

Hawkesley Church Primary Academy

'let your light shine'
Matthew 5:16



Computing Curriculum

Curriculum impact in algorithms and programs.

Progression in algorithms and programs

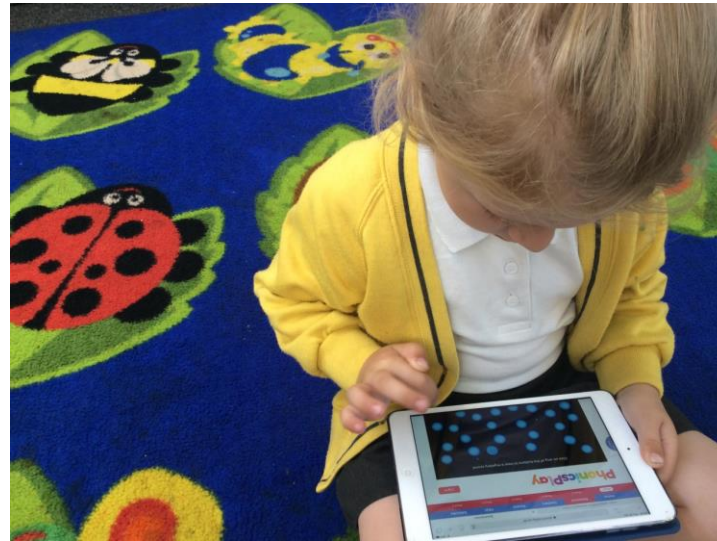
Nursery	Reception		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Guidance from birth-5</p> <p>Knows how to operate simple equipment, e.g.</p> <p>turns on CD player, uses a remote control, can</p> <p>navigate touch-capable technology with support</p>	<p>Completes a simple program on electronic devices</p> <p>Uses ICT hardware to interact with age-appropriate software</p>	Algorithms and programs	<p>Read a set of instructions and usually predict the correct outcome</p> <p>Produce a set of instructions that others can usually follow</p> <p>Understands that computers follow instructions given in a precise way</p>	<p>Produce a sequence of instructions that result in planned outcomes</p> <p>Program a short a sequence of commands that results in a planned effect</p> <p>Program and test a simple program</p> <p>Create algorithms to solve simple problems</p>	<p>Plan a sequence of instructions</p> <p>Give a sequence if instructions, some of which are repeated (repetition) and involve choices (selection) e.g. if..then, to make things happen</p> <p>Program a sequence of commands that results in a planned effect</p> <p>Program and test a simple program</p>	<p>Use sequence, selection and repetition in computer programs</p> <p>Predict the outcome of a given algorithm or program and correctly identify if repetition is involved</p> <p>Understand the difference between the internet and internet services e.g. the world wide web</p> <p>Identify a number of computing devices inside and outside of the classroom and identify some common forms of input and output</p> <p>Understand that computers store data as numbers</p>	<p>Write and amend computer programs</p> <p>Program a number of algorithms that achieve a specific outcome</p> <p>Use repetition, variables and conditional statements in computer programs</p> <p>Test computer programs and correct any errors</p> <p>Know that the World Wide Web consists of many websites and that web pages can be accessed using the internet</p> <p>Know that web pages are formatted using a type of 'code'</p>	<p>Write and amend more complex computer programs to create a variety of outcomes</p> <p>Decompose 'problems' by splitting them into smaller 'problems' and designing solutions for each part</p> <p>Use iteration (repeats and loops), variables and conditional statements (if..then) in computer programs</p> <p>Test computer programs and correct most errors</p>

Whole School

Nursery



Turning on a CD player.



Using touch-capable technology.



Using a remote control.

