CODE WITH CONFIDENCE

Free resources from Purple Mash to support schools with coding.

Perfect for using during:

Hour of Code September 5 - December 17 2023

Computer Science Education Week
4th December 2023

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purple mash

OVERVIEW

The Digital Technologies Curriculum includes coding and computational thinking concepts. It equips students with essential skills including problem-solving and logic and critical thinking, alongside fostering creativity.

Included in this pack you will find a range of activities, lesson plans and short videos to give you confidence with teaching coding.

Resources from 2Code are split into 3 age brackets and cover 3 activities for each age range.

All the resources are part of the Purple Mash DigiTech Scheme of Work – a comprehensive set of resources. It is intended to facilitate teachers in achieving the very best outcomes for children. It exposes children to a wide variety of digital tools, technological skills, and innovations. Through engagement with our scheme of work we believe children will be equipped with essential digital skills, knowledge and the ability to think critically about the digital world around them.

It contains everything that is needed to deliver inspiring and engaging lessons whilst allowing for the flexibility to meet individual school needs. Lessons are delivered from lesson plans with accompanying slide shows. We have included additional units that go beyond the expectations of National and State Curricula, whilst also providing 'Catch-Up' units to close gaps in learning. Wrap-around supporting tools and resources are provided including everything needed for assessment, tracking progression, mapping prior and future learning links; to name just a few. The scheme for Early Years (Reception/Prep/Transition/Kindergarten) shows opportunities for using Mini Mash or Purple Mash as part of the Early Years classroom to support children in working towards early learning goals.

Click Here

TAKE A TRIAL OF PURPLE MASH

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DIGITECH SCHEME OF WORK OVERVIEW

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2CODE

2Code has three key components: free code, guided lessons and debug challenges.

Free Code:

In free code mode, children can create any kind of program they like. The Computing Scheme of work utilises some of the guided lessons, debug challenges and free code modes.

Guided Lessons:

2Code contains a series of lessons which will guide children through creating simple programs. The lessons are split into stages and 2Code automatically detects when a child has completed a stage, allowing them to move on to the next stage. There are hints with video tutorials within each guided lesson to support outcomes for children.

There are three levels of lessons.

Approximate years of suitability are given:

Name	Focus	Approximate Year
Chimp	Covers basic coding/ algorithms and debugging.	Y1 - Y2
Gibbon	Introduces more complex ideas such as variables and selection.	Y3 - Y4
Gorilla	More advanced lessons that will guide the child into creating games and quizzes.	Y5 - Y6

CHIMP RESOURCES

Approximate years Year 1 - 4

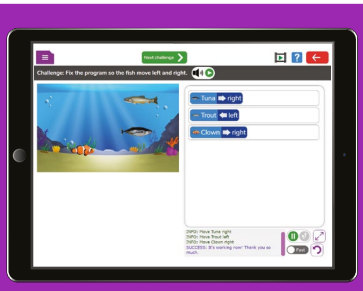
Fun With Fish

Learn how to make the fish move in different directions.

Children begin exploring what an object is and an action that can be given to objects.

LO: To move an object left and right.

SC: Move the tuna fish right.
Move the crab left.
Debug a program to move fish left and right.



TRY THIS OUT

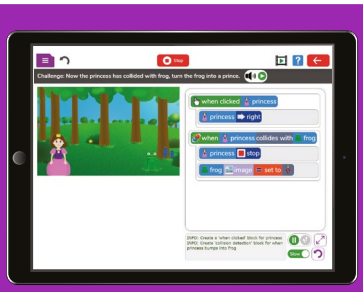
Princess and The Frog

Use code to help the princess turn the frog into a prince.

Children explore making actions occur to objects on 'click' as well as incorporating collision detection into objects and basic use of the timer command.

LO: To move objects on click.
To program collision detection into objects.

SC: To move the princess on click.
To code collision detection so the princess stops.
Change an image on collision.
Use the timer command.



TRY THIS OUT

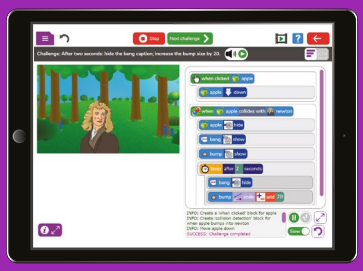
Newton and The Apple

Use 2Code to tell the story of Isaac Newton and the apple.

Children explore further actions that can be applied to objects when clicked including hide/show objects, using timer commands and changing scale of images.

LO: Make the apple fall onto Isaac Newton's head.
Solve a debug challenge.

SC: Make the apple fall.
Make the apple hide.
Show and hide the bang caption and the bump.
Increase the bump size.
Solve a debug challenge.



