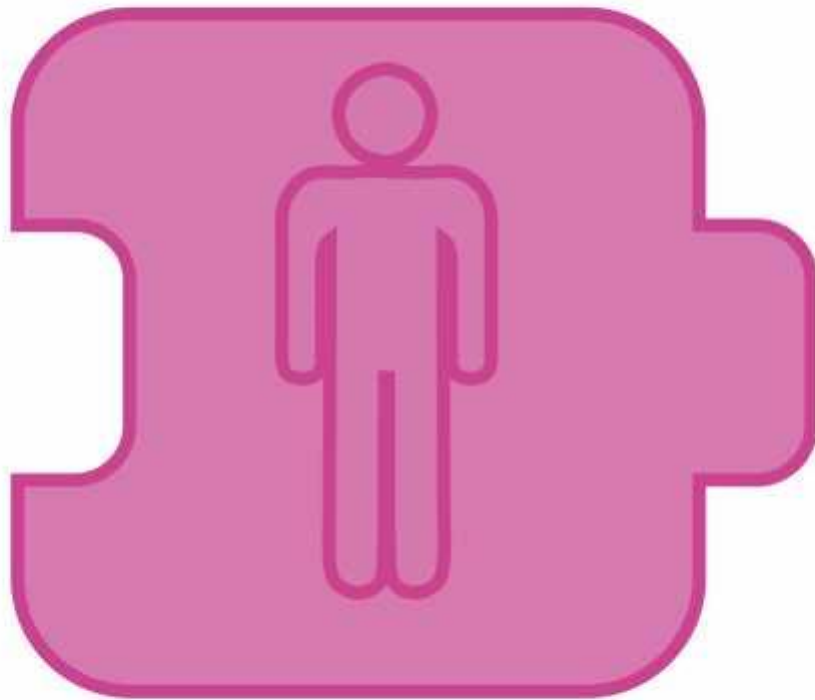


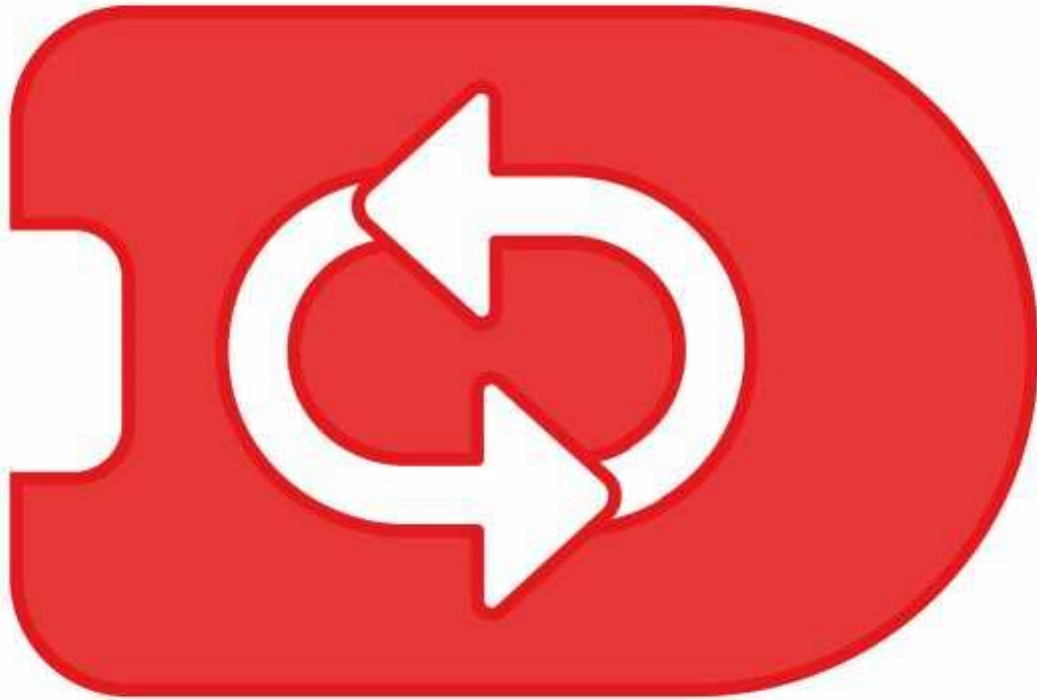








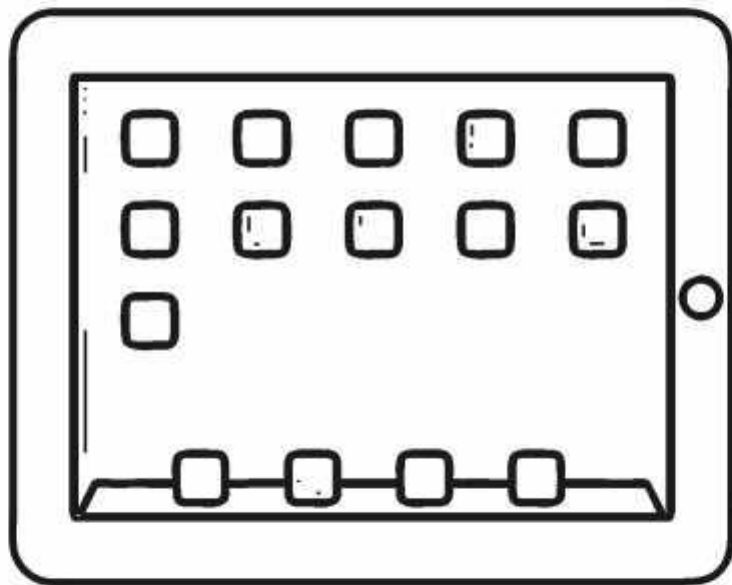


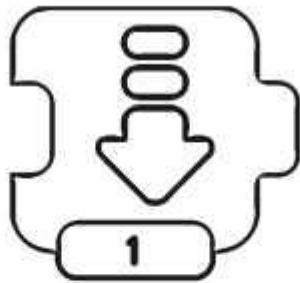
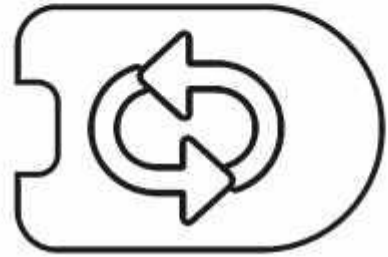


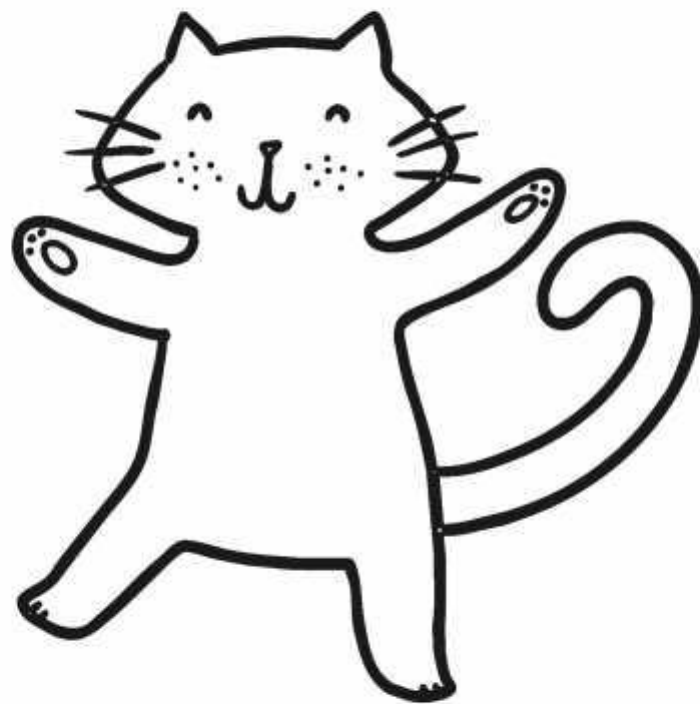


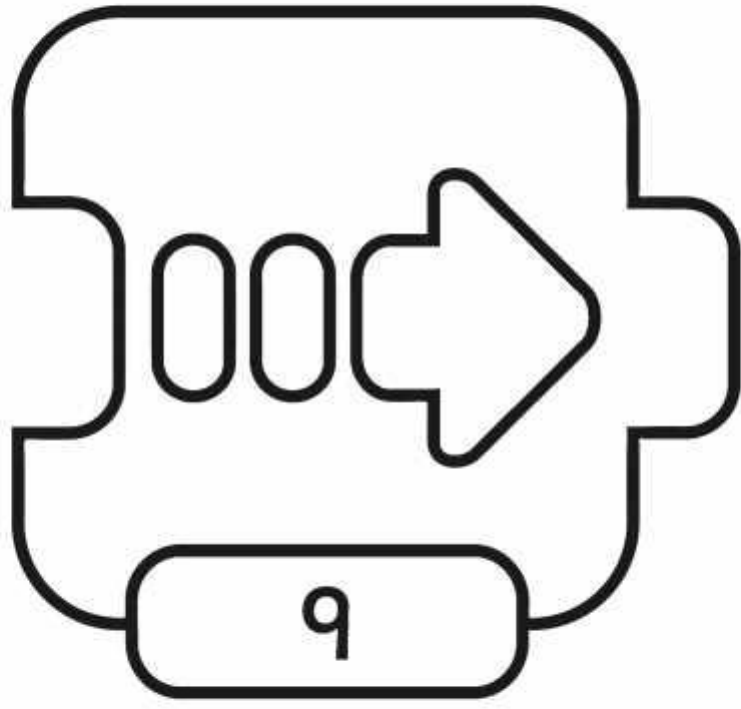


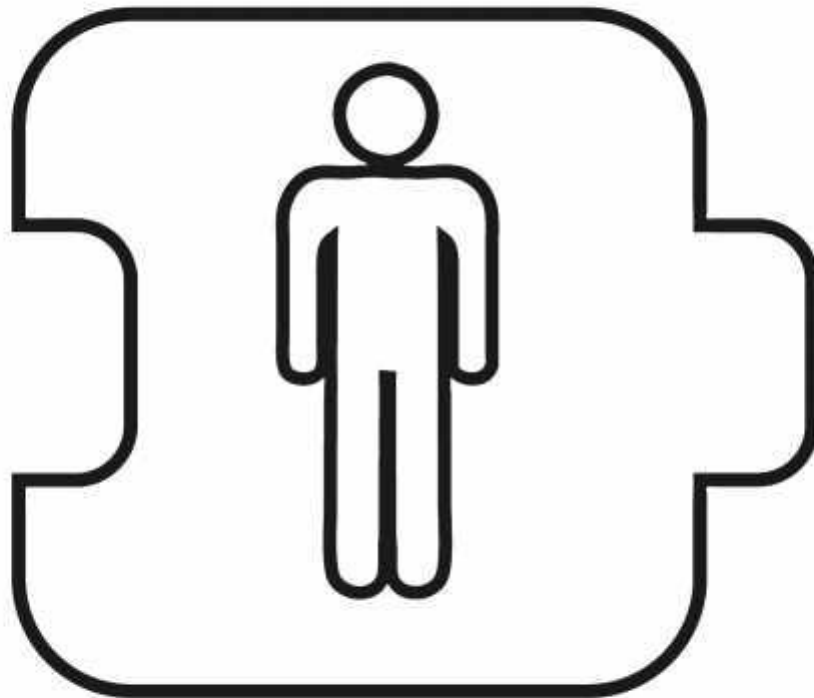


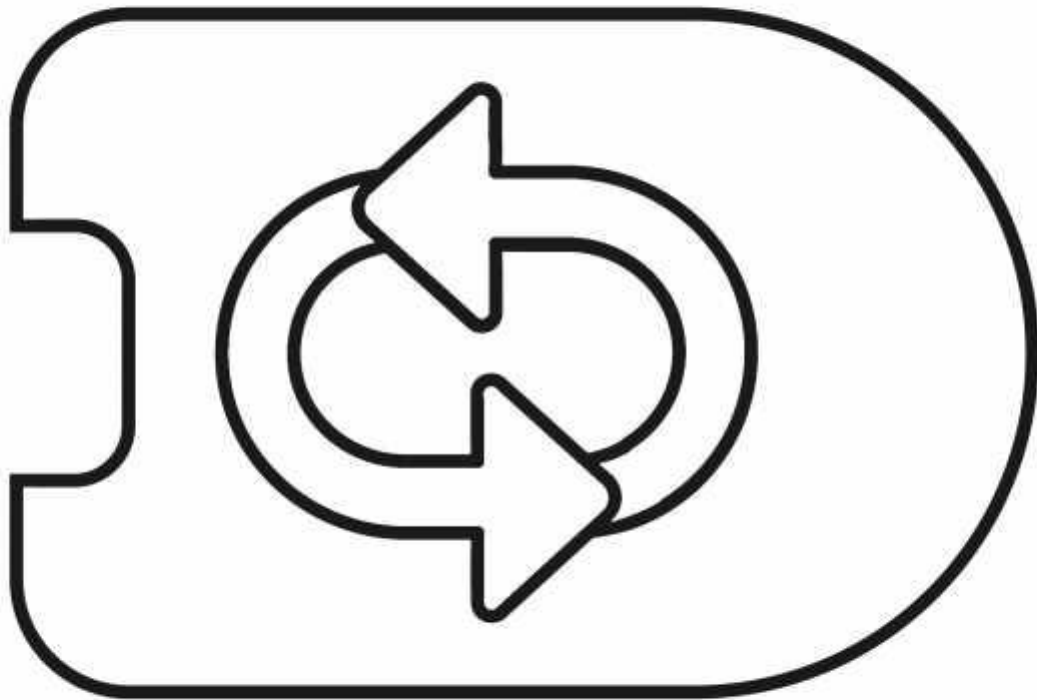


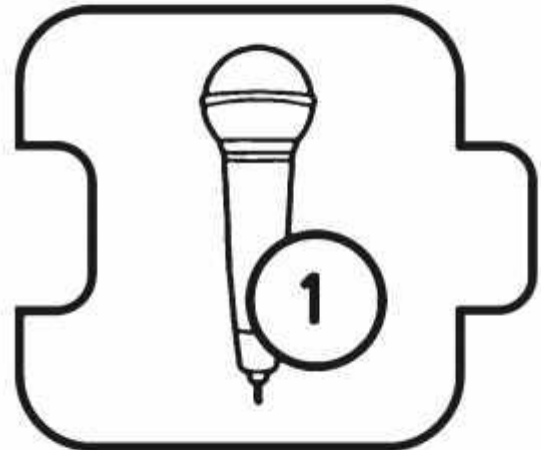
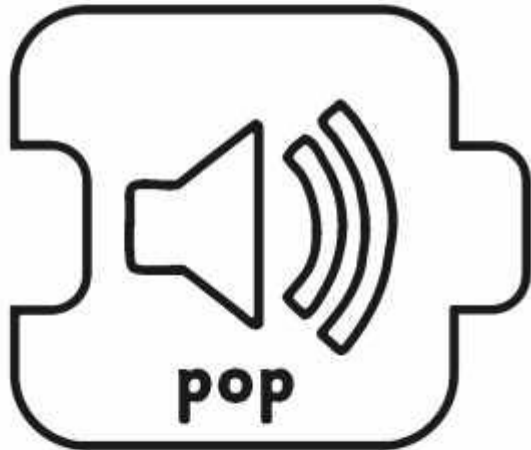


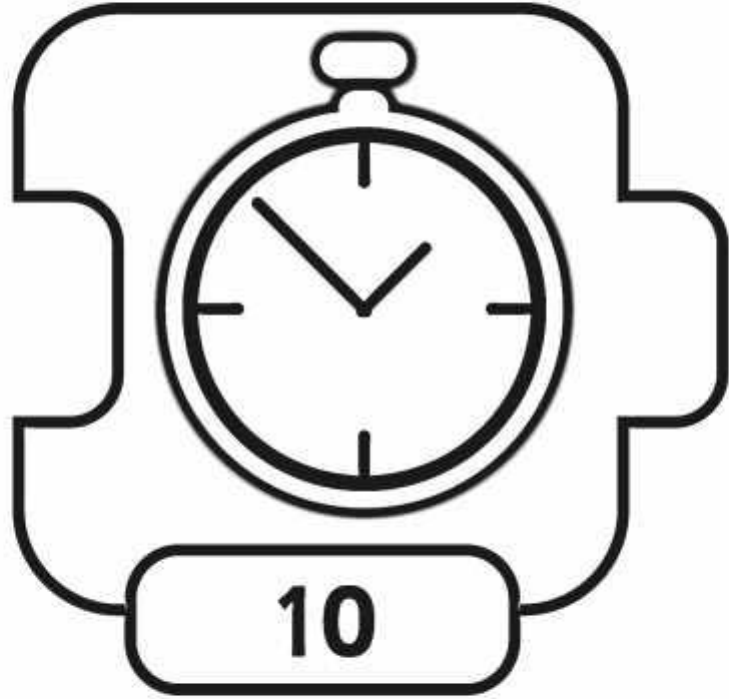


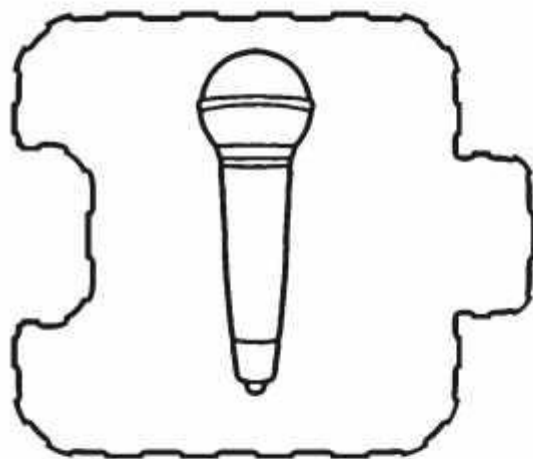
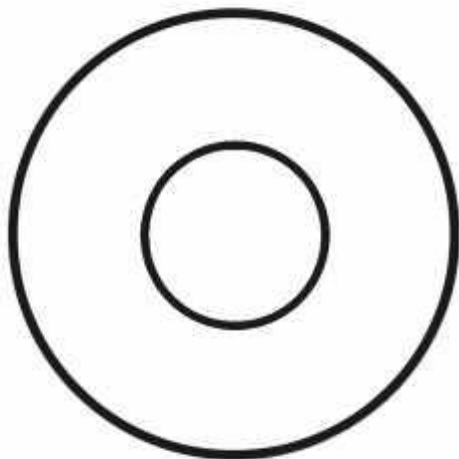


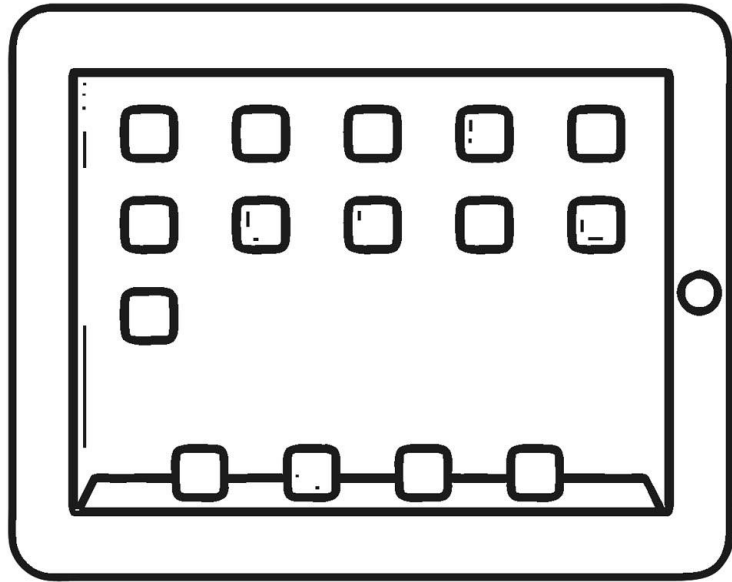


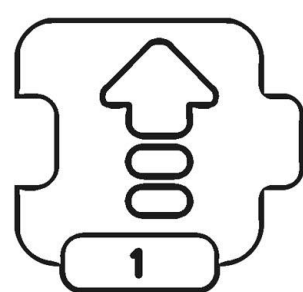
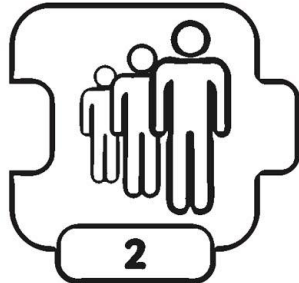
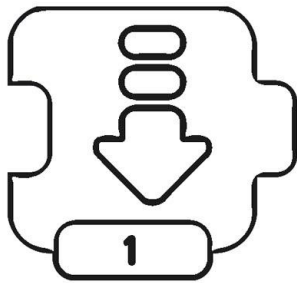
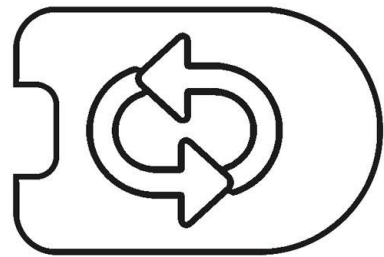
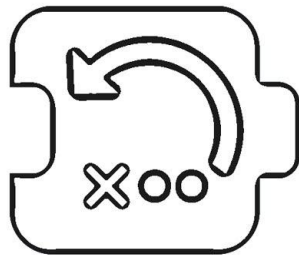
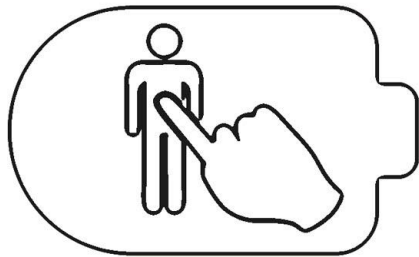


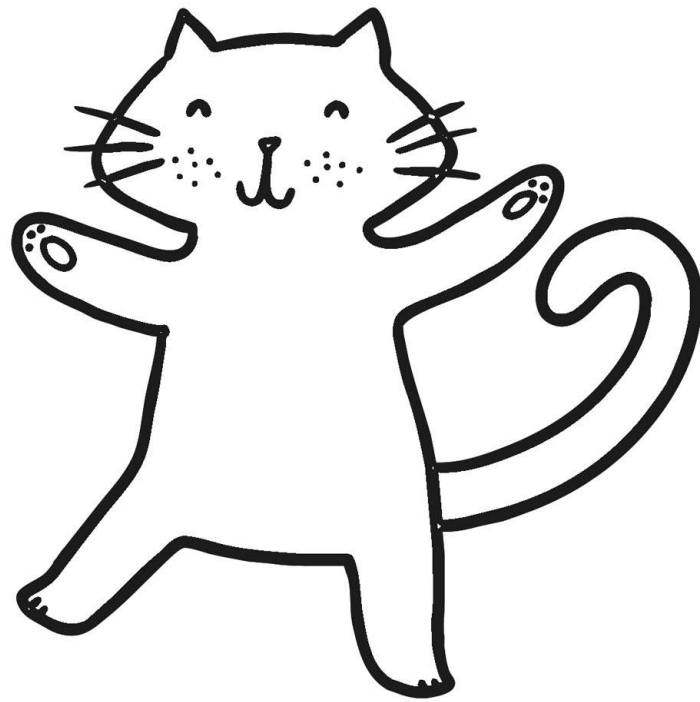


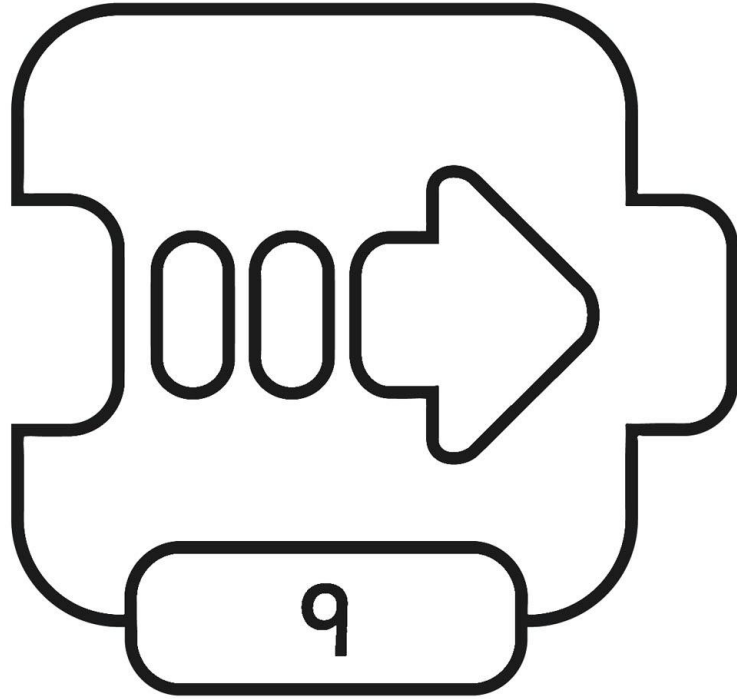


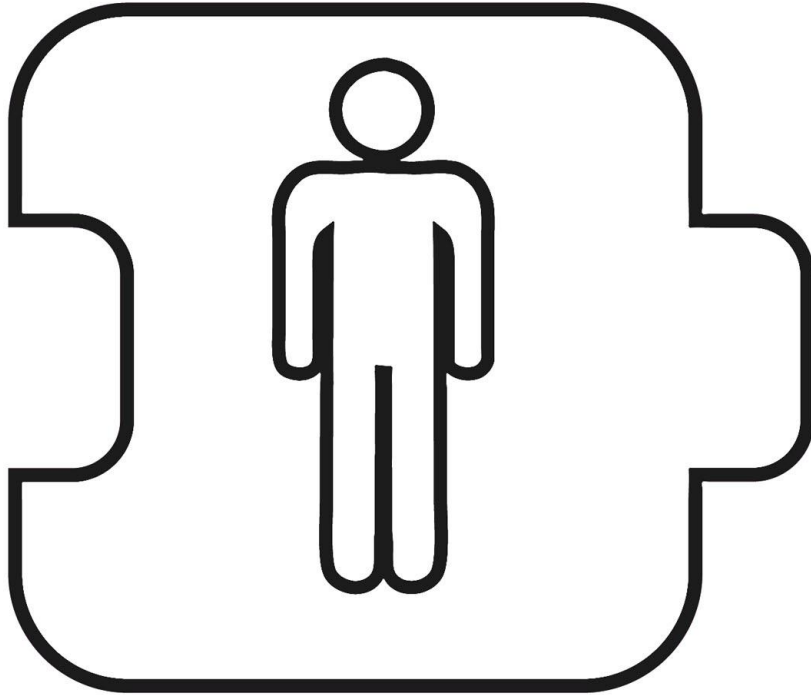


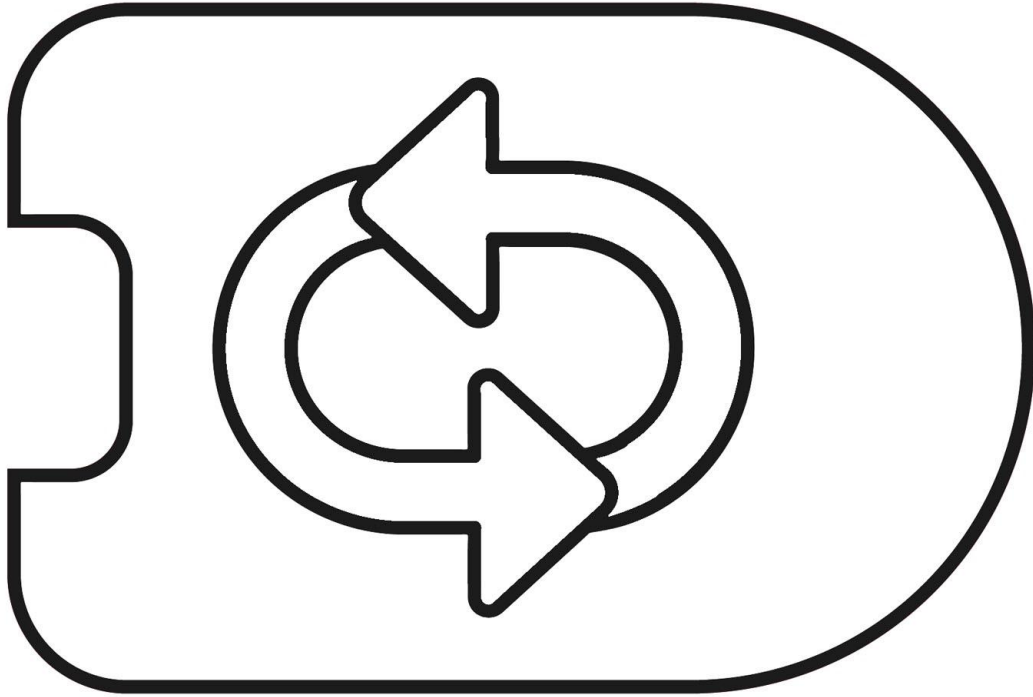


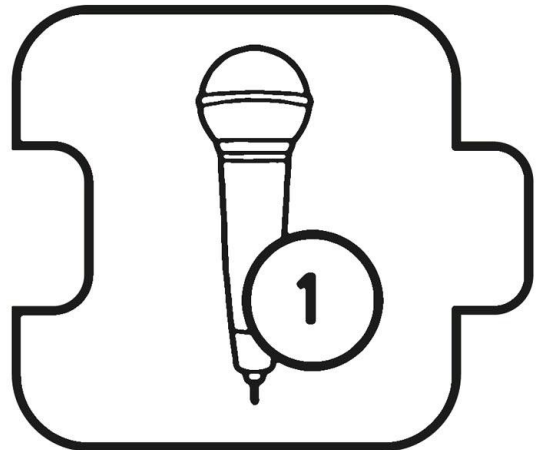
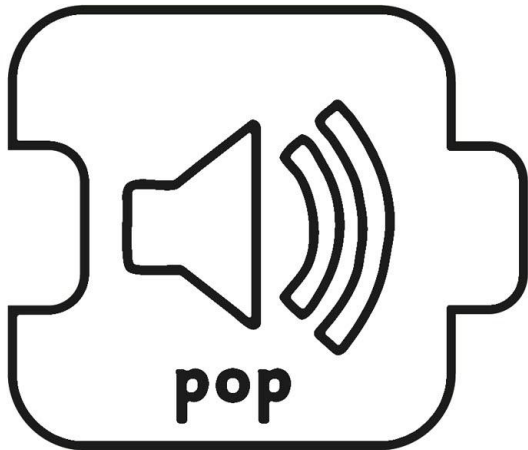


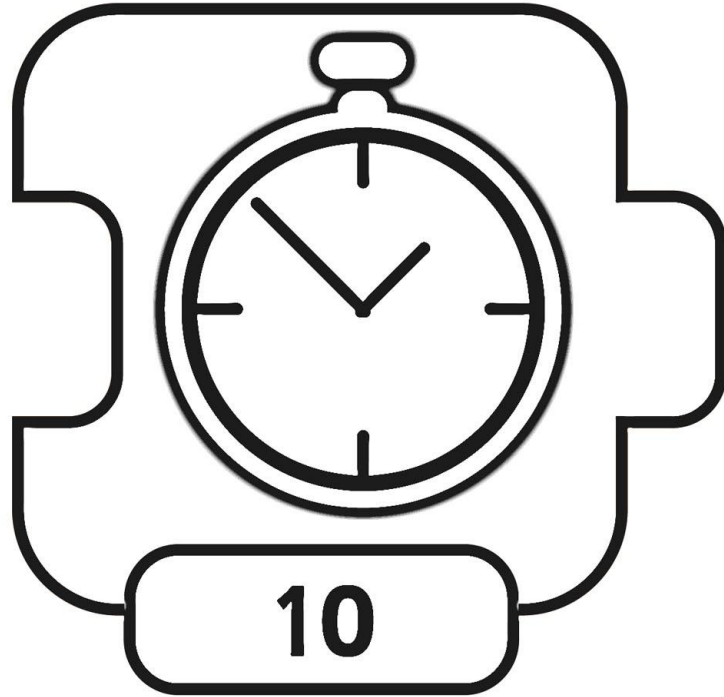


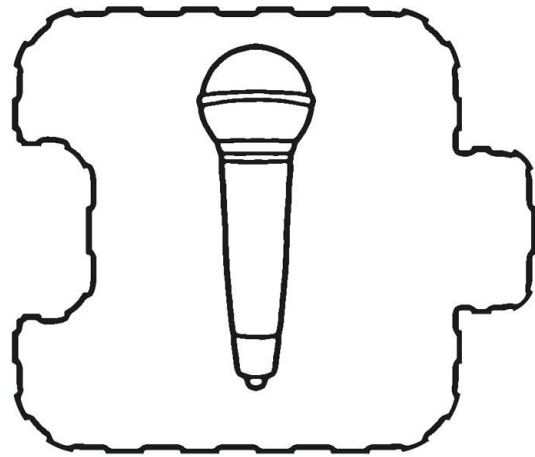
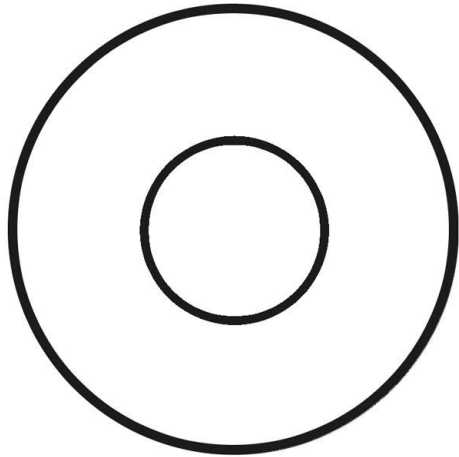


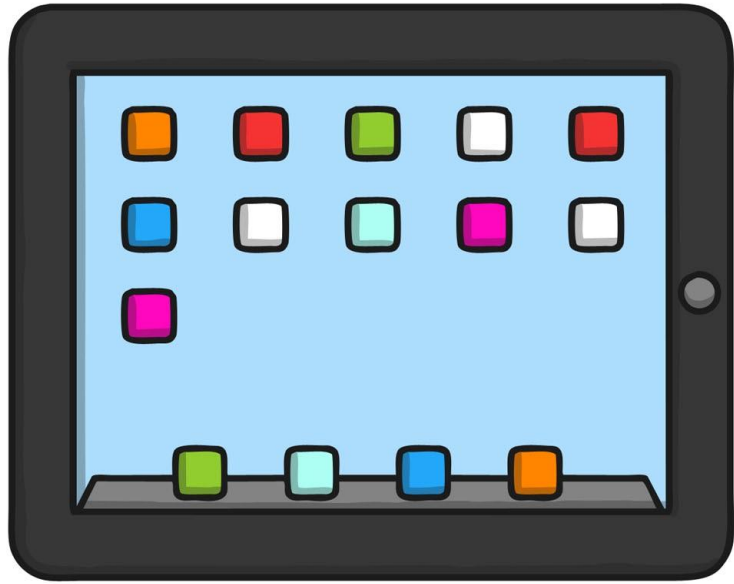


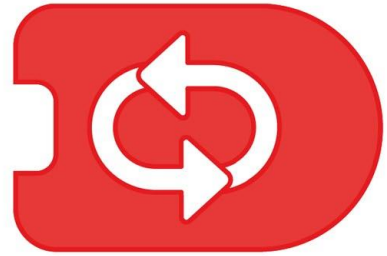
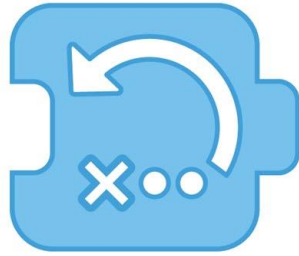




