Adult Guidance: Ready, Steady, Go! Lesson 5

Children's individual solutions to creating the code may vary but trial and error and experimentation with ideas should be encouraged.

At the start of this lesson, it is recommended that children save their work under a new name that indicates 'Ready, Steady, Go! Lesson 5' to allow for assessment against this lesson's success criteria.

The quiz introduced in this lesson includes more complex coding, but allows the children to see how effective **Variables** and **Operators** are when joined together.

Some Potential Debugging

- Ensure the children place all of their question code inside the **forever** loop otherwise the questions will not continuously generate. Some children may not snap their blocks in correctly and this can affect the whole algorithm.
- Ensure that when creating the number variables, that two are created labelled: **Number 1** and **Number 2**. If the children join **Number 1** and **Number 1** together this will create square numbers, for example, 2 x 2. They will need to join **Number 1** and **Number 2** together for their randomised multiplication questions.
- If the sprite appears to 'jump' positions, return to the **Paint Editor** for that sprite and check that the sprite is in the centre of the **canvas**.

Possible solution for the whole quiz:

This variable will generate a random number between 0 and 12. This will be the first number to be multiplied.

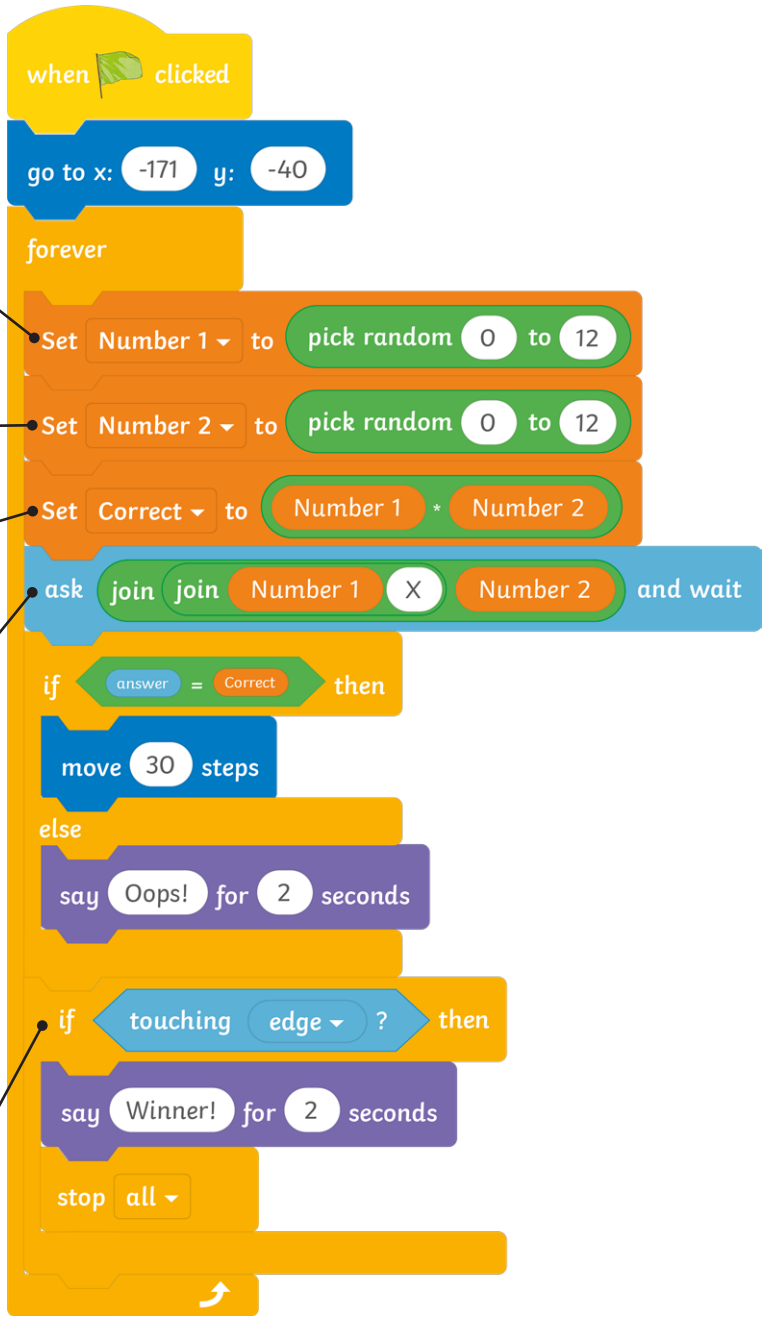
This variable will generate a random number between 0 and 12. This will be the second number to be multiplied.

This variable sets the correct value as **Number 1** multiplied by **Number 2**.

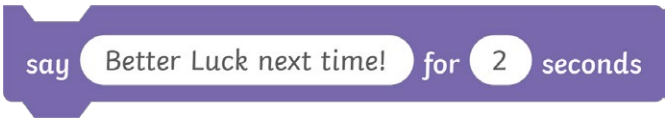
It would be useful to explain to the children that this section uses the **ask and wait** block used in previous lessons.

Two **join** blocks are needed. One **join** block joins the **Number 1** variable and the multiplication sign. The other **join** block, nested inside the **ask and wait** block, joins the **Number 1** and multiplication sign to the **Number 2**. The player will then see the question displayed as two random numbers multiplied: 5 x 9.

Using the **touching edge** block here brings an end to the game and triggers the **say** block.



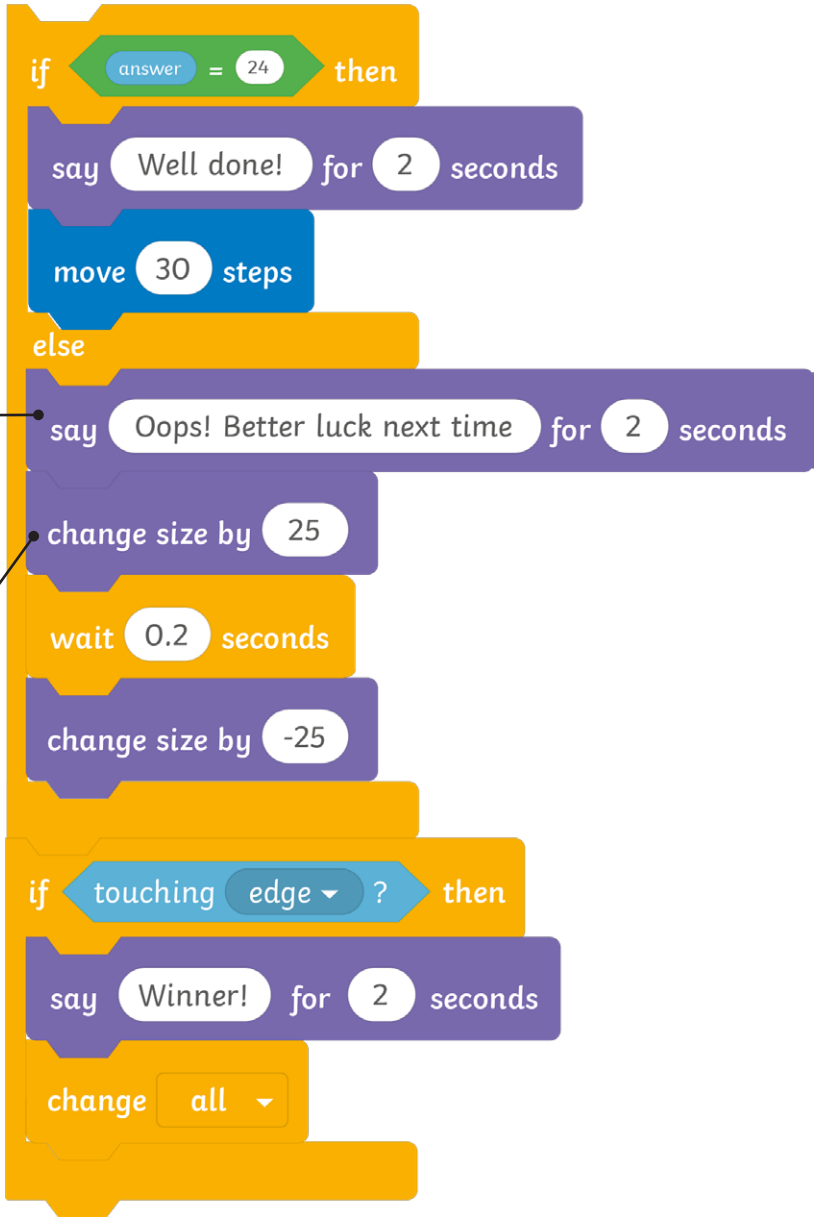
For the children completing the * **Ready, Steady, Go! Algorithm Activity Sheet**, here is a possible approach to changing the text in the **Looks** block.



For the children completing the ** **Ready, Steady, Go! Algorithm Activity Sheet**, here is a possible approach to changing the effects and adding extra **Looks** blooks.

Add another **Looks** block for each time a correct answer is given.