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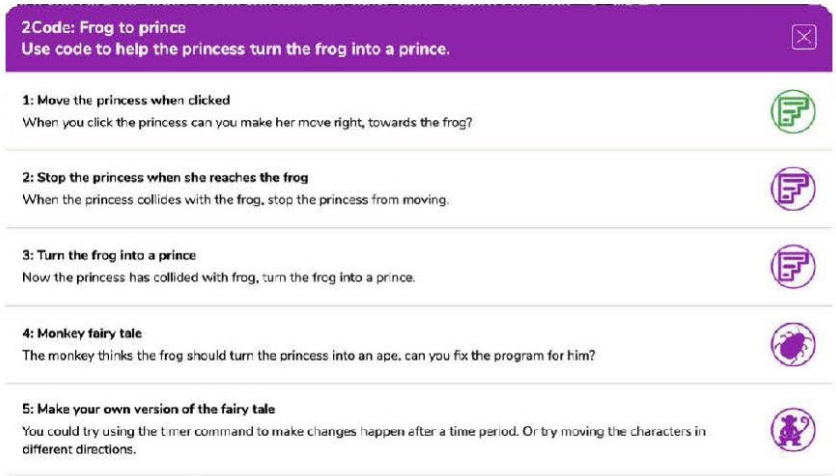
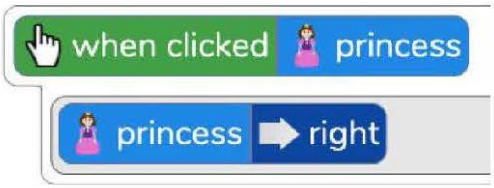
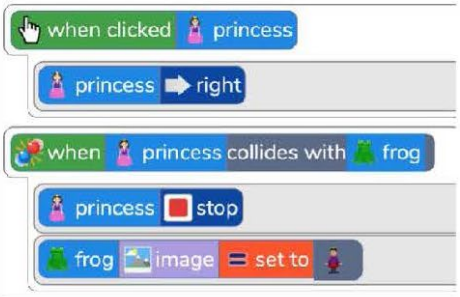
CHIMP SOLUTIONS

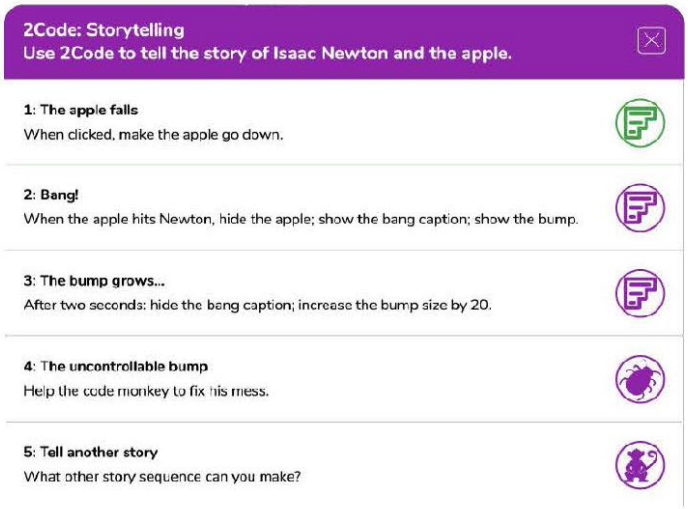
Level	Chimp	Task	PRINCESS AND THE FROG

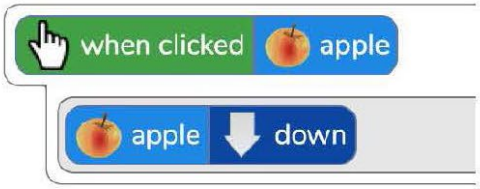
Lesson Objective	Overview of the lesson
To move objects on click To program collision detection into objects	
Success criteria	
To move the princess on click To code collision detection so the princess stops Change an image on collision Use the timer command	

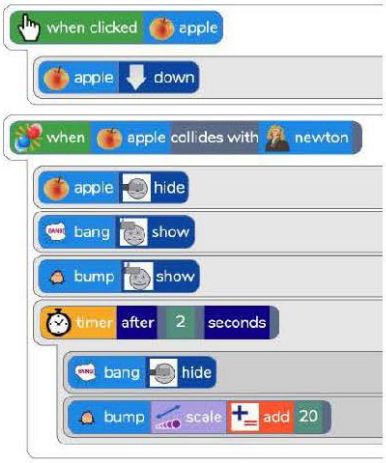
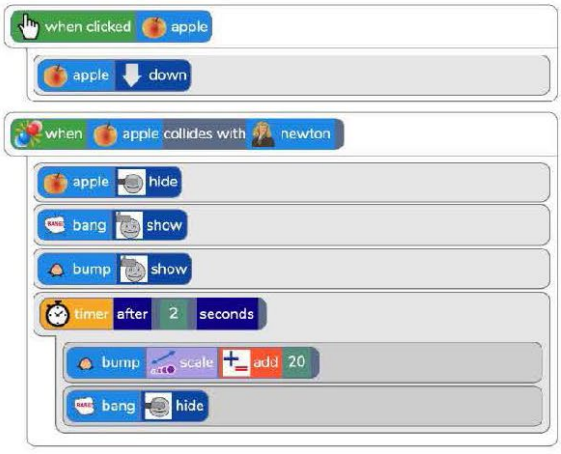
Activity 1	Activity 2
	

Activity 3	Activity 4
	

Level	Chimp	Task	NEWTON AND THE APPLE

Lesson Objective	Overview of the lesson
Make the apple fall onto Isaac Newton's head. Solve a debug challenge. **Success Criteria** Make the apple fall. Make the apple hide. Show and hide the bang caption and the bump. Increase the bump size. Solve a debug challenge.	