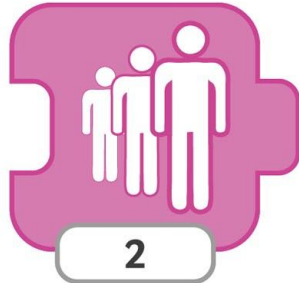




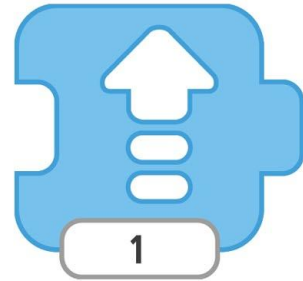




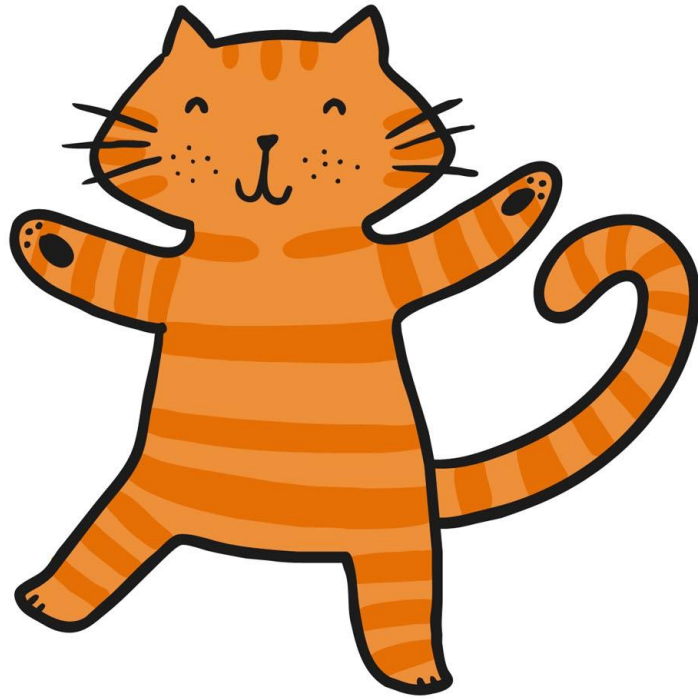
1

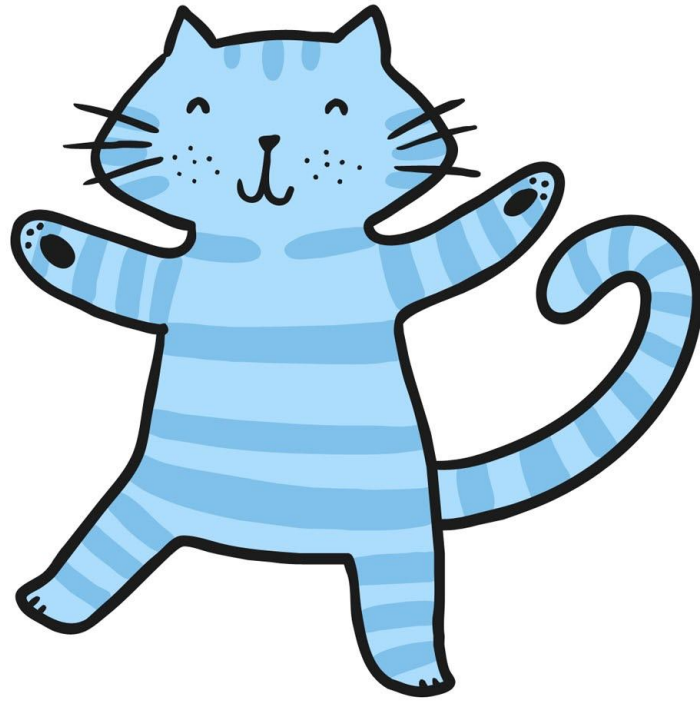


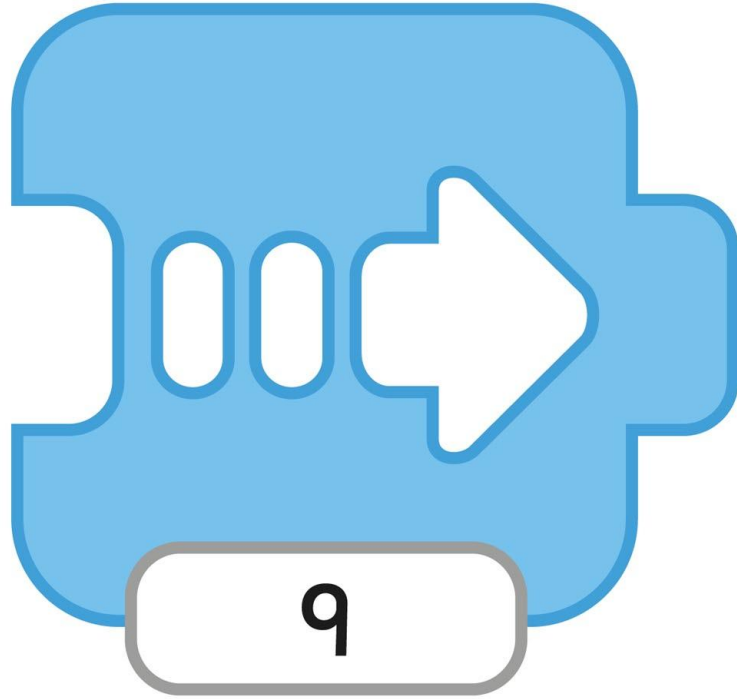
2

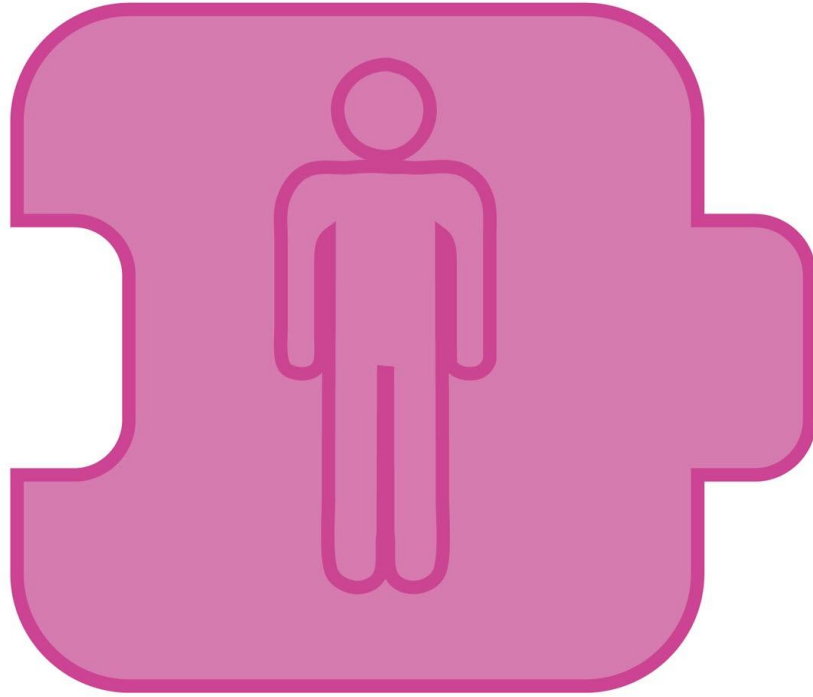


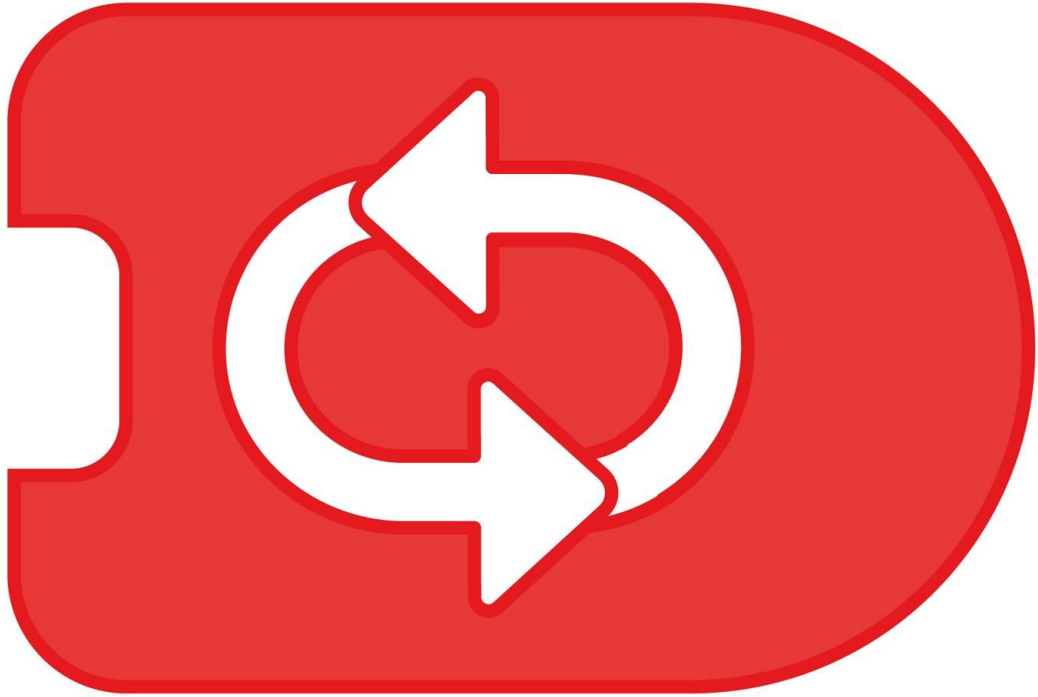
1





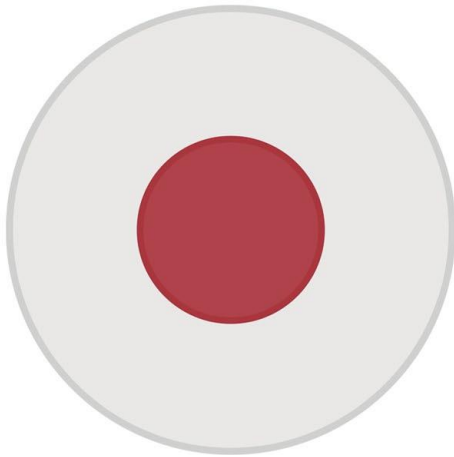


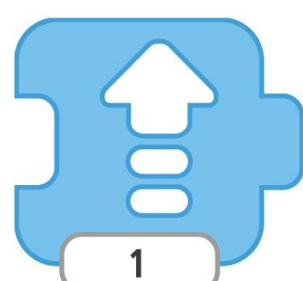
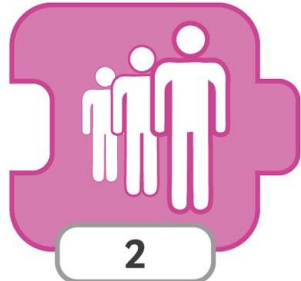
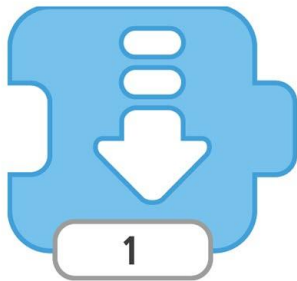
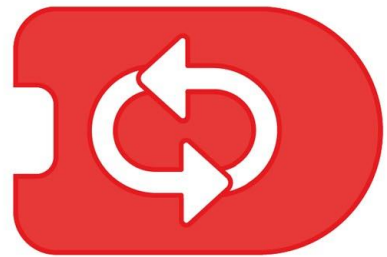
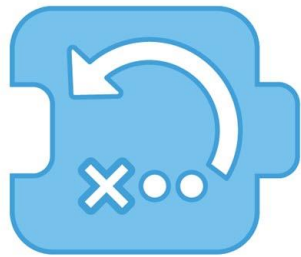


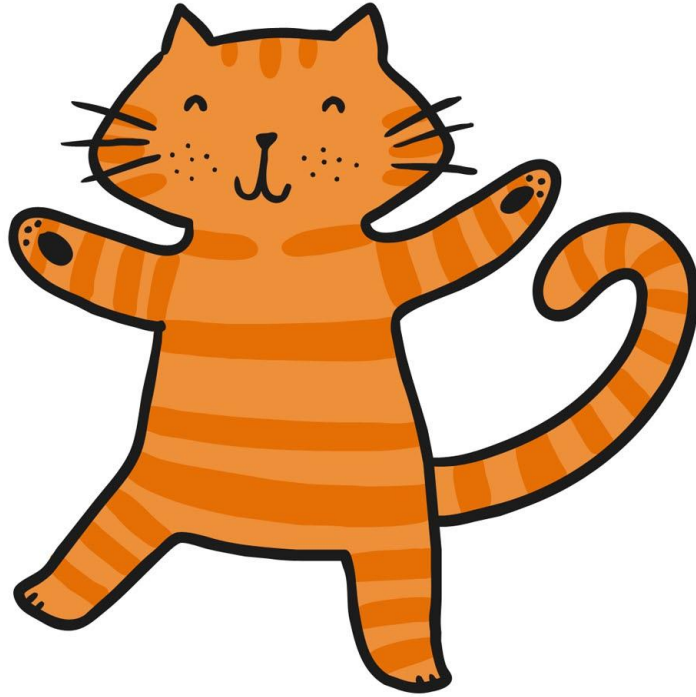


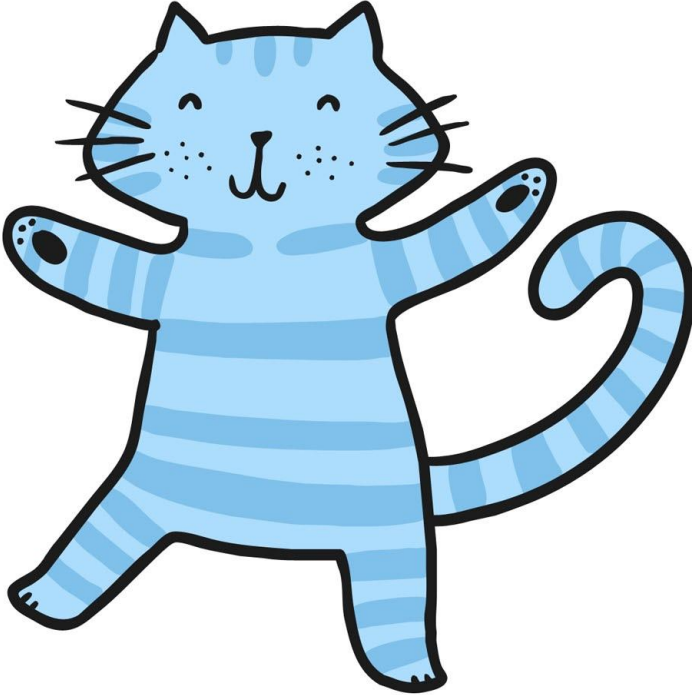


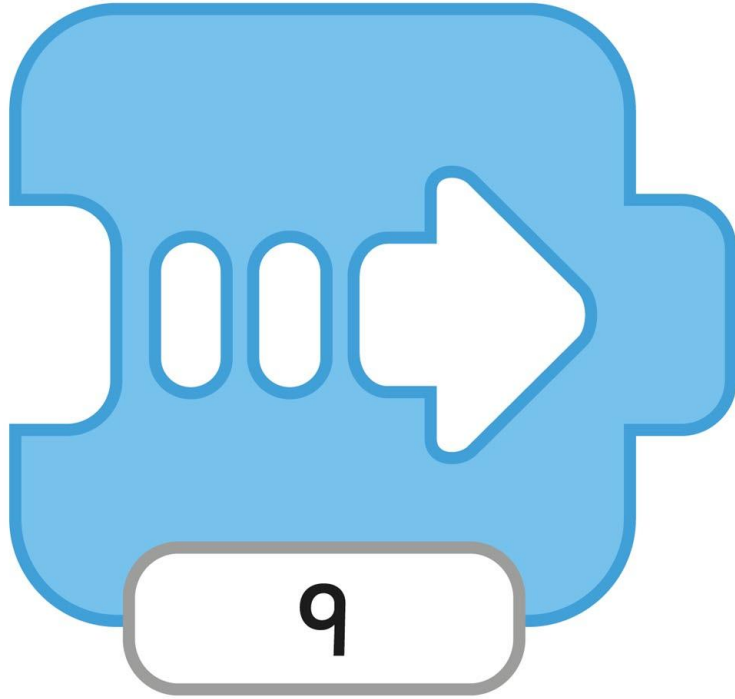


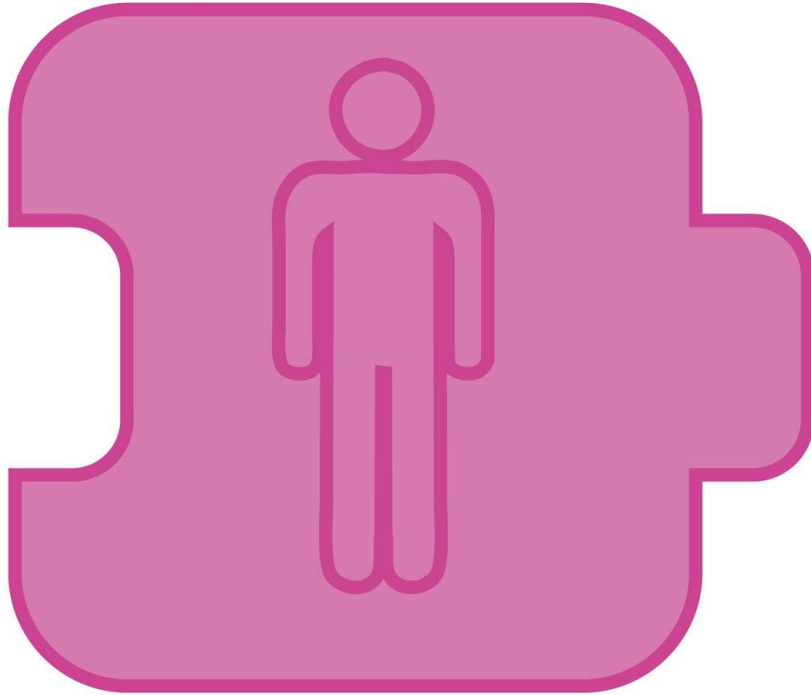


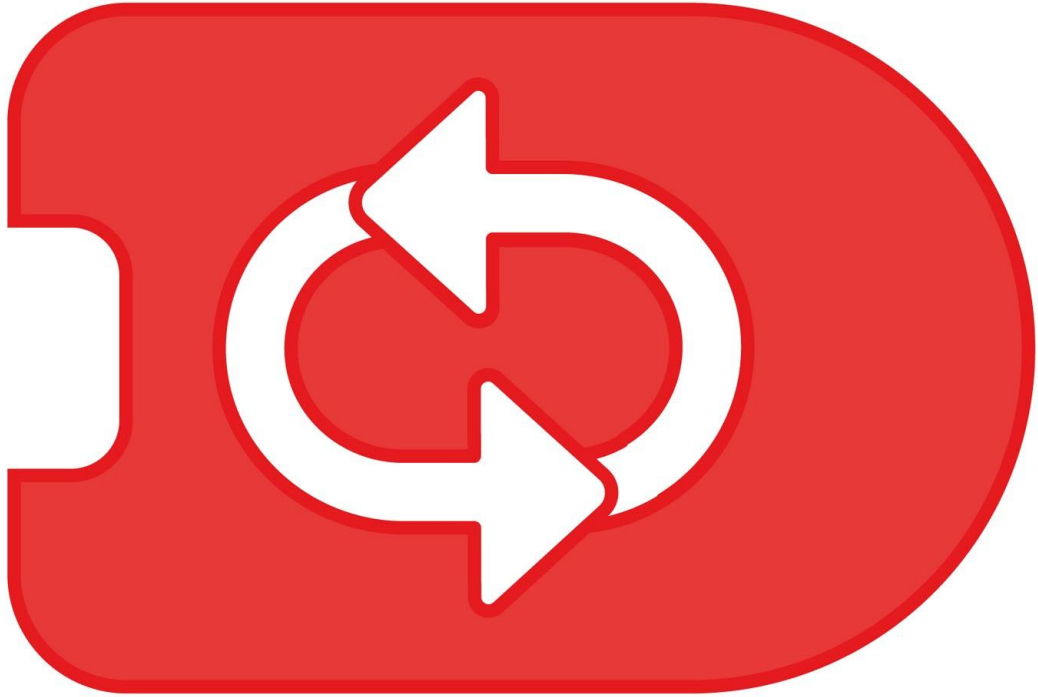






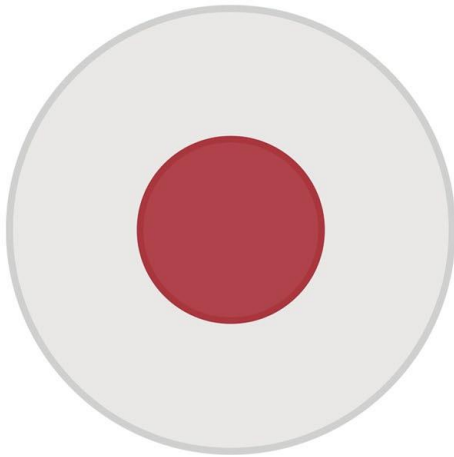


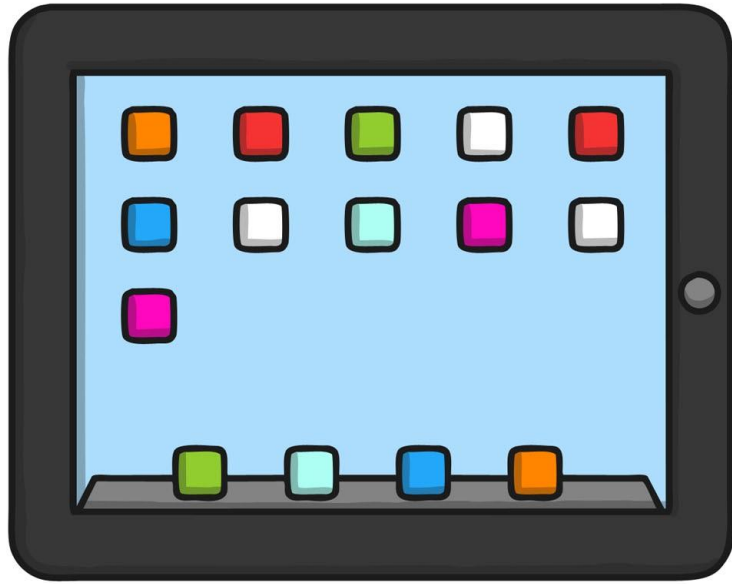


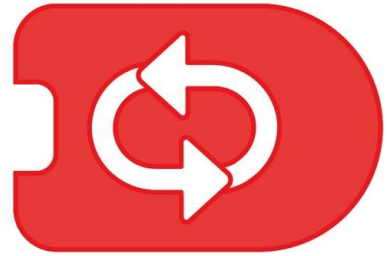
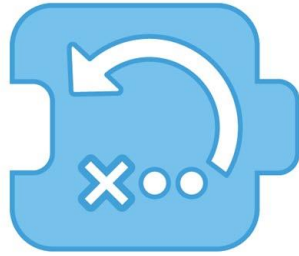




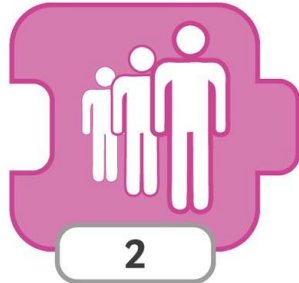




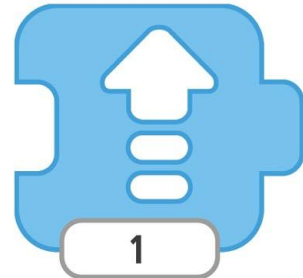




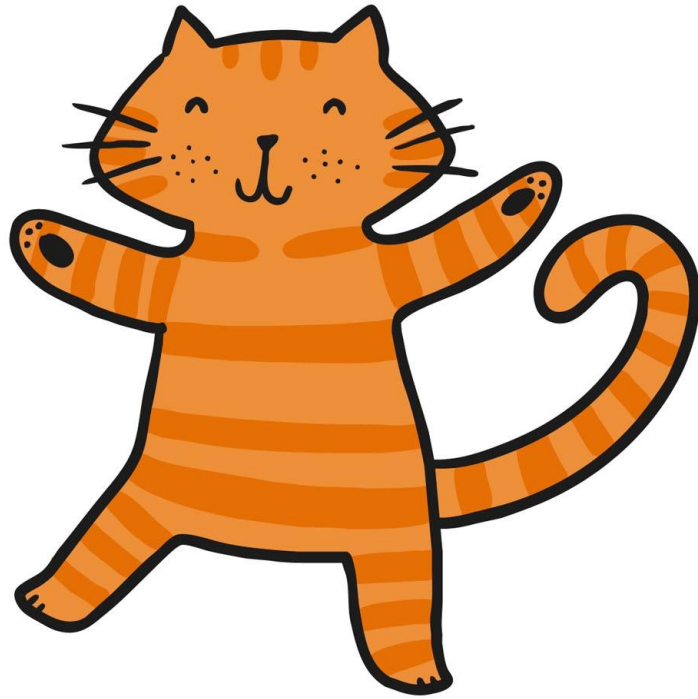
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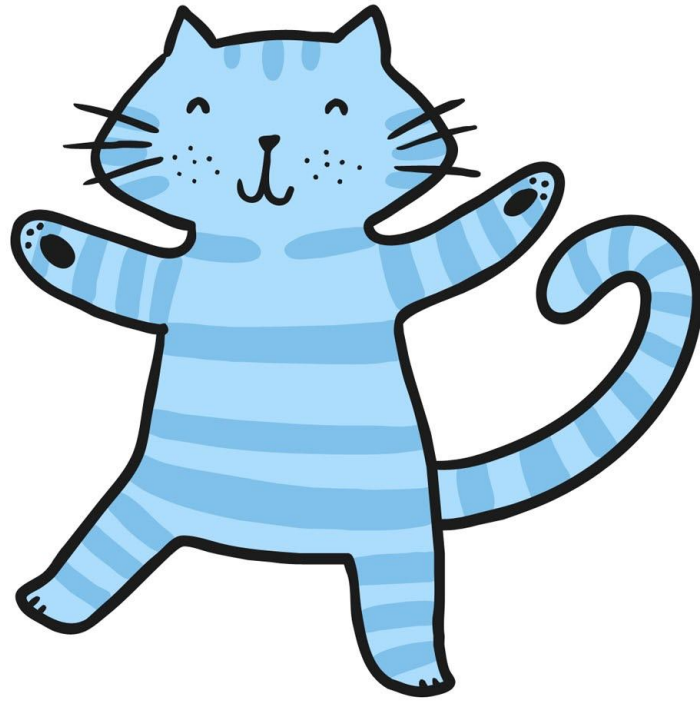


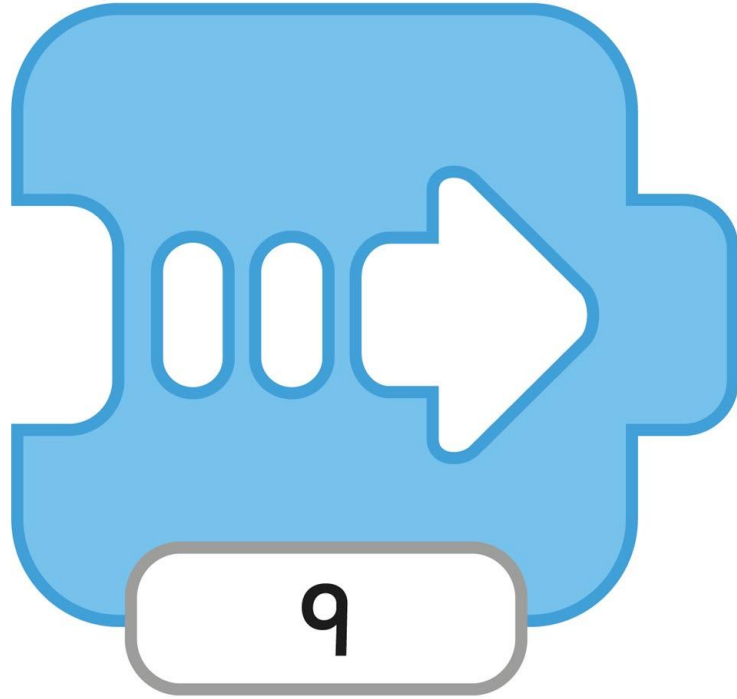
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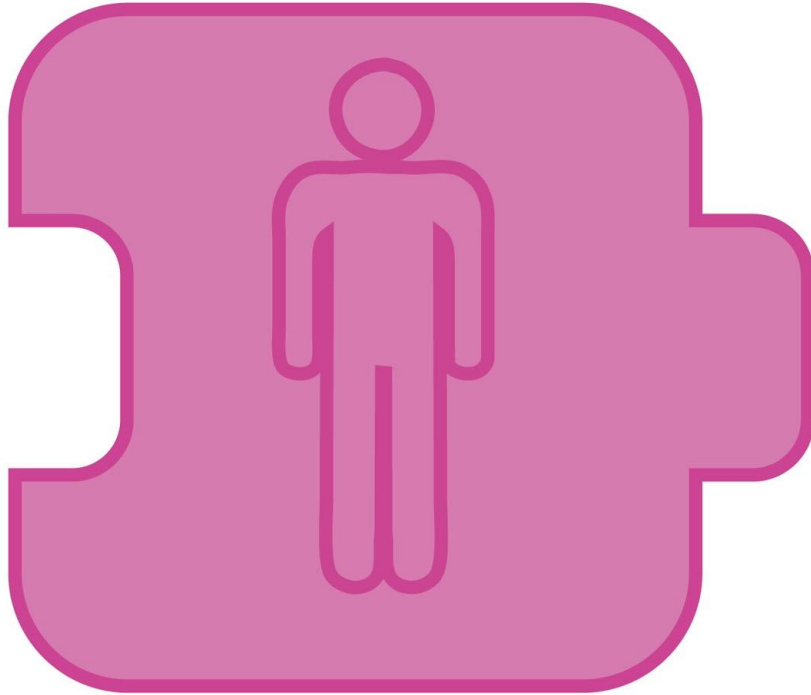


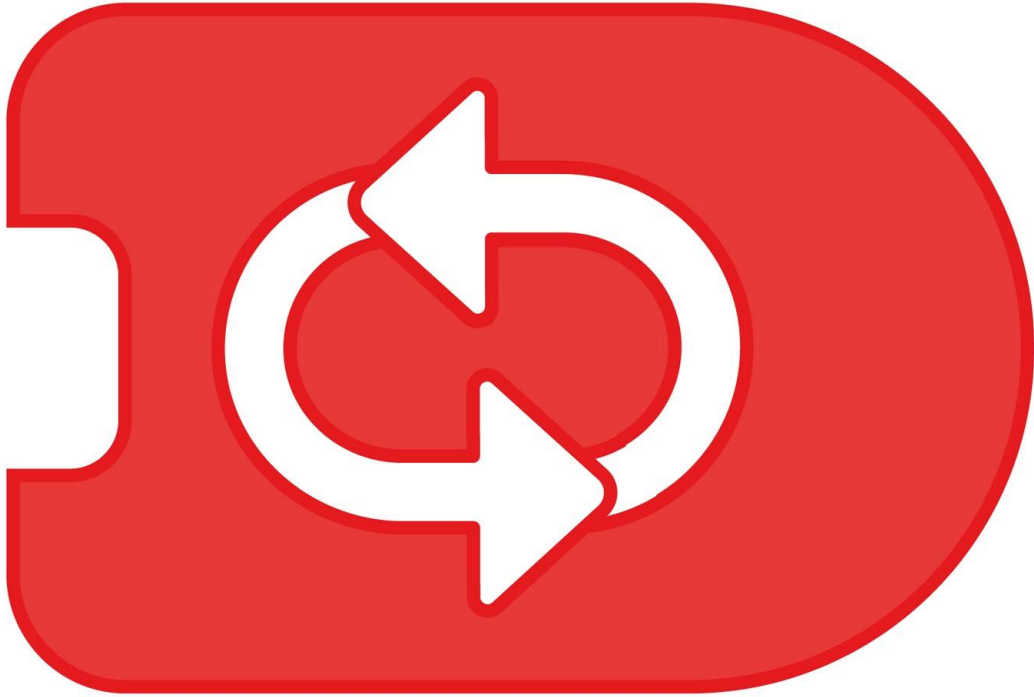
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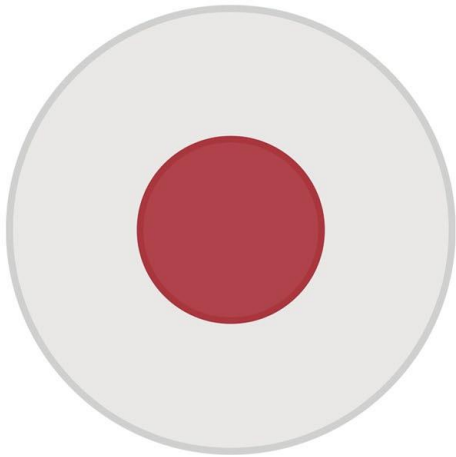


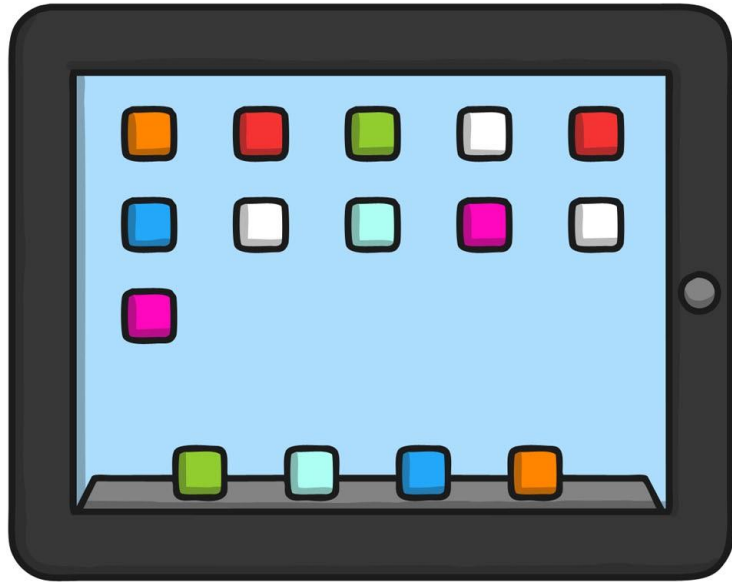


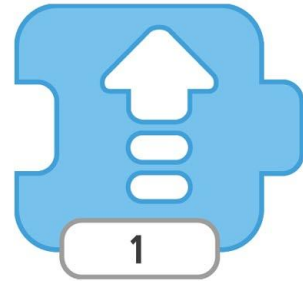
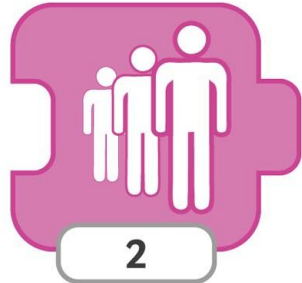
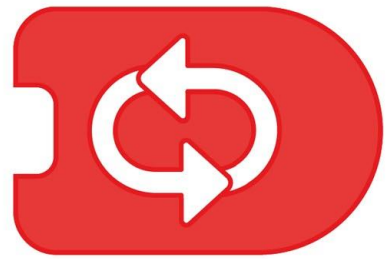
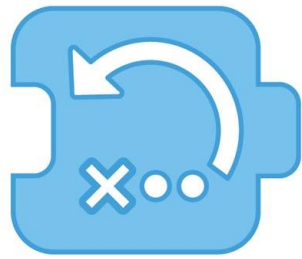