Nursery expectation: Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support

Reception

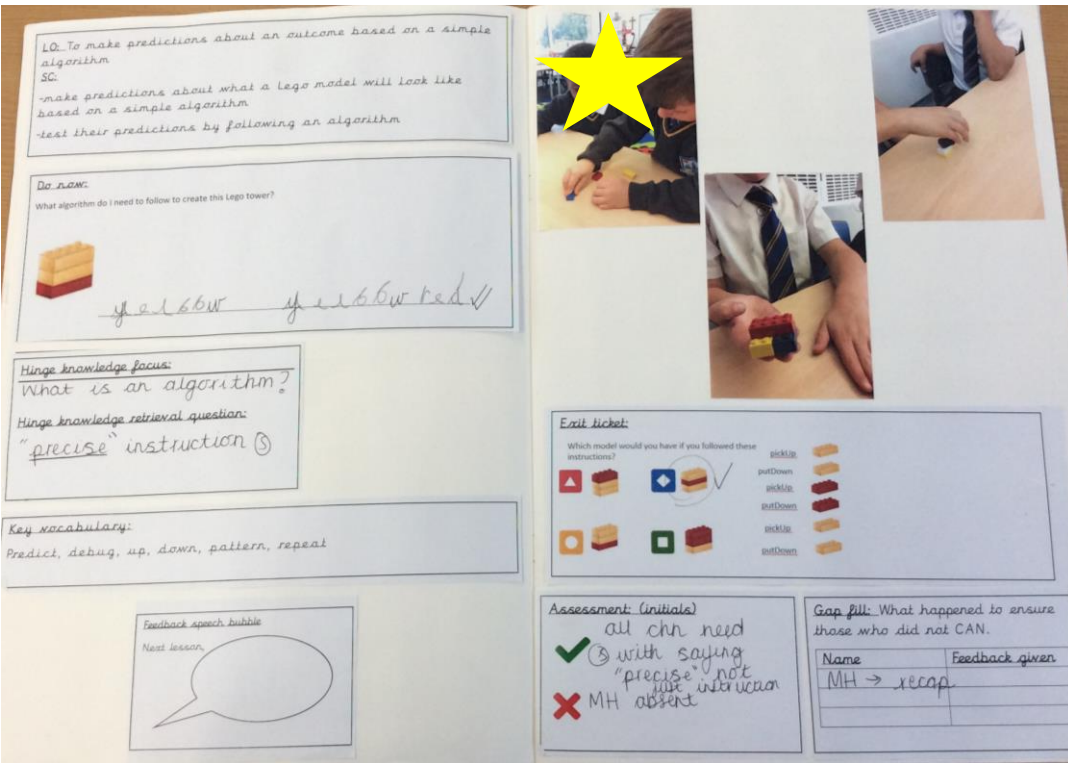


Using Bee-Bots to input different directions.



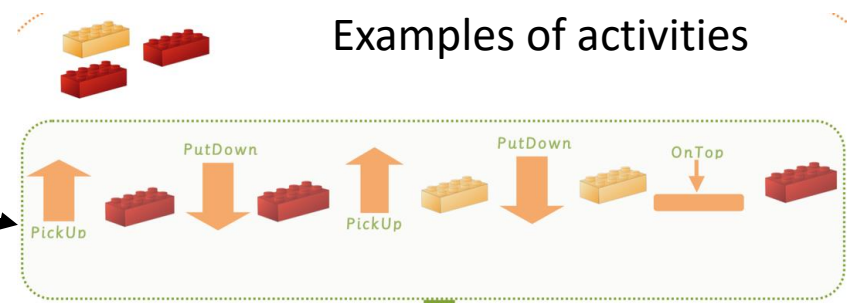
Reception expectation: Completes a simple program on electronic devices. Uses ICT hardware to interact with age-appropriate software

Year 1



All learning is recorded in a journal detailing the structure of the lesson and include pictures of the children's work.

Unplugged activities using no technology to introduce algorithms.



Examples of activities

Which model would you have if you followed these instructions?

Exit ticket for lesson

Year 1 expectation: Read a set of instructions and usually predict the correct outcome
Produce a set of instructions that others can usually follow
Understands that computers follow instructions given in a precise way

Year 2

I want Daisy to move forwards and backwards (like in the Hokey Cokey) but she only moves backwards once!