Activity 1	Activity 2
	

Activity 3	Activity 4
	

GIBBON RESOURCES

Approximate years Year 4 - 6

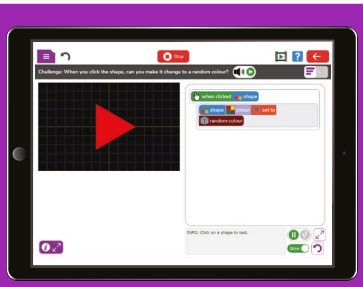
Shapes

A set of challenges involving shapes.

Children explore changing attributes of a shape when clicked such as number of sides an, size and random colour. They also debug buttons that are producing unintended outcomes.

LO: To change the attributes of a shape when clicked.

SC: Make a hexagon.
Change the attributes of a shape on click.
Fix the code so the buttons work correctly



TRY THIS OUT

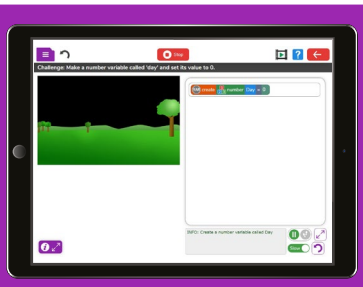
Night and Day

Can you make the sun rise and set repeatedly?

Children learn how to create number variables and the importance of setting the correct value, they also explore a simple IF/Else statement as well as timers using the 'timer every' feature as opposed to 'timer after'.

LO: Make the sun rise and set repeatedly by creating a variable.
Debug a challenge.

SC: Create a number variable.
Make a timer.
Use if and else statements to change from day to night and back again.
Show and hide.
Change the background colour.



TRY THIS OUT

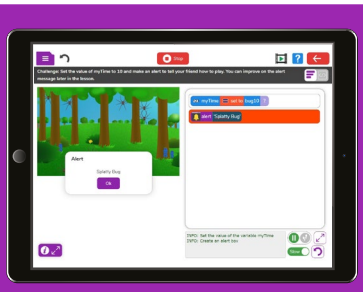
Splatty Bug

In this lesson you will learn how to make a small amount of code do a lot of work.

Children learn to explore using Alerts. They continue building on use of number variables to make a countdown timer including incorporating an If/Else statement which calls the timer every second subtracting 1 unless timer = 0. They incorporate the restart feature which is called when the timer = 0.

LO: Create a small amount of code to create a simple game!

SC: Create an alert.
Make a timer count down.
Increase the score.
Create an if/else statement to restart the game.
Add a when clicked event to hide the bug.
Use x and y coordinates to replace the last bug clicked with a splat image.



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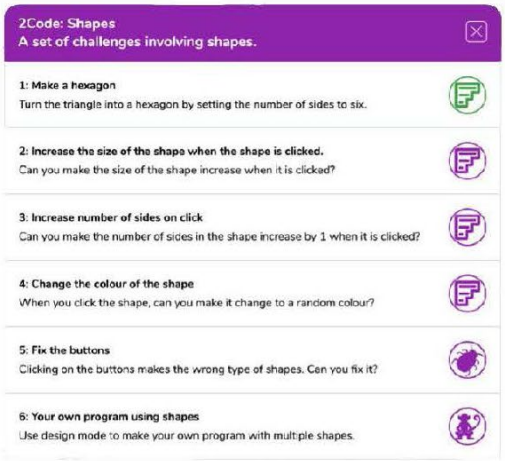
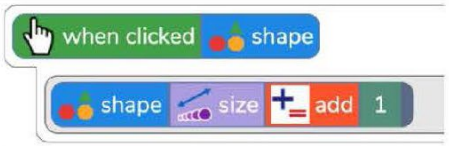
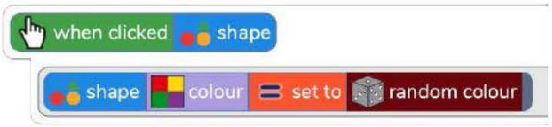
GIBBON SOLUTIONS

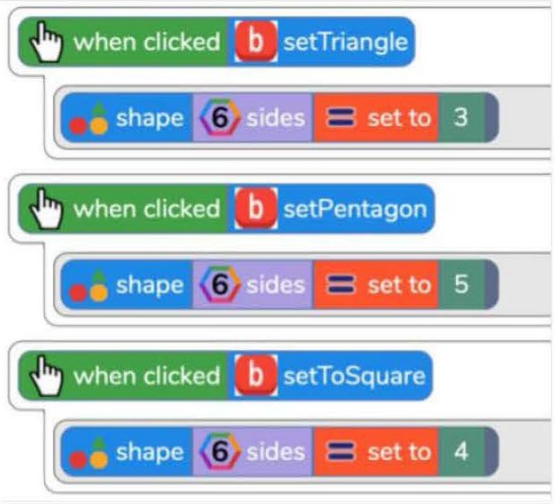
Gibbon - Shapes

Lesson Objective	Overview of the Lesson
To change the attributes of a shape when clicked	
Success Criteria	
Make a hexagon Change the attributes of a shape on click Fix the code so the buttons work correctly	