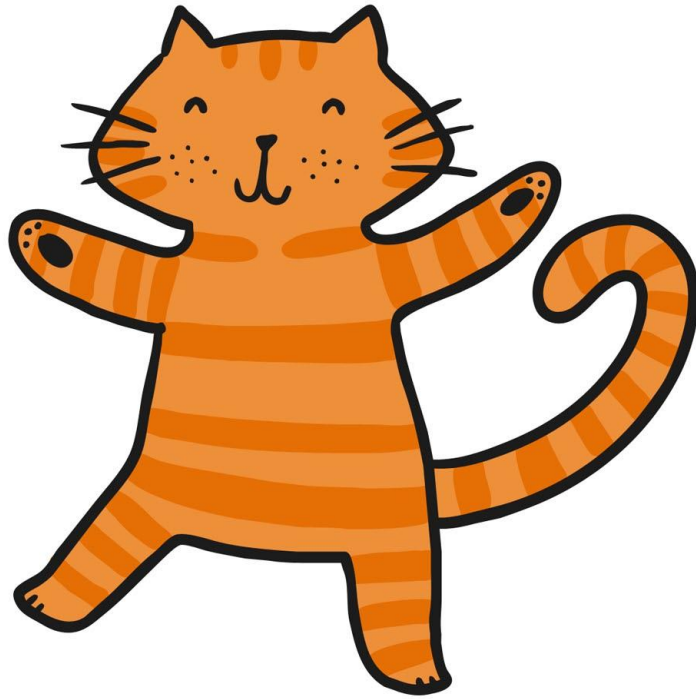


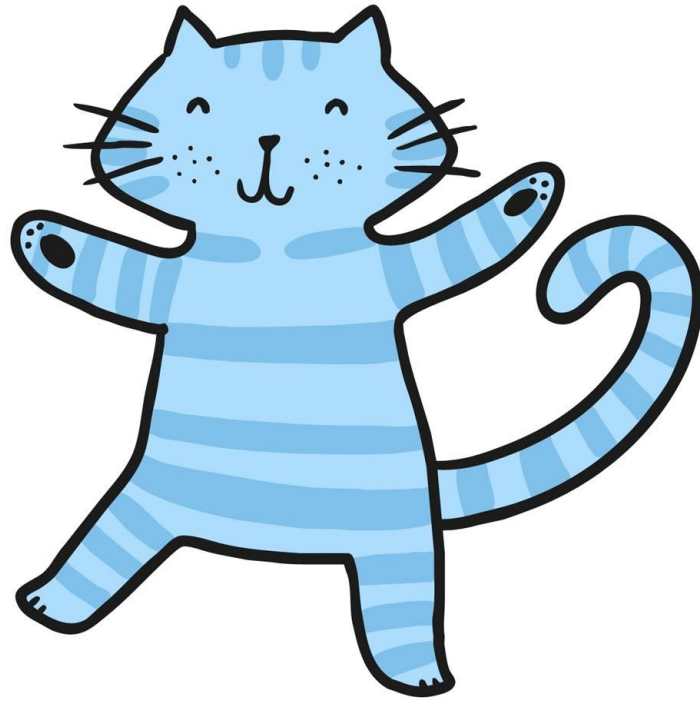


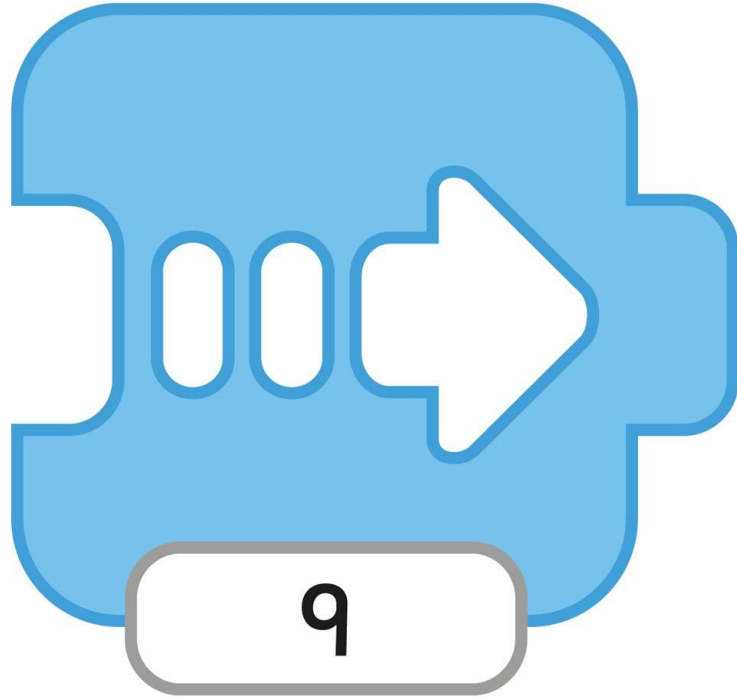


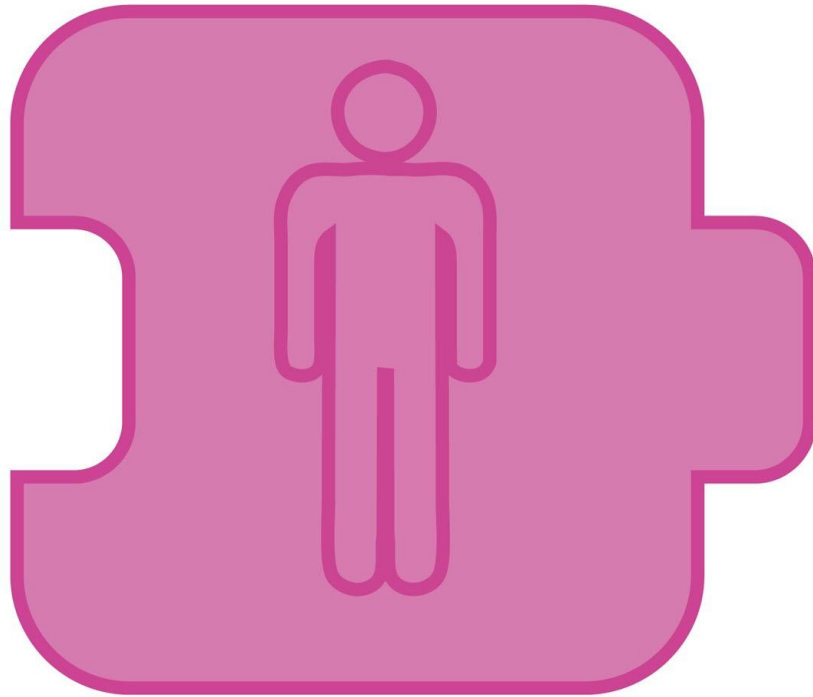


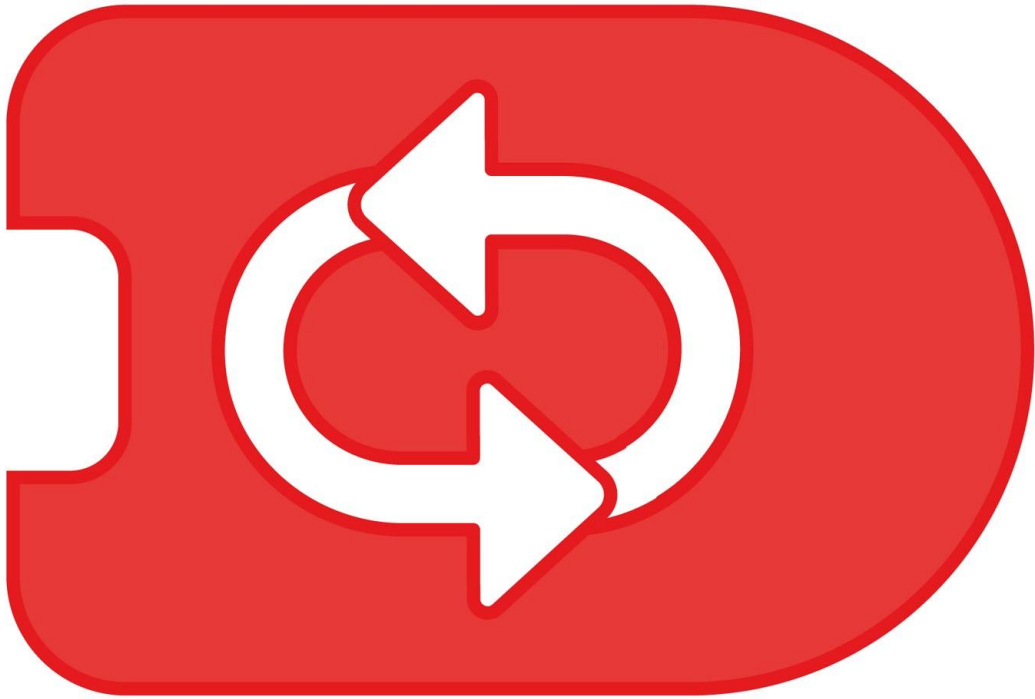






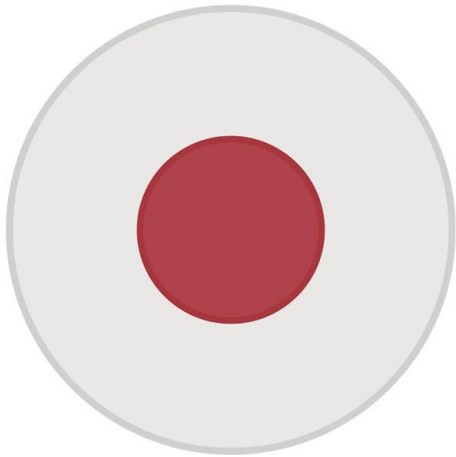


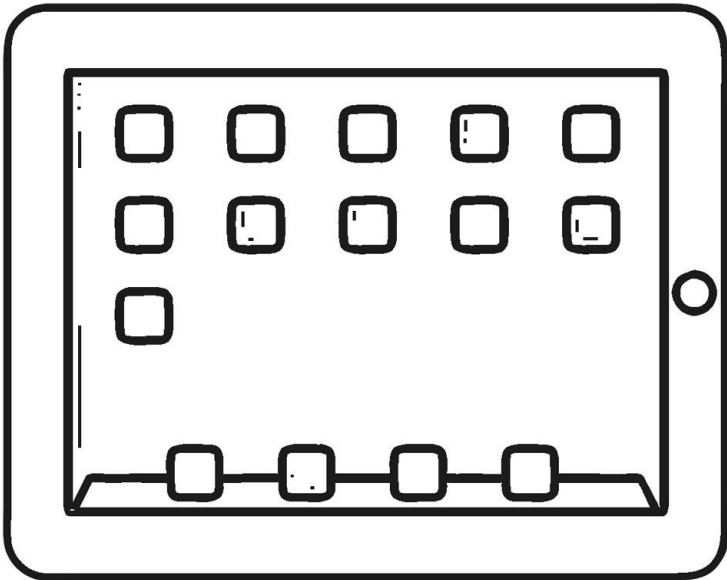


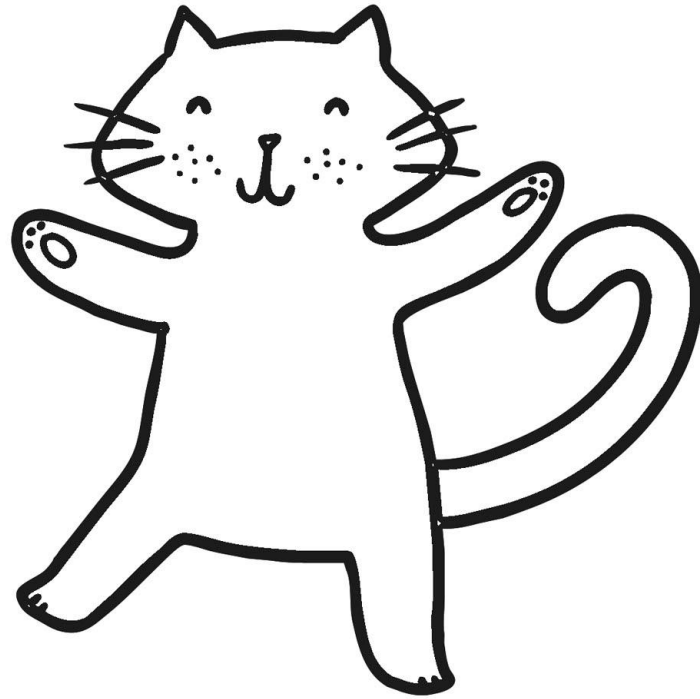


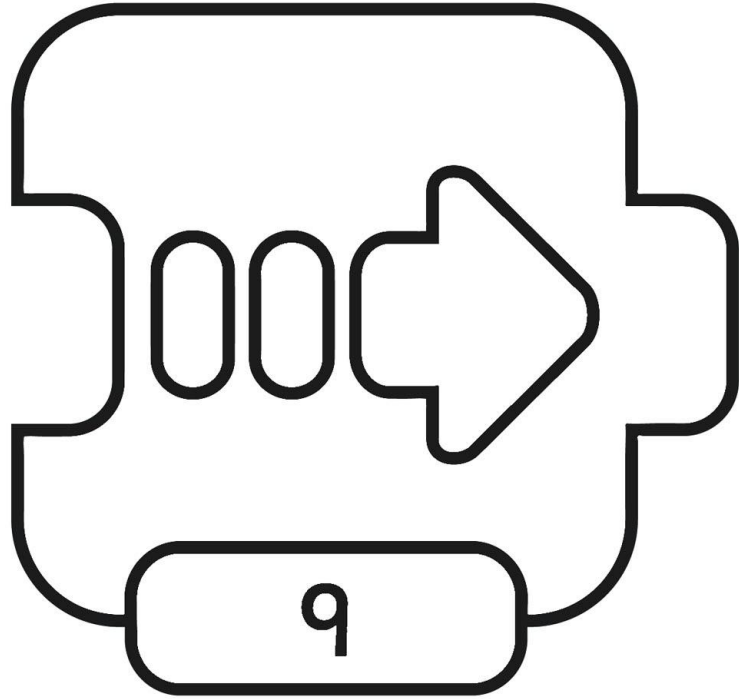


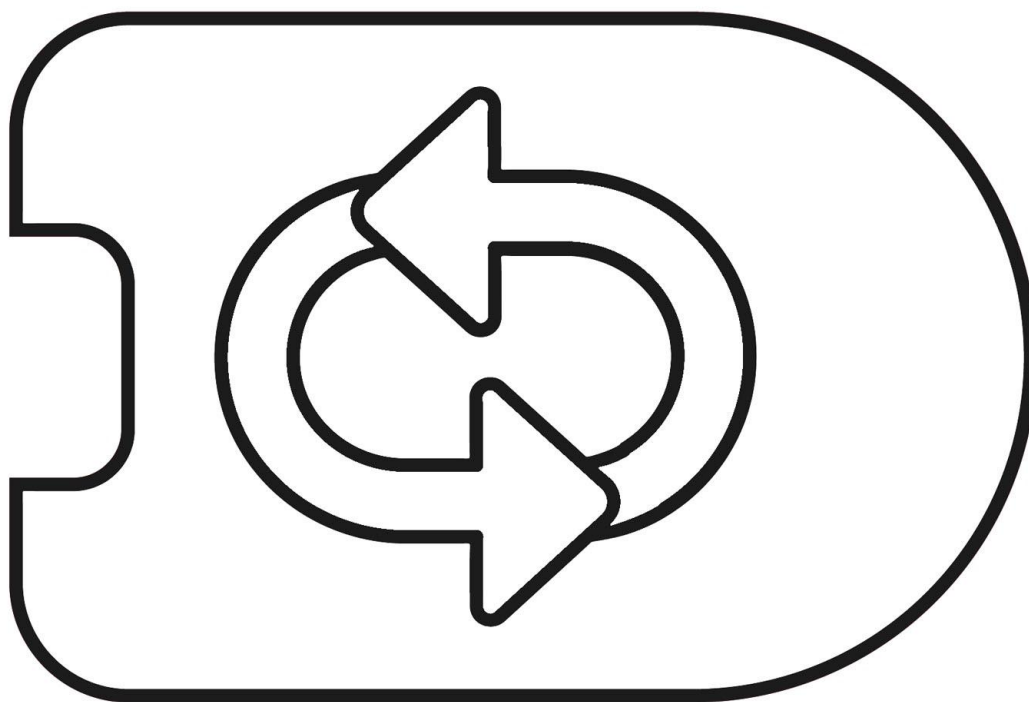


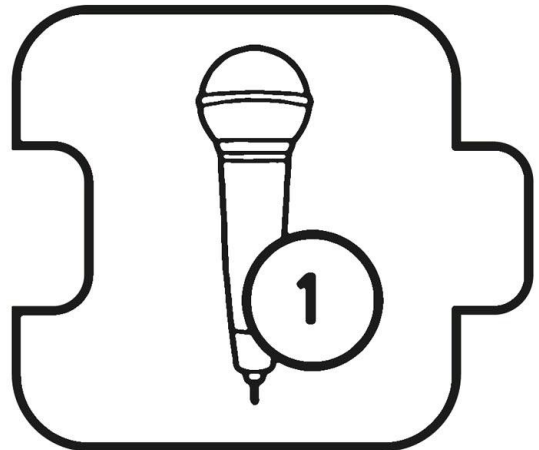
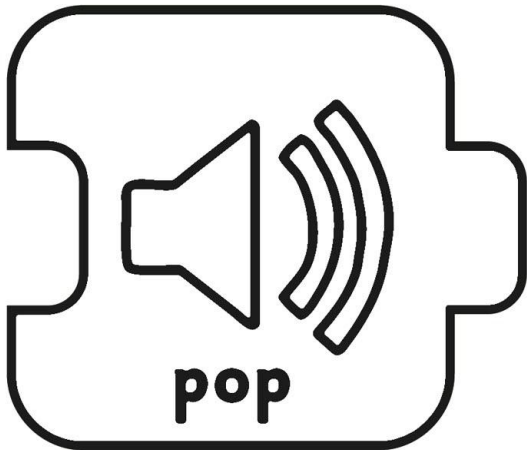


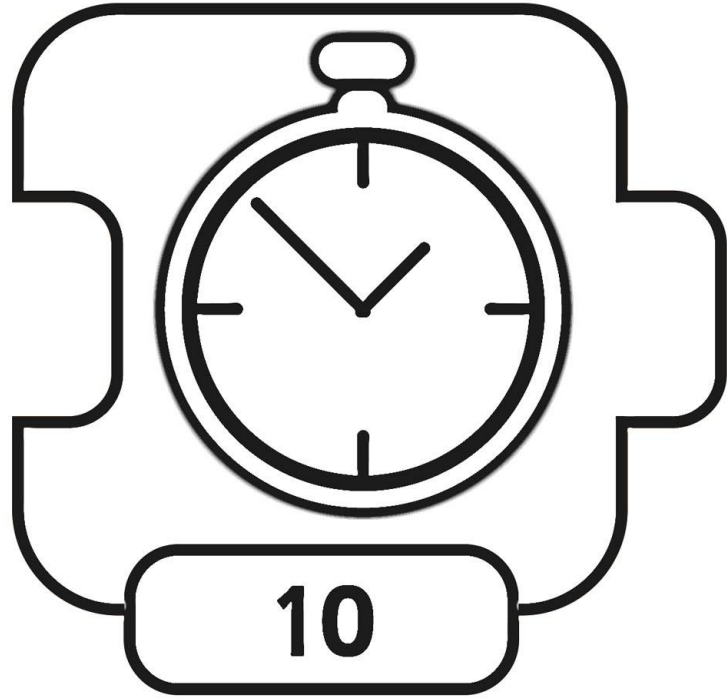


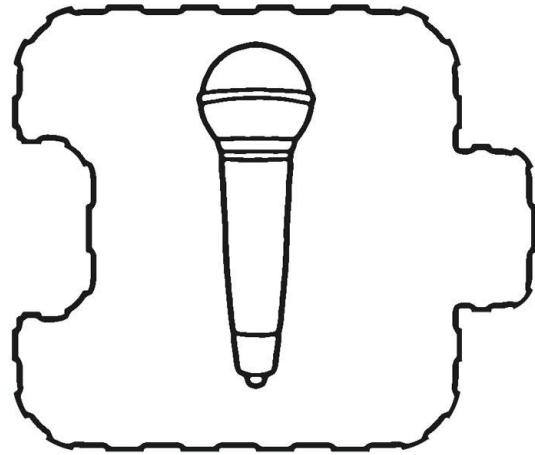
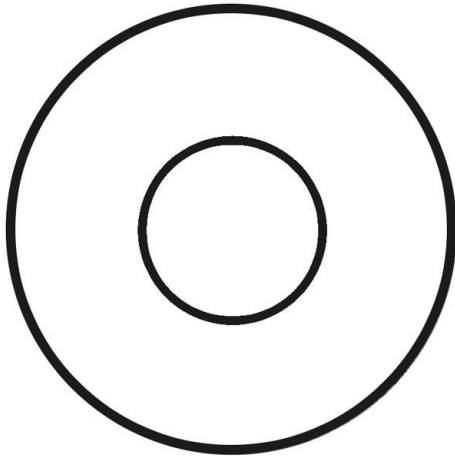


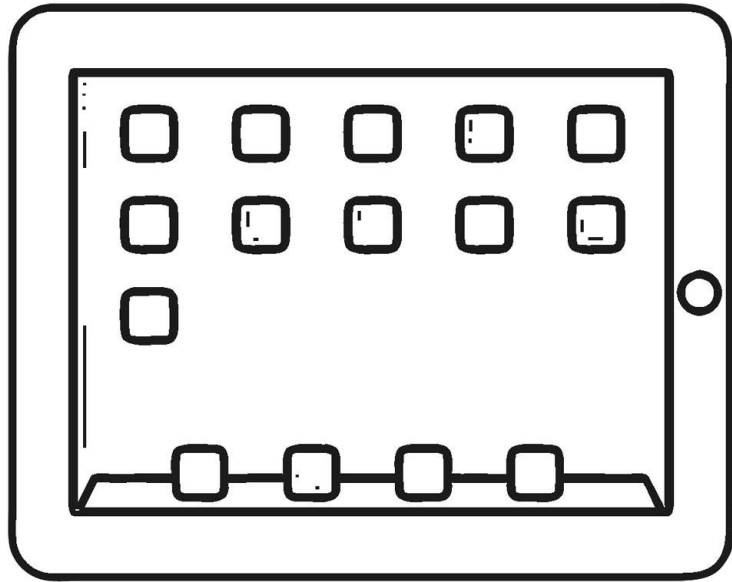


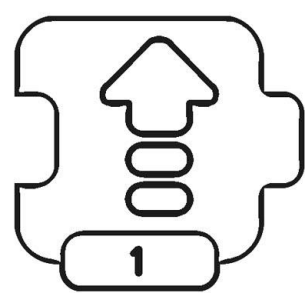
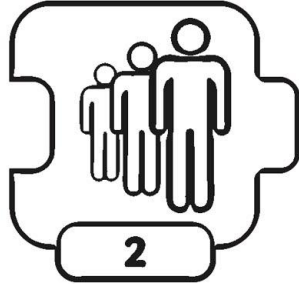
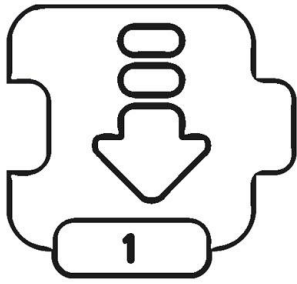
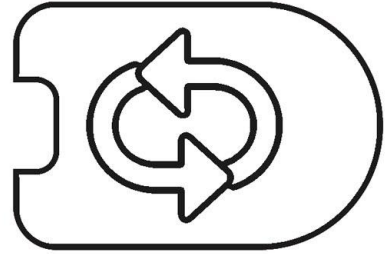
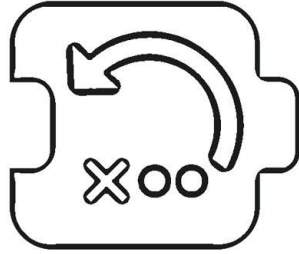
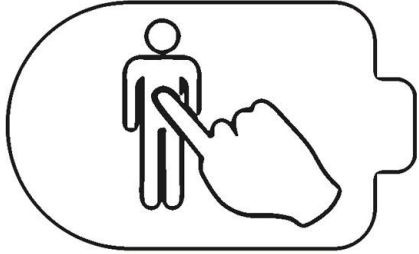


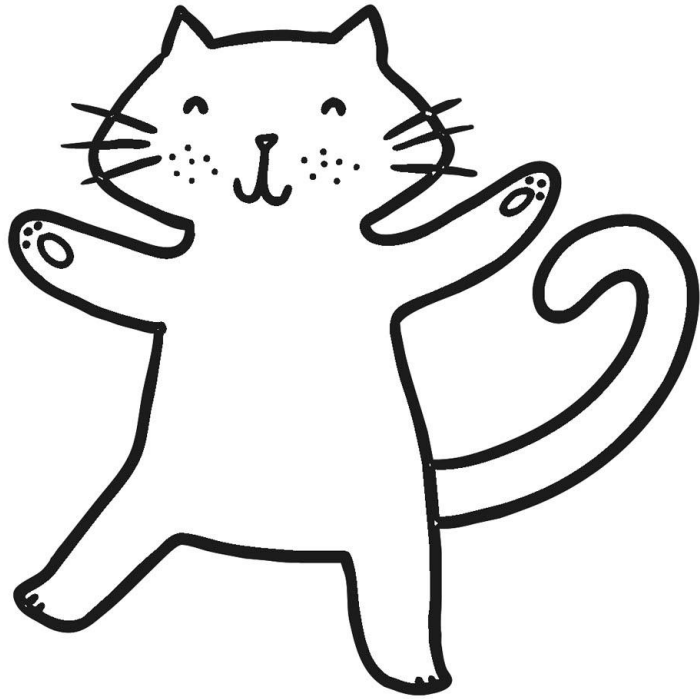


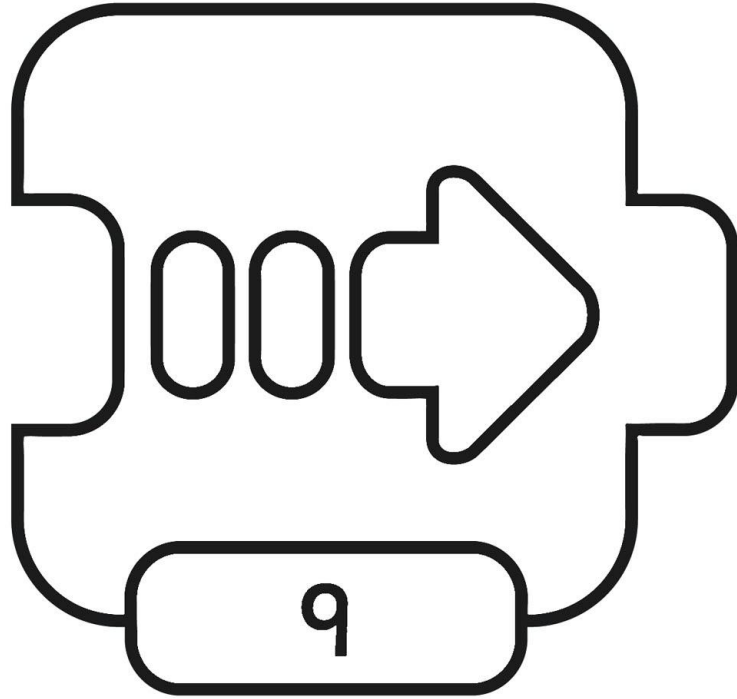


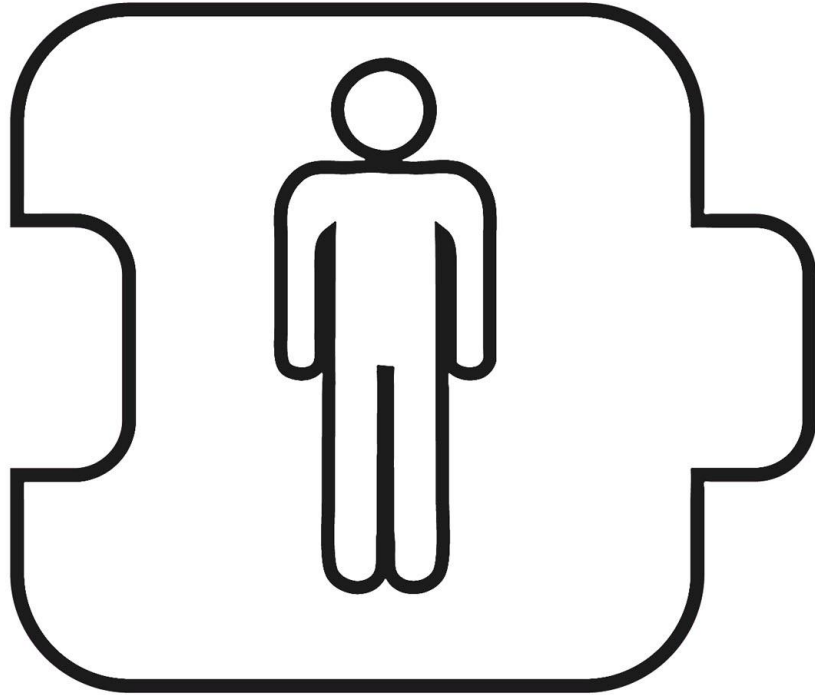


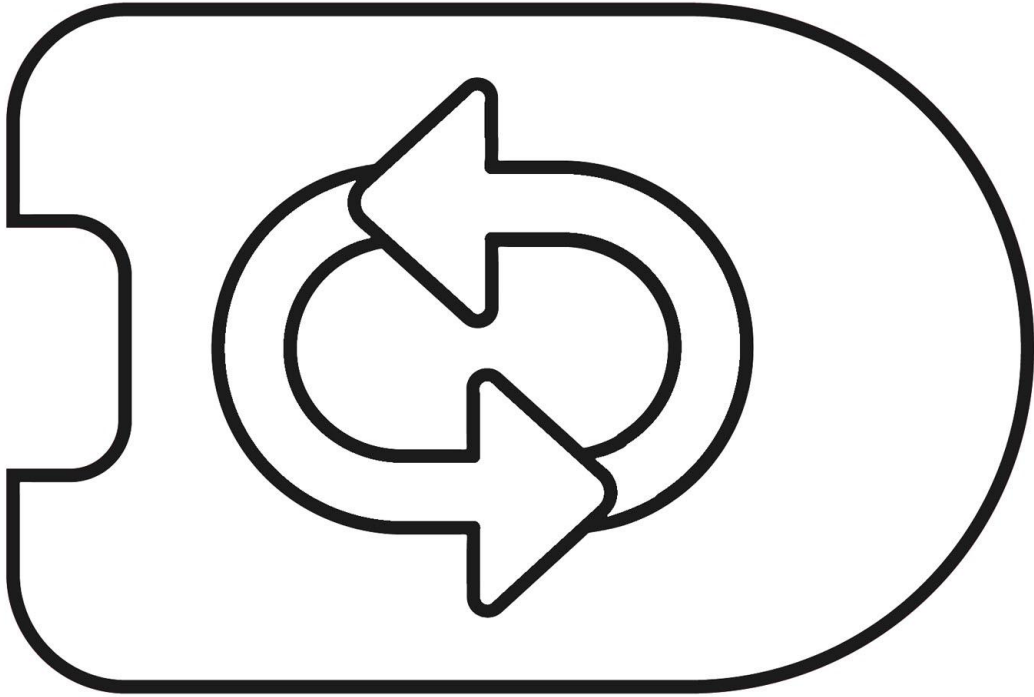


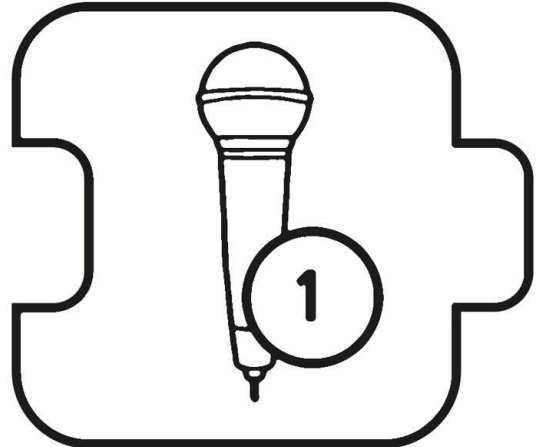
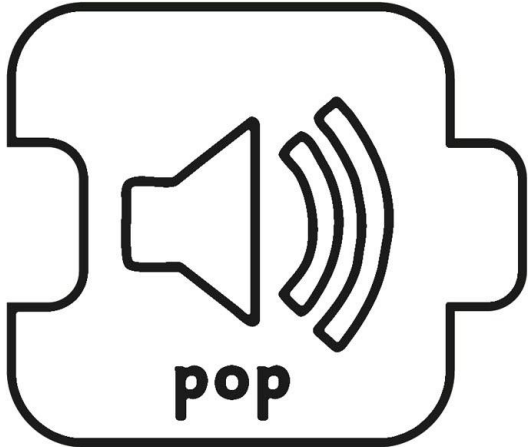


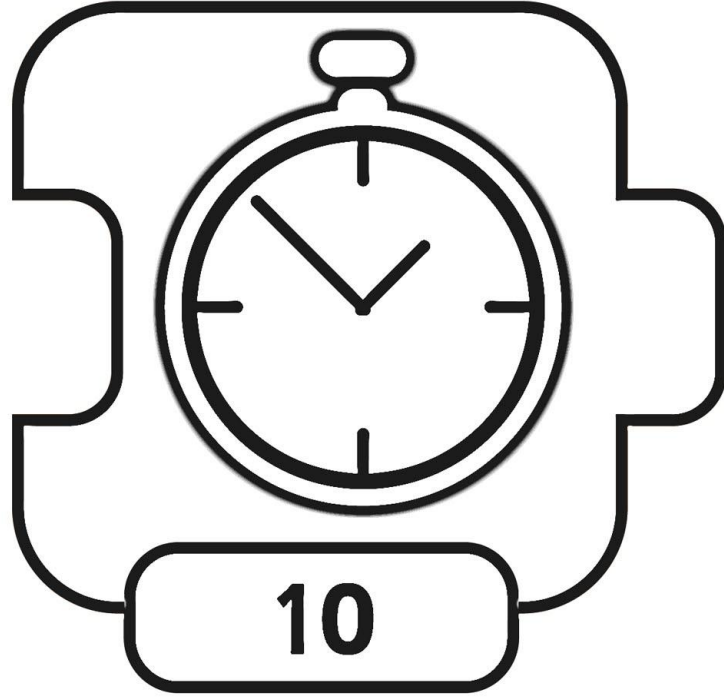


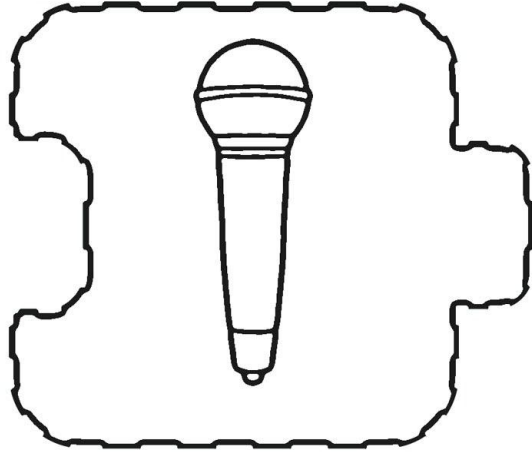
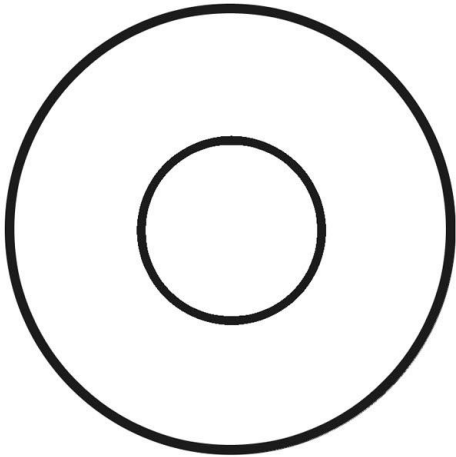


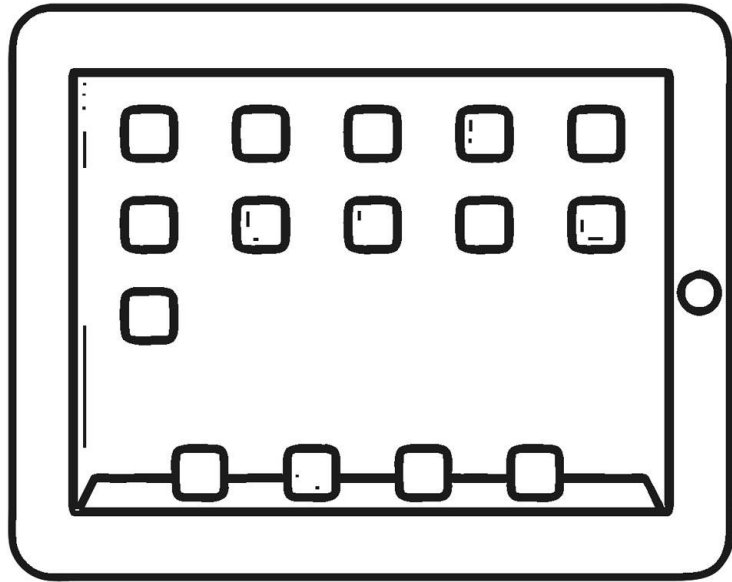


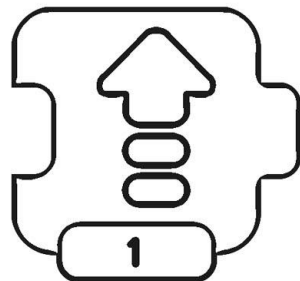
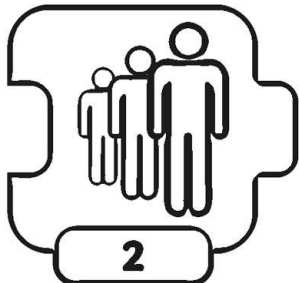
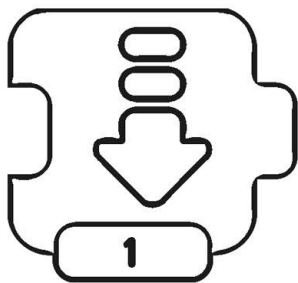
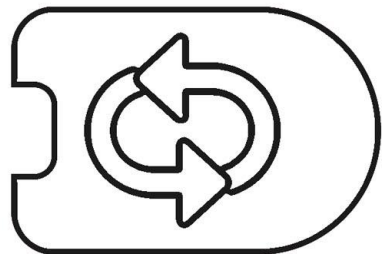
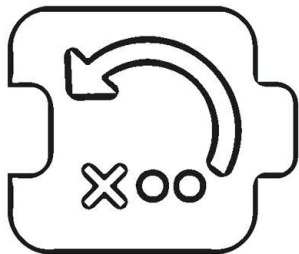
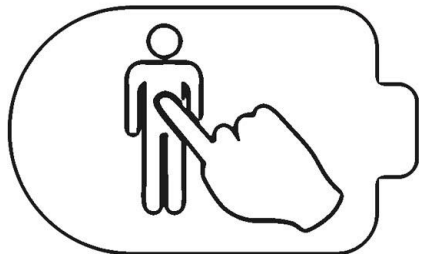