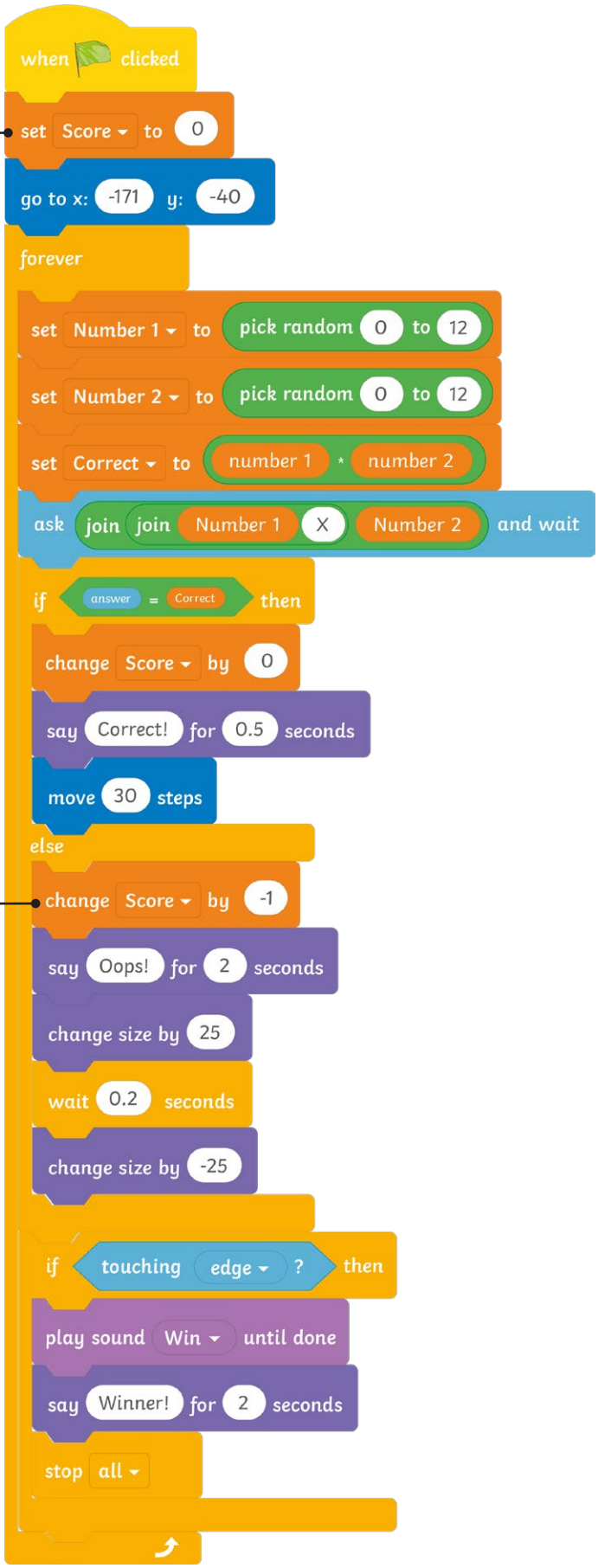
Like in the previous lessons, children can animate the sprite by changing its colour, size or by adding an effect. Remember that sometimes you may need to add a **clear graphics effect** block or a **wait** block to show the change.



For the children completing the *** **Ready, Steady, Go! Algorithm Activity Sheet**, here is a possible approach to adding a score system and deducting points on the scoring system for incorrect answers.

This **set Score** block will start the scoring system.

Adding a **change Score by -1** block will deduct a point for an incorrect answer.



Coding with Scratch: Questions and Quizzes:
Ready, Steady, Go!

National Curriculum

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Aim

To create a new racing quiz using Operators, Variables and Sensing blocks.

Lesson Duration

It is estimated that this lesson will take approximately 60 minutes.

Approx.

Success Criteria

I can design a racetrack backdrop.

I can use Operators and Variables blocks together.

I can use touching edge Sensing blocks.

I can use Motion blocks to move a sprite along in a quiz.

Key Vocabulary

Algorithm, backdrop, edge, forever, join, loop, motion, operators, random, sensing, variable.

Resources

Lesson Pack

PC devices, such as laptops, Chromebooks and/or tablets

Scratch Online version accessed via https://scratch.mit.edu/

Preparation

Differentiated Ready, Steady, Go! Algorithm Activity Sheet - as required.

Please access Lesson 5 (Racing Car Multiplication Quiz Teacher Example) in the _____.

Prior Learning: In the previous lesson, children will have been introduced to Variables and how they can add a new score variable to their game. They will also have had the opportunity to add sounds and special effects to their sprites.

Learning Sequence

	**Remember It:** Using the Lesson Presentation, show the children the different icons from the Scratch Paint Editor and ask the children to recall what the icon is and its function.	
	**Creating a New Quiz:** Using the Lesson Presentation, discuss the previous quiz created and the advantages and disadvantages of using the ask and wait Sensing block. An advantage could be that the children can use it to ask questions where specific written answers are required, such as asking what someone's name is. A disadvantage is that in a multiplication quiz, the same numbers will be generated on each new game as opposed to being randomised. Explain to the children that they are going to be creating a new, competitive quiz. Discuss what features make existing multiplication games interesting. This can include answers such as the use of timers, scores, trying to compete against a computer or another player, etc. Access Lesson 5 (Racing Car Multiplication Quiz Teacher Example) in the Scratch Project Area and play the multiplication quiz with the class without showing them the code.	
	**Getting Started:** Using the Lesson Presentation, ask the children to follow the on-screen instructions to create a new project. They will need to name their file 'Ready, Steady, Go! Lesson 5' then add and position a new sprite. Children will then be given ten minutes to draw a new racetrack backdrop.	
	**New Code:** Using the Lesson Presentation, show the children what the new algorithm for the competitive quiz will look like. Encourage answers to the on-screen questions, such as there are still ask and wait blocks but there are no questions written inside; the numbers are generated randomly from 0 to 12; if…then…else… conditional statements are used again; say blocks are used when the answer is incorrect; there are new move Motion blocks as well as a touching edge Sensing blocks. The children may comment on the complexity of the code with the new green Operators join blocks and the new variables that have been created.	
	**A Closer Look:** Using the Lesson Presentation, work through each line of algorithm and discuss what its function is.	

A Closer Look: The Final Piece: Using the **Lesson Presentation**, explain to the children that the competitive edge of the game is to try and get the sprite touching the edge of the screen, past the finish line.

Forever Loops: Using the **Lesson Presentation**, show the children what a forever loop is and how this will be used in the lesson. It is important to note that a forever loop is important to ensure that random multiplication questions are generated continuously until the quiz ends.

Why will it be useful to use a forever loop within this quiz?

Let the Quiz Begin: Using the **Lesson Presentation**, and the **Differentiated Ready, Steady, Go! Algorithm Activity Sheet**, the children will have the opportunity to complete their own multiplication race.

Children are given a breakdown of the relevant code, with prompts, to create a new mathematical quiz using Operators and Variables to generate the randomised questions. Top tips are provided.

Children are given prompts to help them create their new mathematical quiz using Operators and Variables to generate random multiplication questions. Helpful hints and useful blocks are provided, as well as extra independent challenges.

Children are given instructions with very few useful blocks. They will use Operators and Variables to create random multiplication questions and are challenged to make a score deduction, animate a sprite and add more text to their algorithms. Useful hints are provided.

Let's Discuss: Using the **Lesson Presentation**, ask the children to work in pairs to discuss ways they could make the quiz easier or harder. Possible answers could be: move the sprite more or less steps; choose different numbers from the times tables, such as only use multiples of five; adding scores that increase with a correct answer and deducts for an incorrect answer; add more sound effects. This plenary can be used as a form of assessment to see if the children make suggestions linked to the new skills learnt throughout this unit.

Exploreit

Playit: The children can access the to practise the skills learnt in the lesson today. This will also allow the children to practise setting scores.

Debugit: Children have a go at playing somebody else's quiz. Does any code need debugging? Could any effects be added that were learnt in previous lessons?

Assessment Notes:

Disclaimers:

External Links:

This resource contains links to external websites and/or external apps. Please be aware that the inclusion of any link in this resource should not be taken as an endorsement of any kind by Twinkl of the linked website and/or app, or any association with its operators. You should also be aware that we have no control over the availability of the linked pages and/or apps. If the link is not working, please let us know by contacting TwinklCares and we will try to fix it although we can assume no responsibility if this is the case. We are not responsible for the content of external sites and/or external apps.

Scratch Safety:

Showing or creating the flashing sprite effect could be problematic for children with conditions such as epilepsy. Discretion is advised.

Computing

Coding with Scratch: Questions and Quizzes

Coding with Scratch

Ready, Steady, Go!

Question Marks

This is Quizby.

He is a question mark who loves to ask questions.

When you see a question mark icon like this in the **Lesson Presentation**, it can be clicked on to reveal one of Quizby's questions.

The questions that appear next to these question marks will help you to think about the key learning throughout the lesson.

Aim

- To create a new racing quiz using Operators, Variables and Sensing blocks.

Success Criteria

- I can design a racetrack backdrop.
- I can use Operators and Variables blocks together.
- I can use touching edge Sensing blocks.
- I can use Motion blocks to move a sprite along in a quiz.

Remember It

These icons all appear in the **Paint Editor** when designing your own backdrop. Can you remember what each one does?

Brush This tool allows you to draw straight lines.

Eraser This allows you to rub out any drawings you have made.

Rectangle and **Ellipse** These are the shape tools that allow you to draw squares, rectangles, ovals and circles.

Creating a New Quiz

You hav' ' one sty
the **ask** :k.

Look at the questions and discuss with a partner.

What are the advantages of using the **ask and wait Sensing** block in a quiz and what types of quizzes would they work best for?

Can you think of any disadvantages of using the **ask and wait Sensing** block for a multiplication quiz? Were there any issues?

Creating a New Quiz

Today we will be creating a new multiplication quiz.

Discuss the following questions

- What multiplication quizzes have you played before?
- Have you played any multiplication quizzes before?
- What features did they have that made them appealing?
- What features did they have that made them competitive?

Creating a New Quiz

Open Lesson 5 (Racing Car Multiplication Quiz)
to see what our new quiz will look like.

battling against another person

Had you thought to include some of these features?
You have some great ideas!

using a timer

having a goal or finish point

Getting Started

Open a new Scratch project and name this 'Ready, Steady, Go! Lesson 5'.

Add a new vehicle sprite and position it on the left-hand side of the **Stage**.

The **Motion** block within the **Block Palette** should now show the coordinates of its position.

Your values may be different depending on the position of your sprite.