Activity 1	Activity 2
	

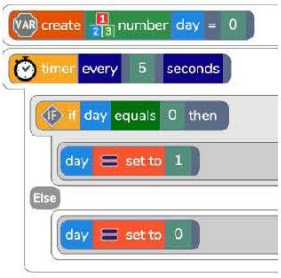
Activity 3	Activity 4
	

Activity 5

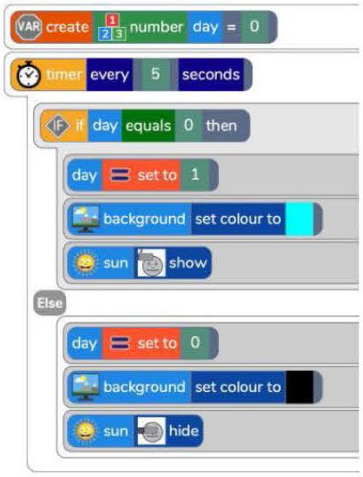


Gibbon – Night and Day

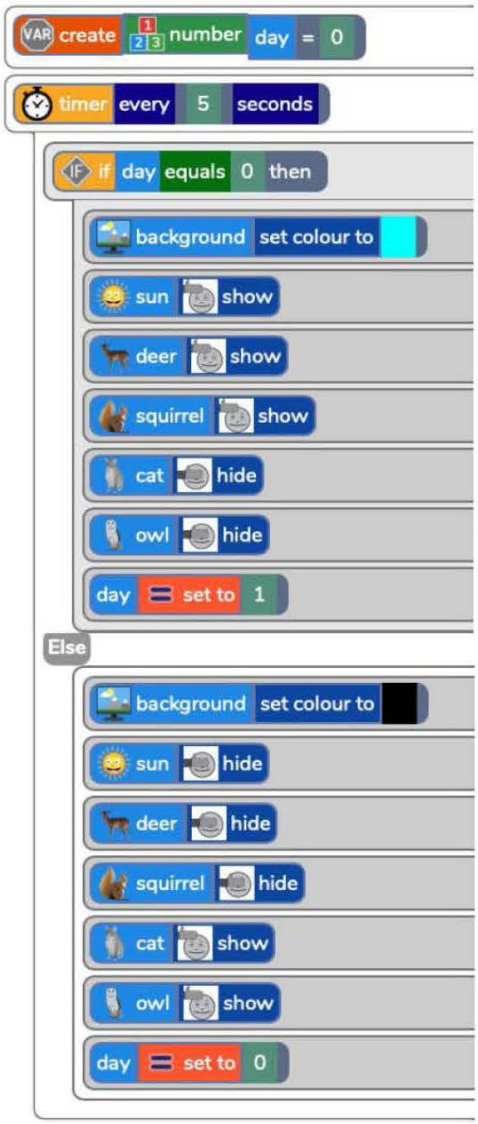
Lesson Objective	Overview of the Lesson
Make the sun rise and set repeatedly by creating a variable. Debug a challenge.	2Code: Night and Day (Gibbon) Can you make the sun rise and set repeatedly? **1: Holding the Day** Make a number variable called 'day' and set its value to 0. **2: Switching the day Variable** Make a timer that gets called every 5 seconds. Put an if/else block in it. If the day variable is 0, set it to 1. Otherwise set it to 0. **3: Turning the sun on and off** Show the sun and make the background light blue in the if block; hide the sun and set background to black in the else block. **4: Turning the sun on and off** Help the code monkey make sure only the deer and squirrel are visible during the day. **5: Improving the day** What else can you add to make these days and nights even more exciting?
Success Criteria	
Create a number variable. Make a timer. Use if and else statements to change from day to night and back again. Show and hide. Change the background colour.	

Activity 1	Activity 2
	

Activity 3



Activity 4 (Debug)

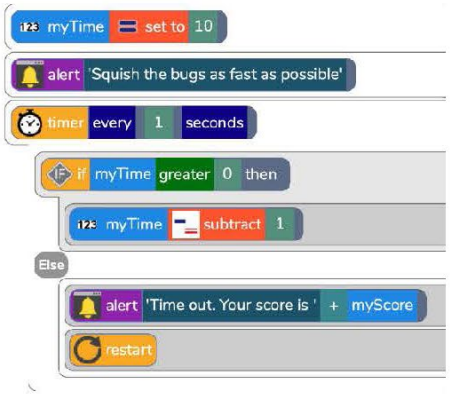


Gibbon - Splatty Bug

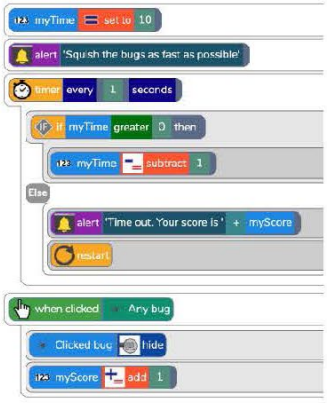
Lesson Objective	Overview of the Lesson
Create a small amount of code to create a simple game!	2Code: Splatty Bug In this lesson you will learn how to make a small amount of code do a lot of work. 1: Start the Game Set the value of myTime to 10 and make an alert to tell your friend how to play. You can improve on the alert message later in the lesson. 2: Countdown to the end of the Game Make a timer that gets called every second. In the timer: if the value of myTime is greater than 0, subtract 1 from myTime; otherwise add an alert that shows both a message and the score, then restart the game. 3: Get the bugs Add a when clicked event. If any bug is clicked, hide it and increase the score by 1. You will need to use the change variable command to hide it. 4: It's splatting time! Move the splat to where the last clicked bug was and show it. 5: Add your own Can you make Splatty Bug more challenging and fun?
Success Criteria Create an alert. Make a timer count down. Increase the score. Create an if/else statement to restart the game. Add a when clicked event to hide the bug. Use x and y coordinates to replace the last bug clicked with a splat image.	