Debug 5

commands

- repeat 5
- when
- move
- turn
- grow
- shrink

program

- when green flag clicked
- repeat 5
 - jump
 - repeat 5

stage

Play

Menu

I want Daisy to jump 3 times and then grow. But she's not jumping 3 times!

Debug 3

commands

- repeat 5
- when
- move
- turn
- grow
- shrink

program

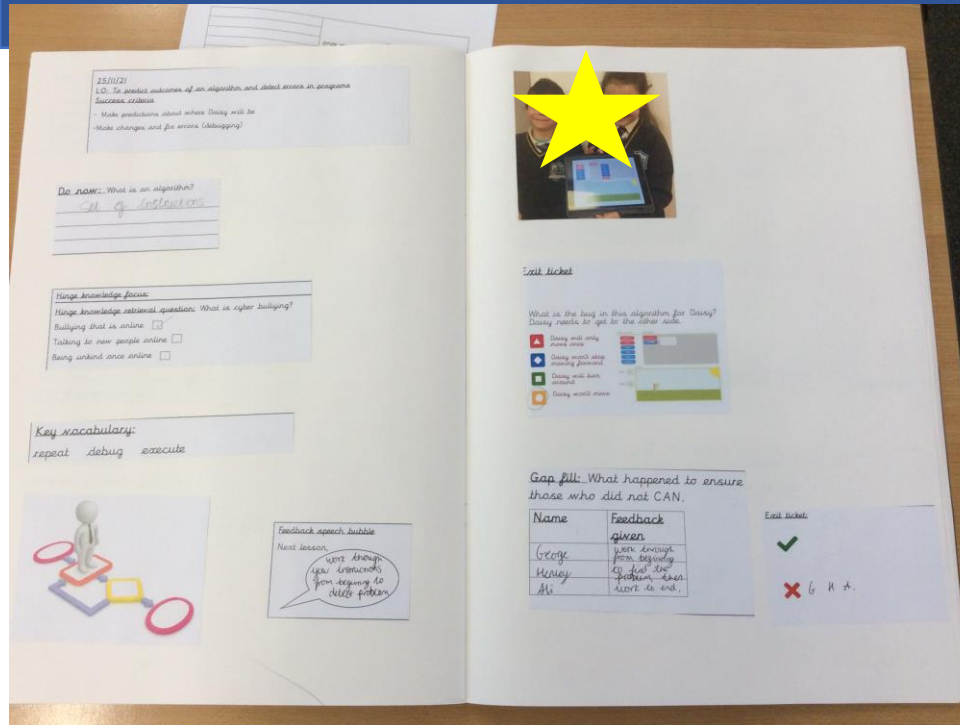
- when green flag clicked
- grow
- move forward