Code Area to set the starting

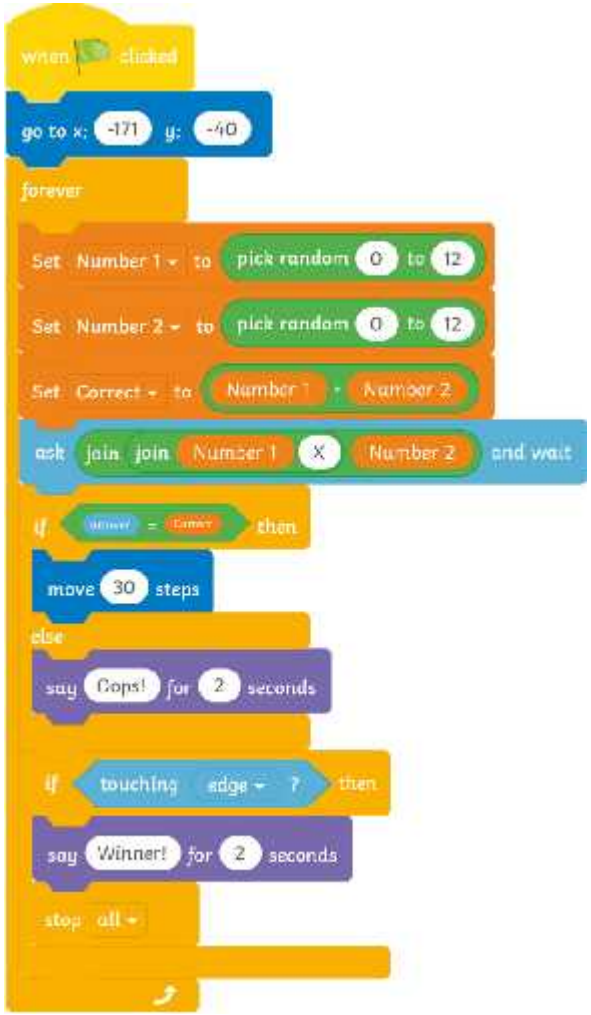
Getting Started: Backdrop

You will now need [illegible]ckdrop.
This needs to b[illegible]prite to race
along to the [illegible]

Activity:
You will now have ten minutes to create your own racetrack backdrop.
Don't forget to check that your sprite is in the correct position to start their race.

New Code

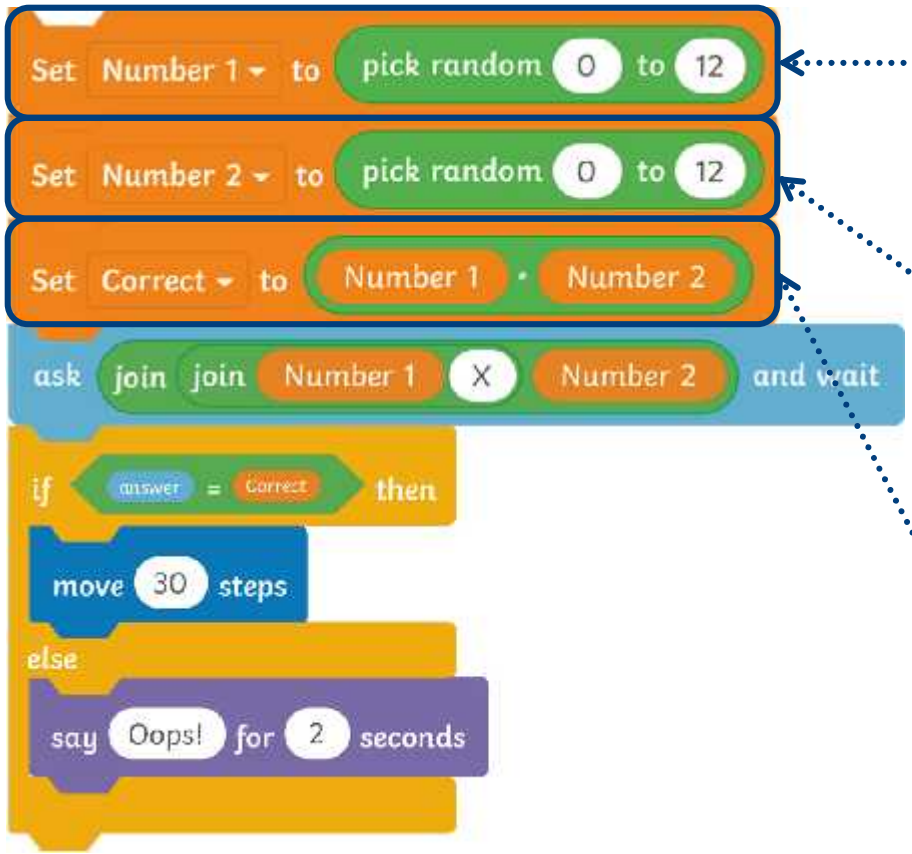
Here is the new code created to generate the mathematical questions.



Can you spot any similarities between this algorithm and the algorithm you created in the previous quiz?

Can you spot any differences?

A Closer Look

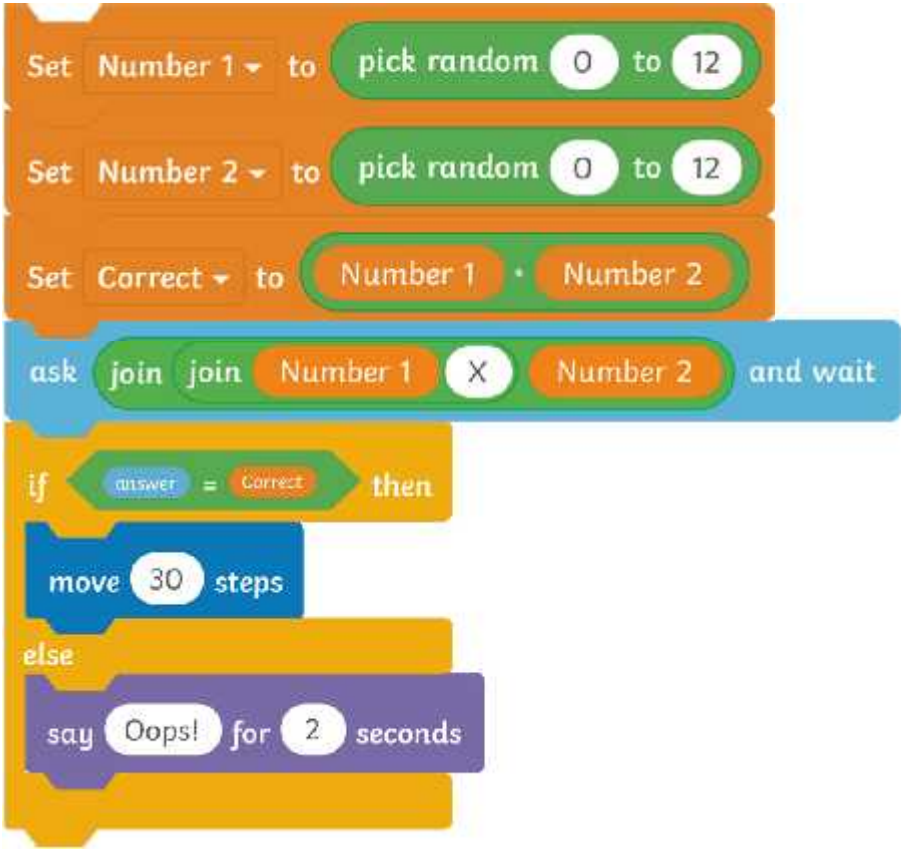


Row 1 sets the first number to be picked from random numbers between 0 and 12.

Row 2 sets the second number to be picked from random numbers between 0 and 12.

Row 3 sets the **Correct** answer as **Number 1** and **Number 2** multiplied together.

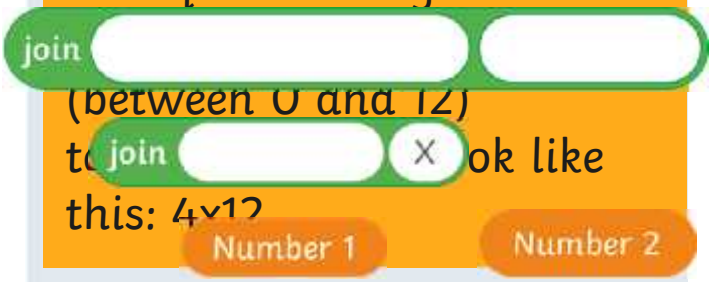
A Closer Look



You will add the **Number 1** variable in the first space of the **join** block and the **X** in the second space of the **join** block.

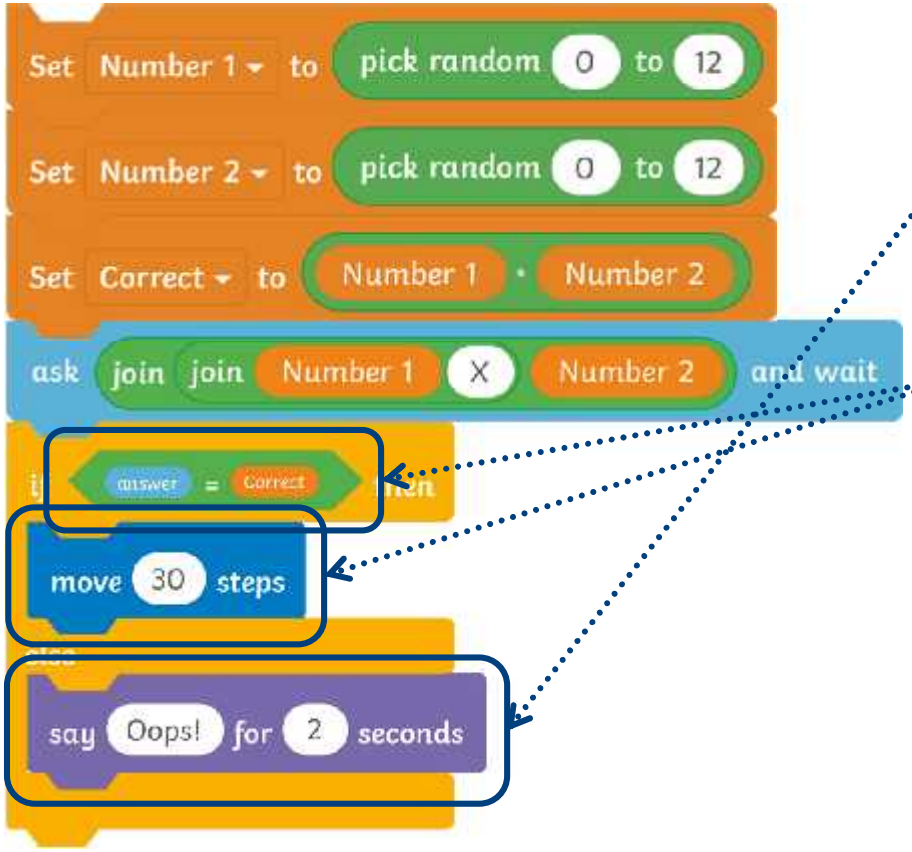
What happens here?