Activity 1

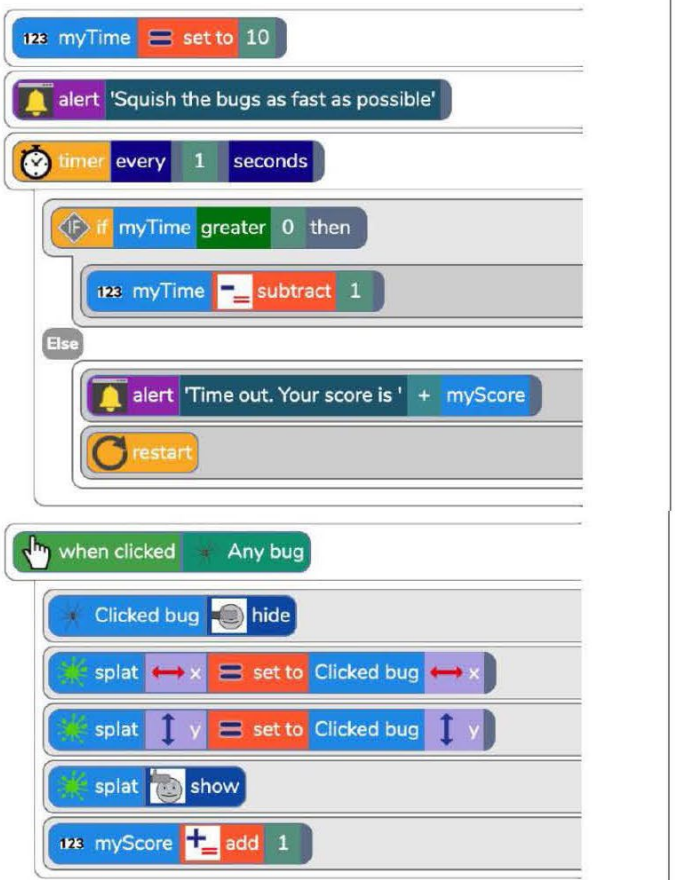
Activity 2



Activity 3



Activity 4


myTime set to 10
alert 'Squish the bugs as fast as possible'
timer every 1 seconds
if myTime greater 0 then
myTime subtract 1
Else
alert 'Time out. Your score is ' + myScore
restart
when clicked Any bug
Clicked bug hide
splat x set to Clicked bug x
splat y set to Clicked bug y
splat show
myScore add 1

GORILLA RESOURCES

Approximate years Year 4 - 6

Turtle road crossing

We are going to make our own version of the classic game frogger. The player will try to move the turtle to the other side of the road to eat the lettuce. If the turtle collides with a car the game will restart.

Children explore using vehicle objects including setting speeds, the When Key event, collision detection, sound output and the control 'restart'.

LO: Make a version of the classic game Frogger.

SC: Add speed to vehicles.
Use collision detection.
Use sound to enhance your game.

TRY THIS OUT

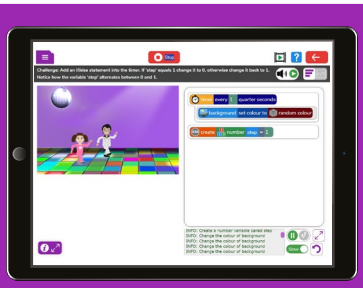
Dancer

Let's flash the lights and make the dancers dance!

Children explore manipulating controls such as 'timer' to change backgrounds, changing variable value using an IF/Else statement. Connecting buttons to achieve a desired outcome.

LO: Code a disco to change lights and move the dancers.

SC: Use a timer to change the background.
Create attributes.
Use buttons.



TRY THIS OUT

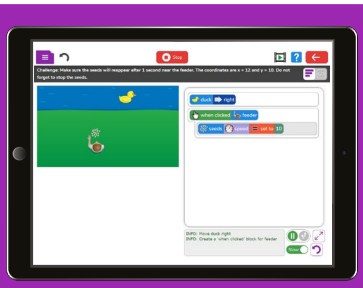
Feed the duck

On this lesson you will learn some advanced techniques. You will learn how to use speed, keyboard and coordinate commands to control the elements.

Children use when clicked and collision events, apply speed to objects, set x/y values. Change scales and angles.

LO: To use speed, keyboard and coordinate commands to control the elements.

SC: Make the duck move.
Change the speed of the moving seeds.
Set the coordinates of where the seed should return to after moving.
Make the duck grow.
Use the arrow keys to change the angle of the feeder and the seeds at the same time.
Create your own game.