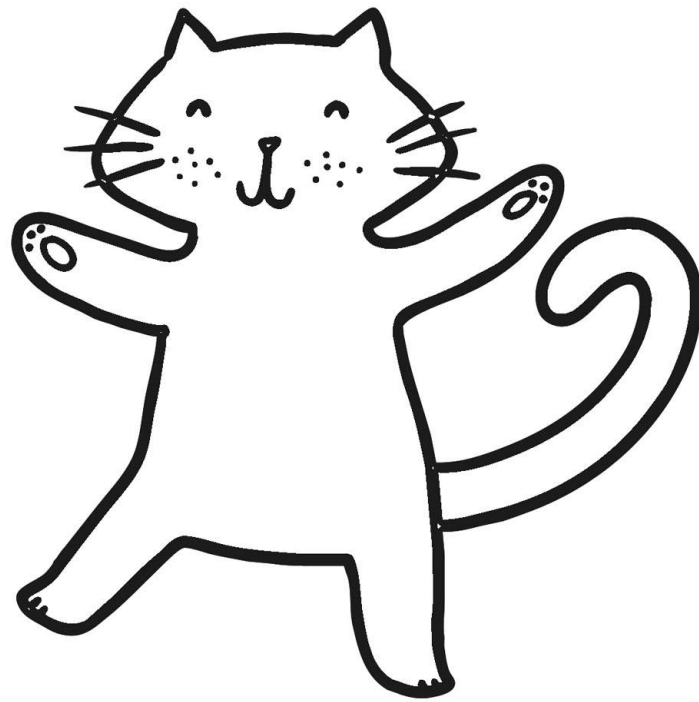


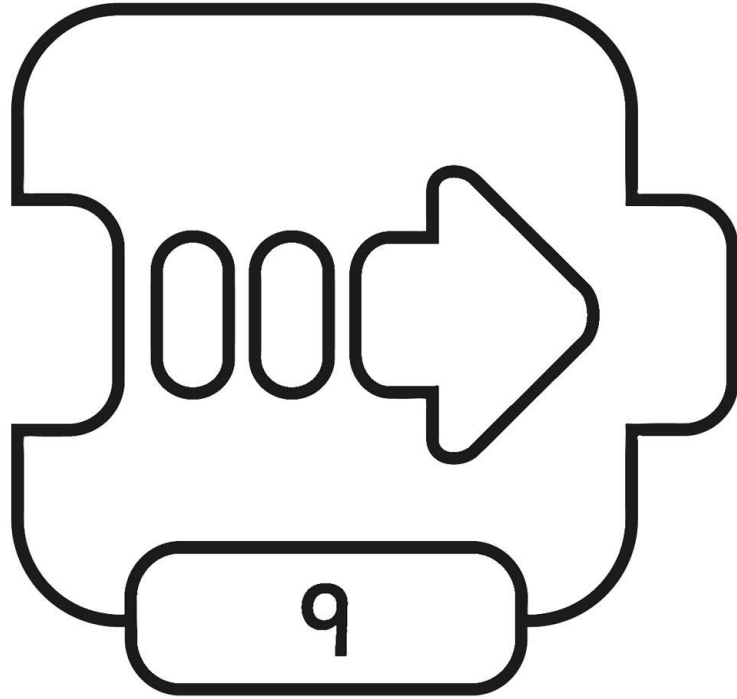


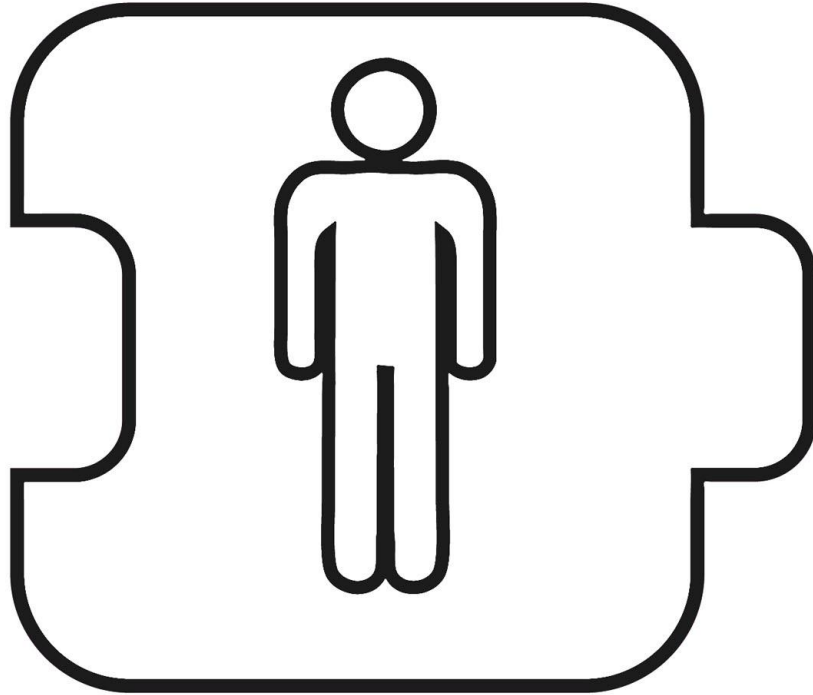


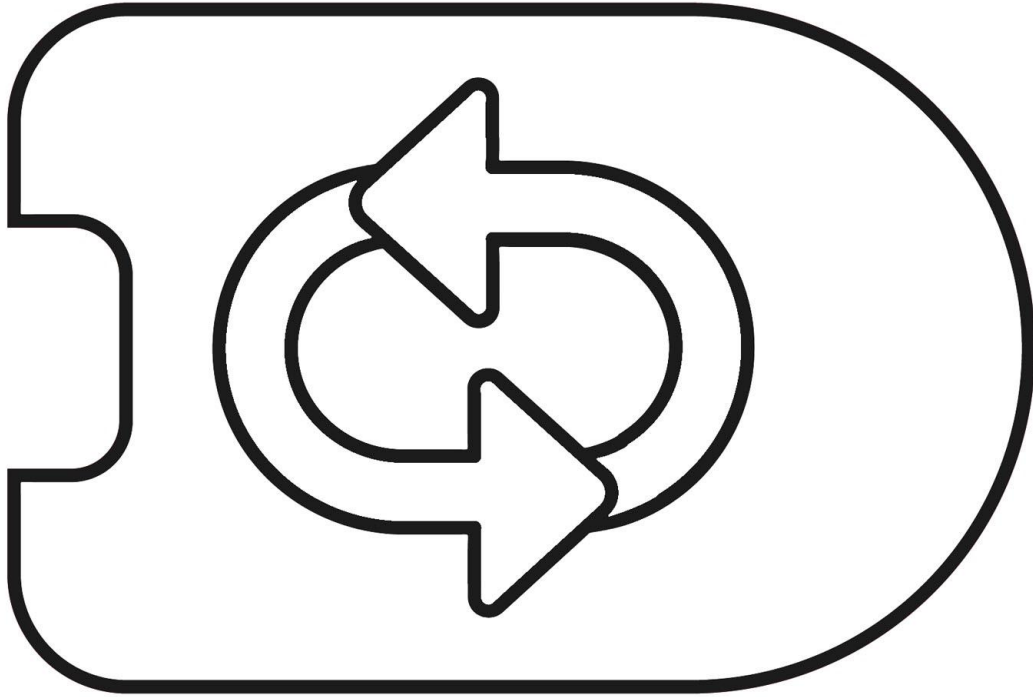


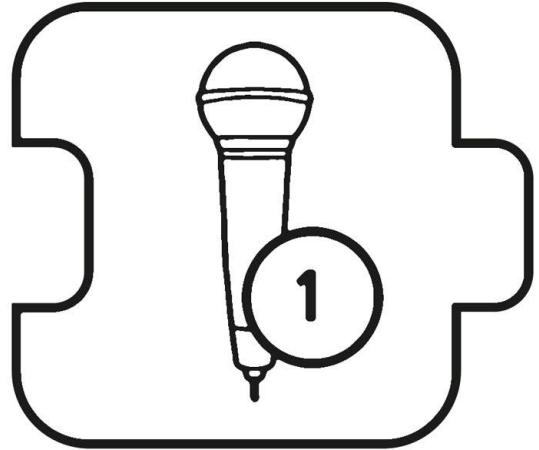
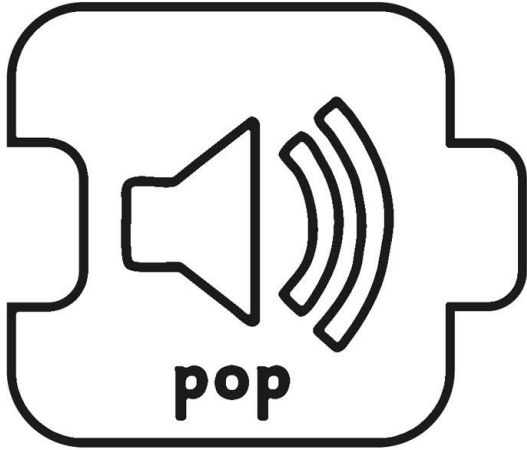


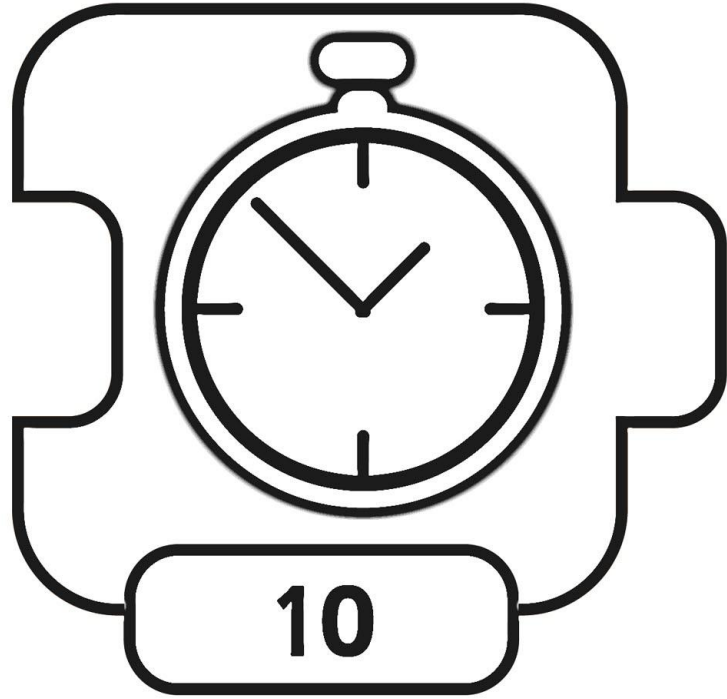


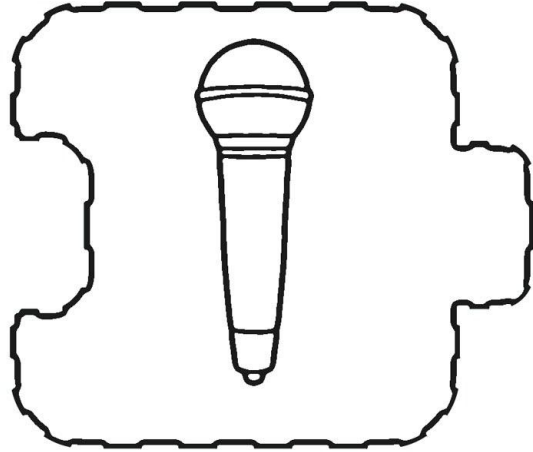
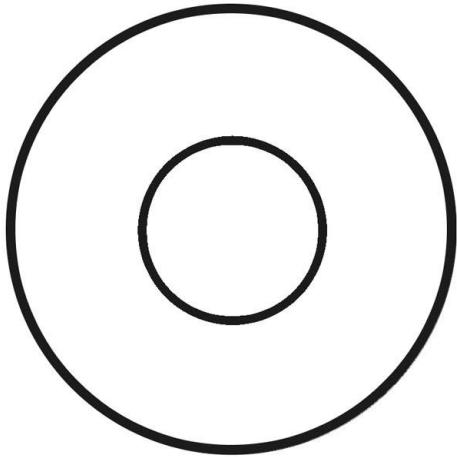












End of Unit Assessment | Computing | Year 1 | Programming with ScratchJr

All	Most	Some
<p>Open the ScratchJr app and start a new project, add new characters and backgrounds, use blocks for movement in different directions, create short sets of sequenced instructions.</p>	<p>Use different end blocks, including repeat forever, change the size of characters to grow or shrink, hide and show characters with an instruction block, can program two or more characters with instructions at the same time.</p>	<p>Use a repeat block for a section of instructions and specified number of times, predict the behaviour of a character, based on a sequence of instructions, edit the colours and other features of characters or sprites, create longer sequences of more complex instructions.</p>
33%	33%	33%
<p>Name Name Name Name</p>	<p>Name Name Name Name</p>	<p>Name Name Name Name</p>

		Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	Name	% of class
% met by child		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
Has the child met the all and most statements?		n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	0%		
All	Take information for this tab from the Unit Overview.																																			0%		
	Open the ScratchJr app and start a new project.																																				0%	
	Add new characters and backgrounds.																																				0%	
	Use blocks for movement in different directions.																																				0%	
	Create short sets of sequenced instructions.																																				0%	
Most	Use different end blocks, including repeat forever.																																				0%	
	Change the size of characters to grow or shrink.																																				0%	
	Hide and show characters with an instruction block.																																				0%	
	Can program two or more characters with instructions at the same time.																																				0%	
Some	Use a repeat block for a section of instructions and specified number of times.																																				0%	
	Predict the behaviour of a character, based on a sequence of instructions.																																				0%	
	Edit the colours and other features of characters or sprites.																																				0%	
	Create longer sequences of more complex instructions.																																				0%	

NC Aims Covered in the ScratchJr Unit

To understand that programs execute by following precise and unambiguous instructions.

To use logical reasoning to predict the behaviour of simple programs.

To create and debug simple programs.

To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

I can...

Computing | Year 1 | Programming with ScratchJr

Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
I can describe and use instructions to program a character.	I can program a character to grow and shrink.	I can use instructions to make characters move at different speeds and distance.	I can use a repeat instruction to make a sequence of instructions run more than once and predict the behaviour.	I can create programs that play a recorded sound.	I can create programs with a sequence of linked instructions.
I can open the ScratchJr app and use buttons to navigate.	I can position new sprites on a suitable background.	I can program a car to move in ScratchJr.	I can use blocks for movement in different directions.	I can record my own sounds.	I can create a short set of instructions for a sequence of movements.
I can add and remove characters and backgrounds.	I can select and drag blocks for grow and shrink.	I can edit the value to make the car travel further.	I can use a REPEAT FOREVER block to make a continuous loop.	I can create instructions to play a recorded sound.	I can create longer sequences of more complex instructions.
I can edit characters and backgrounds.	I can connect blocks that execute a new action.	I can change the speed of the car.	I can use a REPEAT block for a section of instructions.	I can edit and use speech bubbles in my instructions.	I can use the 'WAIT' block.
I can describe the effect of at least three instruction blocks on a character.	I can use start blocks to begin a program.	I can program the car to repeat the moving instructions.	I can predict the behaviour of a character, based on a sequence of instructions.	I can create my own simple programs.	I can program two or more characters with instructions at the same time.

Computing: Programming with Scratch Jr

K	W	L
What I know	What I want to know	What I have learnt

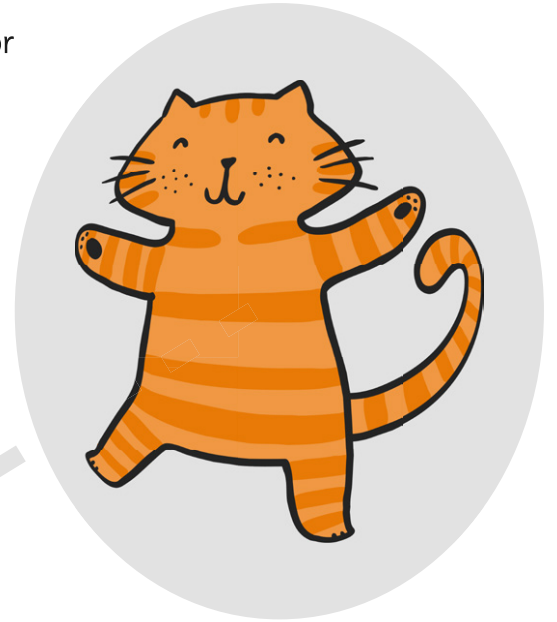
ScratchJr at Home

At school, your child is learning to understand simple computer programming. One of the ways this is being delivered is by using the ScratchJr app for tablets and ipads.

ScratchJr is a way of introducing computer coding, aimed at 5-7 year olds, before moving on to use the original Scratch software after that.

You can find more information about this free app on the website: <http://www.scratchjr.org>

If you or your child has a tablet, you could download the app for your child to use at home. It is fun, interactive and creative.



Try asking your child if they can remember any of the skills or techniques they have practised at school. Alternatively, just experiment with the app and see what you and your child can create together. There are lots of characters and backgrounds to choose from.

Let us know if you manage to create something together!

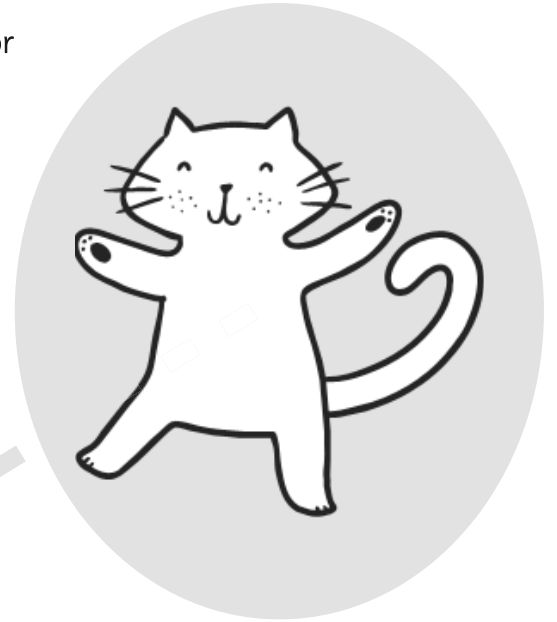
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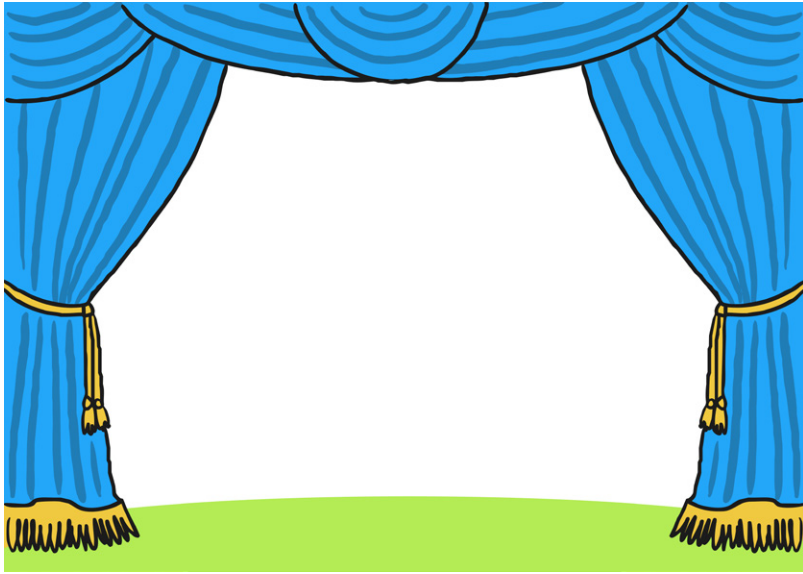
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ScratchJr Theatre Performance

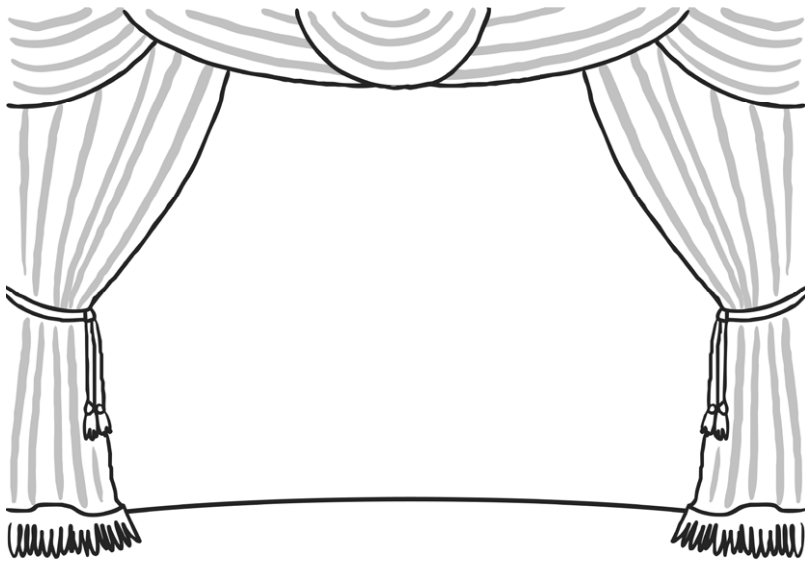


Imagine you are going to program a sequence of instructions for characters on this Theatre background in ScratchJr.

Draw or write what you would do. What characters would you like to use? What will they do? You can use words, pictures or even ScratchJr blocks if you can remember what they do.

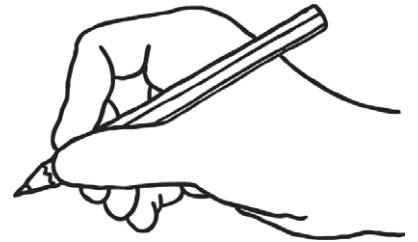


ScratchJr Theatre Performance



Imagine you are going to program a sequence of instructions for characters on this Theatre background in ScratchJr.

Draw or write what you would do. What characters would you like to use? What will they do? You can use words, pictures or even ScratchJr blocks if you can remember what they do.
















Programming with ScratchJr: Cool Characters

<p>Aim: To understand that programs execute by following precise and unambiguous instructions.</p> <p>To use logical reasoning to predict the behaviour of simple programs.</p> <p>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.</p> <p>I can describe and use instructions to program a character.</p>	<p>Success Criteria: I can open the ScratchJr app and use buttons to navigate.</p> <p>I can add and remove characters and backgrounds.</p> <p>I can edit characters and backgrounds.</p> <p>I can describe the effect of at least three instruction blocks on a character.</p>	<p>Resources: Lesson Pack</p> <p>Tablets (Apple, Amazon or Android) with ScratchJr app installed.</p>
<p>I can describe and use instructions to program a character.</p>	<p>Key/New Words: ScratchJr, tablet, blocks, programs, character, background, sequence, project.</p>	<p>Preparation: Watch Demo Activity Sheet - as required Differentiated Cool Characters Activity Sheet - as required</p>

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

Learning Sequence

	<p>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.</p>	
	<p>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.</p>	
	<p>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.</p>	
	<p>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. <i>Can children use software to create new projects, including adding a suitable character and background?</i></p> <div style="display: flex; justify-content: space-around;"> <div> <p> Children open the app and start a new project. They add and remove characters and backgrounds, matching appropriately.</p> </div> <div> <p> 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.</p> </div> <div> <p> 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.</p> </div> </div>	
	<p>Instruction Blocks for Characters: Using the Lesson Presentation, show an example character on the screen and ask what the effect would be of a range of different blocks. <i>Can children describe the instructions that the blocks have upon the character?</i></p>	

Taskit

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

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

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.		

Programming with ScratchJr | Cool Characters

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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.		



Cool Characters

I can describe and use instructions to program a character.

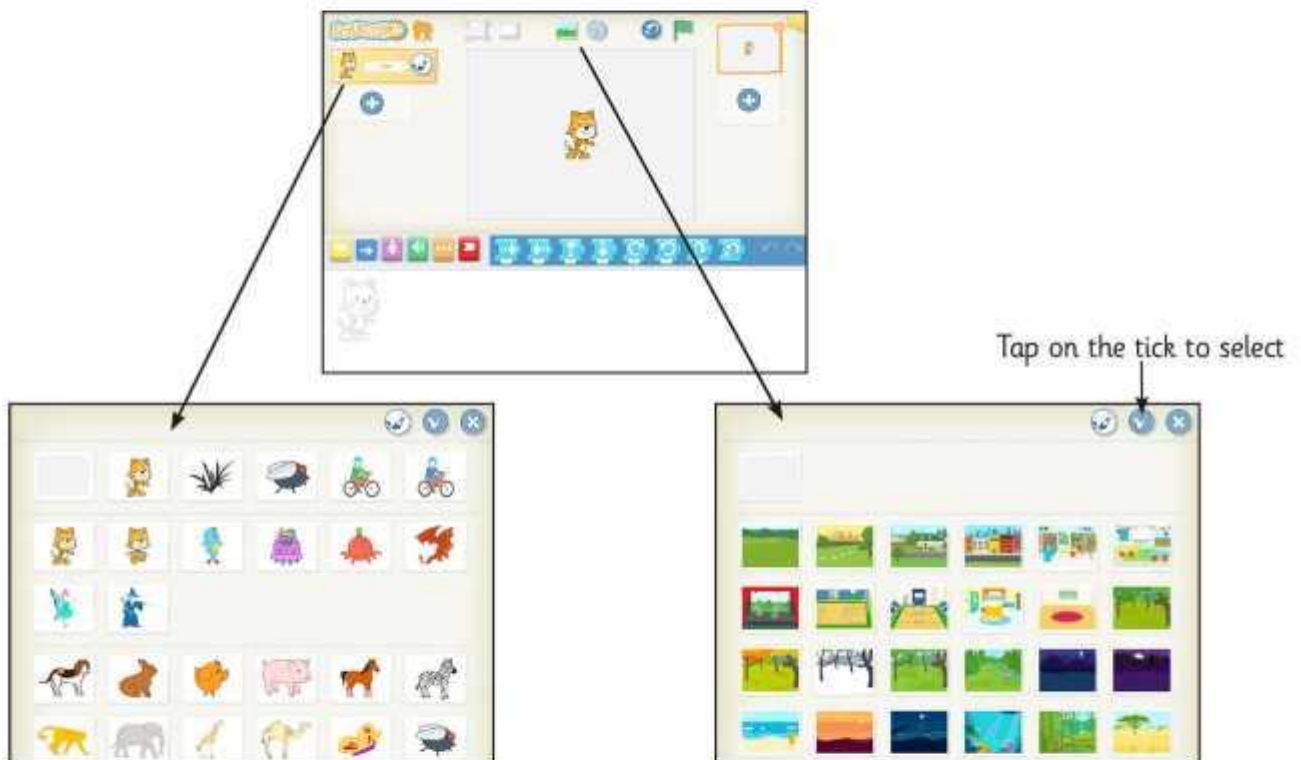


Open the ScratchJr app and start a new project in the My Projects screen.



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

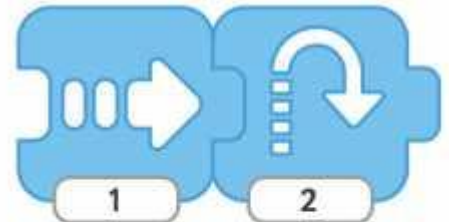
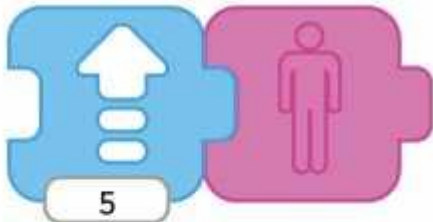
I can describe and use instructions to program a character.



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!



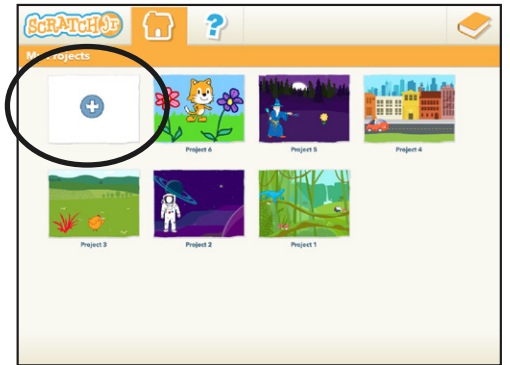


Cool Characters

I can describe and use instructions to program a character.

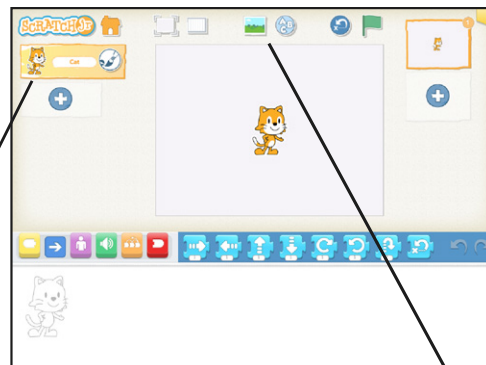


Open the ScratchJr app and start a new project in the My Projects screen.

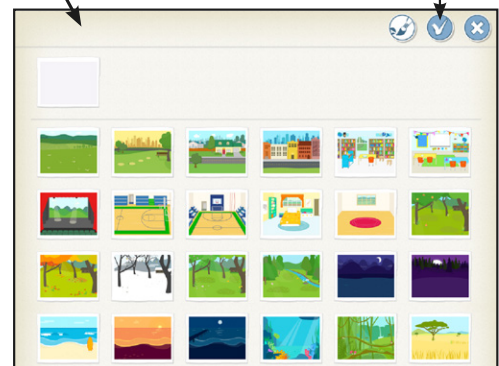
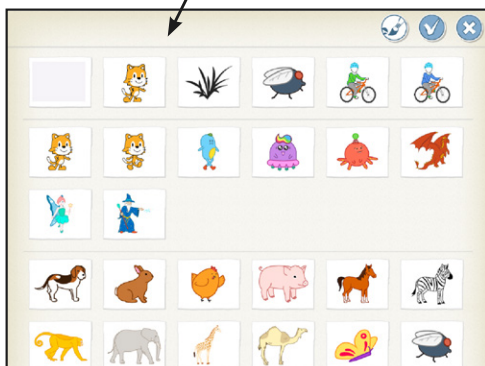


Add a new character and background – select then tap the tick icon.

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



Tap on the tick to select



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.

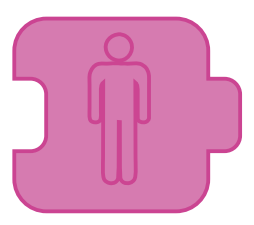
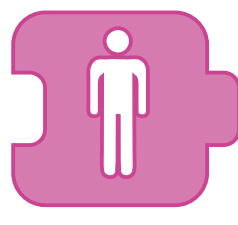
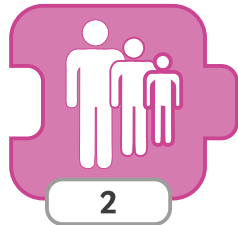
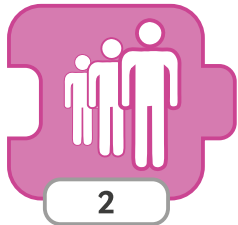
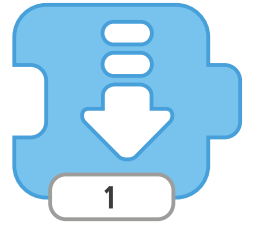
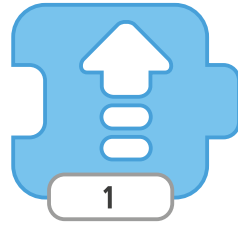
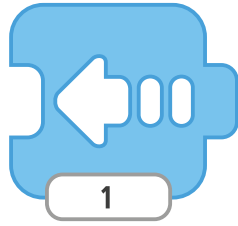
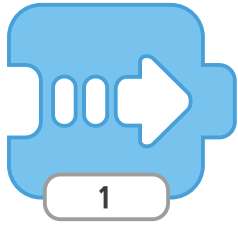


Cool Characters

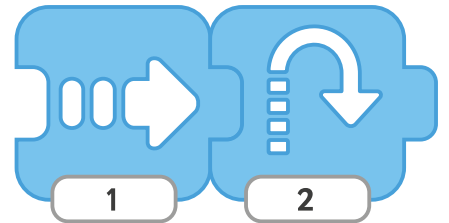
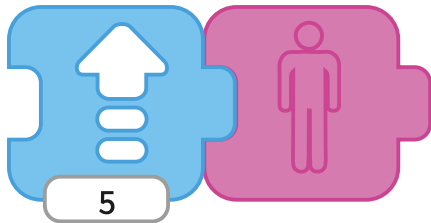
I can describe and use instructions to program a character.



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

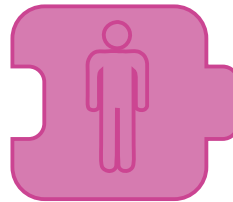
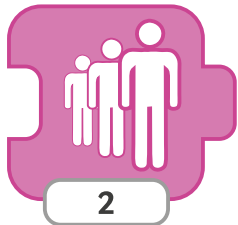
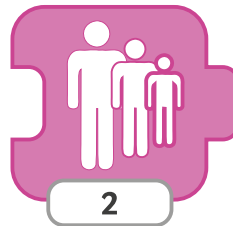
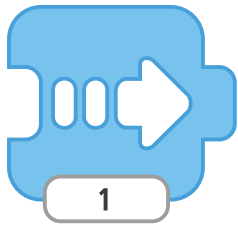


Cool Characters

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:

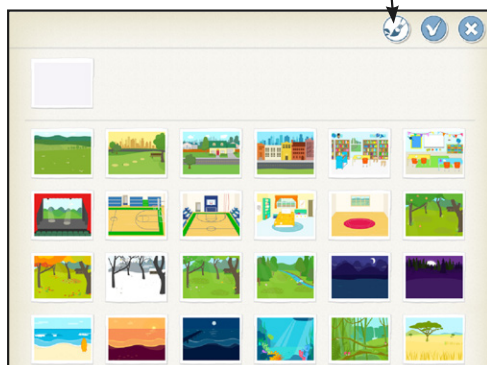
Move Left

Show

Move Down

Jump Up

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



Watch the ScratchJr Demo

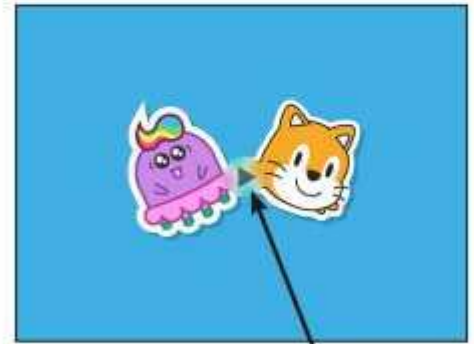
I can describe and use instructions to program a character.



Open the ScratchJr app on your tablet.



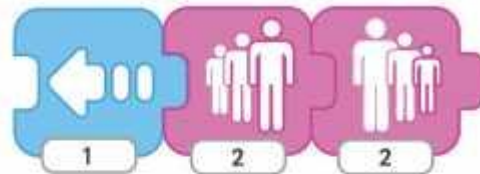
Click on the



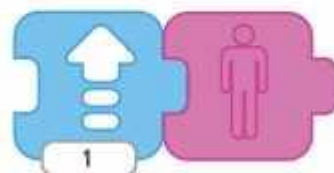
Click on the Play button to watch the Demo.



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



What do you think these blocks will do?



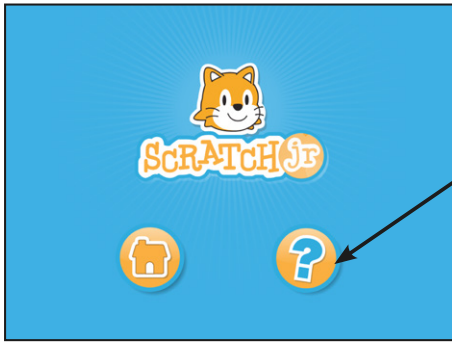
What do you think these blocks will do?

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

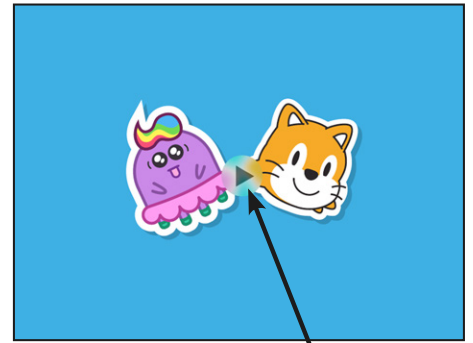
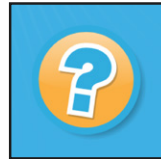
Watch the ScratchJr Demo

I can describe and use instructions to program a character.

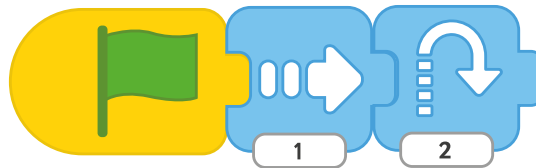
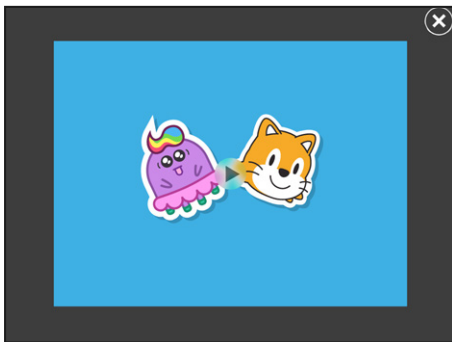
Open the ScratchJr app on your tablet.



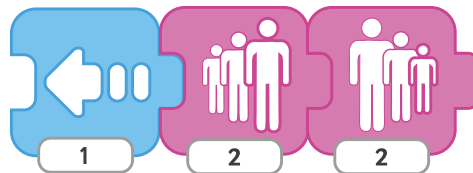
Click on the



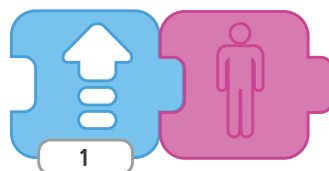
Click on the Play button to watch the Demo.



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



What do you think these blocks will do?



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.

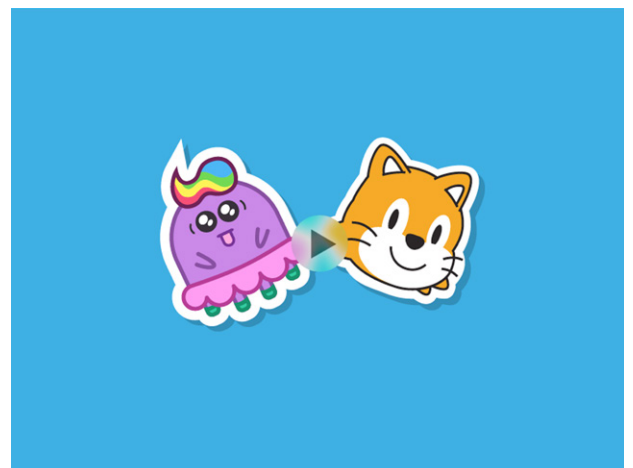
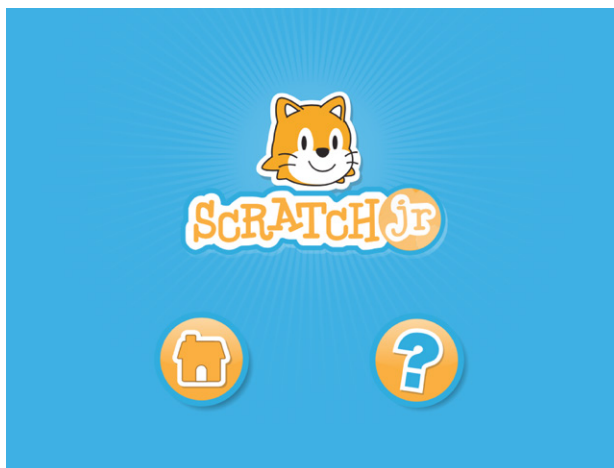
Watching the Demo

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



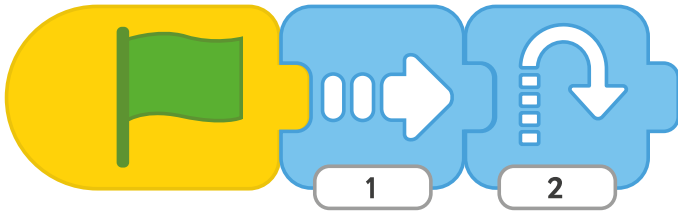
icon on the first screen, then clicking on the Play button.



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.

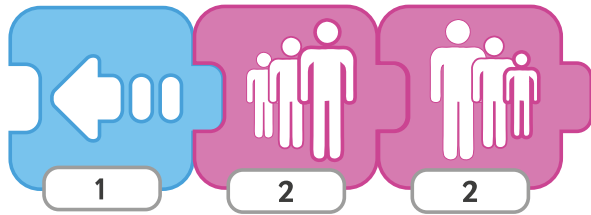
Some of these blocks and sequences are explained on the following page:

Lesson 1



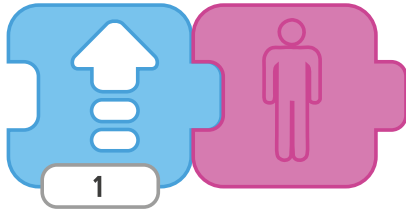
Children may notice that the green flag starts the sequence.

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.