For this part of the code, a sprite will ask the question. This question is generated (between 0 and 12) to look like this: 4x12



add the **Number 2** variable in the second space of the other **join** block.

A Closer Look



A **Loops** block has been added to **say Oops!** when an incorrect answer is given. By adding the **move 30 steps** block, the sprite will move forward the same distance each time a correct answer is given.

What happens here:

This section will decide what happens when a correct or incorrect answer is given.

A Closer Look: The Final Piece

A **Looks** block can be added to let the player know they have won the game. To make the game more competitive, we can add an ***if...then...*** block. We want the game to end when the finish line is reached, therefore a **touching edge** block can be added. This will ensure that if the edge of the **Stage** is touched by your sprite, then the **say** block will run, announcing this sprite is the winner.

Forever Loops

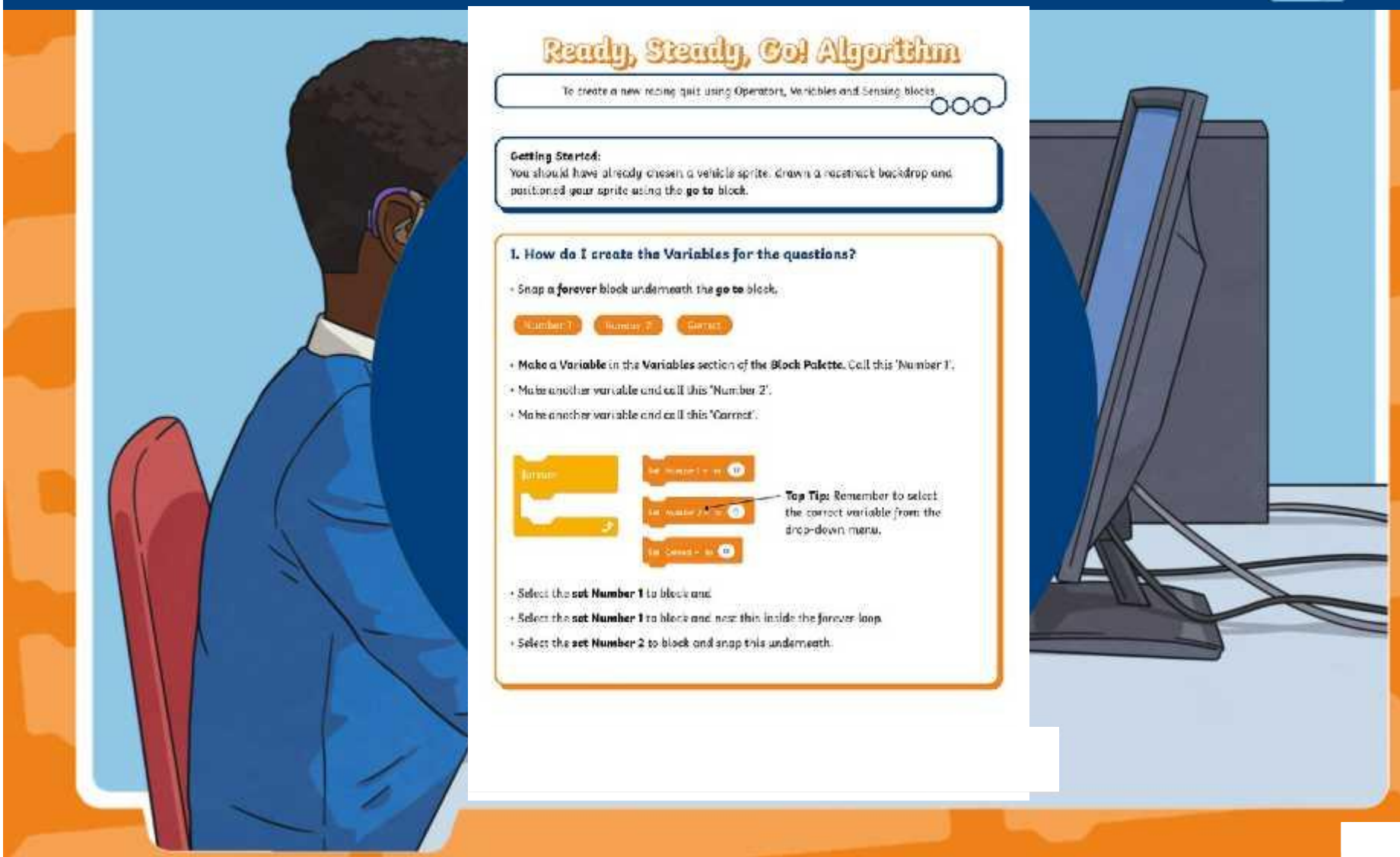
A **forever** loop is used around all of the code apart from the first **Motion** block of the algorithm. The **forever** loop will make everything inside of its C shape repeat continuously without stopping.

In order to stop the loop, a **stop all** block would need to be added or the red **Stop** sign pressed.

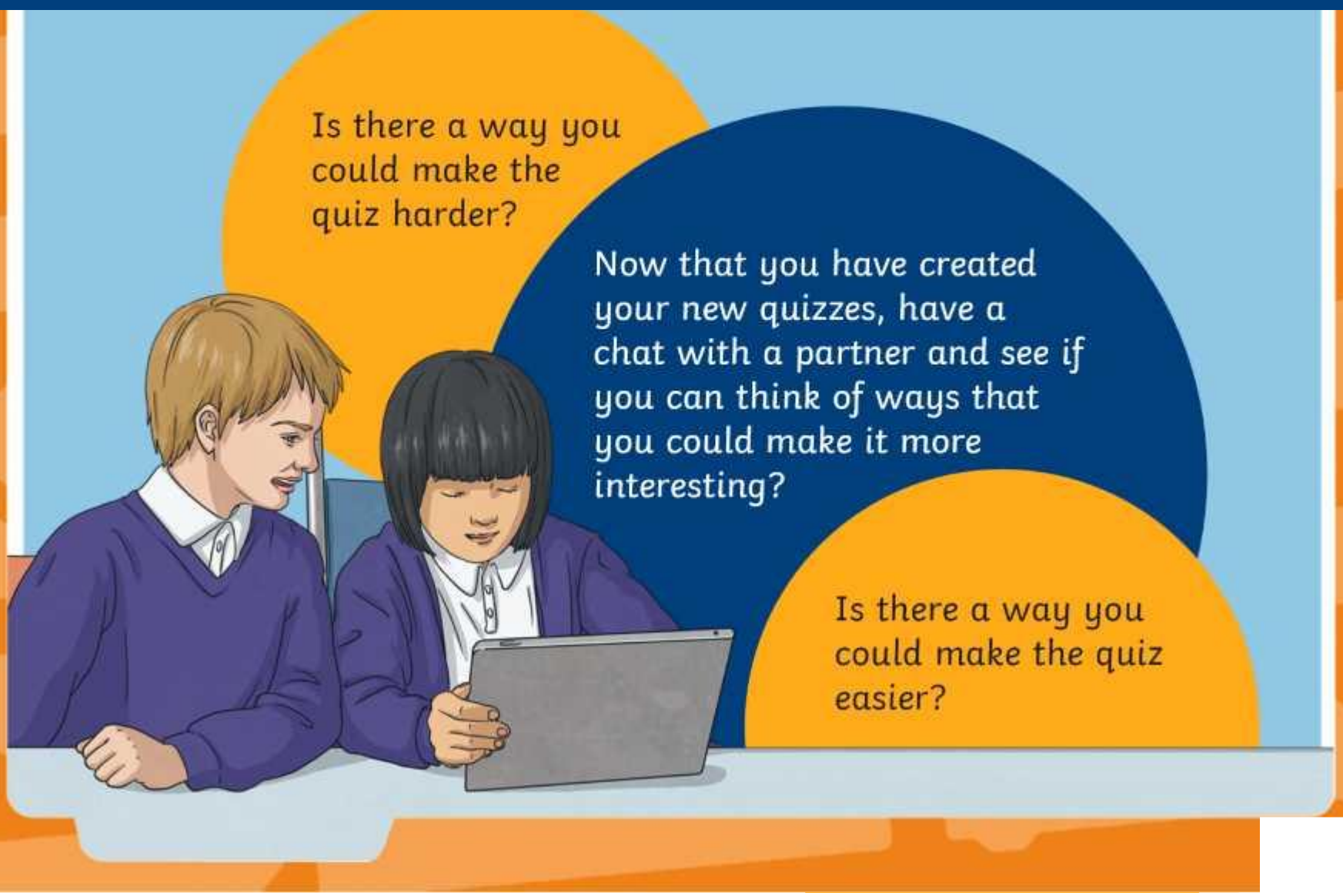
X

Why will it be useful to use a **forever** loop within this quiz?

Let the Quiz Begin!



Let's Discuss!



Aim

- To create a new racing quiz using Operators, Variables and Sensing blocks.

Success Criteria

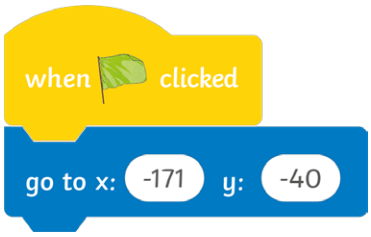
- I can design a racetrack backdrop.
- I can use Operators and Variables blocks together.
- I can use touching edge Sensing blocks.
- I can use Motion blocks to move a sprite along in a quiz.