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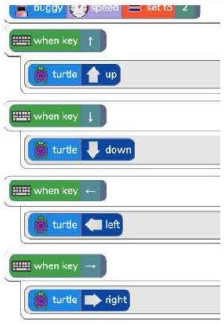
GORILLA SOLUTIONS

Gorilla – Turtle Road Crossing

Lesson Objective	Overview of the Lesson
Make a version of the classic game Frogger	2Code: Turtle crossing the road We are going to make our own version of the classic game frogger. The player will try to move the turtle to the other side of the road to eat the lettuce. If the turtle collides with a car the game will restart. 1: Make the vehicles move Make the vehicles move by setting their speed. 2: Make the turtle controllable Make the turtle controllable using the arrow keys. 3: Add vehicle collision Add collision detection for when the turtle is hit by a vehicle. 4: Eating the food When the turtle collides with the food, play a sound and hide the food. 5: Your own turtle road crossing game Add more sounds and features to your game.
Success Criteria	
Add speed to vehicles Use collision detection Use sound to enhance your game	

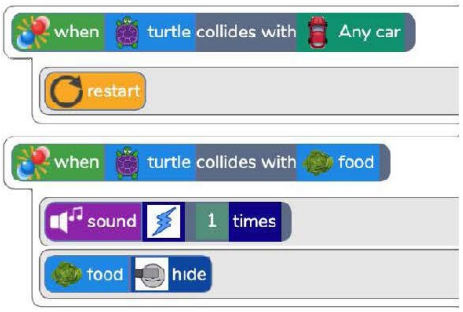
Activity 1

Activity 2

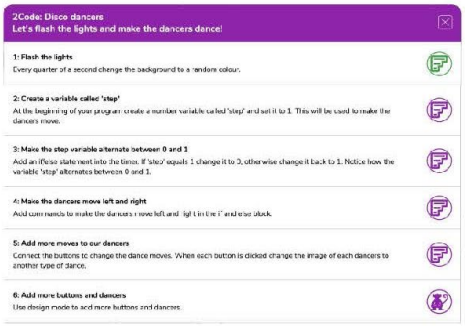


Activity 3

Activity 4

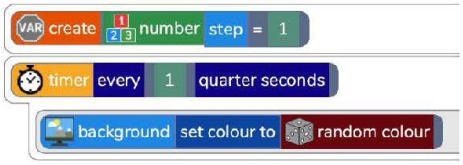


Gorilla – Dancer

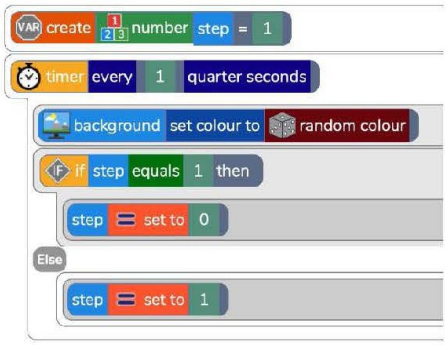
Lesson Objective	Overview of the Lesson
Code a disco to change lights and move the dancers	
Success Criteria	
Use a timer to change the background Create attribute Use buttons	

Activity 1

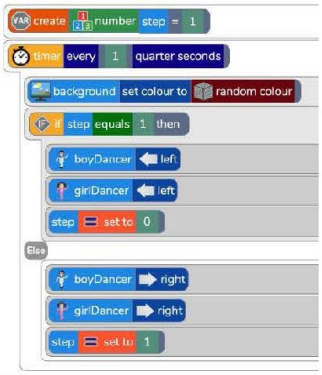
Activity 2

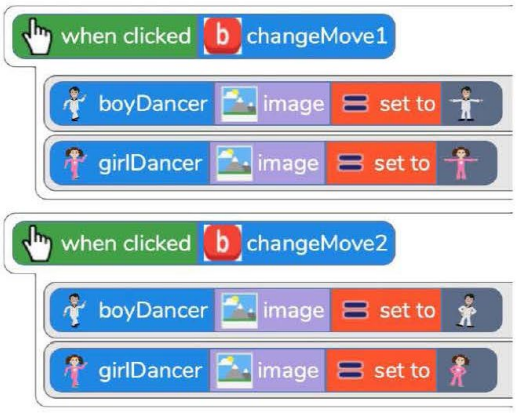


Activity 3

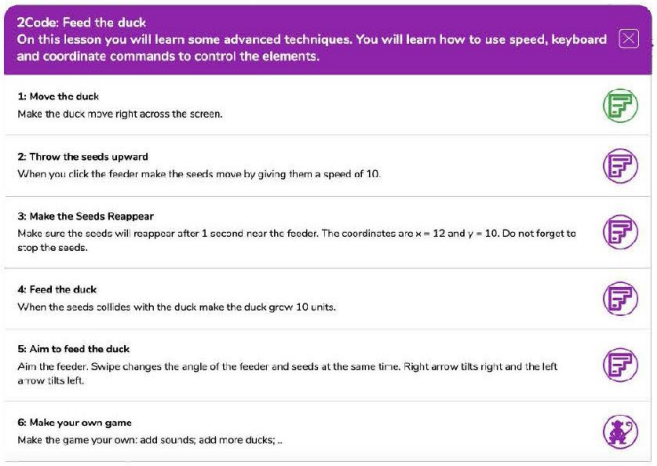


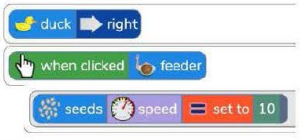
Activity 4

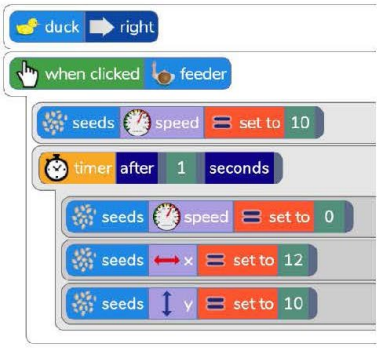
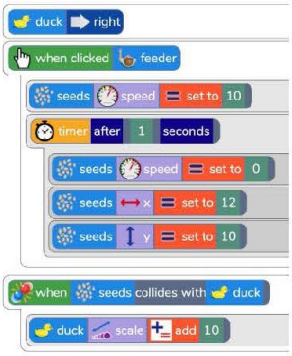