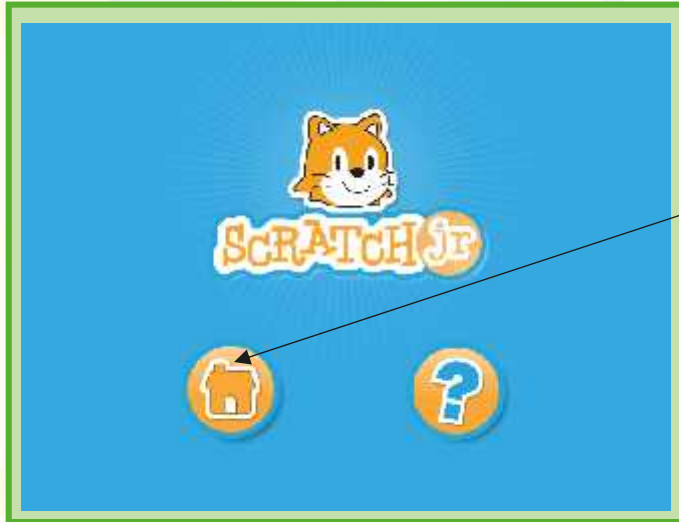
We are going to watch and pause to predict what some of the blocks might do.



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



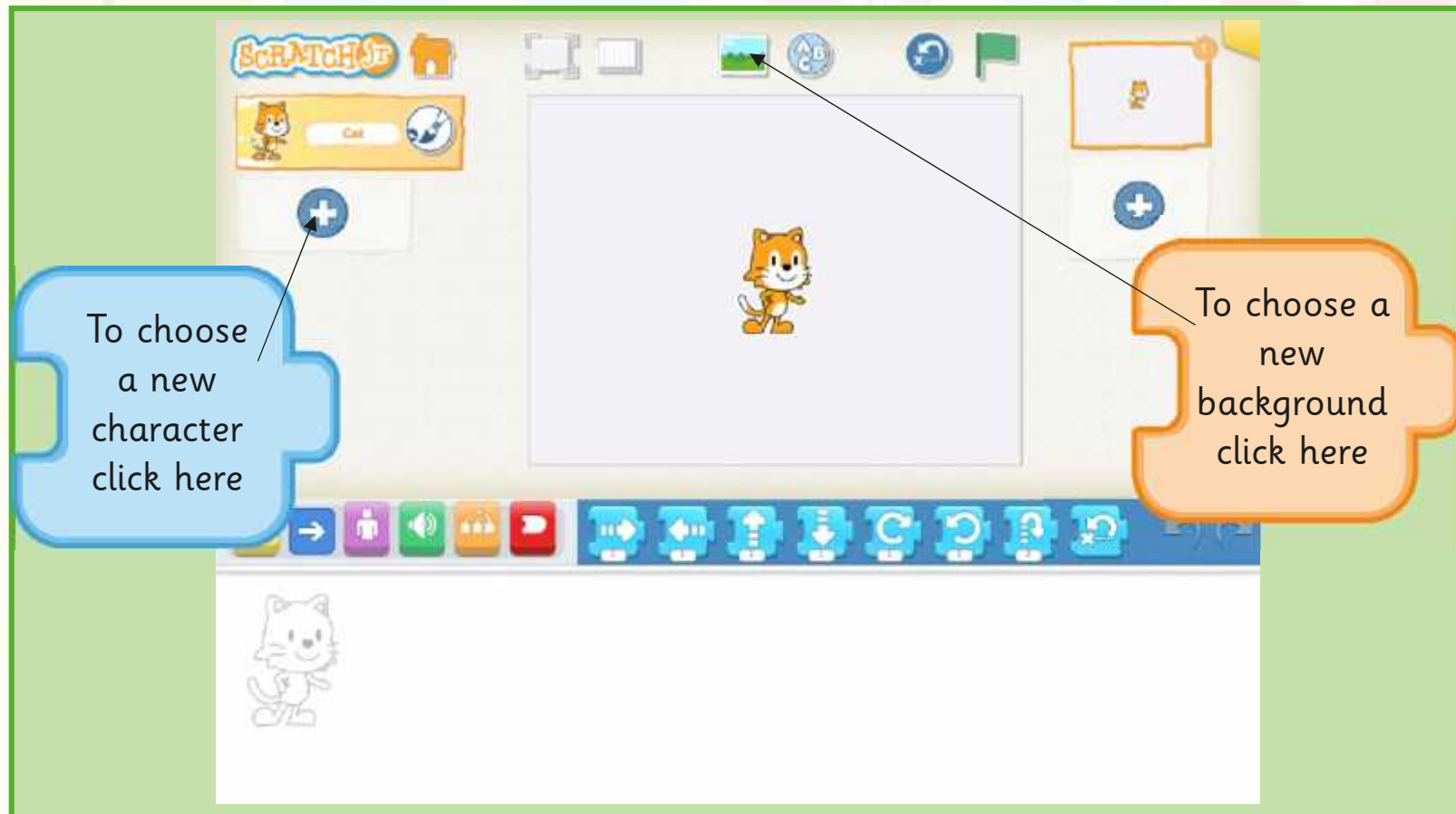
Clicking on the Home icon takes you to 'My Projects'.

Clicking on the + symbol starts a new project.



Starting a New Project

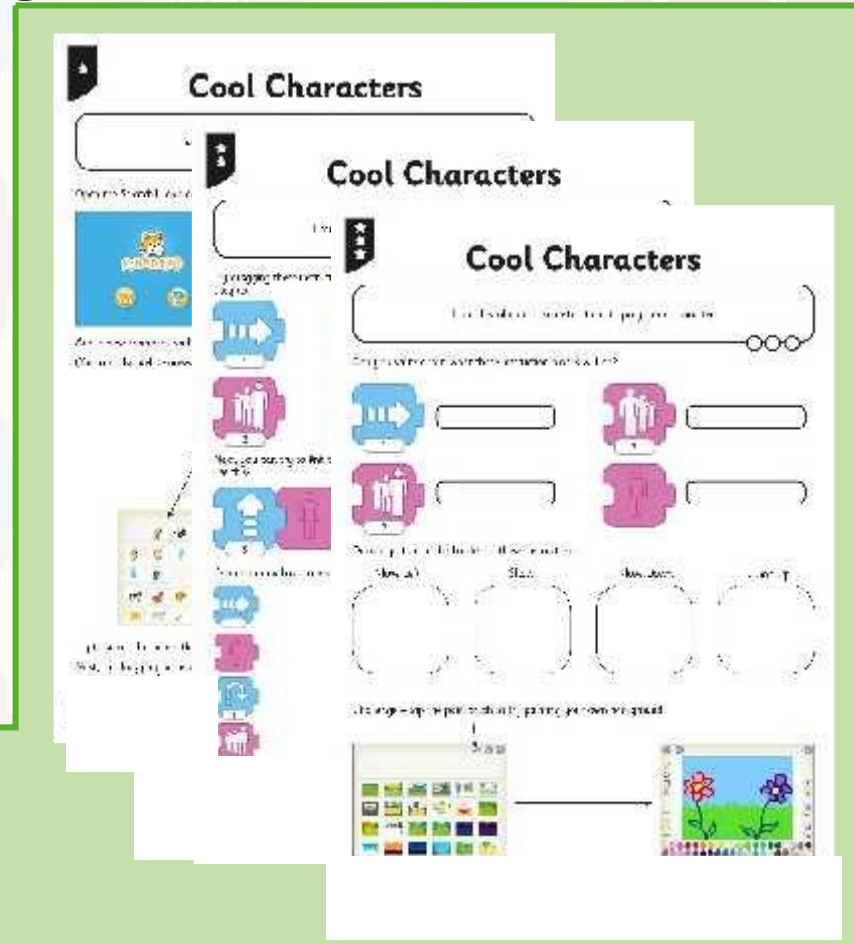
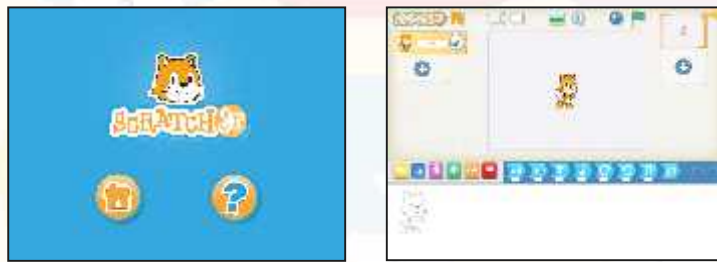
(Changing Characters and Backgrounds)



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?



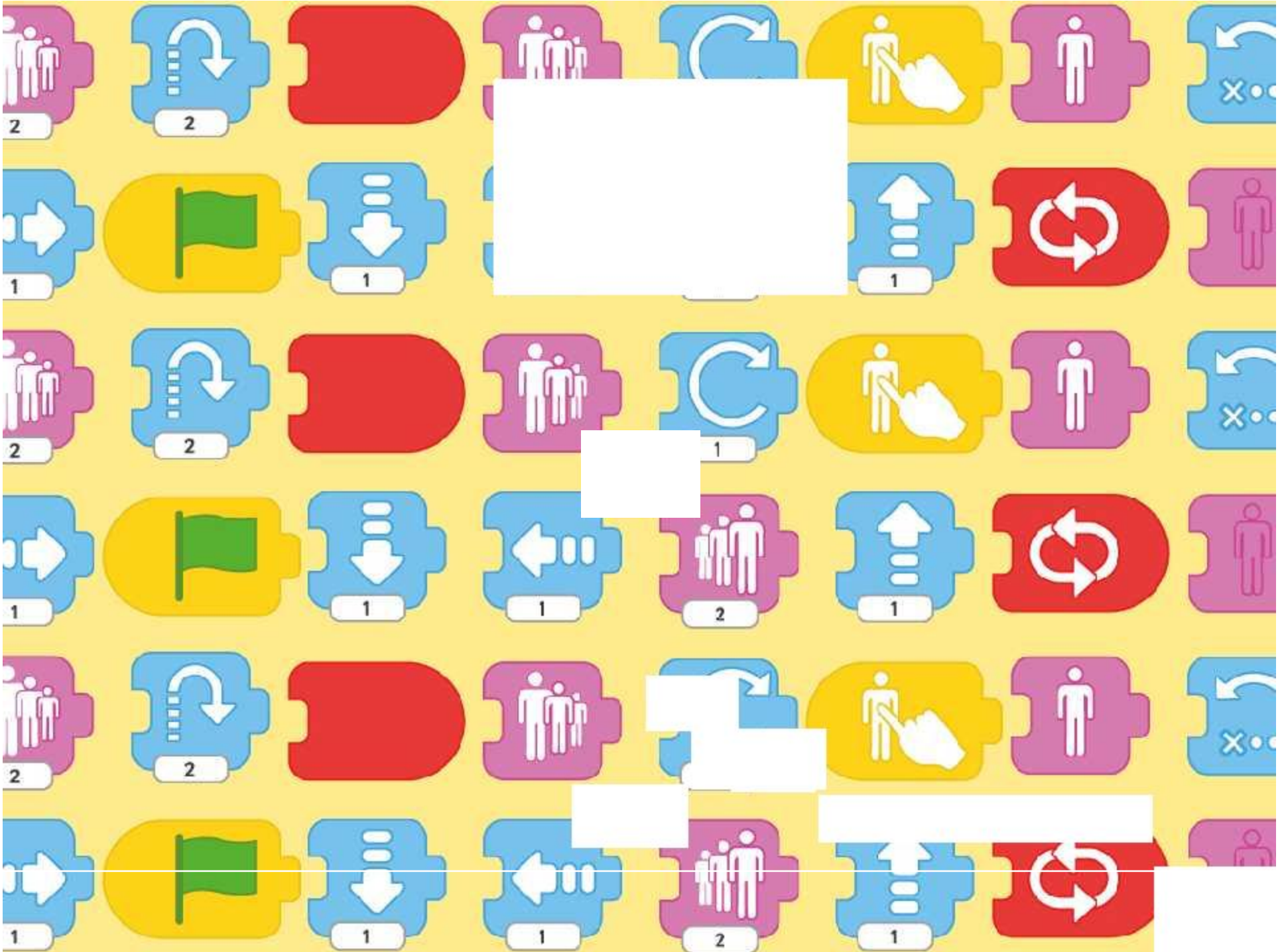
Aim



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.


















Programming with ScratchJr: Grow and Shrink

<p>Aim: To understand that programs execute by following precise and unambiguous instructions. To create and debug simple programs. Children create new projects incorporating the programming blocks for grow and shrink, connecting them in sequence.</p>	<p>Success Criteria: I can position new sprites on a suitable background. I can select and drag blocks for grow and shrink. I can connect blocks that execute a new action. I can use start blocks to begin a program.</p>	<p>Resources: Lesson Pack Tablets (Apple, Amazon or Android) with ScratchJr app installed.</p>
<p>I can program a character to grow and shrink.</p>	<p>Key/New Words: ScratchJr, tablet, blocks, programs, character, background, sequence, project, grow, shrink, connect.</p>	<p>Preparation: Differentiated Grow and Shrink Activity Sheet - as required</p>

Prior Learning: Children will have been introduced to the ScratchJr app in Lesson 1.

Learning Sequence

	<p>Recap Instruction Blocks: Show a selection of instruction blocks from ScratchJr and ask children to remember or suggest what effect each one will have. <i>Can children describe the effects that the blocks have upon the character?</i></p>	
	<p>Grow and Shrink: Focus on the blocks for grow and shrink and discuss their effect. Note the value with the block and how this can be altered to make the sprite grow or shrink at a different rate.</p>	
	<p>Incredible Inflating Chicken! Showing a screenshot of the farm background with a chicken and prickly plant added, ask what would happen if we tap on the 'grow' and 'shrink' blocks when selecting the chicken. Establish that we can use the blocks to change the size of the chicken.</p>	
	<p>Connecting Blocks: Now show the screenshot with blocks connected and discuss the purpose of the 'START ON TAP' or 'START ON BUMP' blocks. How is the chicken made to grow? What makes it shrink again? <i>Can children understand the effect of the connected blocks?</i></p>	
	<p>Grow Your Own Chicken! Children use the differentiated Grow and Shrink Activity Sheets to help them add characters and use the grow and shrink blocks. <i>Can children add the correct blocks to make a sprite grow or shrink?</i></p> <div style="display: flex; justify-content: space-around;"> <div> <p> Most children will begin with the LA sheet. They use skills to add specific characters and background, then blocks for grow and shrink effect.</p> </div> <div> <p> Children begin by following the LA sheet. They then move on to the MA sheet, connect blocks to make sequential programs. They add or edit further objects as an extension.</p> </div> <div> <p> Children begin by following the LA and MA guidance, as necessary. They then move on to the HA sheet, applying skills in a new context. They explore different start trigger instruction.</p> </div> </div>	
	<p>Starting Blocks Display examples of sequences with different starting instructions, e.g. START ON TAP, START ON BUMP, START ON GREEN FLAG. <i>Can children describe what would make each sequence begin?</i></p>	

Taskit

Connectit: Use printed versions of ScratchJr blocks to connect together or as a sequencing activity. Describe the effect of each sequence created.

Watchit: Watch the section of the story from George's Marvellous Medicine (by Roald Dahl, read by Rik Mayall) on _____ at _____ where the chickens are given the medicine!

Programming with ScratchJr | Grow and Shrink

I can program a character to grow and shrink.		
I can position new sprites on a suitable background.		
I can select and drag blocks for grow and shrink.		
I can connect blocks that execute a new action.		
I can use start blocks to begin a program.		

Programming with ScratchJr | Grow and Shrink

I can program a character to grow and shrink.		
I can position new sprites on a suitable background.		
I can select and drag blocks for grow and shrink.		
I can connect blocks that execute a new action.		
I can use start blocks to begin a program.		

Programming with ScratchJr | Grow and Shrink

I can program a character to grow and shrink.		
I can position new sprites on a suitable background.		
I can select and drag blocks for grow and shrink.		
I can connect blocks that execute a new action.		
I can use start blocks to begin a program.		

Programming with ScratchJr | Grow and Shrink

I can program a character to grow and shrink.		
I can position new sprites on a suitable background.		
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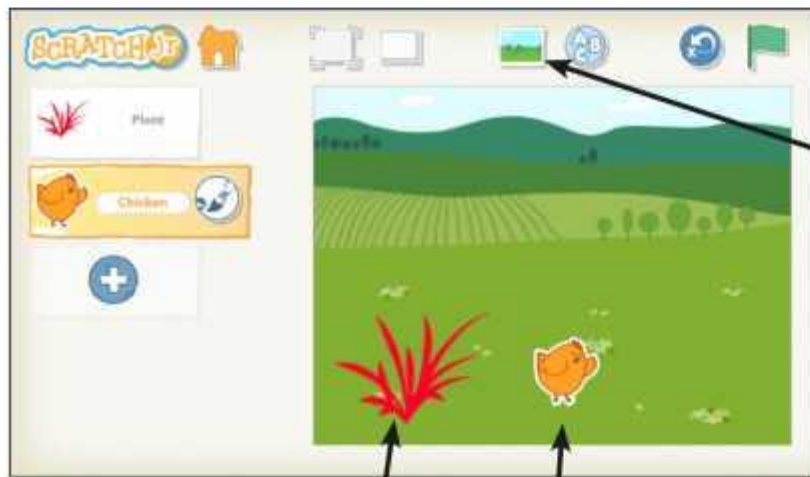


Grow and Shrink

I can program a character to grow and shrink.

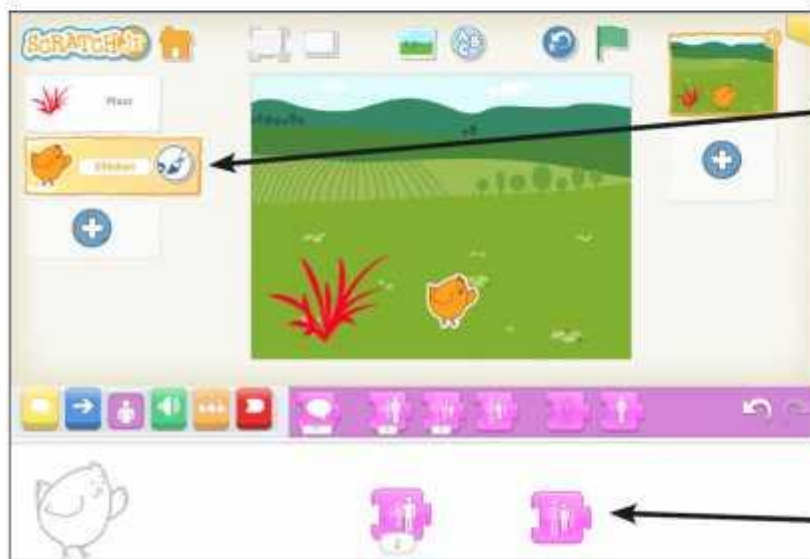


Open the ScratchJr app and start a new project in the My Projects screen.



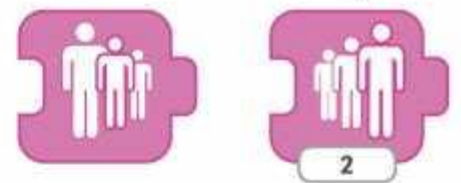
Select the **Farm** from the gallery of backgrounds.

Add new sprites: a prickly **plant** and a **chicken**. Position them on the background.



Make sure the **chicken** is selected.

Drag the blocks for **grow** and **shrink** into the working area.



Try tapping them to change the size of the chicken!

Can you make the **chicken** and the prickly **plant** appear to **grow** and **shrink**, by tapping on the correct blocks?



What happens if you change the number on the bottom of the block, by tapping on it?



Grow and Shrink

I can program a character to grow and shrink.

First you need to have a prickly **plant** and a **chicken** added to a **Farm** background. The next task is to connect blocks to create a program.



From the yellow blocks, select **START ON TAP** to connect with the grow block.

Select **START ON BUMP** to connect with the shrink block.

Test the program to check that the chicken will grow each time you tap on it.

When it grows too big, if the chicken bumps the prickly plant, it should shrink again.



Challenge 1:

Can you add another prickly plant or different object on the opposite side?



Challenge 2:

Can you change the colour of the chicken or plants using the paint editor?



Grow and Shrink

I can program a character to grow and shrink.



You should have already created a **Farm** project with a **chicken** and a prickly **plant**, using the blocks for **grow** and **shrink**, like this:



Now start a **New Project** from the Home Screen.



Test Your Skills

Can you create your own project with a new background and sprites? Program them to grow and shrink when tapped or bumped.

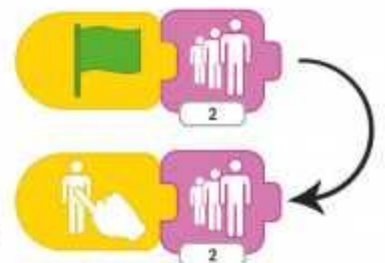
Connect your blocks together to run as a **sequence**.

Challenge 1

Replace the block for **START ON TAP** with **START ON GREEN FLAG**.

To **delete** a block, first **disconnect** by dragging the last block from the **sequence**, then drag and drop somewhere above the working area.

To make the program run, click on the green flag at the top of the screen. Change the number on the grow block to make the sprite grow even more!



Challenge 2

Can you add extra blocks to make your sequence longer?

Try adding a blue movement block so that your sprite grows and moves.

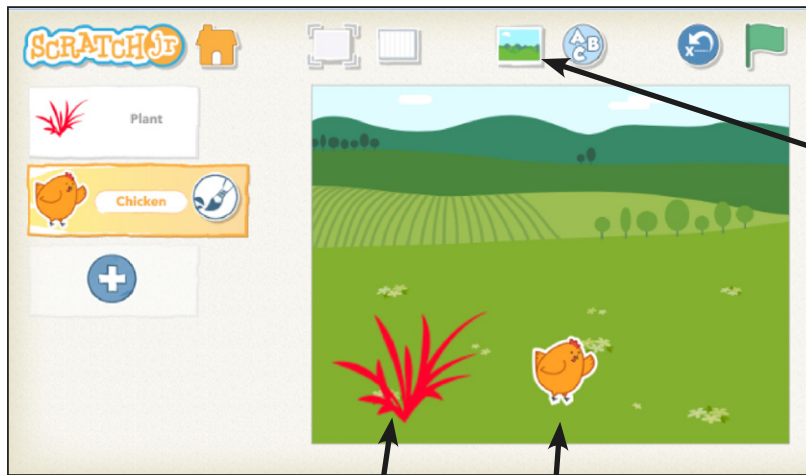


Grow and Shrink

I can program a character to grow and shrink.

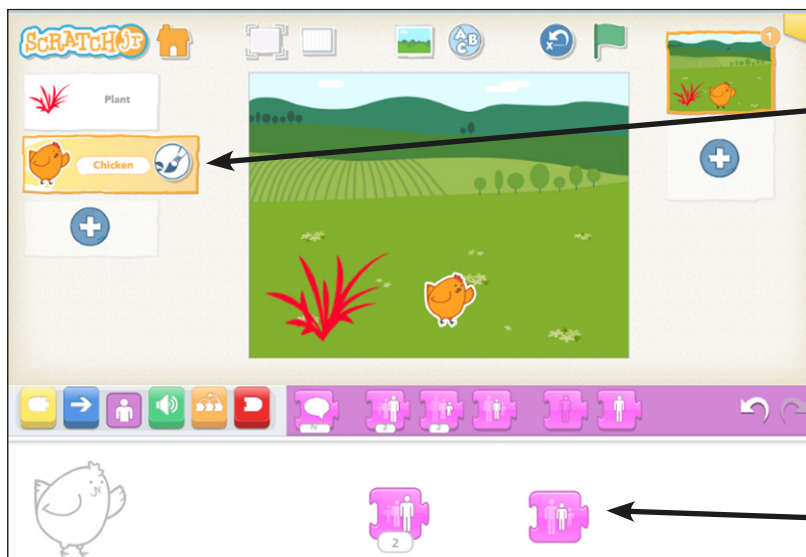


Open the ScratchJr app and start a new project in the My Projects screen.



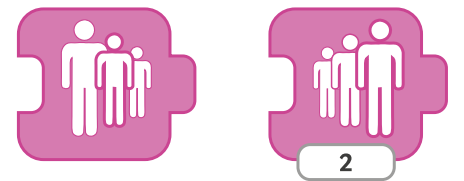
Select the **Farm** from the gallery of backgrounds.

Add new sprites: a prickly **plant** and a **chicken**. Position them on the background.



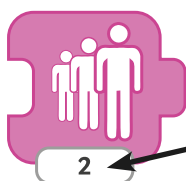
Make sure the **chicken** is selected.

Drag the blocks for **grow** and **shrink** into the working area.



Try tapping them to change the size of the chicken!

Can you make the **chicken** and the prickly **plant** appear to **grow** and **shrink**, by tapping on the correct blocks?



What happens if you change the number on the bottom of the block, by tapping on it?





Grow and Shrink

I can program a character to grow and shrink.

First you need to have a prickly **plant** and a **chicken** added to a **Farm** background. The next task is to connect blocks to create a program.



From the yellow blocks, select **START ON TAP** to connect with the grow block.

Select **START ON BUMP** to connect with the shrink block.

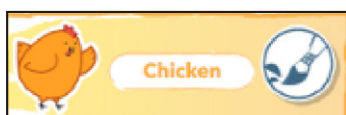
Test the program to check that the chicken will grow each time you tap on it.

When it grows too big, if the chicken bumps the prickly plant, it should shrink again.



Challenge 1:

Can you add another prickly plant or different object on the opposite side?



Challenge 2:

Can you change the colour of the chicken or plants using the paint editor?





Grow and Shrink

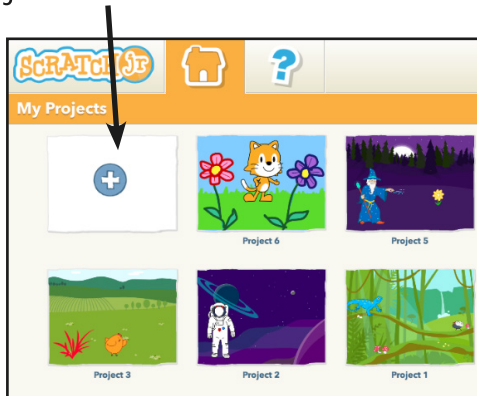
I can program a character to grow and shrink.



You should have already created a **Farm** project with a **chicken** and a prickly **plant**, using the blocks for **grow** and **shrink**, like this:



Now start a **New Project** from the Home Screen.



Test Your Skills

Can you create your own project with a new background and sprites? Program them to grow and shrink when tapped or bumped.

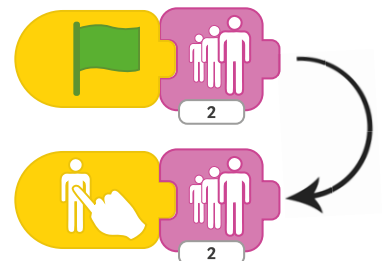
Connect your blocks together to run as a **sequence**.

Challenge 1

Replace the block for **START ON TAP** with **START ON GREEN FLAG**.

To **delete** a block, first **disconnect** by dragging the last block from the **sequence**, then drag and drop somewhere above the working area.

To make the program run, click on the green flag at the top of the screen. Change the number on the grow block to make the sprite grow even more!



Challenge 2

Can you add extra blocks to make your sequence longer?

Try adding a blue movement block so that your sprite grows and moves.

Lesson 2: Grow and Shrink

Grow and Shrink

This lesson introduces the movement blocks for grow and shrink, as well as the blocks required to start the actions, either by tapping on or bumping another object. When created, the project involves tapping on the chicken to make it grow until it hits the prickly plant and then shrink, as if it is deflating!

Differentiated Activity Sheets LA, MA and HA

As in the previous lesson, the differentiated activity sheets are designed to be used in sequential order, with children starting by following guidance on the first sheet. If working successfully through this first activity sheet, children then progress to the MA and HA. In some cases, higher ability children may be able to complete the initial tasks without requiring the first sheet and therefore be able to move quickly or immediately to the guidance on the MA sheet.

Progression of tasks and skills:

1. Open app, change background (farm).
2. Add a character (chicken) and a second object (prickly plant), then delete the original sprite; position each on background.
3. Select 'grow' and 'shrink' blocks; drag into working area and tap to execute.
4. Change the value of the 'grow' block to increase size by greater amount.
5. Connect blocks 'START ON TAP' and 'START ON BUMP'.
6. Test and debug program.
7. Additional challenges:
 - a. Add a second prickly plant on the opposite side.
 - b. Change the colour of the plants using the paint editor.
8. Start a new project.
9. Demonstrate skills by changing background and sprites.
10. Select and drag blocks previously used, replacing 'START ON TAP' with 'START ON GREEN FLAG'.
11. Execute program by clicking the Green Flag (note difference that the sprite will not continue to grow as with continual tapping, but the value of the grow block can be increased to compensate).



Computing

Programming with ScratchJr

The background of the slide is a repeating pattern of puzzle pieces. Each piece is light purple with a darker purple border and contains a white icon of three stylized human figures of varying heights. Below each icon is a small white box containing the number '2'. The puzzle pieces are arranged in a grid, with some pieces missing or overlapping, creating a sense of movement and change.

Grow and Shrink

Aim

I can program a character to grow and shrink.

Success Criteria

- I can position new sprites on a suitable background.
- I can select and drag blocks for grow and shrink.
- I can connect blocks that execute a new action.
- I can use the start blocks to begin a program.

Recap Instruction Blocks



Look at these instruction blocks from ScratchJr.

Can you remember what effect each one will have?

Grow and Shrink

In this lesson, we will focus on the blocks for **grow** and **shrink**.

What happens when we tap on one of these blocks with a character selected?

What is the number for at the bottom of the block?

What happens if we change this number to a bigger value?



Incredible Inflating Chicken!



Look at this ScratchJr project with a Farm background and the sprites, a chicken and prickly plant added.

What would happen if we tap on the 'grow' or 'shrink' blocks when the chicken is selected?

Connecting Blocks



What new blocks have been connected now?

The first is called 'START ON TAP' and the second is 'START ON BUMP'.

How do you think the chicken is instructed to grow now? What makes it shrink again? (What will it BUMP into as it grows too big?)

Grow Your Own Chicken!

Try starting your own new project with a Farm background, a chicken and a prickly plant.

Add the blocks to make the chicken grow until it touches the prickly plant, then shrink again back to normal size.

Can you create a program (a sequence of blocks) using the grow and shrink instructions?

The screenshot shows the 'Grow and Shrink' programming environment. It features a central workspace with a farm background, a chicken, and a prickly plant. The workspace is surrounded by a toolbar with various icons. Below the workspace, there are several blocks and instructions:

- Open the farm in app:** A block with a farm icon.
- Add new chicken to project:** A block with a chicken icon.
- Grow the chicken until it touches the prickly plant:** A block with a chicken icon and a prickly plant icon.
- Shrink the chicken back to normal size:** A block with a chicken icon.
- See Your Skills:** A section with a list of skills and a progress indicator.
- Challenge 1:** A section with a list of challenges and a progress indicator.
- Challenge 2:** A section with a list of challenges and a progress indicator.



Starting Blocks

Look at these blocks for different starting instructions
How does each of the starting blocks make a sequence begin?



START ON TAP
Starts the instruction sequence when the sprite is tapped.



START ON BUMP
Starts the instruction sequence when the sprite touches or bumps another object.



START ON GREEN FLAG
Starts the instruction sequence when the green flag is tapped.

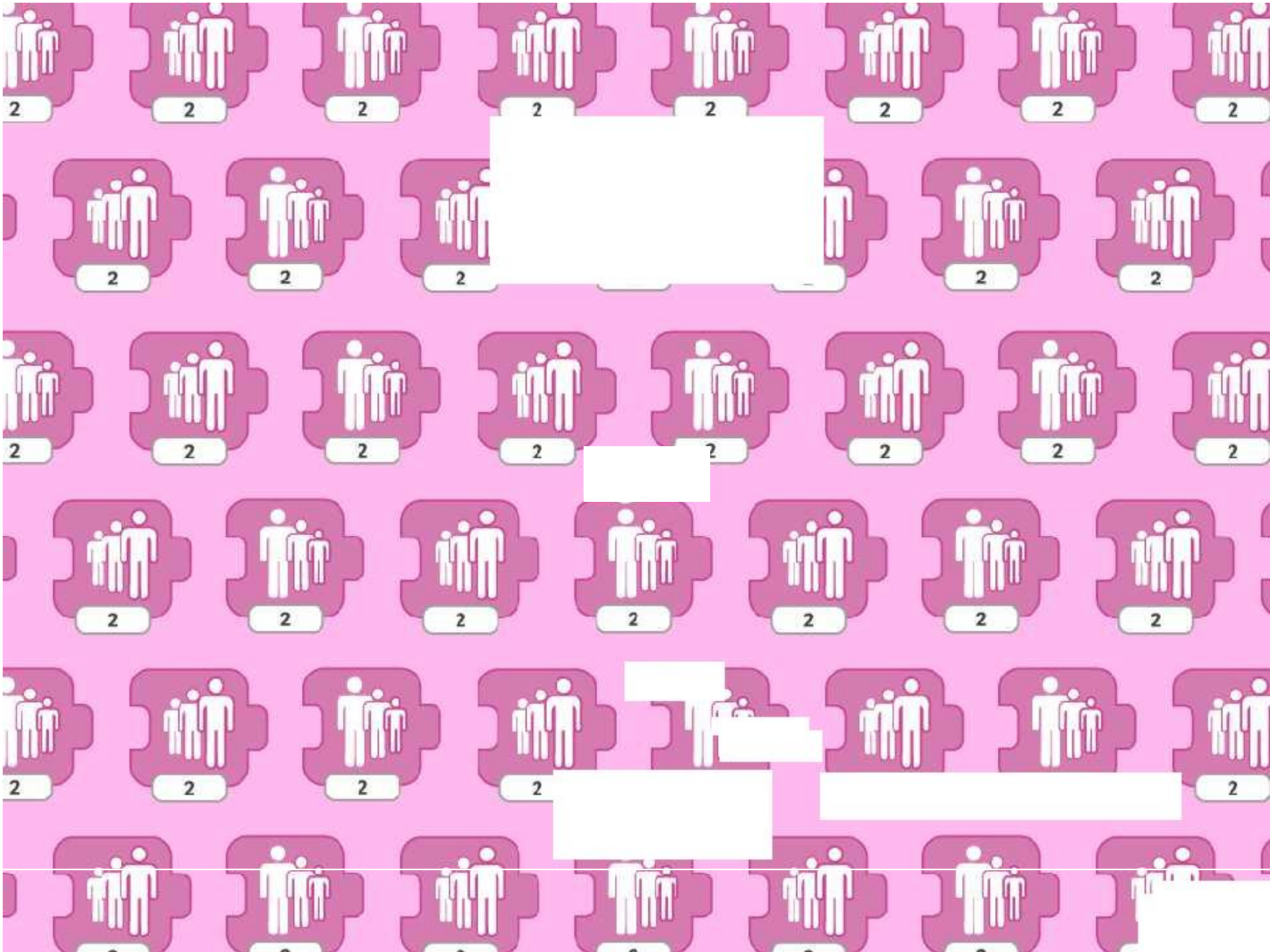
Aim



I can program a character to grow and shrink.

Success Criteria

- I can position new sprites on a suitable background.
- I can select and drag blocks for grow and shrink.
- I can connect blocks that execute a new action.
- I can use the start blocks to begin a program.
















Programming with ScratchJr: Time to Move

<p>Aim: To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>To create and debug simple programs.</p> <p>To use logical reasoning to predict the behaviour of simple programs.</p>	<p>Success Criteria: I can program a car to move in ScratchJr. I can edit the value to make the car travel further. I can change the speed of the car. I can program the car to repeat the moving instructions.</p>	<p>Resources: Lesson Pack</p> <p>Tablets (Apple, Amazon or Android) with ScratchJr app installed.</p>
<p>Children use the context of an animated car (or cars) travelling along a road on a city background. Movement blocks are combined with blocks to change speed, iterations or repetition to program the cars.</p> <p>I can use instructions to make characters move at different speeds and distance.</p>	<p>Key/New Words: ScratchJr, tablet, blocks, programs, character, background, sequence, project, grow, shrink, repeat forever, speed, size.</p>	<p>Preparation: Differentiated Moving Cars Activity Sheet - as required Moving Underwater Activity Sheet - as required</p>

Prior Learning: Children will have become familiar with the ScratchJr app in Lessons 1 and 2.

Learning Sequence

	<p>Starting and Ending: Recap the different ways of starting a sequence of instruction blocks. Can children remember what each block does and how it works? Display some end blocks to demonstrate that good code should have a start and an end. We can choose to either run a sequence of blocks once or use the 'REPEAT FOREVER' block to keep running the sequence.</p>	
	<p>Moving Along: Show the screenshot of the car on the road. Can children identify the correct block to make it move in the right direction along the road? How do we make it go further? What do children predict will happen when it reaches the end of the screen? Note: the sprite automatically reappears back on the other side of the screen, continuing its instructions sequentially.</p>	
	<p>Changing Size and Speed: Show a selection of blocks. Can children identify which block would be used to make the car smaller, to fit the size of the road? Which block would be used to make the car travel faster? Note: the latter is a new block to be introduced so children won't be familiar with it.</p>	
	<p>Let's Drive! Children use the differentiated Moving Cars Activity Sheets to create and edit simple programs, designed to make one or more cars travel along the road on the background. <i>Can children use the correct sequence of instructions to program the cars to move at different speeds?</i></p> <div style="display: flex; justify-content: space-around;"> <div>  <p>Children use the LA sheet as a guide. They add a car to the city background and program it to travel along using repetition, either a given number of time or forever.</p> </div> <div>  <p>Children use the MA sheet as a guide. They add a second car to the background, changing the size and programming it to travel at a different speed.</p> </div> <div>  <p>As an extra challenge, children use the HA sheet as a guide to apply skills, using their own choice of background and character from given suggestions: cyclists in the suburb background, or sea creatures in the underwater one.</p> </div> </div>	
	<p>Moving in Different Directions: Some pupils may have attempted the challenge of the sea creatures underwater. Show an example screenshot and ask children to describe to a partner, then feedback, what each set of instructions would make the associated character do. This task could also be provided as a written extension using the Moving Underwater Activity Sheet.</p>	

Taskit

RolePlayit: Children use toy cars to role play the instructions given in ScratchJr. A red and a blue car can start from the same place. They follow the instructions created in the app to show what happens.

Designit: Children design their own city background on paper, using rectangle shapes for buildings and smaller ones for windows. A car could be drawn separately or printed, to move along a road in front of the city buildings.