Coding
with Scratch

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

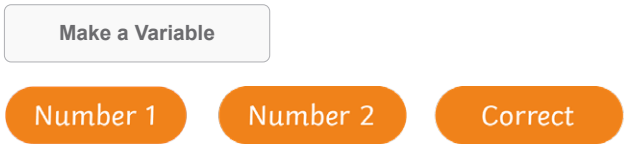
Getting Started:
You should have already chosen a vehicle sprite, drawn a racetrack backdrop and positioned your sprite using the **go to** block.

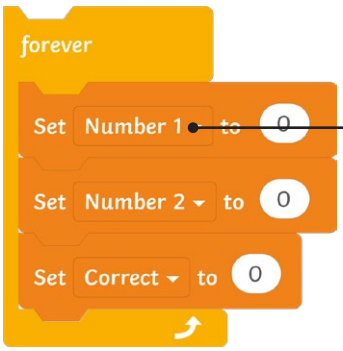


1. How do I create the Variables for the questions?

- Snap a **forever** block underneath the **go to** block.

- **Make a Variable** in the **Variables** section of the **Block Palette**. Call this 'Number 1'.
- Make another variable and call this 'Number 2'.
- Make another variable and call this 'Correct'.





Top Tip: Remember to select the correct variable from the drop-down menu.

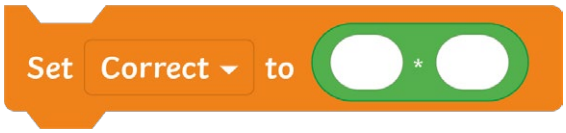
- Select the **set Number 1 to** block and nest this inside the **forever** loop.
- Select the **set Number 2 to** block and snap this underneath.
- Select the **set Number 2** to block and snap this underneath.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

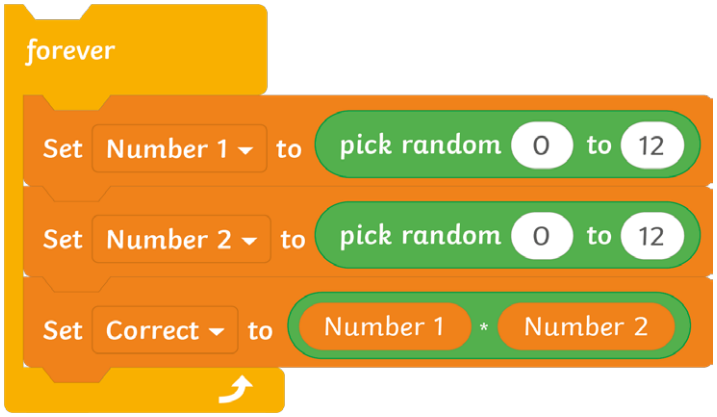
2. How do I add Operators?

- Select the **pick random** block and nest inside the **set Number 1 to** white space. Make sure to type in the values '0' and '12'.
- Select another **pick random** block and nest inside the **Number 2** space. Make sure to type in the values '0' and '12'.



- Select a multiplication **Operators** block and nest this inside the **set Correct to** block.

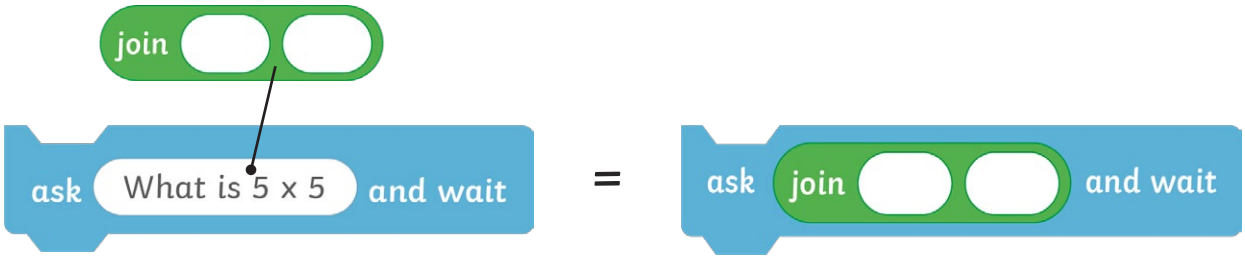
- Nest in the **Number 1** and **Number 2** oval-shaped **Variables** on either side of the multiplication symbol.



Ready, Steady, Go! Algorithm

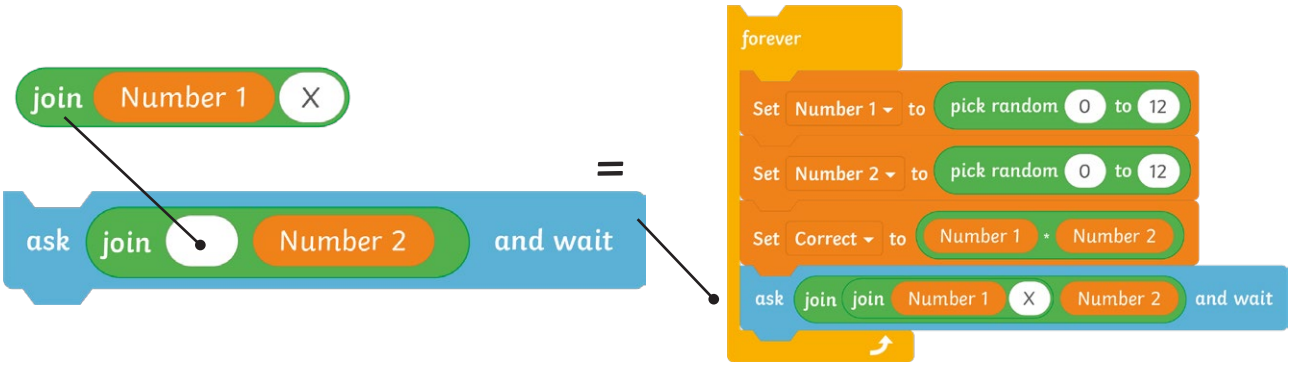
To create a new racing quiz using Operators, Variables and Sensing blocks.

3. How do I ask the questions?



- Select the **pick random** block and nest inside the **set Number 1 to** white space. Make sure to type in the values '0' and '12'.

- Select another **join** block. Nest a **Number 1** in the first space and put an 'X' in the second space.



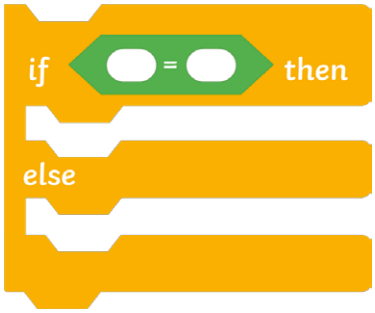
- Nest this new **join** block inside the first space of the previous **join** block.
- Snap this block inside the **forever** loop, underneath the **set Correct to Number 1 * Number 2** block.

Top Tip: When nesting inside spaces, if you hover over the space, it will become highlighted to show where the block can be dropped inside.

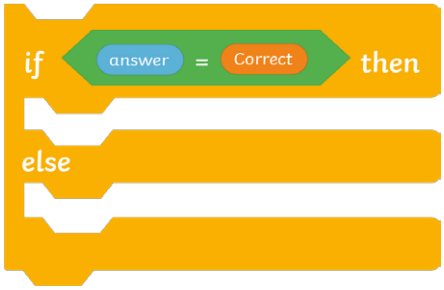
Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

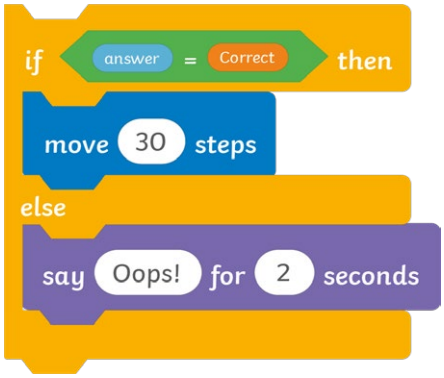
4. How can I add if...then...else...blocks to move the sprite along in the race?



- Select an **if...then...else...** block and snap this in underneath the **ask and wait** block.
- Select a hexagonal green **equals** block and nest this inside the hexagonal space next to **if**.



- Nest an answer block inside the first white space and a **Correct** block inside the second white space.

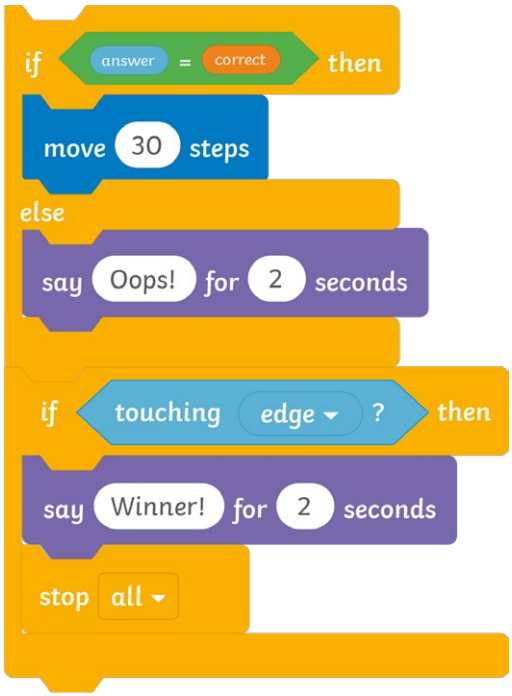


- Add a **move 30 steps** block inside the **if** section.
- Inside the **else** section, snap in a **say Oops! for 2 seconds** block.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

5. How can I end the quiz?



- Snap an **if...then...** block underneath the existing **if...then...else...** block.
- Nest a **touching edge** block inside the hexagonal space next to **if**.
- Add a **say Winner! for 2 seconds** block underneath.
- Add a **stop all** block underneath.

Challenge:
Can you change some of the text inside the **Looks** blocks?