Activity 5


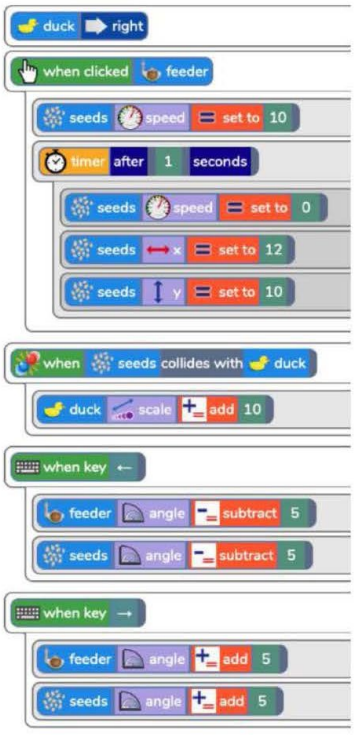
Gorilla- Feed the Duck

Lesson Objective	Overview of the Lesson
To use speed, keyboard and coordinate commands to control the elements.	
Success Criteria	
Make the duck move. Change the speed of the moving seeds. Set the coordinates of where the seed should return to after moving. Make the duck grow. Use the arrow keys to change the angle of the feeder and the seeds at the same time. Create your own game.	

Activity 1	Activity 2
	

Activity 3	Activity 4
	

Activity 5



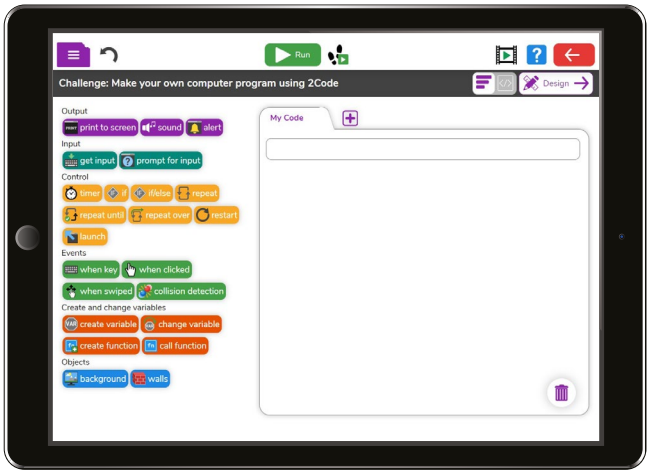
2CODE

2Code has three key components: free code, guided lessons and debug challenges.

TRY THIS OUT

FREE CODE

In free code mode, children can create any kind of program they like. The DigiTech Scheme of work utilises some of the guided lessons, debug challenges and free code modes.



TRY THIS OUT

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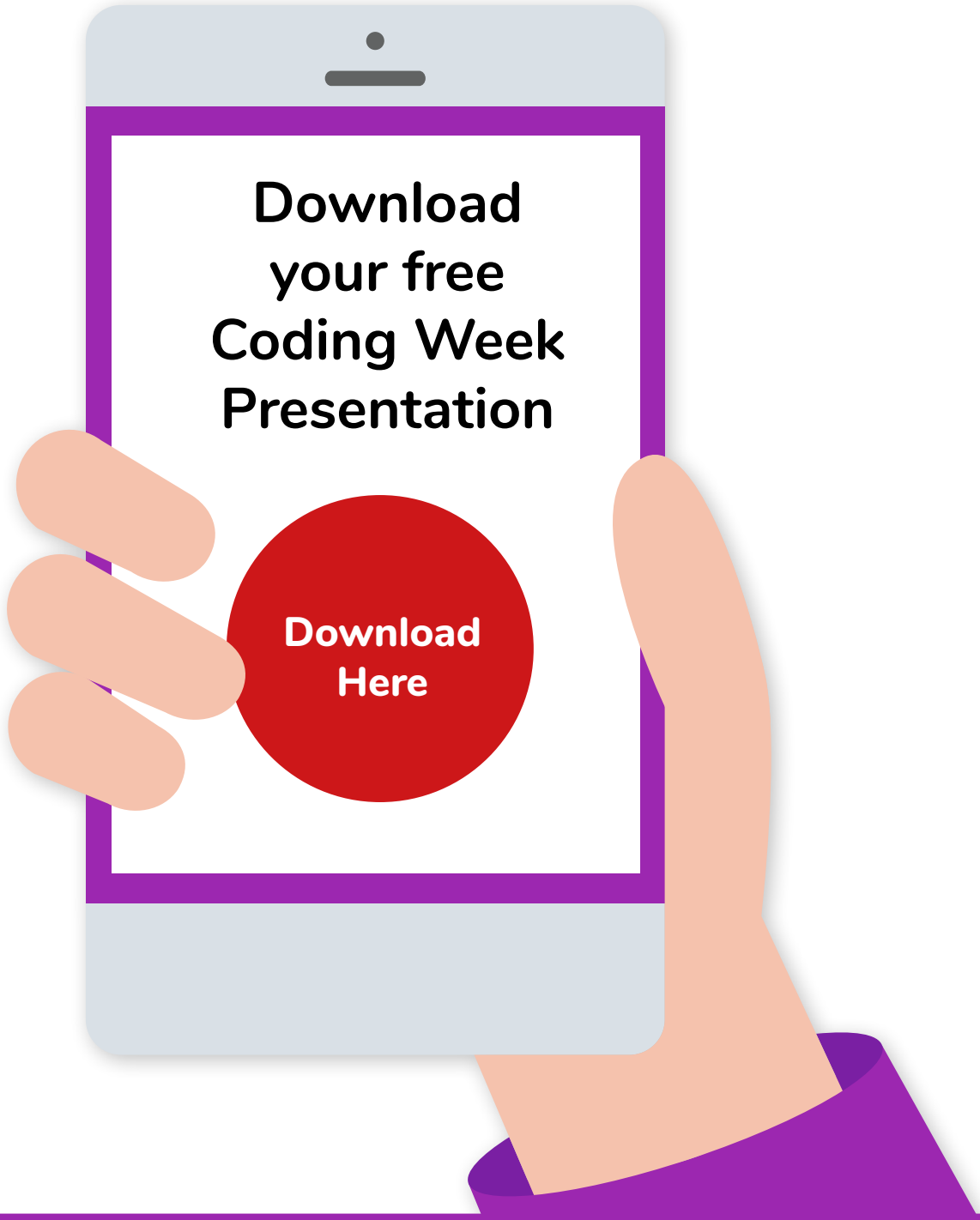
TEACHING SLIDESHOW
INTRODUCTION TO CODING