Programming with ScratchJr | Time to Move

I can use instructions to make characters move at different speeds and distance.		
I can program a car to move in ScratchJr.		
I can edit the value to make the car travel further.		
I can change the speed of the car.		
I can program the car to repeat the moving instructions.		

Programming with ScratchJr | Time to Move

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Programming with ScratchJr | Time to Move

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I can program a car to move in ScratchJr.		
I can edit the value to make the car travel further.		
I can change the speed of the car.		
I can program the car to repeat the moving instructions.		



Moving Cars

I can use instructions to make characters move at different speeds and distance.

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



Select the **City** background.

Delete the cat sprite and add a **Driver** instead.



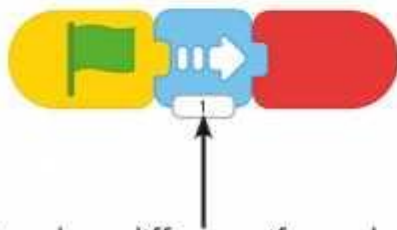
Drag the **SHRINK** block into the working area and tap to make the car the right size for the road.

Add the correct block of code to make the car move (from left to right). Start on the **GREEN FLAG** and use an **END BLOCK** to finish.



Test and Debug

1. What happens if you click on the number underneath the **MOVE RIGHT** arrow and change to a bigger number, like 5?
2. What happens if you change the End block to **REPEAT FOREVER**?



3. Does it make a difference if you chance the number again underneath the **MOVE RIGHT** arrow?
4. Find the block for **SET SPEED** and add it to your code. Use it to make your Driver go faster or slower.



At the top of the screen, click the Green Flag to start the code and the red Hexagon to stop.





Moving Cars

I can use instructions to make characters move at different speeds and distance.

You need a ScratchJr project with a car **Driver** on a **City** background.


Add a second car **Driver** of a different colour. Change the size and position on the road.



Let's Have a Race!

Program the instructions for one car, so that it travels 10 steps along and then stops. Program the other car so that it travels the same distance but goes faster!



 Test your Program by clicking the Green Flag!

Keep Racing!

Change your instructions so that the **END BLOCK** becomes **REPEAT FOREVER**. Do this for both cars.



Change your instructions so that the **END BLOCK** becomes **REPEAT FOREVER**. Do this for both cars.

 Test again by clicking the Green Flag!

You can keep changing your code to see if you can change the results of the race.

Try making one car travel further. Experiment to see what else you can do!



Moving Cars

I can use instructions to make characters move at different speeds and distance.



You need to have completed the ScratchJr project with two car **Drivers** on a **City** background, changing the speed of the cars to make a race.

Challenge:

Can you use your skills to create a new project with different sprites and background?



1. Use the **Suburb** background and add cyclists instead of cars. Can you make one cyclist travel in the opposite direction to the other?



2. Use the **Underwater** background and add four different sea creatures. Can you make them all move in different directions and speeds?





Moving Cars

I can use instructions to make characters move at different speeds and distance.

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



Select the **City** background.

Delete the cat sprite and add a **Driver** instead.



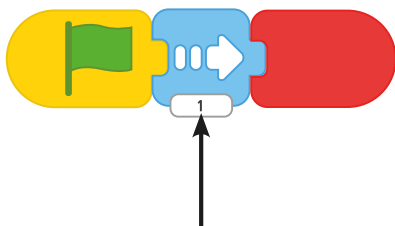
Drag the **SHRINK** block into the working area and tap to make the car the right size for the road.

Add the correct block of code to make the car move (from left to right). Start on the **GREEN FLAG** and use an **END BLOCK** to finish.

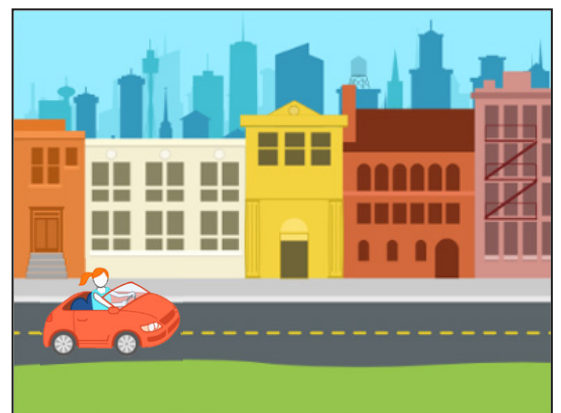


Test and Debug

1. What happens if you click on the number underneath the **MOVE RIGHT** arrow and change to a bigger number, like 5?
2. What happens if you change the End block to **REPEAT FOREVER**?



3. Does it make a difference if you change the number again underneath the **MOVE RIGHT** arrow?
4. Find the block for **SET SPEED** and add it to your code. Use it to make your Driver go faster or slower.



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Do this for both cars.



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Try making one car travel further. Experiment to see what else you can do!



Moving Cars

I can use instructions to make characters move at different speeds and distance.



You need to have completed the ScratchJr project with two car **Drivers** on a **City** background, changing the speed of the cars to make a race.

Challenge:

Can you use your skills to create a new project with different sprites and background?



1. Use the **Suburb** background and add cyclists instead of cars. Can you make one cyclist travel in the opposite direction to the other?



2. Use the **Underwater** background and add four different sea creatures. Can you make them all move in different directions and speeds?



Moving Underwater

I can use instructions to make characters move at different speeds and distance.



In this **Underwater** background, each sea creature has been programmed to move in a different way. Can you write what each block or sequence will do? Try them out!

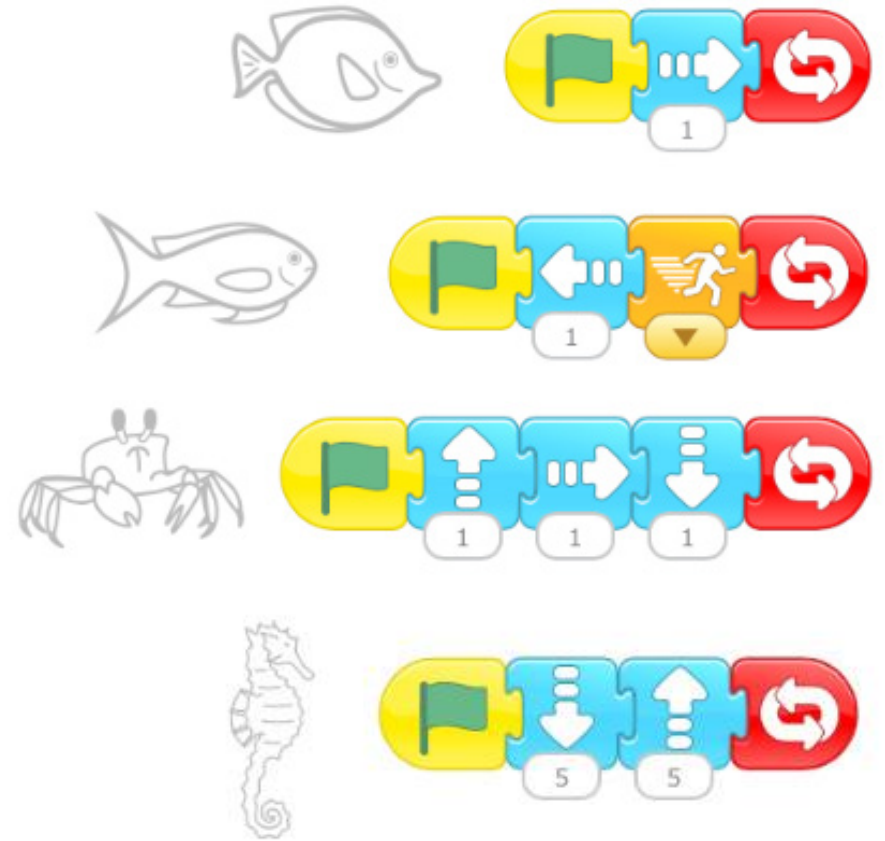


Moving Underwater

I can use instructions to make characters move at different speeds and distance.



In this **Underwater** background, each sea creature has been programmed to move in a different way. Can you write what each block or sequence will do? Try them out!



Lesson 3: Time to Move

Time to Move

This lesson is based around moving sprites (in this case, cars) in a single direction. The movement blocks are combined with the idea of repetition, whilst also editing other values such as the size and speed of movement.

Repetition

This means creating an instruction (or sequence of instructions) to be repeated more than once. This could be by a given number of times or by just repeating in a constant loop.

In this case, the REPEAT FOREVER block is used at the end of the sequence to create a loop.

Activity Sheets: Moving Cars

The first Activity Sheet involves adding and programming one car on the background. Children must also change its size and position it on the road.

Children can then progress onto the MA Activity Sheet, which instructs them to add a second car and to program the two cars slightly differently, so that one car travels faster. Then the REPEAT FOREVER block is introduced to keep the cars moving.

The project is started with the Green Flag and can be stopped by tapping the Red Hexagon.

The HA Activity Sheet, designed as an extension, encourages children to test and apply their skills by creating a new project.



Computing

Programming with ScratchJr

Time to Move

Aim

I can use instructions to make characters move at different speeds and distance.

Success Criteria

- I can program a car to move in ScratchJr.
- I can edit the value to make the car travel further.
- I can change the speed of the car.
- I can program the car to repeat the moving instructions.



Starting and Ending

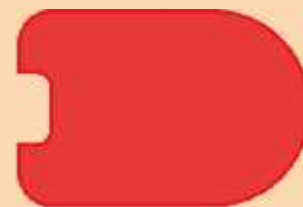
Can you remember different ways of starting a sequence of instruction blocks?

What does each block do and how does it work?



Good code will also have an ending, as well as a start.

Here are two ways to end a set of instructions:



We can choose to run a sequence of blocks once.

We can use the 'REPEAT FOREVER' block to keep running the sequence.



Moving Along

Look at this example of a car on the road, using the City background.



Which block could we use to make it move in the right direction along the road?

How do we make it go further?

What do you predict will happen when it reaches the end of the screen?

Changing Size and Speed



Look at these blocks.

Which block would be used to make the car smaller, to fit the size of the road?

Which block would be used to make the car travel faster?



Shrink
(make smaller)

Set Speed
(Faster or Slower)



Let's Drive!

Use the Activity Sheets to create and edit simple programs that make the cars move along the City background.



Moving Cars

Download the City background and the cars.

Use the cars to create a simple program that makes them move along the City background.

Challenge

Use the cars to create a simple program that makes them move along the City background.

Let's Make a Road

Use the cars to create a simple program that makes them move along the City background.

Keep Moving!

Use the cars to create a simple program that makes them move along the City background.

Challenge

Use the cars to create a simple program that makes them move along the City background.

Moving in Different Directions



In this Underwater project, each sea creature has been programmed to move in a different way. Can you describe what each set of instructions will do?

Moving Underwater

I can use instructions to make characters move at different speeds and distance.

In this Underwater background, each sea creature has been programmed to move in a different way. Can you write what each block or sequence will do? Try to be creative!



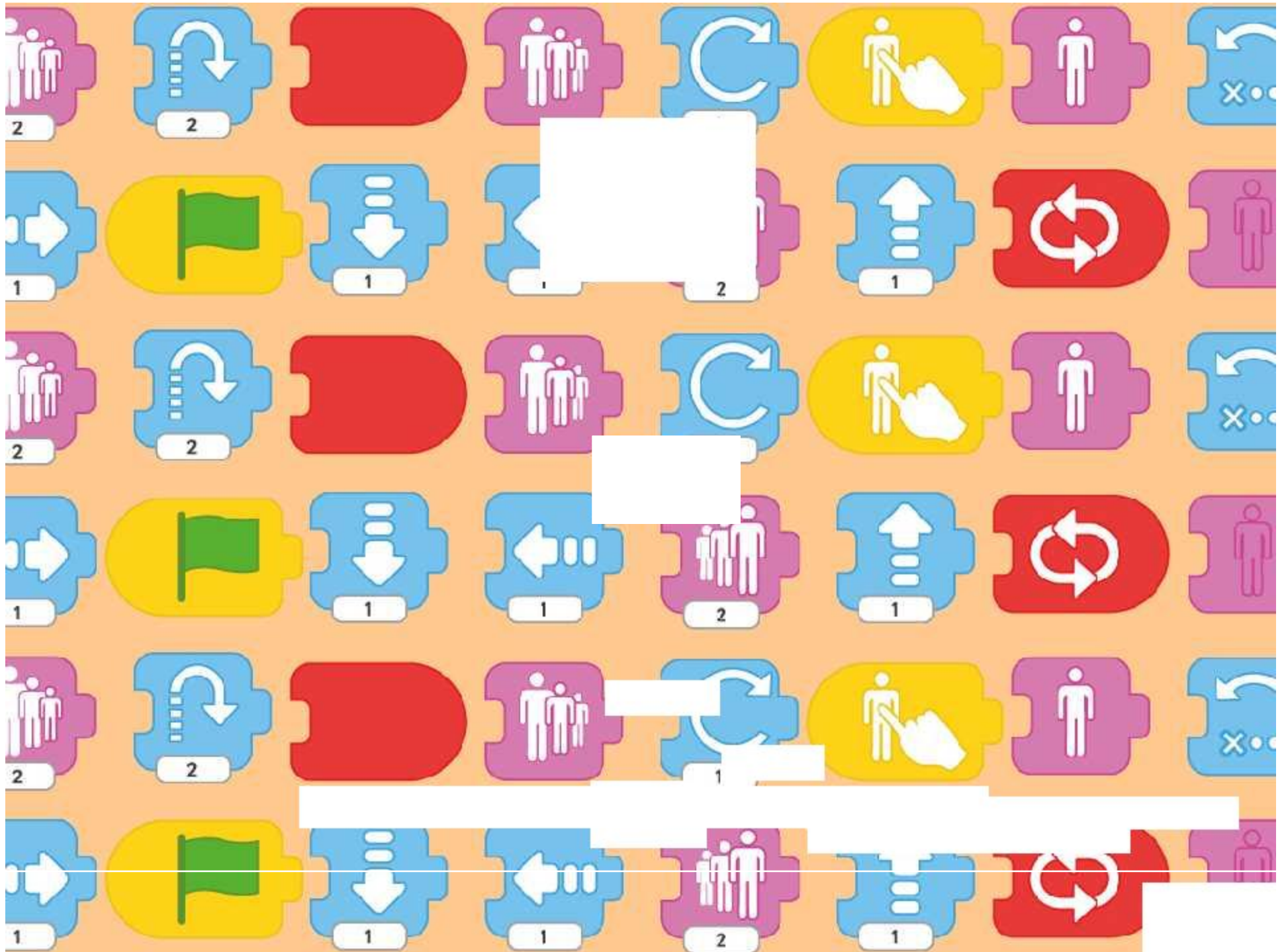
Aim



I can use instructions to make characters move at different speeds and distance.

Success Criteria

- I can program a car to move in ScratchJr.
- I can edit the value to make the car travel further.
- I can change the speed of the car.
- I can program the car to repeat the moving instructions.
















Programming with ScratchJr: Repeat

<p>Aim: To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. To create and debug simple programs. To use logical reasoning to predict the behaviour of simple programs.</p> <p>In the context of a spaceman's movement floating in space, children use the REPEAT FOREVER block and then the REPEAT block in order to create repetition of an instruction sequence. A prediction should always be made about each code before trying it out.</p> <p>I can use a repeat instruction to make a sequence of instructions run more than once and predict the behaviour.</p>	<p>Success Criteria: I can use blocks for movement in different directions. I can use a REPEAT FOREVER block to make a continuous loop. I can use a REPEAT block for a section of instructions. I can predict the behaviour of a character, based on a sequence of instructions.</p>	<p>Resources: Lesson Pack Tablets (Apple, Amazon or Android) with ScratchJr app installed.</p>
	<p>Key/New Words: ScratchJr, tablet, blocks, programs, character, sprite, background, sequence, project, move, repeat, repeat forever, invisible, shrink, predict.</p>	<p>Preparation: Differentiated Spaceman Activity Sheet - as required Using Repeat Activity Sheet - as required</p>

Prior Learning: Children will have begun to create simple programs using the ScratchJr app in Lessons 1-3.

Learning Sequence

	<p>Moving Around: Can children suggest any blocks which make a sprite move? Where would those blocks be? Show screenshot with movement blocks visible and establish the purpose of each. Remind children that the last lesson focused mainly on moving in one direction (to the right) but with the Underwater sea creatures, various different directions were used.</p>	
	<p>Spaceman Travelling: Show the screenshot of the spaceman sprite, matched to a suitable background. Which direction might he move in, if he was floating in space? Establish that he may move in many different directions, so we are going to build a sequence of blocks to create this movement.</p>	
	<p>Repeat or Repeat Forever: Show the sequence with the REPEAT FOREVER block at the end. Can children describe what effect this block has? Tell children that we don't want the spaceman to keep repeating the sequence forever, just to do it a certain number of times. To do this, we use a REPEAT BLOCK, placed around the blocks we want to be repeated – and say how many times to do it. (It may be helpful to demonstrate this on a tablet at this point.)</p>	
	<p>Program Your Spaceman: Children use the differentiated Spaceman Activity Sheets to program the astronaut to move. Can children use the REPEAT FOREVER and REPEAT blocks, describing the different effects of each? In each case, children should be encouraged to predict what the spaceman will do, based on their precise instructions, before testing the program to see if it behaves as expected. If not, children change the blocks or value to 'debug' the program.</p> <div style="display: flex; justify-content: space-around;"> <div>  <p>Children select a sequence of move blocks with an END block, and then replace with REPEAT FOREVER. As an extension, children could move on the to MA and HA sheets if appropriate.</p> </div> <div>  <p>Children begin by following the LA sheet, then progress to the MA sheet. They replace the REPEAT FOREVER block with REPEAT for a given number of times. They add a GO HOME button.</p> </div> <div>  <p>After following the LA and MA sheets, children follow additional challenges on the HA sheet, exploring making the spaceman shrink or become invisible, as well as changing their background and sequence. Children can also use the Using Repeat Activity Sheet as an extension or group work.</p> </div> </div>	
	<p>Predicting Behaviour: Using the Lesson Presentation, display the sequence of code that some children may have managed to get to using the HA Activity Sheet. Can children predict and describe what each block does in turn? What appears to happen to the astronaut? If children have different code, compare examples/ask others to predict the character's behaviour based on this code.</p>	

Taskit
Actit: In an open area such as the playground, one child can play the role of the spaceman, while another gives instructions of which direction to move and how many steps.
Paintit: Children could paint a picture of an astronaut floating in space or landing on the Moon.

Programming with ScratchJr | Repeat

I can use a repeat instruction to make a sequence of instructions run more than once and predict the behaviour.		
I can use blocks for movement in different directions.		
I can use a REPEAT FOREVER block to make a continuous loop.		
I can use a REPEAT block for a section of instructions.		
I can predict the behaviour of a character, based on a sequence of instructions.		

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Spaceman

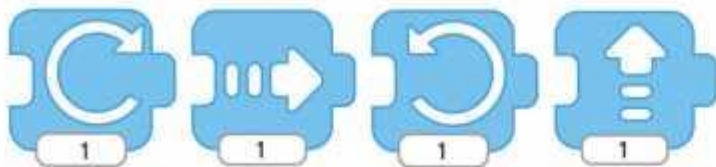
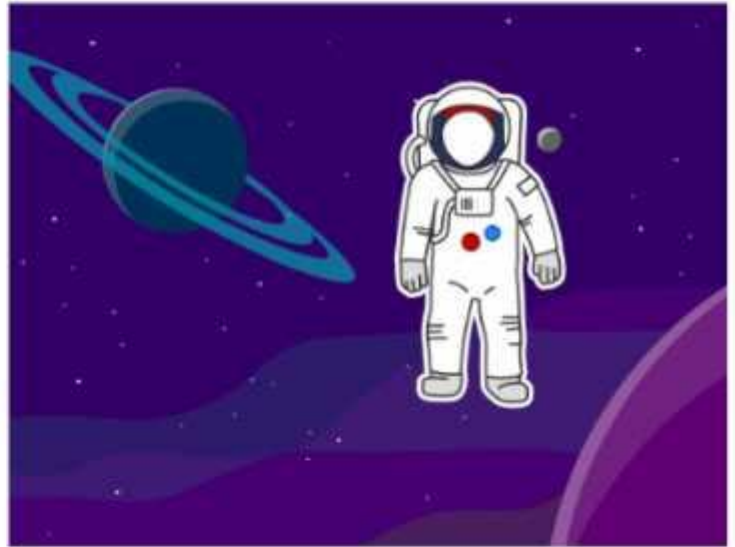
I can use a repeat instruction to make a sequence of instructions run more than once.



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

Choose the **Space** background and add an **Astronaut** sprite.

Drag some of the movement blocks into the working area and try them out.



1. Make a sequence of movements. **Connect** them together. Start with the **GREEN FLAG** and use an **END BLOCK**. Copy this **sequence** and then click the **GREEN FLAG** to try it out.




2. Add extra blocks or remove some, to make a new movement sequence. Try it out.

3. What do you think will happen if we change the **END BLOCK** for a **REPEAT FOREVER** block?



Try it out.

 4. Start a new sequence of your own. Use the **GREEN FLAG** to start and **REPEAT FOREVER** to end.

5. What happens to the spaceman when he reaches the edge of the screen?

 6. Use the Red Hexagon to stop running the code.

7. Make a new sequence for a partner to copy or create. Can you **predict** what the spaceman will do before you try it out?



Spaceman

I can use a repeat instruction to make a sequence of instructions run more than once.



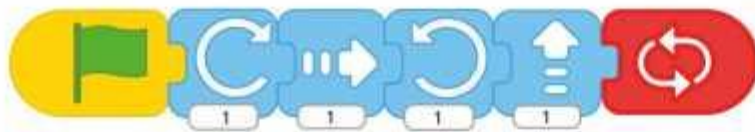
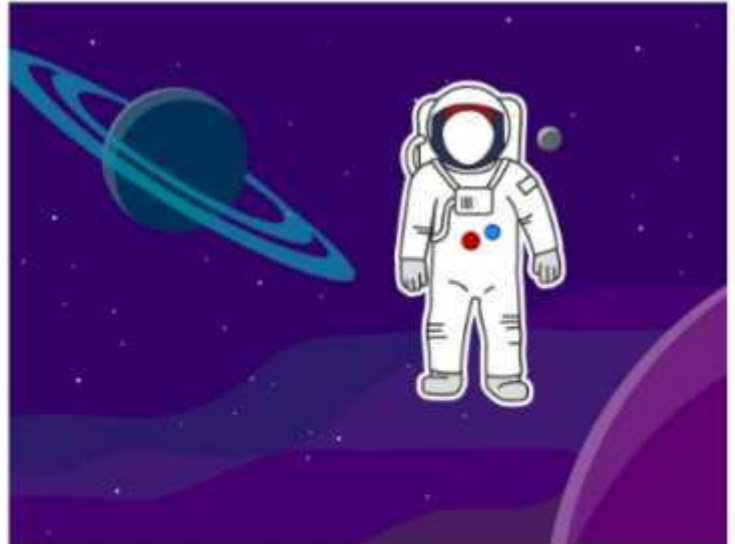
You need to have a ScratchJr project with the **Space** background and add an **Astronaut** sprite.

Either copy the sequence below or use your own sequence of movement blocks.

You should have at between 4 and 8 movement blocks in your sequence.

Remember the **GREEN FLAG** to start and the **REPEAT FOREVER** at the end.

Can you **predict** what the spaceman will do before you run the sequence?



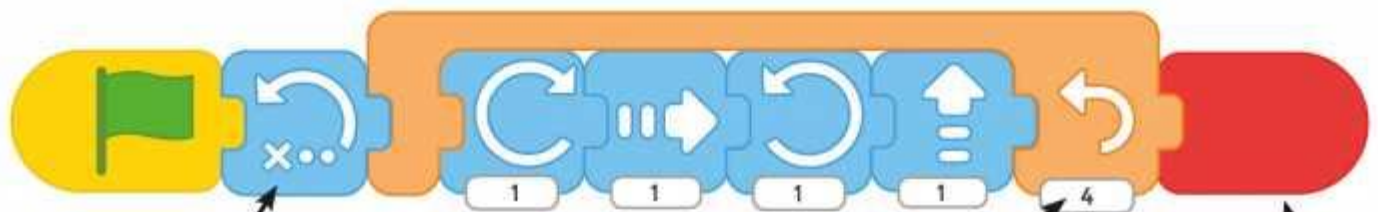
What if you change the values of the numbers underneath the blocks?

What will happen?

Try it and test your code.

When we use **REPEAT FOREVER**, the sequence just keeps running in a **loop** forever or until we stop the program.

We can make the sequence run for a particular number of times. Use the **REPEAT** block to make this sequence instead:



This block sends the sprite back to its start

The number shows how many times to repeat the sequence

The **END BLOCK** finishes the sequence

Try some different sequences using the **REPEAT BLOCK**. Any code inside the **REPEAT BLOCK** will be done the number of times shown underneath.



Spaceman

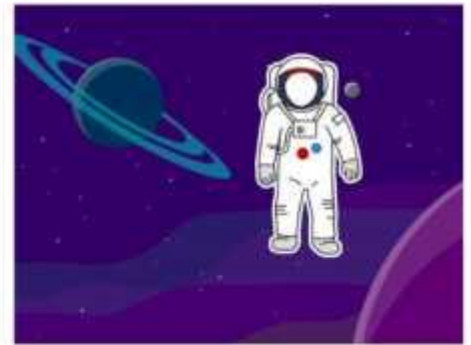
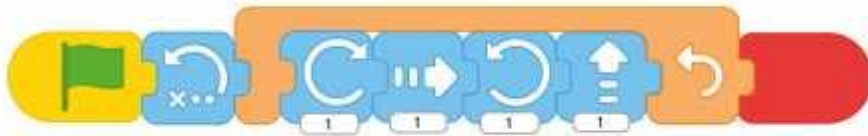
I can use a repeat instruction to make a sequence of instructions run more than once.



You need to have a ScratchJr project with the **Space** background and add an **Astronaut** sprite.

Check that you already have a sequence using the **REPEAT** block.

It might look something like this:



Challenge 1

Can you add a block inside the **REPEAT SEQUENCE** to make the spaceman **SHRINK** each time. Predict what will happen, then test your code to try it out!



Challenge 2

Edit your **REPEAT** block so that the sequence inside is repeated 9 times. Can you remember how to do it?



Challenge 3

Add a block at the end to make the spaceman become **INVISIBLE**. Make sure it is outside the **REPEAT SEQUENCE**.



Challenge 4

Add a new background. Select the **Moon** background and add the spaceman again.



Challenge 5

Go back to your code by selecting the spaceman on the first background. Choose a new **END** block. You should have a new block to choose with a picture of the second background. Predict what will happen when you run your code, then try it out!





Spaceman

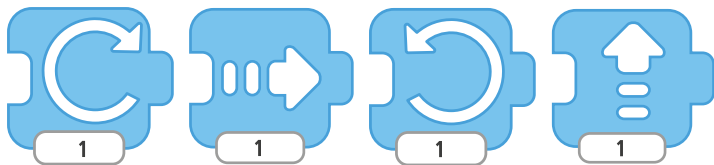
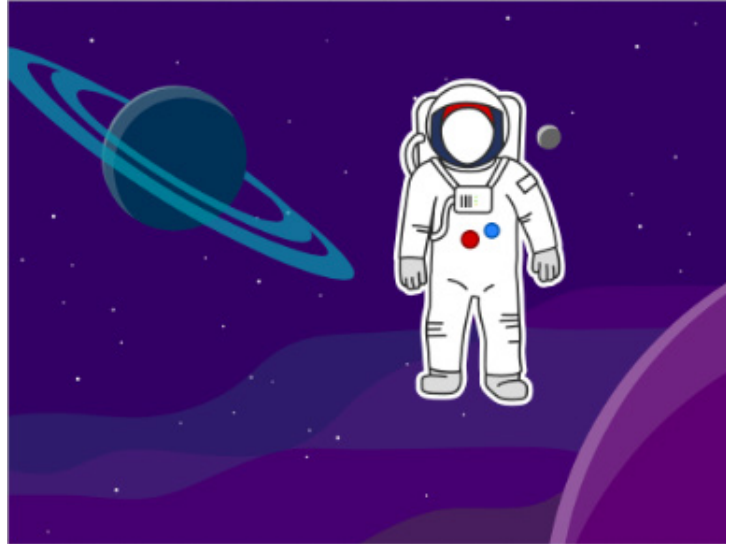
I can use a repeat instruction to make a sequence of instructions run more than once.



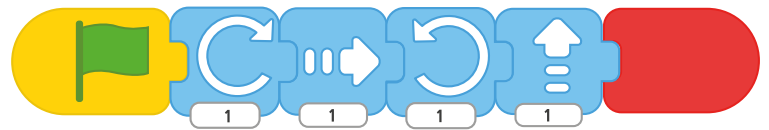
Open the ScratchJr app and start a new project in the My Projects screen.

Choose the **Space** background and add an **Astronaut** sprite.

Drag some of the movement blocks into the working area and try them out.

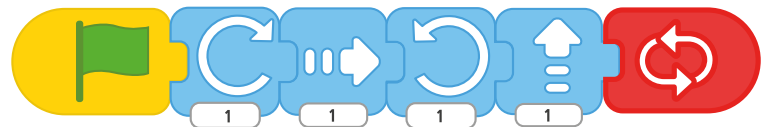


1. Make a sequence of movements. **Connect** them together. Start with the **GREEN FLAG** and use an **END BLOCK**. Copy this **sequence** and then click the **GREEN FLAG** to try it out.




2. Add extra blocks or remove some, to make a new movement sequence. Try it out.

3. What do you think will happen if we change the **END BLOCK** for a **REPEAT FOREVER** block?



Try it out.

 4. Start a new sequence of your own. Use the **GREEN FLAG** to start and **REPEAT FOREVER** to end.

5. What happens to the spaceman when he reaches the edge of the screen?

 6. Use the Red Hexagon to stop running the code.

7. Make a new sequence for a partner to copy or create. Can you **predict** what the spaceman will do before you try it out?



Spaceman

I can use a repeat instruction to make a sequence of instructions run more than once.



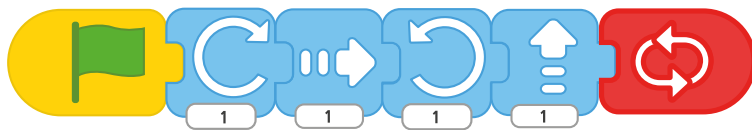
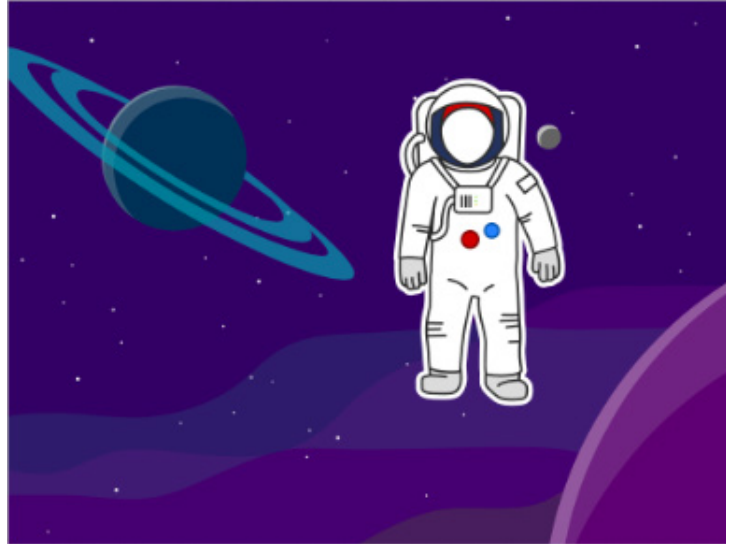
You need to have a ScratchJr project with the **Space** background and add an **Astronaut** sprite.

Either copy the sequence below or use your own sequence of movement blocks.

You should have at between 4 and 8 movement blocks in your sequence.

Remember the **GREEN FLAG** to start and the **REPEAT FOREVER** at the end.

Can you **predict** what the spaceman will do before you run the sequence?



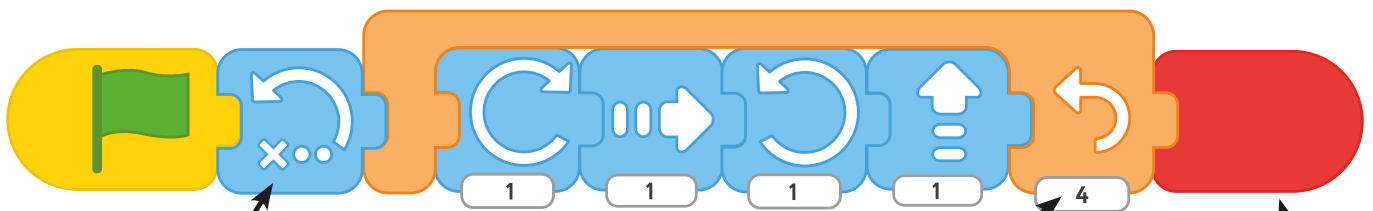
What if you change the values of the numbers underneath the blocks?

What will happen?

Try it and test your code.

When we use **REPEAT FOREVER**, the sequence just keeps running in a **loop** forever or until we stop the program.

We can make the sequence run for a particular number of times. Use the **REPEAT** block to make this sequence instead:



This block sends the sprite back to its start

The number shows how many times to repeat the sequence

The **END BLOCK** finishes the sequence

Try some different sequences using the **REPEAT BLOCK**. Any code inside the **REPEAT BLOCK** will be done the number of times shown underneath.



Spaceman

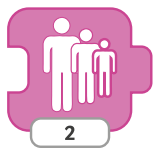
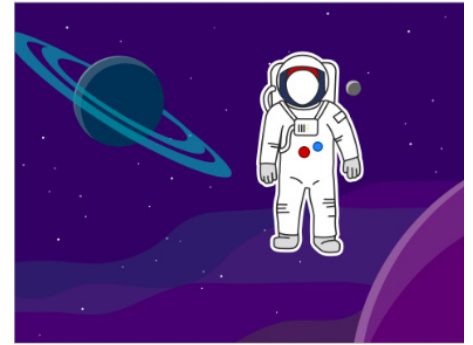
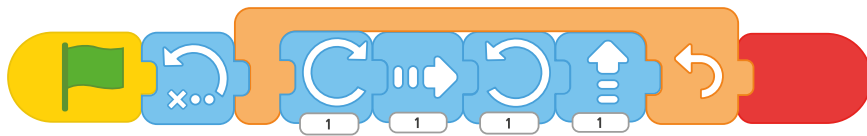
I can use a repeat instruction to make a sequence of instructions run more than once.



You need to have a ScratchJr project with the **Space** background and add an **Astronaut** sprite.

Check that you already have a sequence using the **REPEAT** block.

It might look something like this:



Challenge 1

Can you add a block inside the **REPEAT SEQUENCE** to make the spaceman **SHRINK** each time. Predict what will happen, then test your code to try it out!



Challenge 2

Edit your **REPEAT** block so that the sequence inside is repeated 9 times. Can you remember how to do it?



Challenge 3

Add a block at the end to make the spaceman become **INVISIBLE**. Make sure it is outside the **REPEAT SEQUENCE**.



Challenge 4

Add a new background. Select the **Moon** background and add the spaceman again.



Challenge 5

Go back to your code by selecting the spaceman on the first background. Choose a new **END** block. You should have a new block to choose with a picture of the second background. Predict what will happen when you run your code, then try it out!

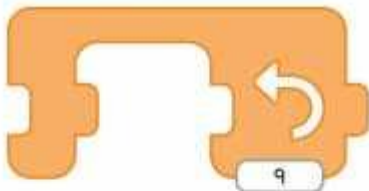


Using Repeat

I can use a repeat instruction to make a sequence of instructions run more than once.



Can you write down what each of the blocks does in this code? What does it make the spaceman character do?



Using Repeat

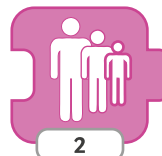
I can use a repeat instruction to make a sequence of instructions run more than once.

Can you write down what each of the blocks does in this code? What does it make the spaceman character do?





















Lesson 4: Repeat

Repeat

This lesson guides children through the understanding of using repetition in simple programs. It is intended that an adult is present to work through the activities and these may be delivered to one group at a time after the lesson introduction.

The initial code on the LA Spaceman Activity Sheet does not include any repeat function. The sequence just runs through once and then ends. Children can then predict and test the difference by changing the **END BLOCK** for a **REPEAT FOREVER BLOCK**.

Activity Sheets: Spaceman

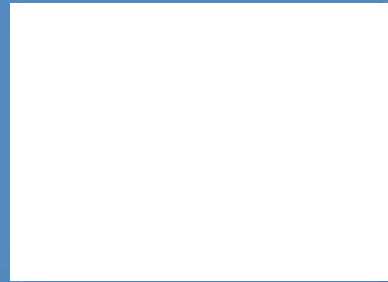
As with previous lesson in the unit, the Activity Sheets are designed for all children to work through in order from LA to HA. Some children will progress further than others. It is also possible for some children to start directly with MA Activity Sheet, if appropriate.

By the end of the activity, children will have explored the different use of the REPEAT FOREVER block compared to the REPEAT block, which runs a sequence for a given number of times.

As an additional challenge, the function is given a purpose in the final Activity Sheet, where the Astronaut is programmed to disappear into the distance and end up on the Moon.

Some children may be able to investigate this technique further and understand the process which has created the effect. By adding a shrink instruction to each iteration of the repeat, followed by an invisible instruction at the end, it creates the illusion. After the Astronaut disappears, the new background is fetched. The final code is below:





Computing

Programming with ScratchJr

The image features a background of a grid of red buttons. Each button has a white circular arrow icon, indicating a 'repeat' or 'refresh' function. The buttons are arranged in a regular pattern. In the center of the grid, the word "Repeat" is written in a bold, black, sans-serif font. This text is enclosed within a white, rounded rectangular box that has a slight drop shadow, making it stand out from the grid. The overall color scheme is primarily red and white, with the black text providing a strong contrast.