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

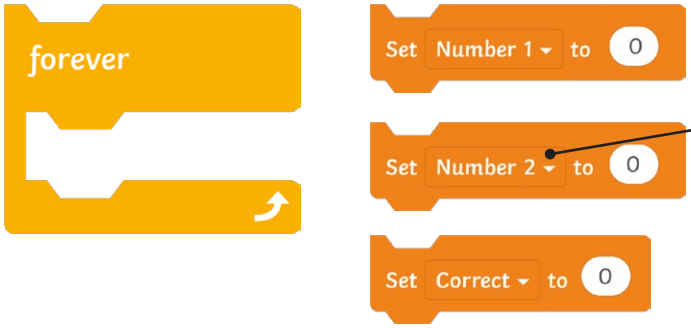
Getting Started:
You should have already chosen a vehicle sprite, drawn a racetrack backdrop and positioned your sprite using the **go to** block.

1. How do I create the Variables for the questions?

- Snap a **forever** block underneath the **go to** block.

Number 1 Number 2 Correct

- **Make a Variable** in the **Variables** section of the **Block Palette**. Call this 'Number 1'.
- Make another variable and call this 'Number 2'.
- Make another variable and call this 'Correct'.



Top Tip: Remember to select the correct variable from the drop-down menu.

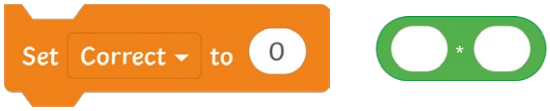
- Select the **set Number 1 to** block and nest this inside the **forever** loop.
- Select the **set Number 2** to block and snap this underneath.
- Select the **set Correct to** block and snap this underneath.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

2. How do I add Operators?

- Select the **pick random** block and nest inside the **set Number 1 to** white space. Make sure to type in the values '0' and '12'.
- Select another **pick random** block and nest inside the **Number 2** space. Make sure to type in the values '0' and '12'.



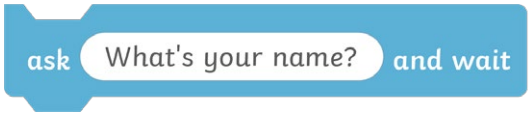
- Select a multiplication **Operators** block and nest this inside the **set Correct to** block.

- Nest in the **Number 1** and **Number 2** oval-shaped **Variables** on either side of the multiplication symbol.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

3. How do I ask the questions?



- Select the **ask and wait** block and nest a **join** block inside the white space.
- Insert a **Number 2** in the second **join** white space.

- Select another **join** block. Nest a **Number 1** in the first space and put an 'X' in the second space.

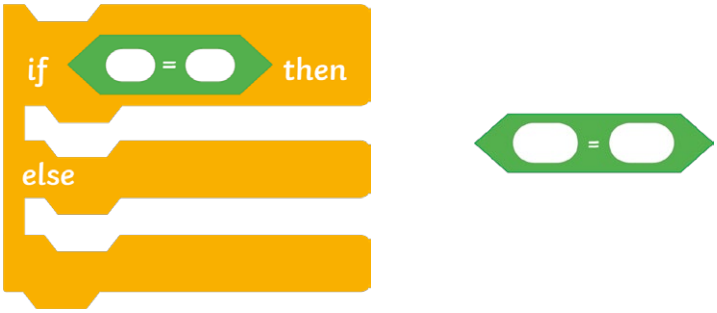
- Nest this new **join** block inside the first space of the previous **join** block.
- Snap this block inside the **forever** loop, underneath the **set Correct to Number 1** * **Number 2** block.

Top Tip: When nesting inside spaces, if you hover over the space, it will become highlighted to show where the block can be dropped inside.

Ready, Steady, Go! Algorithm

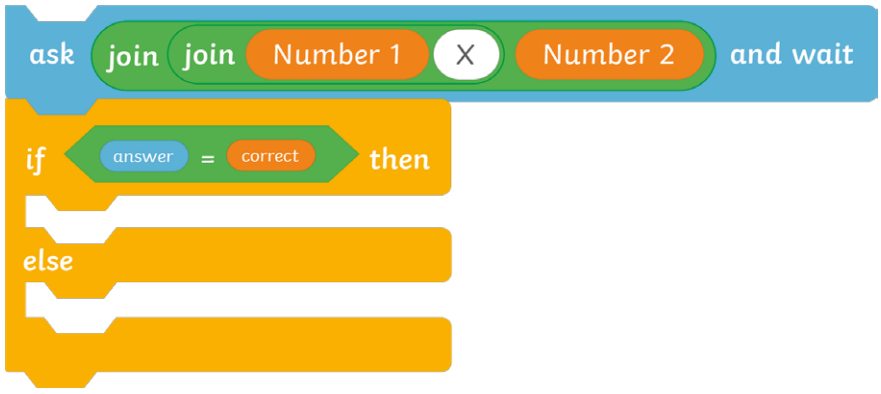
To create a new racing quiz using Operators, Variables and Sensing blocks.

4. How can I add if...then...else...blocks to move the sprite along in the race?



- Select an **if...then...else...** block and snap this in underneath the **ask and wait** block.
- Select a hexagonal green **equals** block and nest this inside the hexagonal space.

- Nest an **answer** block inside the first white space and a **Correct** block inside the second white space.



- Add a **move 30 steps** block.
- Inside the **else** section, snap in a **say Oops! for 2 seconds** block.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

5. How can I end the quiz?

- Snap an **if...then...** block underneath the existing **if...then...else...** block.
- Nest a **touching edge** block inside the hexagonal space.
- Add a **say Winner! for 2 seconds** block underneath.
- Add a **stop all** block underneath.

Challenge:

Can you change some of the text inside the **Looks** blocks?

Can you add another **say** block to the algorithm for each time a correct answer is given?

Can you animate the sprite when an incorrect answer is given?

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

Useful blocks are included throughout this activity.
Getting Started:
You should have already chosen a vehicle sprite, drawn a racetrack backdrop and positioned your sprite using the **go to** block.

1. How do I create the Variables for the questions?

- Snap a **forever** block underneath the **go to** block.

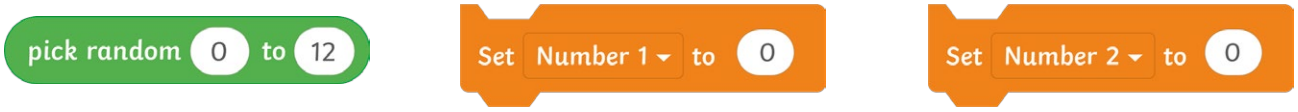
Number 1 | Number 2 | Correct

- **Make a Variable** in the **Variables** section of the **Block Palette**. Call this 'Number 1'.
- Make another variable and call this 'Number 2'.
- Make another variable and call this 'Correct'.
- Select the **set Number 1 to** block and nest this inside the **forever** loop.
- Select the **set Number 2 to** block and snap this underneath.
- Select the **set Correct to** block and snap this underneath

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

2. How do I add Operators?



- Select the **pick random** block and nest inside the **set Number 1 to** block. Make sure to type in the values '0' and '12'.
- Select another **pick random** block and nest inside the **set Number 2 to** block. Make sure to type in the values '0' and '12'.

- Select a multiplication **Operators** block and nest this inside the **set Correct to** block.
- Nest in the **Number 1** and **Number 2** oval-shaped **Variables** on either side of the multiplication symbol.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

3. How do I ask the questions?

- Select the **ask and wait** block and nest a **join** block inside.
- Insert a **Number 2** in the second **join** white space.
- Select another **join** block. Nest a **Number 1** in the first space and put an 'X' in the second space.

- Nest this new **join** block inside the first space of the previous **join** block.
- Snap this block inside the **forever** loop, underneath the **set Correct to Number 1** * **Number 2** block.

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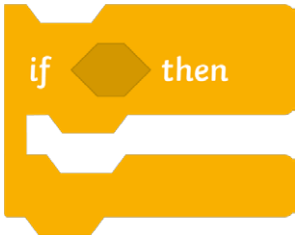
Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

4. How can I add if...then...else...blocks to move the sprite along in the race?

- Select an **if...then...else...** block and snap this in underneath the **ask and wait** block.
- Select a hexagonal green **equals** block and nest this inside the hexagonal space.
- Nest an **answer** block inside the first white space and a **Correct** block inside the second white space.
- Add a **move 30 steps** block.
- Inside the **else** section, snap in a **say Oops! for 2 seconds** block.

5. How can I end the quiz?



- Snap an **if...then...** block underneath the existing **if... then...else...** block.
- Nest a **touching edge** block inside the hexagonal space.
- Add a **say Winner! for 2 seconds** block underneath.
- Add a **stop all** block underneath.

Challenge:

Can you animate the sprite when a correct or incorrect answer is given?

Can you add more text to the algorithm when a correct answer is given?

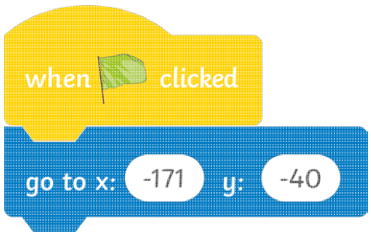
Can you add a scoring system?

Can you deduct a point for incorrect answers?

Ready, Steady, Go! Algorithm

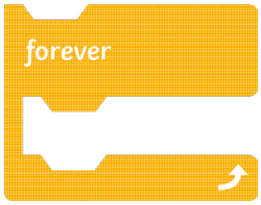
To create a new racing quiz using Operators, Variables and Sensing blocks.

Getting Started:
You should have already chosen a vehicle sprite, drawn a racetrack backdrop and positioned your sprite using the **go to** block.



1. How do I create the Variables for the questions?

- Snap a **forever** block underneath the **go to** block.