Covering objects, actions, and events



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ACTIVITY LINK

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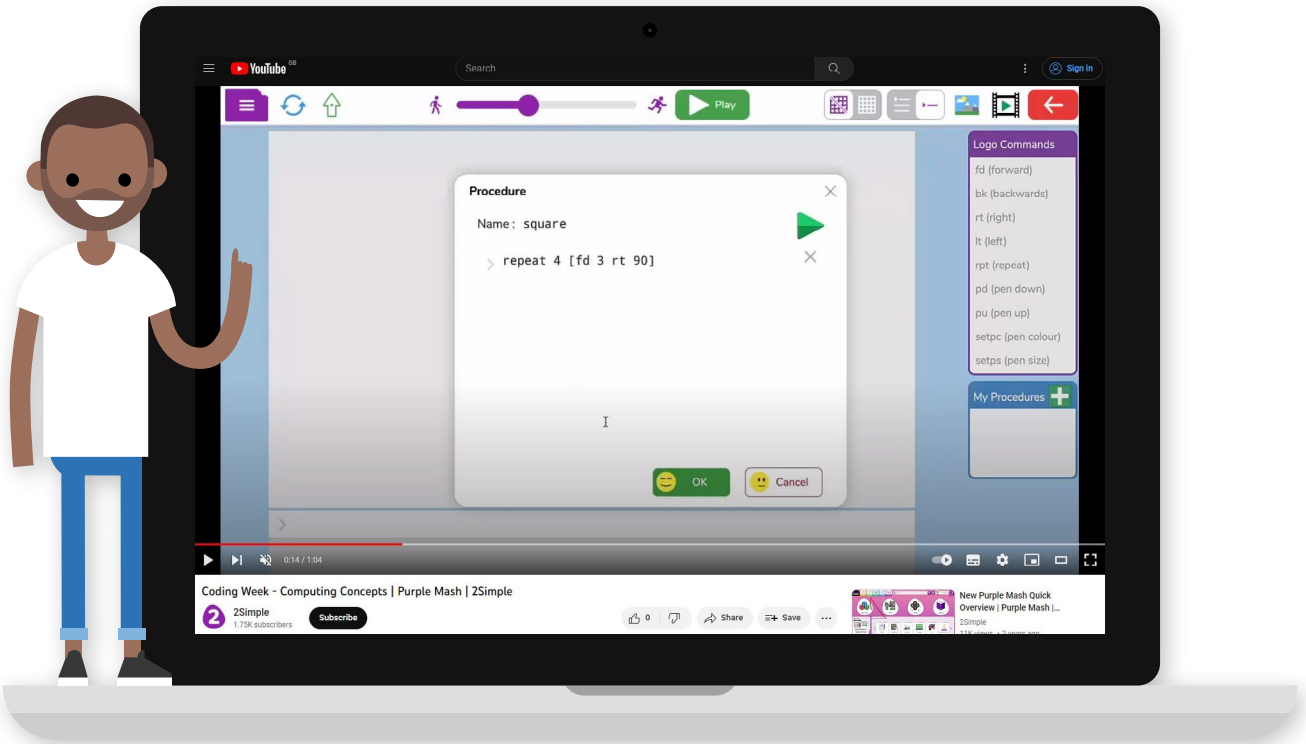
COMPUTING CONCEPTS

Teach decomposing, logical reasoning and variables during Coding Week with Purple Mash tools and activities.



Click here to watch

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