Repeat

Aim

I can use a repeat instruction to make a sequence of instructions run more than once and predict the behaviour.

Success Criteria

- I can use blocks for movement in different directions.
- I can use a REPEAT FOREVER block to make a continuous loop.
- I can use a REPEAT block for a section of instructions.
- I can predict the behaviour of a character, based on a sequence of instructions.



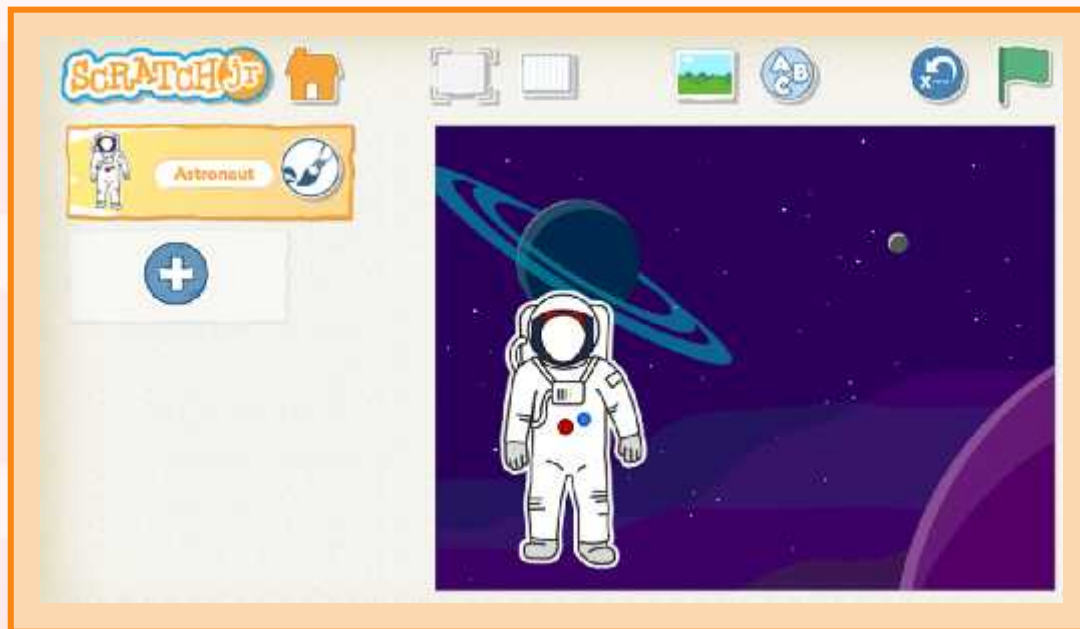
Moving Around

Can you describe any blocks which make a sprite move?

What do they look like and where would those blocks be?



Spaceman Travelling



Look at this Astronaut floating in Space. Which direction might he be moving in?

He may move in many different directions, so we are going to build a sequence of blocks to create this.



Repeat or Repeat Forever

Look at this sequence of movements. Can you predict what will happen to the Astronaut?

What will happen if we add the REPEAT FOREVER block at the end instead?



What if we don't want the astronaut to keep repeating the sequence forever, just to do it a certain number of times?

To do this, we use a REPEAT block, placed around the blocks we want to be repeated – and say how many times to do it.



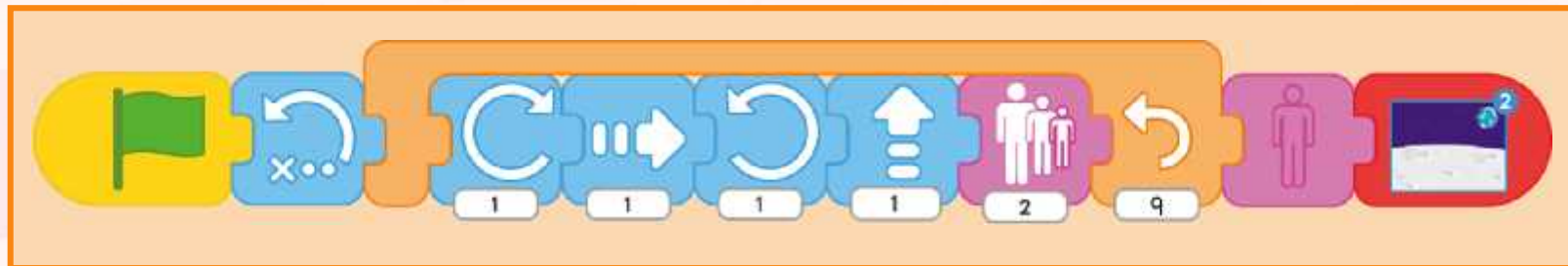


Predicting Behaviour

Look at the code below.

Can you predict and describe what each block does in turn?

What appears to happen to the Astronaut?



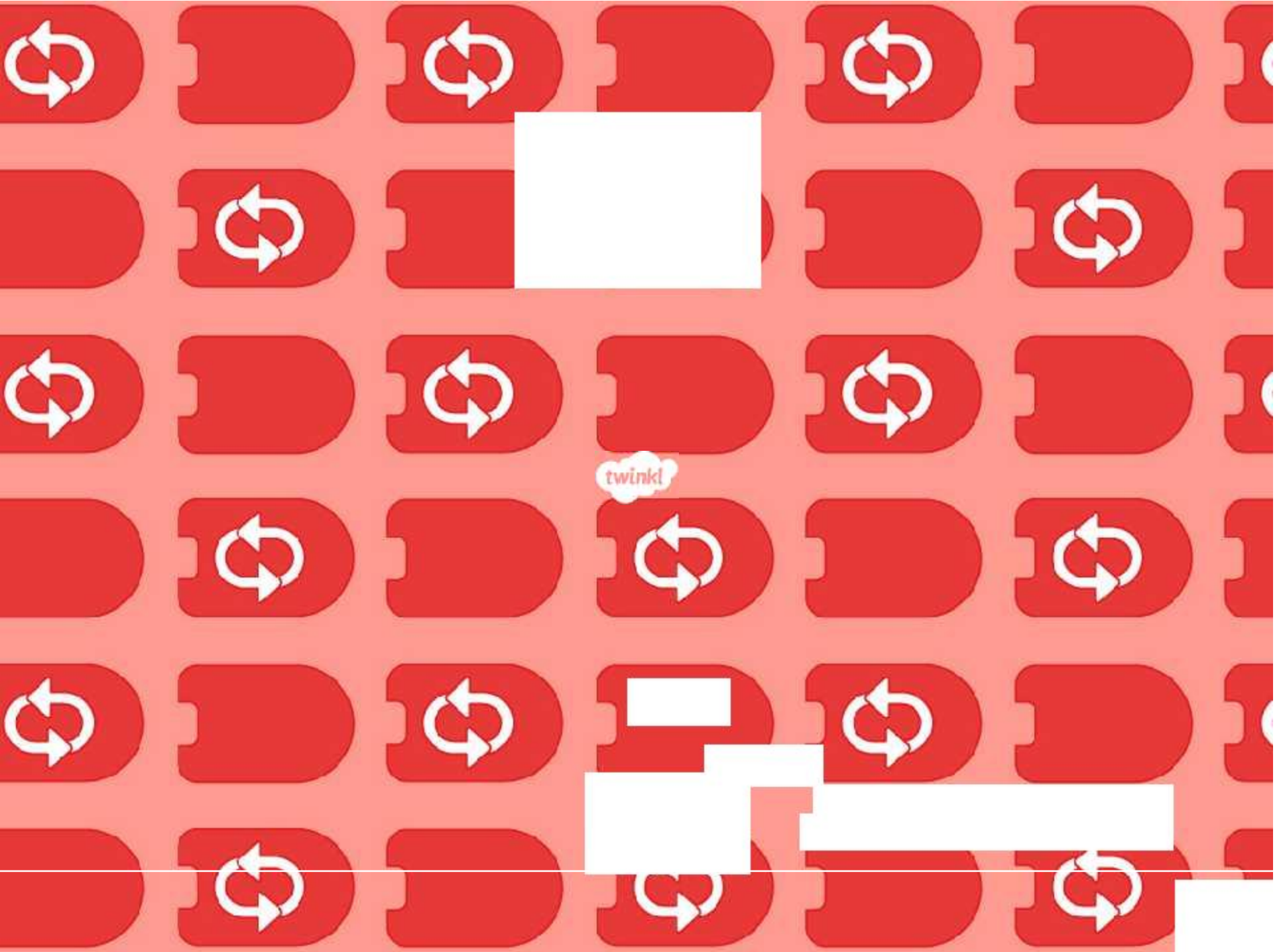
Aim



I can use a repeat instruction to make a sequence of instructions run more than once and predict the behaviour.

Success Criteria

- I can use blocks for movement in different directions.
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Programming with ScratchJr: Sounds

<p>Aim: To understand what algorithms are, how they are implemented as programs on digital devices and that programs execute by following precise and unambiguous instructions.</p> <p>To create and debug simple programs.</p> <p>Children record animal sounds and then create simple programs to play the recorded sound, when the animal is clicked.</p> <p>I can create programs that play a recorded sound.</p>	<p>Success Criteria: I can record my own sounds.</p> <p>I can create instructions to play a recorded sound.</p> <p>I can edit and use speech bubbles in my instructions.</p> <p>I can create my own simple programs.</p>	<p>Resources: Lesson Pack</p> <p>Tablets (Apple, Amazon or Android) with ScratchJr app installed.</p>
	<p>Key/New Words: ScratchJr, tablet, blocks, programs, character, background, sequence, project, grow, shrink, sound, record.</p>	<p>Preparation: Scratch Junior Blocks Sheet - as required (with blocks pre-cut if desired)</p> <p>Differentiated Animal Sounds Activity Sheet - as required</p>

Prior Learning: Children will have begun to create simple programs using the ScratchJr app in Lessons 1-4.

Learning Sequence

	<p>Identifying Blocks: Begin by providing children with a range of images for ScratchJr blocks, using the Scratch Junior Blocks Sheet and allow them to identify together which blocks they recognise and can describe the effects for. <i>Can children predict what any of the other blocks do?</i></p>	
	<p>Sounds and Speech: Use the Lesson Presentation to show the blocks for recording and playing sounds and for adding speech bubbles. Ask what children think they are for and then describe their purpose.</p>	
	<p>Animal Sounds: Using the Lesson Presentation, display some of the animal sprites available on ScratchJr, along with speech bubbles. Allow children to have fun demonstrating animal sounds, while clicking to display a text version of the sound inside the speech bubbles.</p>	
	<p>Code for Sounds: Show an example of a sequence of blocks, involving sound and speech bubbles. Children use the blocks from the Scratch Junior Blocks Sheet (either by cutting out or using pre-cut version), like jigsaw pieces to make a sequence similar to the example on the board.</p>	
<p> Record Your Sounds: Children use the differentiated Animal Sounds Activity Sheets to create code to use sounds. <i>Can children create code to play recorded sounds?</i></p> <p> Children copy code for 3 animals.</p> <p> Children copy code for animals, and then create their own code for 2 more.</p> <p> Children copy code for 1 animal and then create their own code for at least 3 more.</p>		
	<p>Describe a Sequence: Show the image of four animals on a River background. Ask children to describe, draw or make a sequence of blocks (could include a sound, speech bubble or movement) and say what it would program the animal to do.</p>	

Taskit

Modelit: Children use building bricks, toys or pictures of animals/other characters. They act out how they would move, if programmed by a sequence of ScratchJr instructions.

Paintit Using square templates, children paint a picture of one of the ScratchJr blocks, using the correct symbols and colours. It could make a great display or piece of art with lots of them combined!

Programming with ScratchJr | Sounds

I can create programs that play a recorded sound.		
I can record my own sounds.		
I can create instructions to play a recorded sound.		
I can edit and use speech bubbles in my instructions.		
I can create my own simple programs.		

Programming with ScratchJr | Sounds

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Programming with ScratchJr | Sounds

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Programming with ScratchJr | Sounds

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I can create my own simple programs.		

Programming with ScratchJr | Sounds

I can create programs that play a recorded sound.		
I can record my own sounds.		
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Animal Sounds

I can create programs that play a recorded sound.

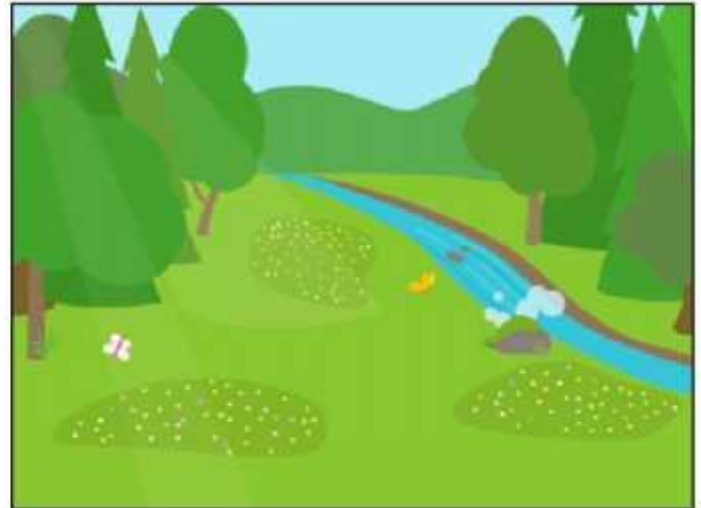


Open the ScratchJr app and start a new project in the My Projects screen.

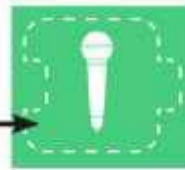
Choose an outdoor background such as the **River**.

In this project, you are going to add some animals and program them with suitable sounds.

First, add the horse and position on the background. This is the code to create for the horse:

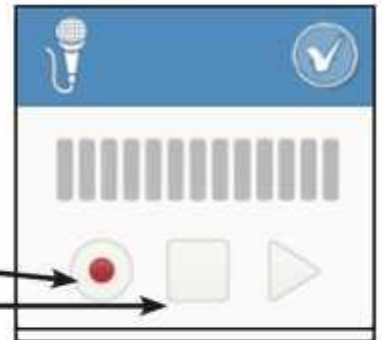


To use this block for PLAY RECORDED SOUND, you must first click on the microphone image to record your sound.



To start recording, press the record button and when finished, press the stop button.

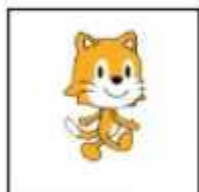
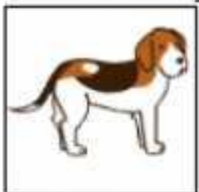
If you are happy with your horse sound, click the tick icon.



Now you can select the block to PLAY RECORDED SOUND.



Do the same for the cat and the dog. Try this code. Can you predict what the cat will do?





Animal Sounds

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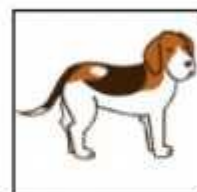
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Do the same for the cat and add a speech bubble too. Try this code. Can you predict what the cat will do?



Try adding at least two more animals of your own. Record a sound for each animal and add movement and speech bubbles to the sequence of code.





Animal Sounds

I can create programs that play a recorded sound.



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

Choose an outdoor background such as the **River**.

In this project, you are going to add some animals and program them with suitable sounds.

First, add the walking cat and position on the background. This is the code to create for the cat:



To use this block for PLAY RECORDED SOUND, you must first click on the microphone image to record your sound.

To start recording, press the record button and when finished, press the stop button.

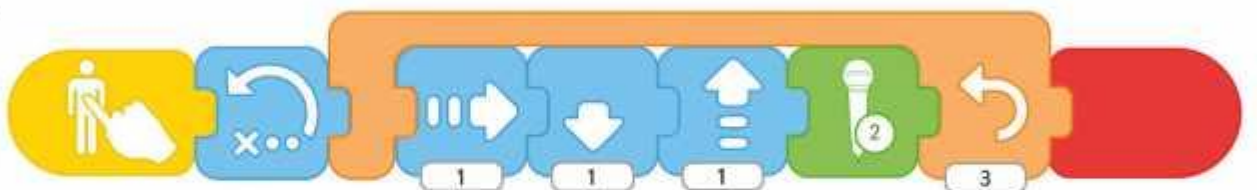
If you are happy with your horse sound, click the tick icon.



Now you can select the block to PLAY RECORDED SOUND.



Do the same for the fly and at least three more animals of your own, recording a sound as well as movement and speech bubbles. Try this code. Can you predict what the fly will do?





Animal Sounds

I can create programs that play a recorded sound.

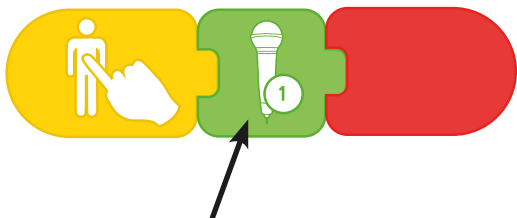
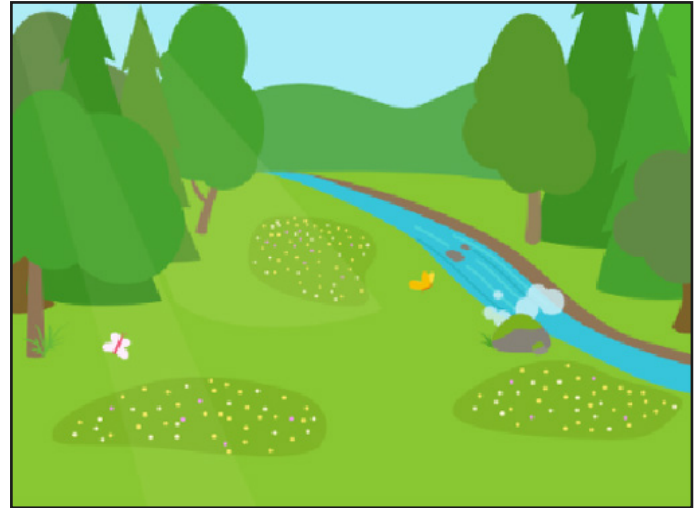


Open the ScratchJr app and start a new project in the My Projects screen.

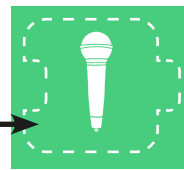
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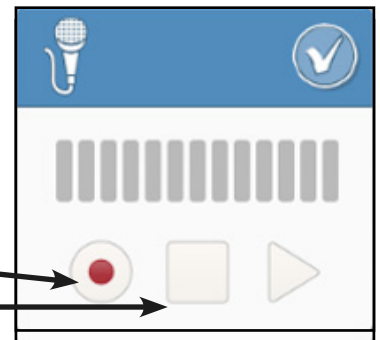
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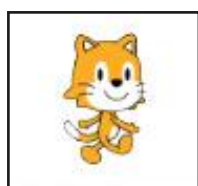


If you are happy with your horse sound, click the tick icon.

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Animal Sounds

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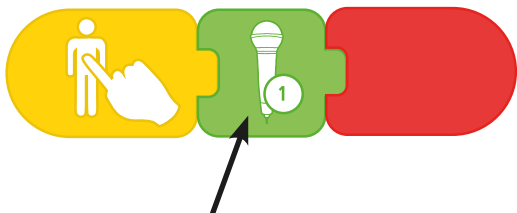
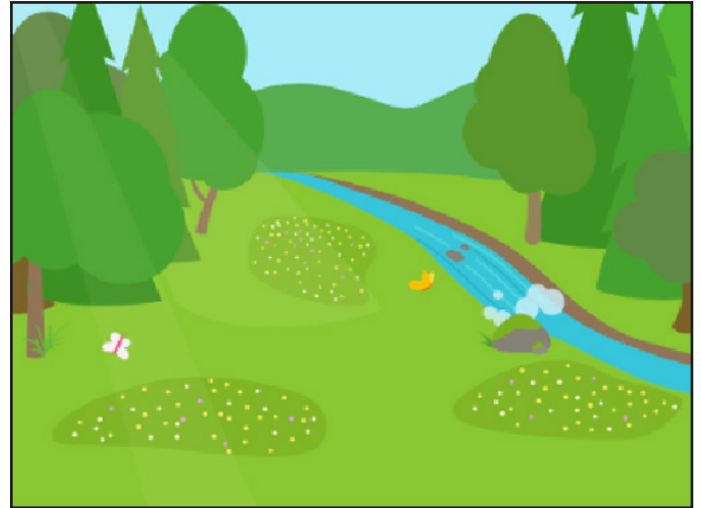


Open the ScratchJr app and start a new project in the My Projects screen.

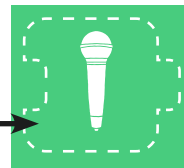
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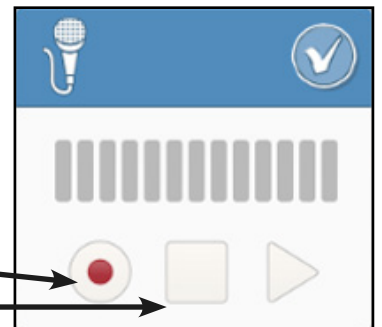
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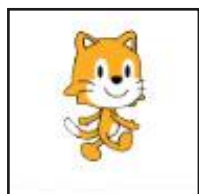


If you are happy with your horse sound, click the tick icon.

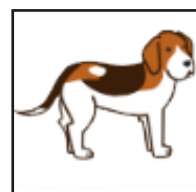
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Do the same for the cat and add a speech bubble too. Try this code. Can you predict what the cat will do?



Try adding at least two more animals of your own. Record a sound for each animal and add movement and speech bubbles to the sequence of code.





Animal Sounds

I can create programs that play a recorded sound.

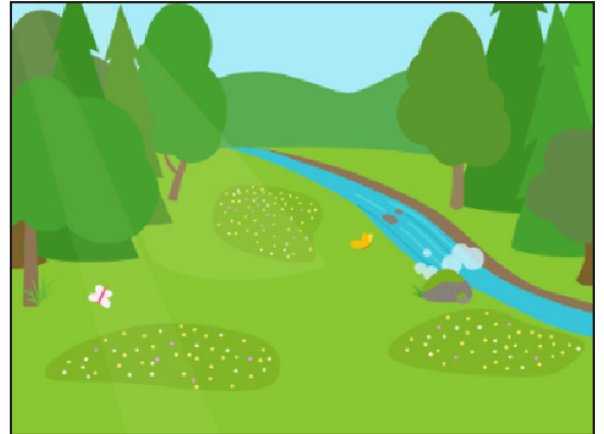


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In this project, you are going to add some animals and program them with suitable sounds.

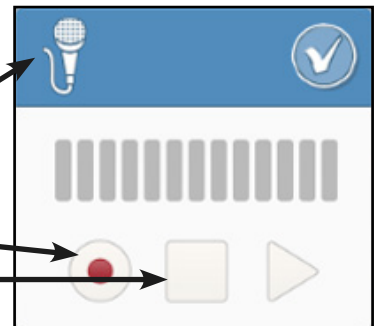
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To start recording, press the record button and when finished, press the stop button.

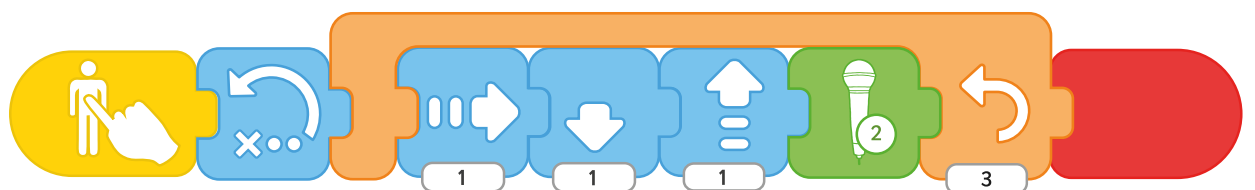
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Do the same for the fly and at least three more animals of your own, recording a sound as well as movement and speech bubbles. Try this code. Can you predict what the fly will do?



Lesson 5: Sounds

Activity Sheets

In this lesson, the three Activity Sheets are differentiated in design so that children of higher, middle or lower ability can be given one activity each.

The LA activity provides example code for three animals, which the children can copy and recreate.

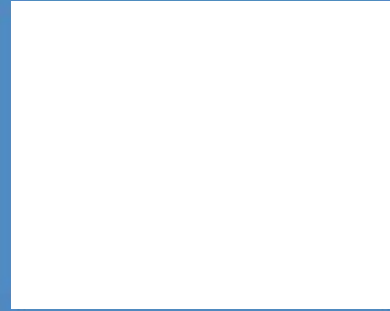
The MA activity provides example code for two animals and the opportunity for children to create two more of their own.

The HA activity is open-ended for children to create their own code using recorded sounds.

Working with Groups

It is recommended that an adult works with a small group of children at a time to deliver the main activity of the lesson, with children using their own tablet.





Computing

Programming with ScratchJr

Aim

I can create programs that play a recorded sound.

Success Criteria

- I can record my own sounds.
- I can create instructions to play a recorded sound.
- I can edit and use speech bubbles in my instructions.
- I can create my own simple programs.

Identifying Blocks

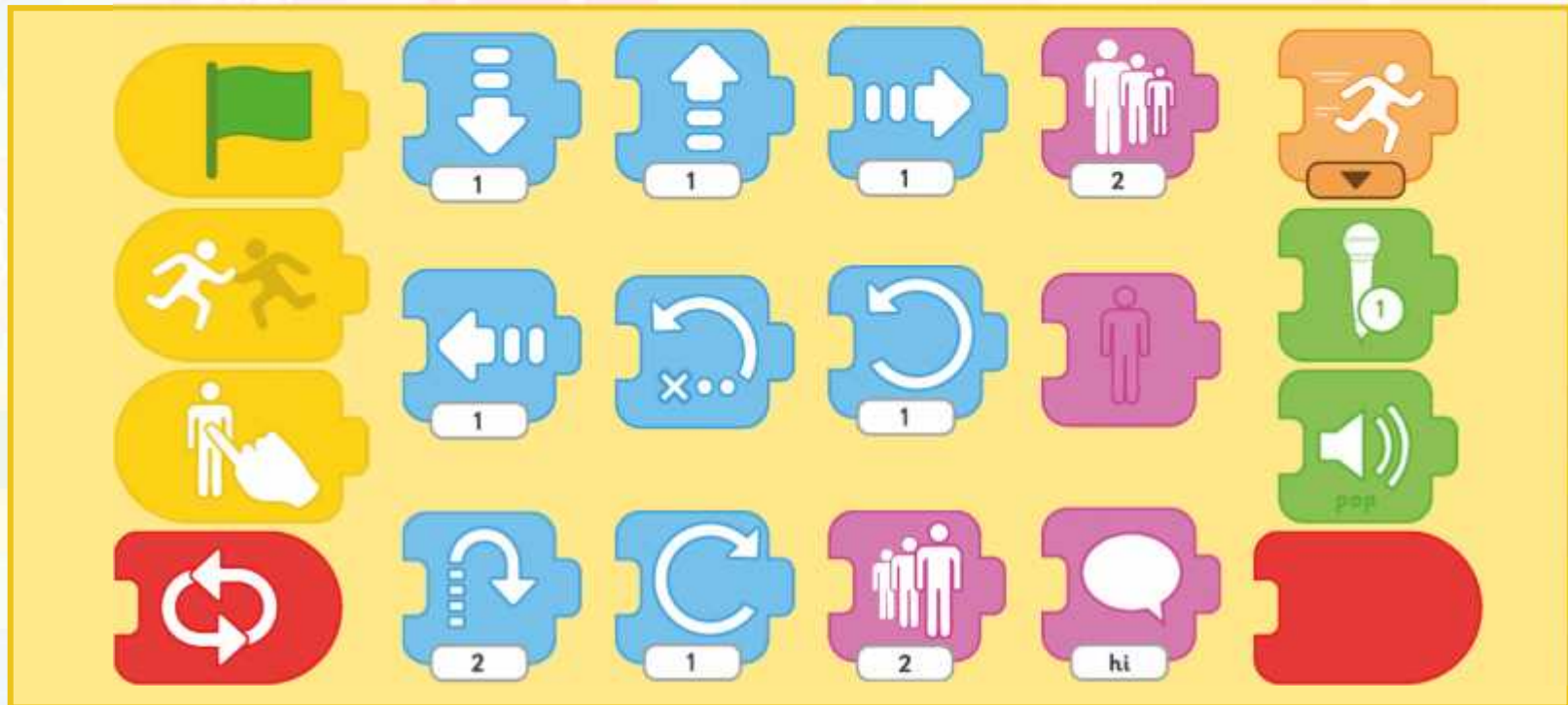


Use the ScratchJr blocks.

Can you describe what they do?

Which ones can you identify?

Can you guess what any of the other blocks do?



Sounds and Speech

What are these blocks for?



Display Speech Bubble

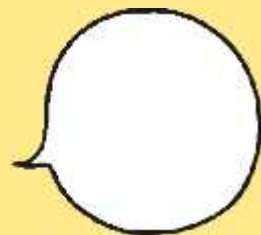
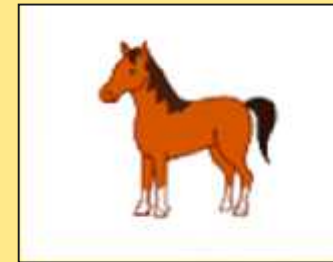


Play Recorded Sound

Animal Sounds



What sounds or speech would you add for these animals?

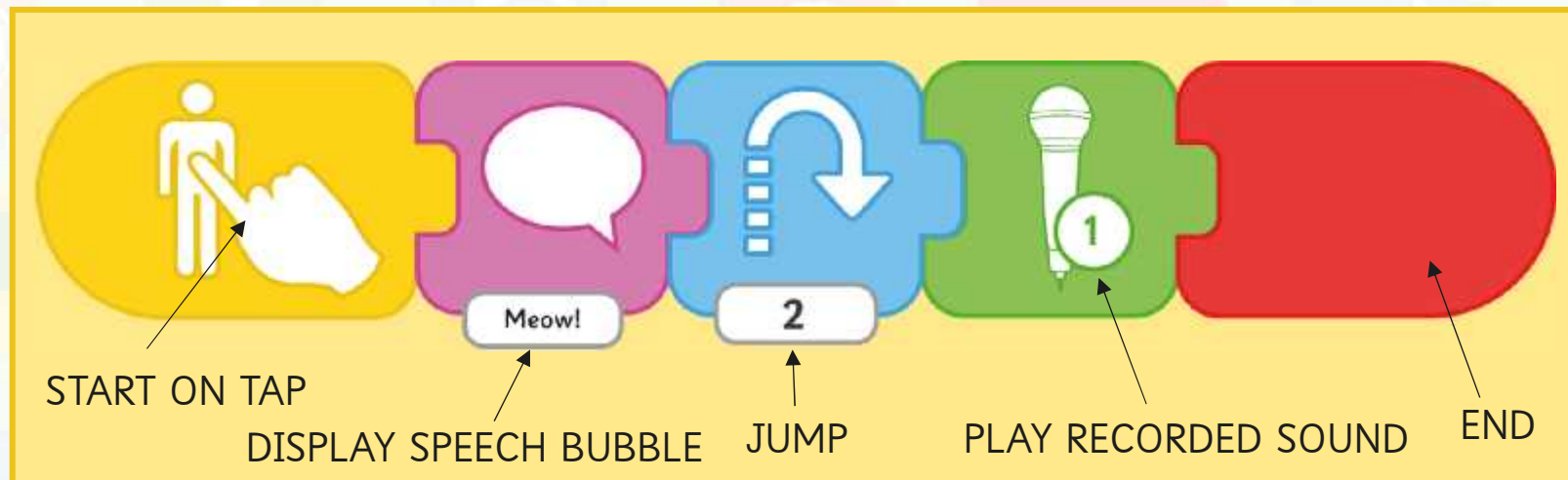


Code for Sounds

This code uses sound and speech bubbles.

Can you use the blocks on paper to make a sequence like this?

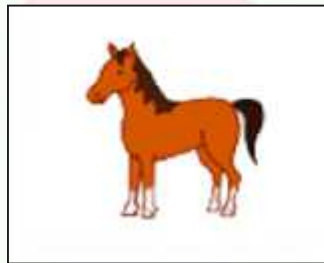
What does each instruction in the program do?



Record Your Sounds



Can you create the code to play your own recorded sounds in ScratchJr?



Animal Sounds

Click on the animal icon
Click on the sound icon
Click on the key icon

Animal Sounds

Click on the animal icon
Click on the sound icon
Click on the key icon

Animal Sounds

Click on the animal icon
Click on the sound icon
Click on the key icon

Use the Animal Sounds Activity Sheets to program these animals!

Describe a Sequence



Choose one of the animals in the picture.

Describe, draw or make a sequence of blocks (it could include a sound, speech bubble or movement).

Can you say what the sequence would program the animal to do?



Aim

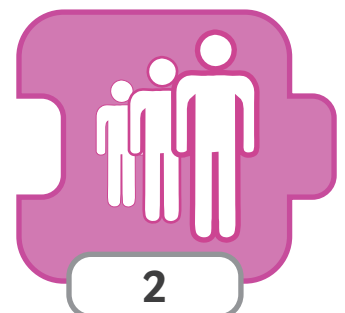
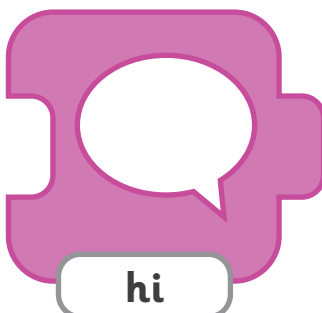
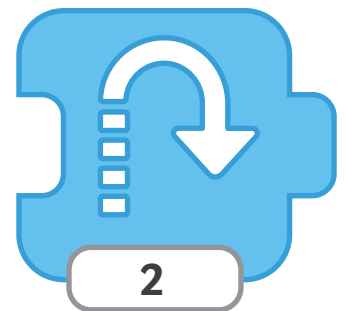
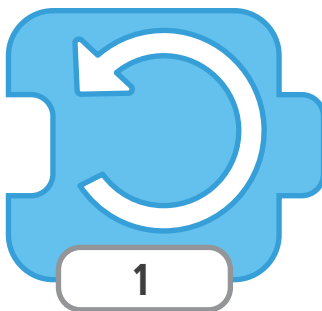
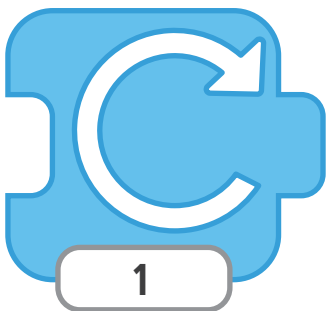
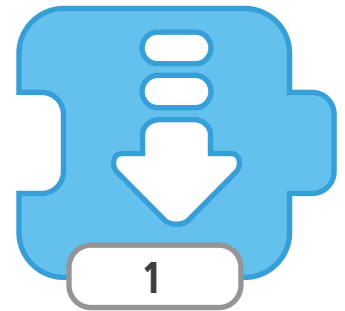
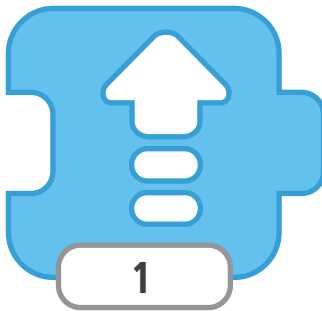
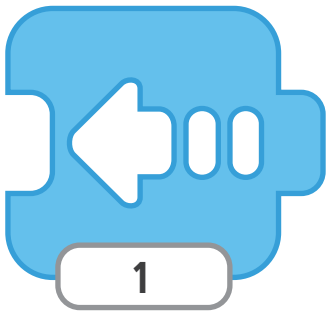
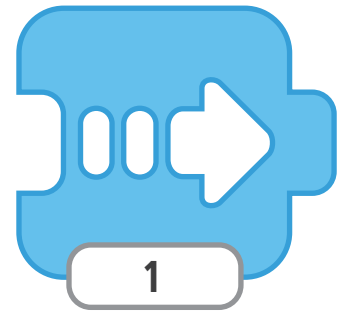
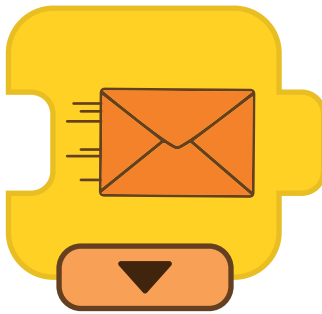
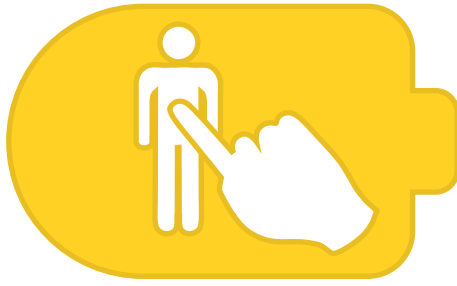
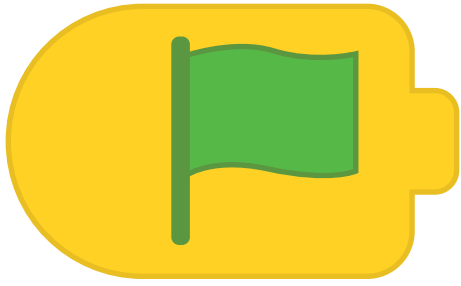


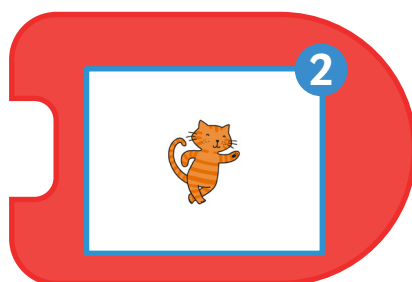
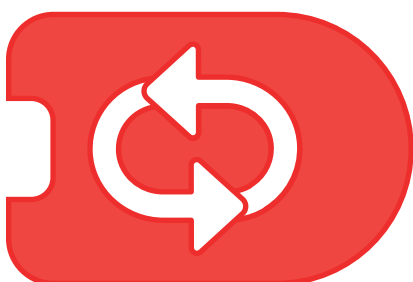
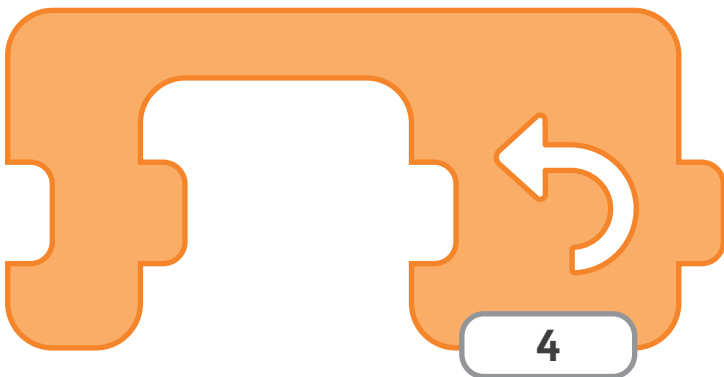
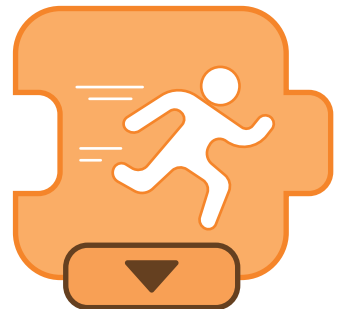
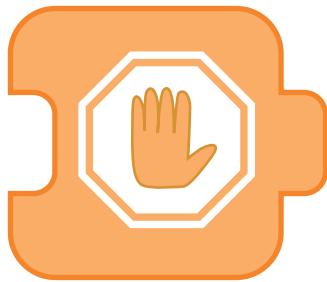
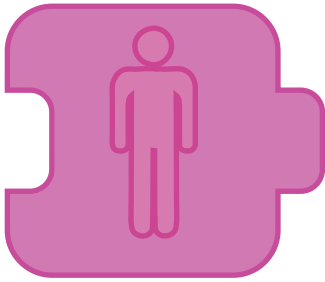
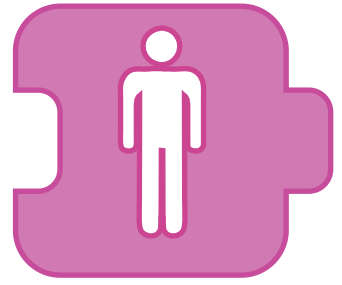
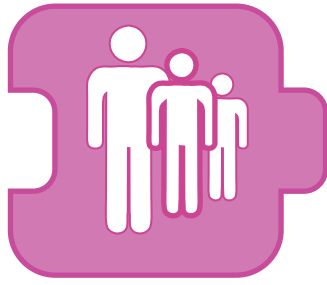
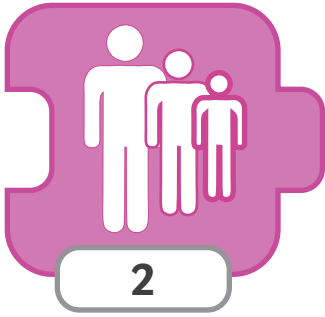
I can create programs that play a recorded sound.