- **Make a Variable** in the **Variables** section of the **Block Palette**. Call this 'Number 1'.
- Make another variable and call this 'Number 2'.
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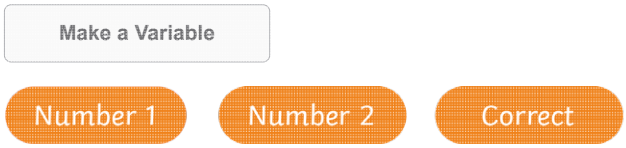
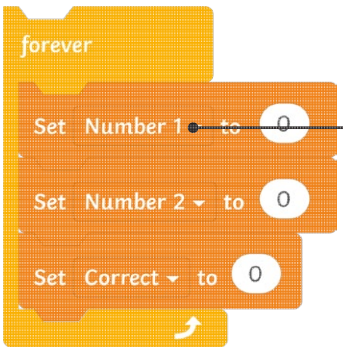




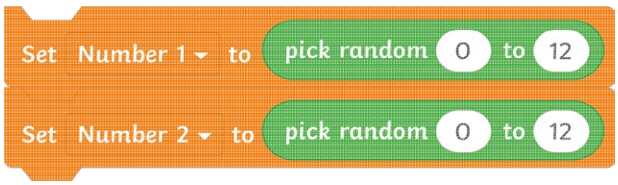
Top Tip: Remember to select the correct variable from the drop-down menu.

- Select the **set Number 1 to** block and nest this inside the **forever** loop.
- Select the **set Number 2 to** block and snap this underneath.
- Select the **set Number 2** to block and snap this underneath.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

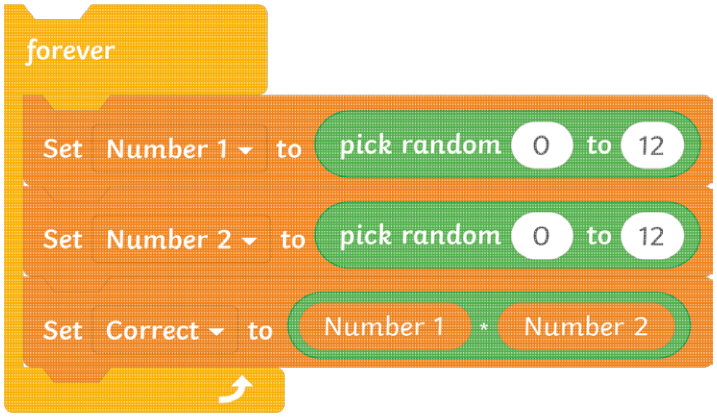
2. How do I add Operators?



- Select the **pick random** block and nest inside the **set Number 1 to** white space. Make sure to type in the values '0' and '12'.
- Select another **pick random** block and nest inside the **Number 2** space. Make sure to type in the values '0' and '12'.

- Select a multiplication **Operators** block and nest this inside the **set Correct to** block.

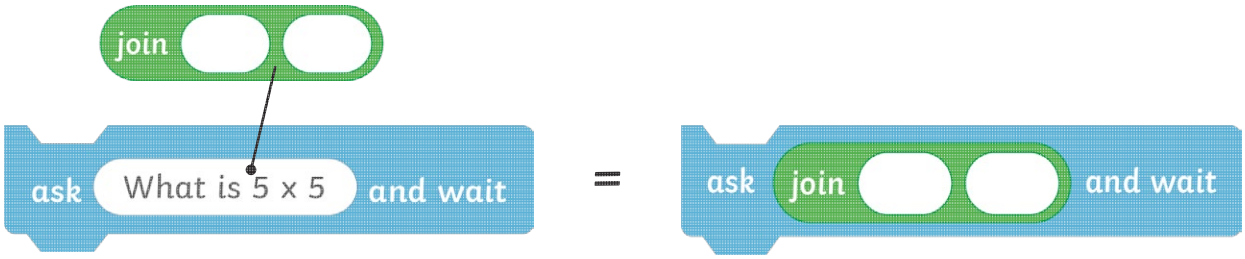
- Nest in the **Number 1** and **Number 2** oval-shaped **Variables** on either side of the multiplication symbol.



Ready, Steady, Go! Algorithm

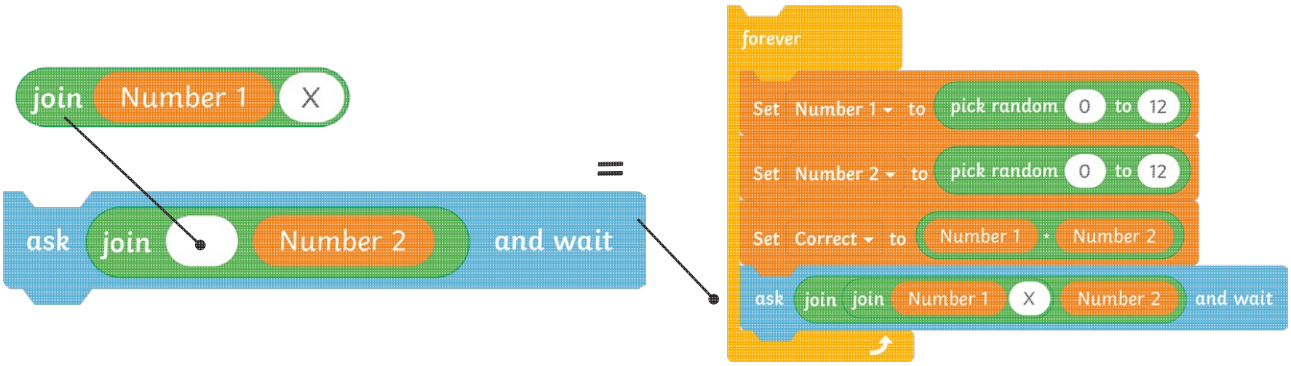
To create a new racing quiz using Operators, Variables and Sensing blocks.

3. How do I ask the questions?



- Select the **pick random** block and nest inside the **set Number 1 to** white space. Make sure to type in the values '0' and '12'.

- Select another **join** block. Nest a **Number 1** in the first space and put an 'X' in the second space.



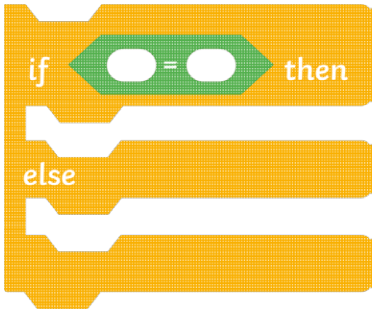
- Nest this new **join** block inside the first space of the previous **join** block.
- Snap this block inside the **forever** loop, underneath the **set Correct to Number 1 * Number 2** block.

Top Tip: When nesting inside spaces, if you hover over the space, it will become highlighted to show where the block can be dropped inside.

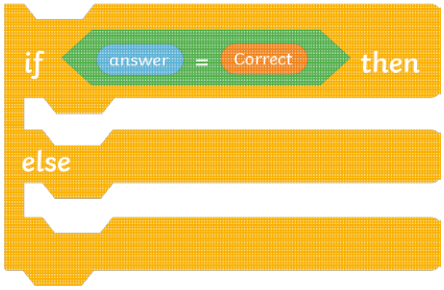
Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

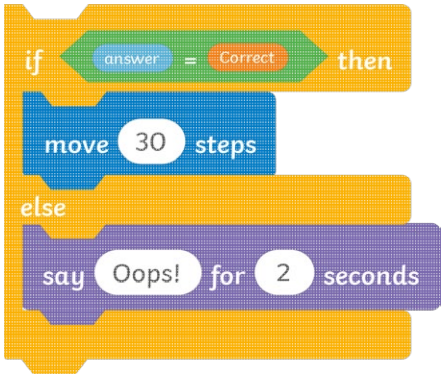
4. How can I add if...then...else...blocks to move the sprite along in the race?



- Select an **if...then...else...** block and snap this in underneath the **ask and wait** block.
- Select a hexagonal green **equals** block and nest this inside the hexagonal space next to **if**.



- Nest an answer block inside the first white space and a **Correct** block inside the second white space.

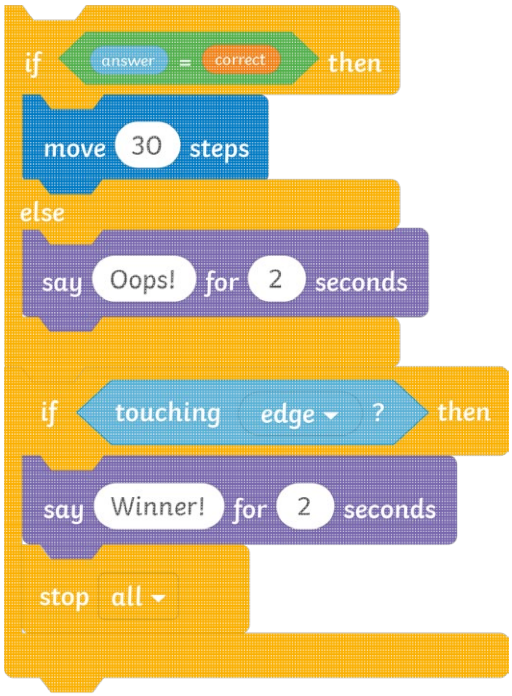


- Add a **move 30 steps** block inside the **if** section.
- Inside the **else** section, snap in a **say Oops! for 2 seconds** block.

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

5. How can I end the quiz?



- Snap an **if...then...** block underneath the existing **if...then...else...** block.
- Nest a **touching edge** block inside the hexagonal space next to **if**.
- Add a **say Winner! for 2 seconds** block underneath.
- Add a **stop all** block underneath.

Challenge:
Can you change some of the text inside the **Looks** blocks?

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

Getting Started:
You should have already chosen a vehicle sprite, drawn a racetrack backdrop and positioned your sprite using the **go to** block.

1. How do I create the Variables for the questions?

- Snap a **forever** block underneath the **go to** block.

Number 1 Number 2 Correct

- **Make a Variable** in the **Variables** section of the **Block Palette**. Call this 'Number 1'.
- Make another variable and call this 'Number 2'.
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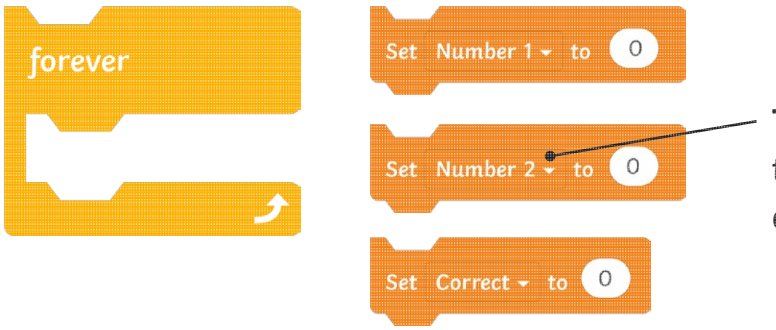

Top Tip: Remember to select the correct variable from the drop-down menu.