Success Criteria

- I can record my own sounds.
- I can create instructions to play a recorded sound.
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Programming with ScratchJr: Sequencing

<p>Aim: To understand that programs execute by following precise and unambiguous instructions.</p> <p>To create and debug simple programs.</p> <p>To use logical reasoning to predict the behaviour of simple programs.</p> <p>Children use a given background and character(s) to create sequences of linked instructions with increasing complexity.</p> <p>I can create programs with a sequence of linked instructions.</p>	<p>Success Criteria: I can create a short set of instructions for a sequence of movements.</p> <p>I can create longer sequences of more complex instructions.</p> <p>I can use the 'WAIT' block.</p> <p>I can program two or more characters with instructions at the same time.</p>	<p>Resources: Lesson Pack</p> <p>Tablets (Apple, Amazon or Android) with ScratchJr app installed.</p>
	<p>Key/New Words: ScratchJr, tablet, blocks, programs, character, background, project, wait, sequence, instructions.</p>	<p>Preparation: Differentiated Penguins Activity Sheet - as required</p>

Prior Learning: Children will have begun to create simple programs using ScratchJr app in Lessons 1-5.

Learning Sequence

	<p>Penguins: Show the 'Arctic' background from ScratchJr, with a penguin character. Ask children what the penguin could be programmed to do. Encourage suggestions such as run, jump, spin, somersault, dive into the water etc.</p>	
	<p>Instruction Sequence: Show examples of some simple instruction sequences and see if children can predict what they will program the penguin to do.</p>	
	<p>Wait: Introduce the block for WAIT and how it is used. Demonstrate as part of a sequence and ask children to describe how it would work and what it would look like in action.</p>	
	<p>Programming Penguins: Begin by verbally introducing the task of programming the penguin(s) to move and hop into the water, then turn invisible or somersault into the water. Allow children to attempt to create a working sequence first, before providing the with examples. Children can then edit or change their sequence as necessary. <i>Can children create increasingly complex sequences of instructions to program a character?</i></p> <div style="display: flex; justify-content: space-around;"> <div>  <p>Children use basic instruction sequences to move the penguin character.</p> </div> <div>  <p>Children use instruction sequences with increasing complexity and additional blocks (including WAIT) and include a second penguin.</p> </div> <div>  <p>After creating the first set of complex instructions using a WAIT block, children use multiple further penguin characters. They distinguish them by renaming and recolouring.</p> </div> </div>	
	<p>Describing Instructions: Ask children to describe what actions they were able to program the penguin to do, describing the blocks used. In addition, or as alternative, use some example blocks to ask children if they can describe how to sequence some given instructions, such as jumping into the water and doing a somersault.</p>	

Taskit

Writeit: Write your own sentences about your ScratchJr penguin. 'The penguin...'

Countit: Practise counting activities with penguin pictures. How many penguins...?

Watchit: Watch _____ jumping into water.

Programming with ScratchJr | Sequencing

I can create programs with a sequence of linked instructions.		
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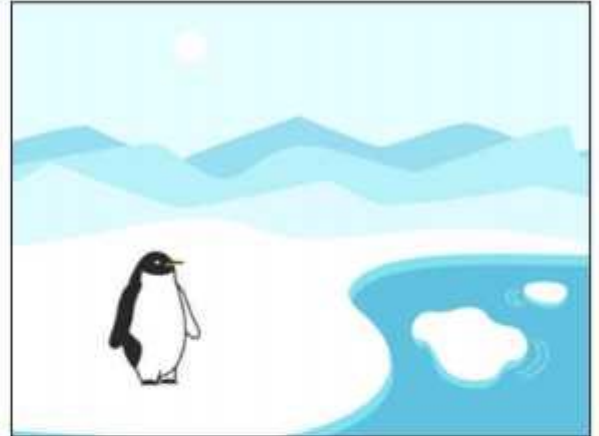
Penguins

I can create programs with a sequence of linked instructions.

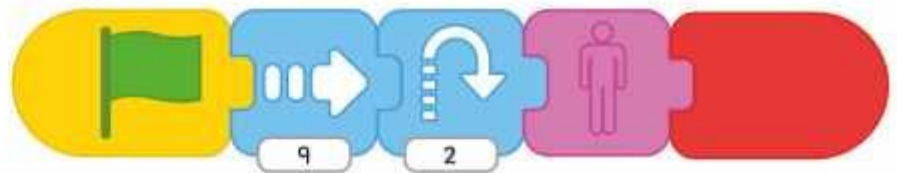


Open the ScratchJr app and start a new project in the My Projects screen.

Choose the **Arctic** background and add a **Penguin**. Delete the cat.



Add this sequence of instructions for your penguin:

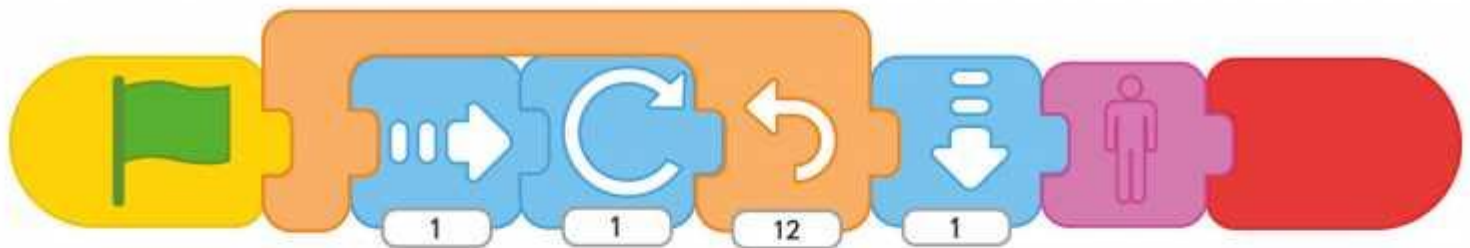


MOVE FORWARD 9, HOP, HIDE.

What happens after running the sequence once?

Add a **GO HOME** button after **GREEN FLAG**.

Try this sequence for the same (or another) penguin:



Try out your own sequences to make the penguin move in different ways!



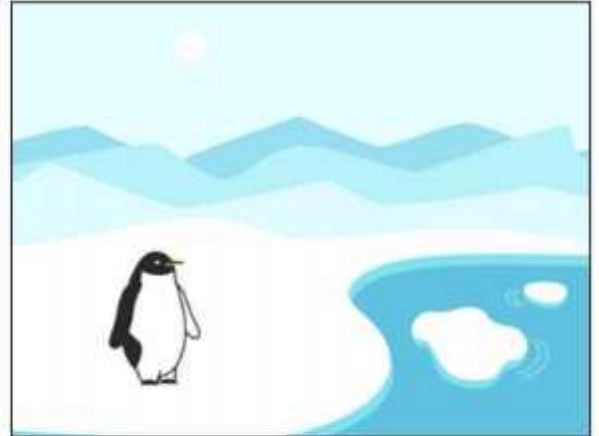
Penguins

I can create programs with a sequence of linked instructions.

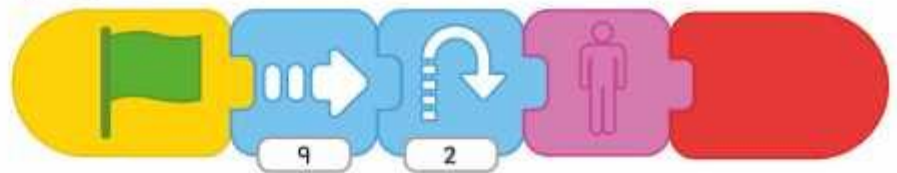


Open the ScratchJr app and start a new project in the My Projects screen.

Choose the **Arctic** background and add a **Penguin**. Delete the cat.

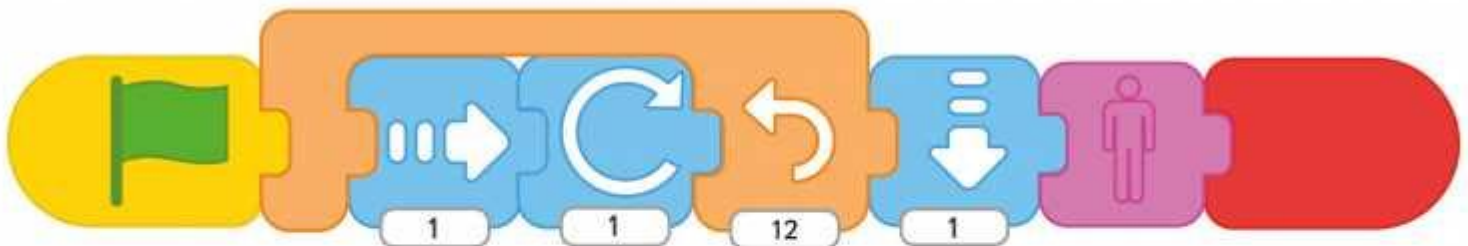
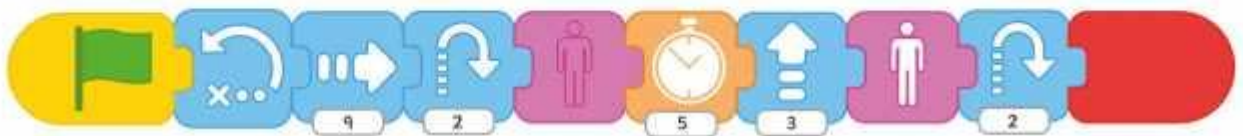


Add this sequence of instructions for your penguin:



What happens after running the sequence once?

Add a **GO HOME** button after **GREEN FLAG** then add: **WAIT** for 5, **MOVE UP** 3, **SHOW**, **HOP**.



Try this sequence for another penguin. **Predict** what it will do before running it.



Penguins

I can create programs with a sequence of linked instructions.



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

Choose the **Arctic** background and add a **Penguin**. Delete the cat.

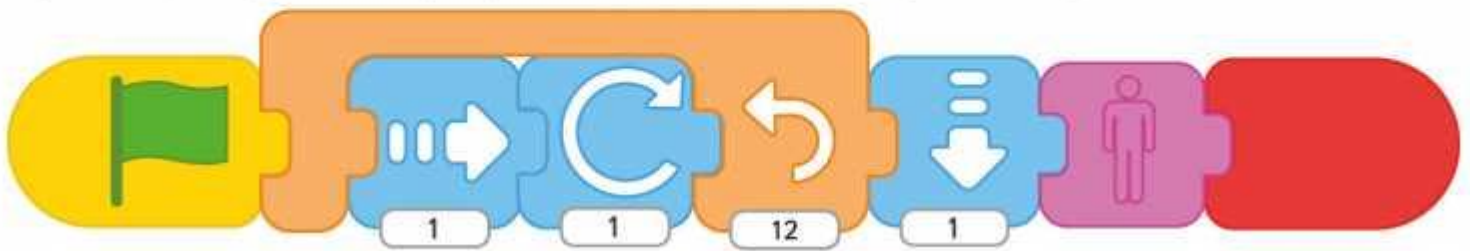


Add this sequence of instructions for your penguin:



Add a second penguin and colour it a different colour. Rename as penguin2.

Try this sequence for another penguin. Predict what it will do before running it.



Try out your own sequences to make more penguins move in different ways!

Give each penguin a different colour and name.

Make them all start at the same time OR only start when you tap on them.



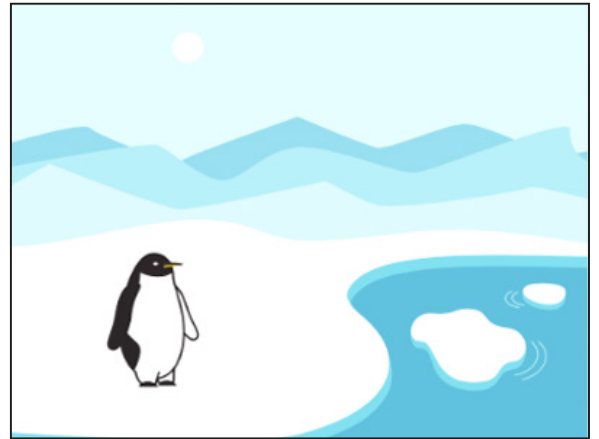
Penguins

I can create programs with a sequence of linked instructions.

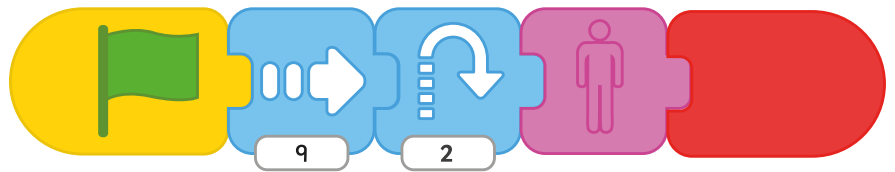


Open the ScratchJr app and start a new project in the My Projects screen.

Choose the **Arctic** background and add a **Penguin**. Delete the cat.



Add this sequence of instructions for your penguin:

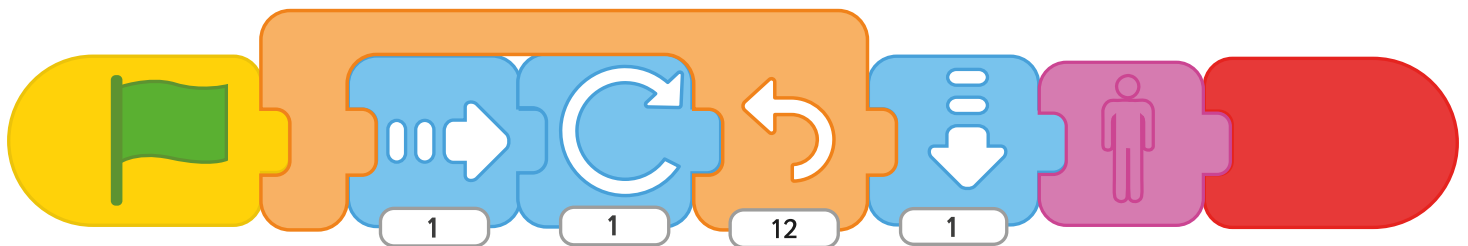


MOVE FORWARD 9, HOP, HIDE.

What happens after running the sequence once?

Add a **GO HOME** button after **GREEN FLAG**.

Try this sequence for the same (or another) penguin:



Try out your own sequences to make the penguin move in different ways!



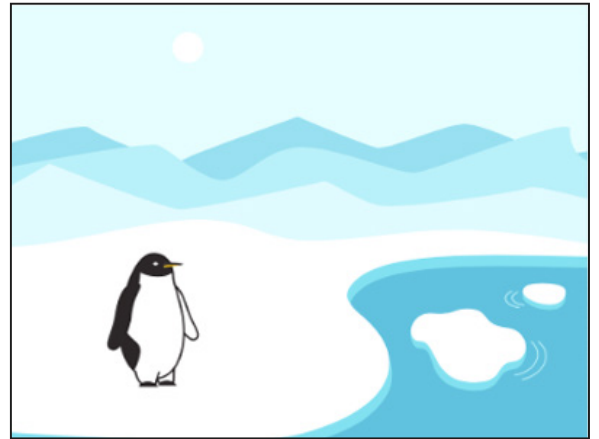
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I can create programs with a sequence of linked instructions.

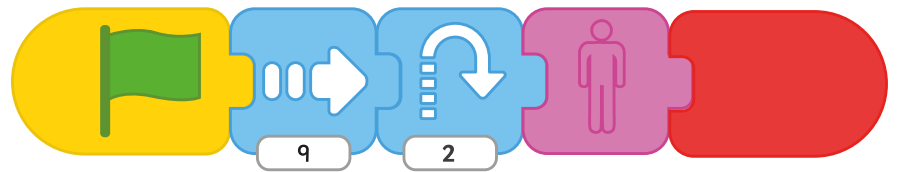
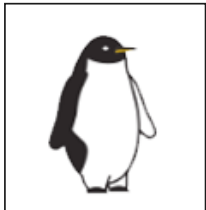


Open the ScratchJr app and start a new project in the My Projects screen.

Choose the **Arctic** background and add a **Penguin**. Delete the cat.

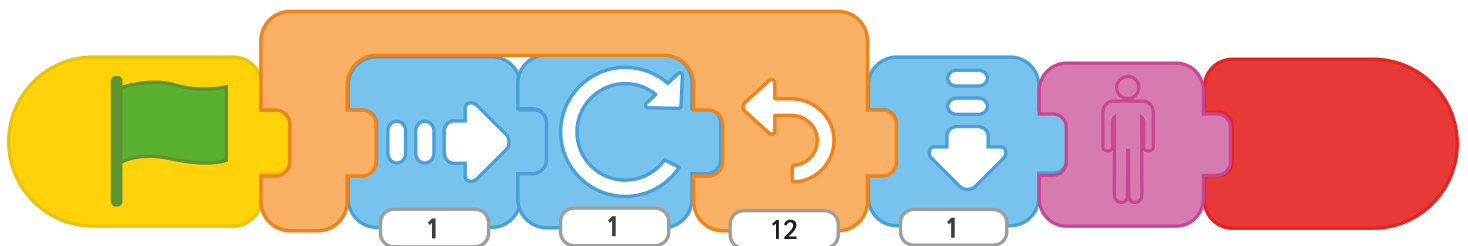
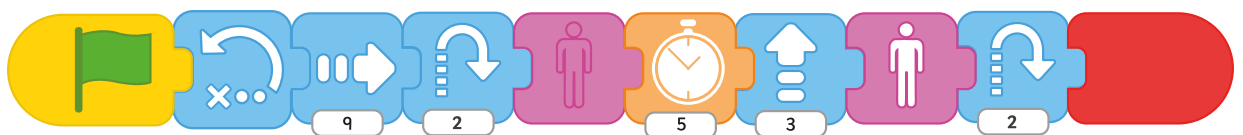


Add this sequence of instructions for your penguin:



What happens after running the sequence once?

Add a **GO HOME** button after **GREEN FLAG** then add: **WAIT** for 5, **MOVE UP** 3, **SHOW**, **HOP**.



Try this sequence for another penguin. **Predict** what it will do before running it.



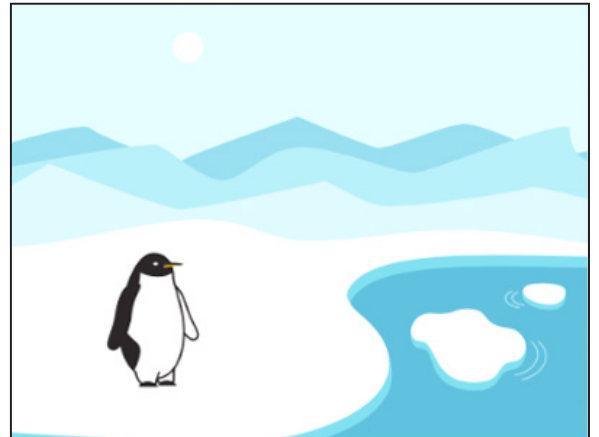
Penguins

I can create programs with a sequence of linked instructions.

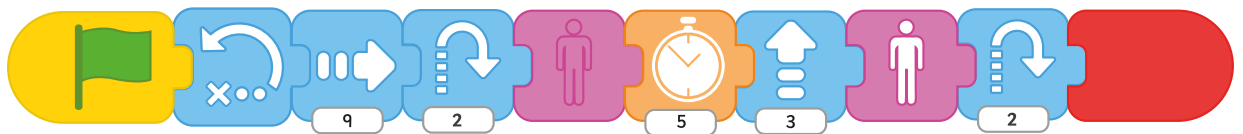


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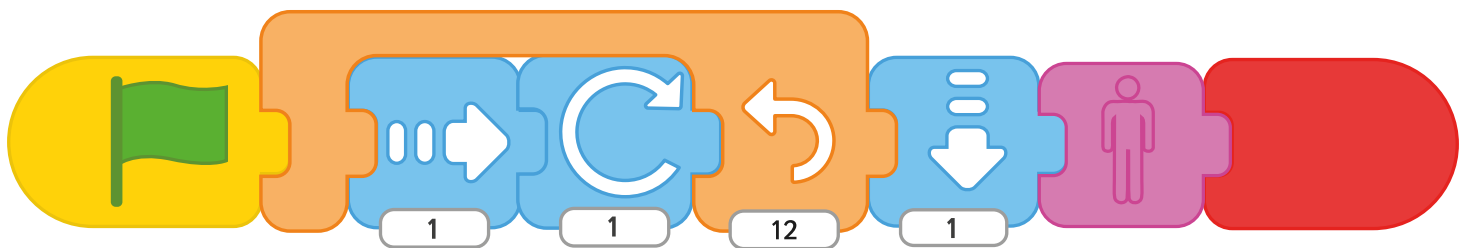


Add this sequence of instructions for your penguin:



Add a second penguin and colour it a different colour. Rename as penguin2.

Try this sequence for another penguin. Predict what it will do before running it.



Try out your own sequences to make more penguins move in different ways!

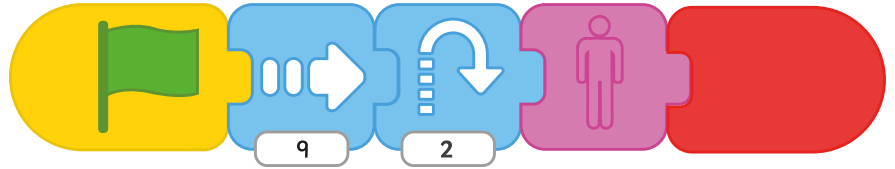
Give each penguin a different colour and name.

Make them all start at the same time OR only start when you tap on them.

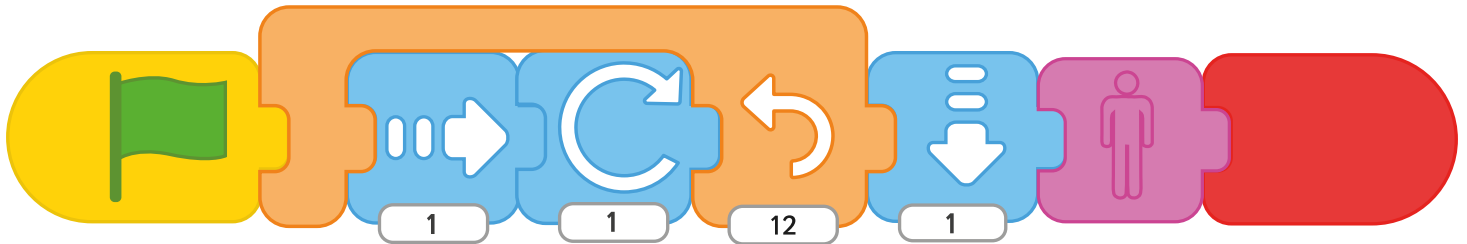
Lesson 6: Sequencing

Example Sequences

In the first simple sequence below, the penguin moves to the right 9 units (as if walking forwards), then jumps and disappears (using the HIDE block). If positioned correctly, this can make the penguin appear to jump into the water. Children can experiment with starting the penguin in the correct place in order for it to look better.

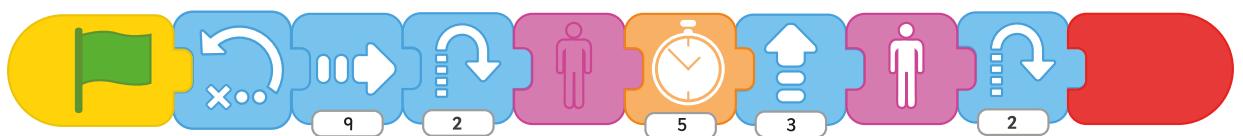


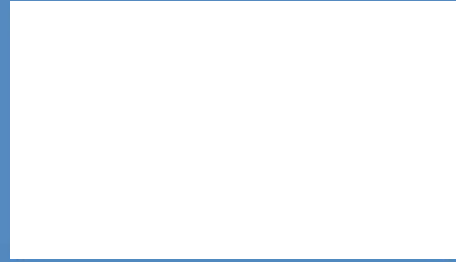
In this next sequence, the REPEAT block is used to perform 12 iterations. Each time, the penguin moves forward by 1 unit and then rotates 1 unit. The effect is that it appears to somersault forwards. At the end of the repeat section, the penguin moves down by one unit and disappears, seeming to have landed in the water – if positioned in the right place at the start.



In the extended sequence below, children are asked what happens after the HIDE block.

The penguin waits for a count of 5, then moves up 3 units (whilst still hidden). It then reappears, using the SHOW block and jumps. The effect is that the penguin appears to move underwater, then jump back out!





Computing

Programming with ScratchJr

Sequencing

Aim

I can create programs with a sequence of linked instructions.

Success Criteria

- I can create a short set of instructions for a sequence of movements.
- I can create longer sequences of more complex instructions.
- I can use the 'WAIT' block.
- I can program two or more characters with instructions at the same time.

Penguins



Look at this example of the 'Arctic' background from ScratchJr, with a penguin character.

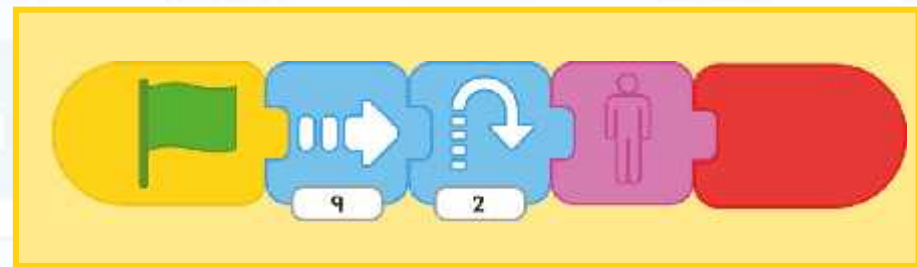
What could the penguin be programmed to do, using the ScratchJr blocks that you know?

Ideas might include: run, jump, spin, somersault, dive into the water.

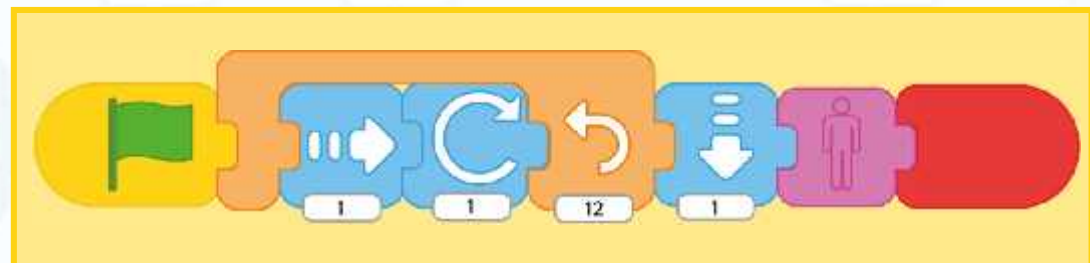
Instruction Sequences



What do you think this sequence of instructions will program the penguin to do?



What about this one?



Wait

This block means WAIT.



If you use it in your instructions, it will make the character wait for a short time before moving onto the next block in the sequence.

Can anyone tell what happens here, after the HIDE block?



Programming Penguins



Use the Penguins Activity Sheet to add your own penguin to an Arctic background.

Can you follow the steps to create your own sequence of instructions for the penguin?

Try out your own ideas!

The screenshots show the following steps:

- Step 1:** Selecting the 'Penguins' project and adding a penguin sprite.
- Step 2:** Selecting an Arctic background for the stage.
- Step 3:** Creating a sequence of instructions for the penguin, including 'MOVE FORWARD' and 'GO HOME' blocks.
- Step 4:** Adding a color change instruction to the sequence.

Describing Instructions



Can anyone describe what actions they were able to program the penguin to do?

Say which blocks were used.



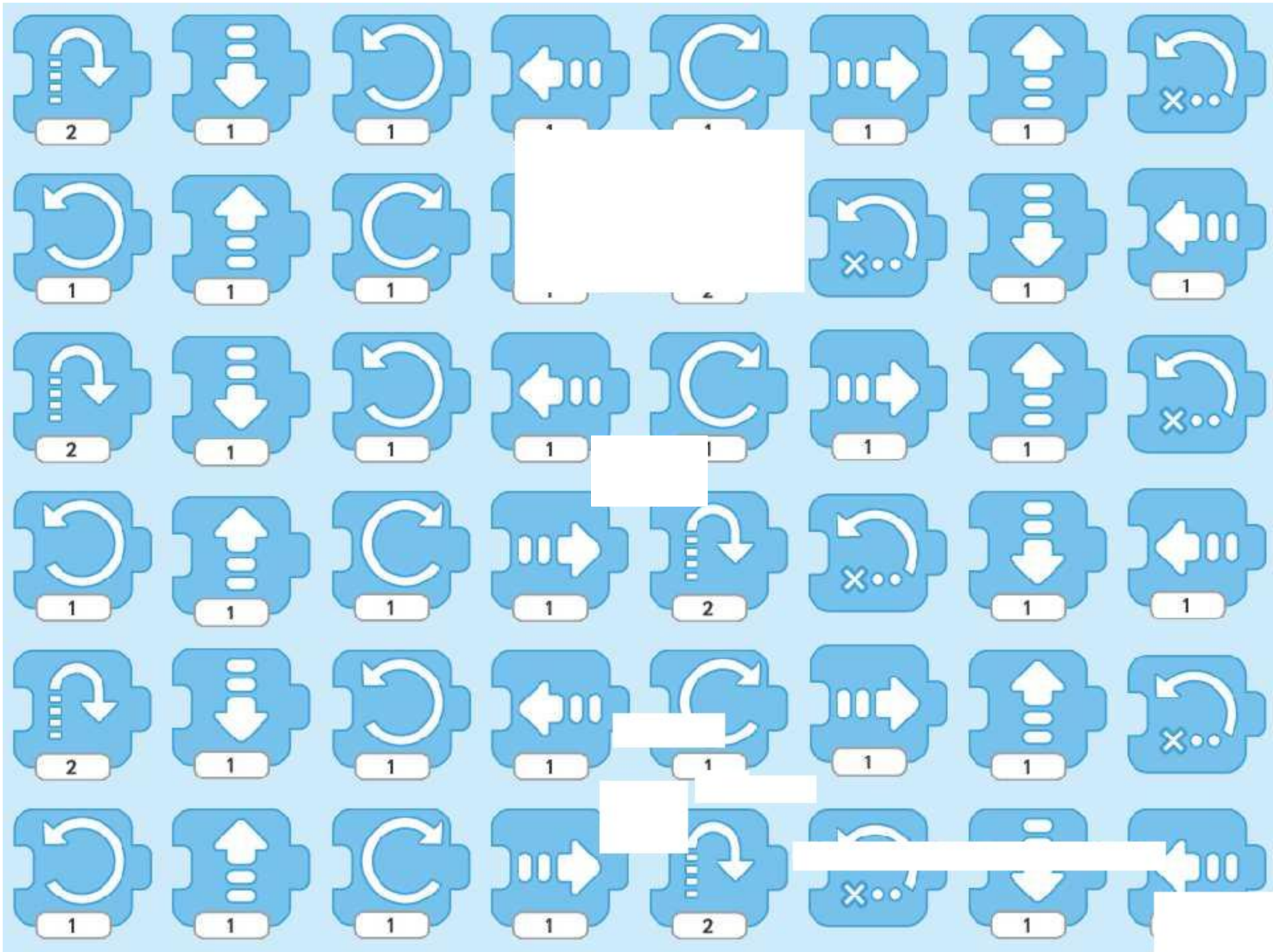
Aim



I can create programs with a sequence of linked instructions.

Success Criteria

- I can create a short set of instructions for a sequence of movements.
- I can create longer sequences of more complex instructions.
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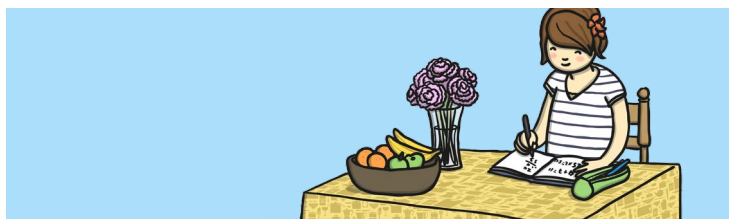
Introduction

This unit introduces children at Key Stage 1 to the principles of coding, using the age-appropriate ScratchJr software. A more accessible version of the popular Scratch Programming and aimed at age 5-7, ScratchJr is available as a free app for Apple, Amazon and Android tablets. The platform encourages basic understanding of algorithms and how to create precise instructions for visual working programs. It begins to develop a sense of creating, debugging and logical reasoning, which are required for further programming at KS2.



Health & Safety

Ensure rules are clear for using tablet devices.



Home Learning

Task 1 ScratchJr at Home: An open-ended activity, directed at parents or carers, encouraging them to download the free ScratchJr app and work with their child to explore and get creative!

Task 2 Theatre Performance: The ScratchJr app is not required at home for this task. Children are shown an image of the theatre background from ScratchJr. Their challenge is to use words, pictures or even ScratchJr blocks to plan what could happen on stage, deciding on characters and actions.

Assessment Statements

By the end of this unit...

...all children should be able to:

- open the ScratchJr app and start a new project;
- add new characters and backgrounds;
- use blocks for movement in different directions;
- create short sets of sequenced instructions.

...most children will be able to:

- use different end blocks, including repeat forever;
- change the size of characters to grow or shrink;
- hide and show characters with an instruction block;
- program two or more characters with instructions at the same time.

...some children will be able to:

- use a repeat block for a section of instructions and specified number of times;
- predict the behaviour of a character, based on a sequence of instructions;
- edit the colours and other features of characters or sprites;
- create longer sequences of more complex instructions.

Lesson Breakdown

Resources

1. Cool Characters

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.

- Tablets required with free ScratchJr App for Apple, Amazon or Android device.

2. Grow and Shrink

To understand that programs execute by following precise and unambiguous instructions.

To create and debug simple programs.

Children create new projects incorporating the programming blocks for grow and shrink, connecting them in sequence.

- I can program a character to grow and shrink.

- Tablets required with free ScratchJr App for Apple, Amazon or Android device.

3. Time to Move

To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

To create and debug simple programs.

To use logical reasoning to predict the behaviour of simple programs.

Children use the context of an animated car (or cars) travelling along a road on a city background. Movement blocks are combined with blocks to change speed, iterations or repetition to program the cars.

- I can use instructions to make characters move at different speeds and distance.

- Tablets required with free ScratchJr App for Apple, Amazon or Android device.

4. Repeat

To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

To create and debug simple programs.

To use logical reasoning to predict the behaviour of simple programs.

In the context of a spaceman's movement floating in space, children use the REPEAT FOREVER block and then the REPEAT block in order to create repetition of an instruction sequence.

- I can use a repeat instruction to make a sequence of instructions run more than once.

- Tablets required with free ScratchJr App for Apple, Amazon or Android device.

5. Sounds

To understand what algorithms are; how they are implemented as programs on digital devices and that programs execute by following precise and unambiguous instructions.

To create and debug simple programs.

Children record animal sounds and then create simple programs to play the recorded sound, when the animal is clicked..

- I can create programs that play a recorded sound.

- Tablets required with free ScratchJr App for Apple, Amazon or Android device.

6. Sequencing

To understand that programs execute by following precise and unambiguous instructions.

To create and debug simple programs.

To use logical reasoning to predict the behaviour of simple programs.

Children use a given background and character(s) to create sequences of linked instructions with increasing complexity.

- I can create programs with a sequence of linked instructions.

- Tablets required with free ScratchJr App for Apple, Amazon or Android device.