- Select the **set Number 1 to** block and nest this inside the **forever** loop.
- Select the **set Number 2** to block and snap this underneath.
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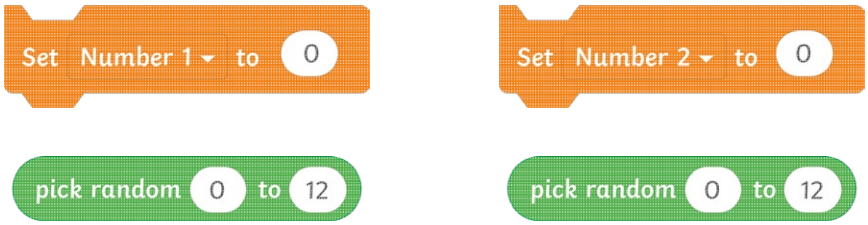
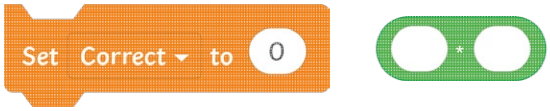
Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

2. How do I add Operators?



- Select the **pick random** block and nest inside the **set Number 1 to** white space. Make sure to type in the values '0' and '12'.
- Select another **pick random** block and nest inside the **Number 2** space. Make sure to type in the values '0' and '12'.



- Select a multiplication **Operators** block and nest this inside the **set Correct to** block.

- Nest in the **Number 1** and **Number 2** oval-shaped **Variables** on either side of the multiplication symbol.

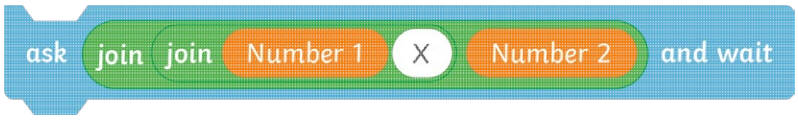
Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

3. How do I ask the questions?

- Select the **ask and wait** block and nest a **join** block inside the white space.
- Insert a **Number 2** in the second **join** white space.

- Select another **join** block. Nest a **Number 1** in the first space and put an 'X' in the second space.



- Nest this new **join** block inside the first space of the previous **join** block.
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Ready, Steady, Go! Algorithm

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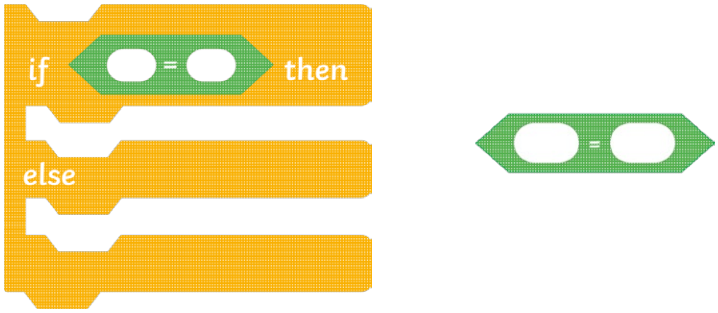
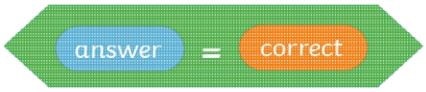
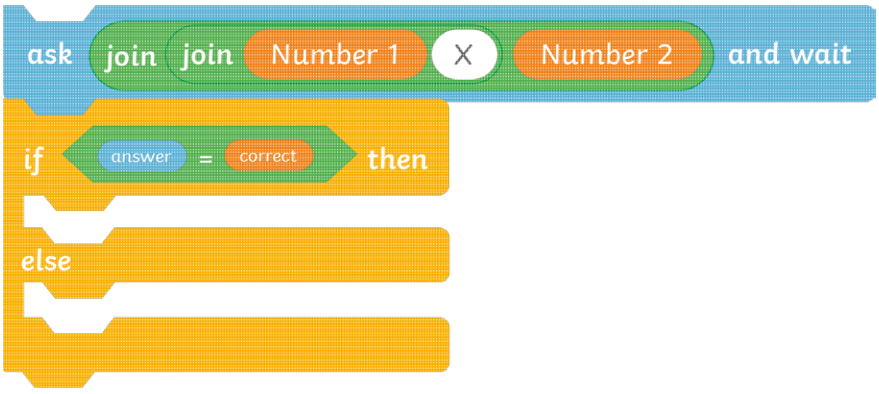
4. How can I add if...then...else...blocks to move the sprite along in the race?



- Select an **if...then...else...** block and snap this in underneath the **ask and wait** block.
- Select a hexagonal green **equals** block and nest this inside the hexagonal space.



- Nest an **answer** block inside the first white space and a **Correct** block inside the second white space.



- Add a **move 30 steps** block.
- Inside the **else** section, snap in a **say Oops! for 2 seconds** block.

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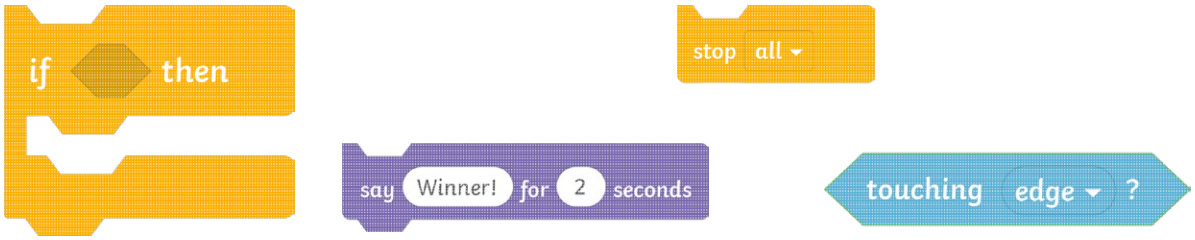
To create a new racing quiz using Operators, Variables and Sensing blocks.

5. How can I end the quiz?



- Snap an **if...then...** block underneath the existing **if...then...else...** block.
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Challenge:

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Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

Useful blocks are included throughout this activity.

Getting Started:

You should have already chosen a vehicle sprite, drawn a racetrack backdrop and positioned your sprite using the **go to** block.

1. How do I create the Variables for the questions?

- Snap a **forever** block underneath the **go to** block.

Number 1 | Number 2 | Correct

- **Make a Variable** in the **Variables** section of the **Block Palette**. Call this 'Number 1'.
- Make another variable and call this 'Number 2'.
- Make another variable and call this 'Correct'.
- Select the **set Number 1 to** block and nest this inside the **forever** loop.
- Select the **set Number 2 to** block and snap this underneath.
- Select the **set Correct to** block and snap this underneath

Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

2. How do I add Operators?

- Select the **pick random** block and nest inside the **set Number 1 to** block. Make sure to type in the values '0' and '12'.
- Select another **pick random** block and nest inside the **set Number 2 to** block. Make sure to type in the values '0' and '12'.

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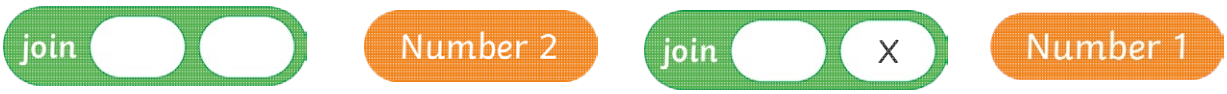
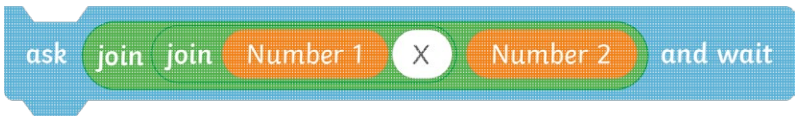
To create a new racing quiz using Operators, Variables and Sensing blocks.

3. How do I ask the questions?



- Select the **ask and wait** block and nest a **join** block inside.
- Insert a **Number 2** in the second **join** white space.
- Select another **join** block. Nest a **Number 1** in the first space and put an 'X' in the second space.



- Nest this new **join** block inside the first space of the previous **join** block.
- Snap this block inside the **forever** loop, underneath the **set Correct to Number 1** * **Number 2** block.

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Ready, Steady, Go! Algorithm

To create a new racing quiz using Operators, Variables and Sensing blocks.

4. How can I add if...then...else...blocks to move the sprite along in the race?

- Select an **if...then...else...** block and snap this in underneath the **ask and wait** block.
- Select a hexagonal green **equals** block and nest this inside the hexagonal space.
- Nest an **answer** block inside the first white space and a **Correct** block inside the second white space.
- Add a **move 30 steps** block.
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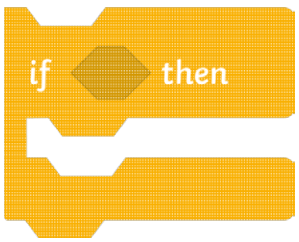

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- Nest a **touching edge** block inside the hexagonal space.
- Add a **say Winner! for 2 seconds** block underneath.
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Challenge:

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Can you add a scoring system?

Can you deduct a point for incorrect answers?

Coding with Scratch: Questions and Quizzes | Ready, Steady, Go!

To create a new racing quiz using Operators, Variables and Sensing blocks.		
I can design a racetrack backdrop.		
I can use Operators and Variables blocks together.		
I can use touching edge Sensing blocks.		
I can use Motion blocks to move a sprite along in a quiz.		

Coding with Scratch: Questions and Quizzes | Ready, Steady, Go!

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To create a new racing quiz using Operators, Variables and Sensing blocks.		
I can design a racetrack backdrop.		
I can use Operators and Variables blocks together.		
I can use touching edge Sensing blocks.		
I can use Motion blocks to move a sprite along in a quiz.		