stage

Play

Menu

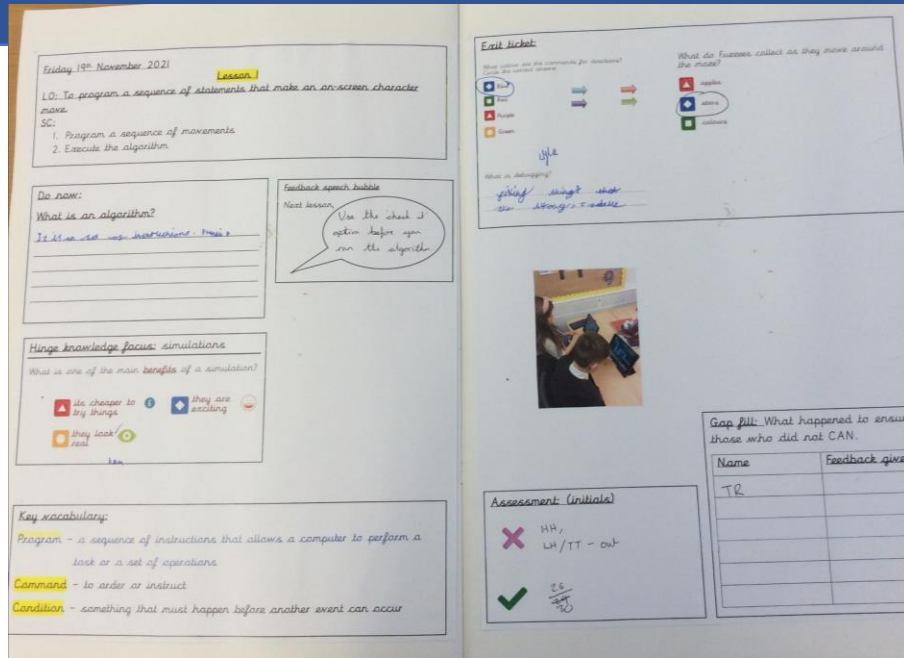
Programming and testing simple programs. Creating algorithms to solve simple problems.



All learning is recorded in a journal detailing the structure of the lesson and include pictures of the children's work.

Year 2 expectation: Produce a sequence of instructions that result in planned outcomes. Program a short a sequence of commands that results in a planned effect. Program and test a simple program. Create algorithms to solve simple problems

Year 3

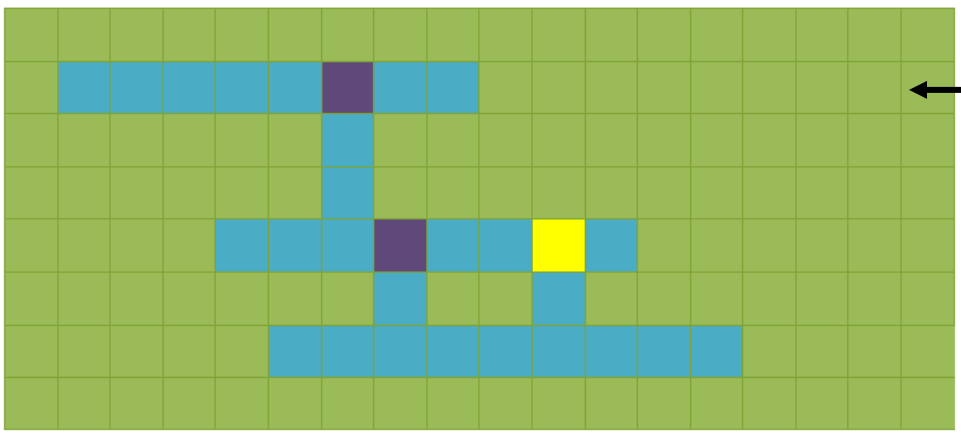


Use a word processor to colour the squares and design your own Kodable maze

Make the paths blue, the background green and don't forget to colour your choice squares

★ ★ ★

Challenge – can you copy and paste the stars and add them to the squares on your maze?

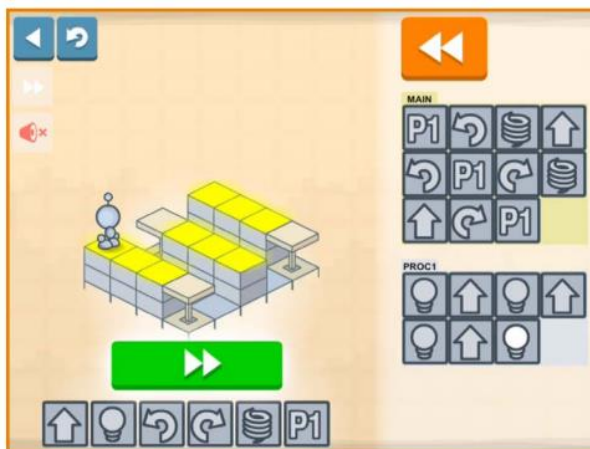
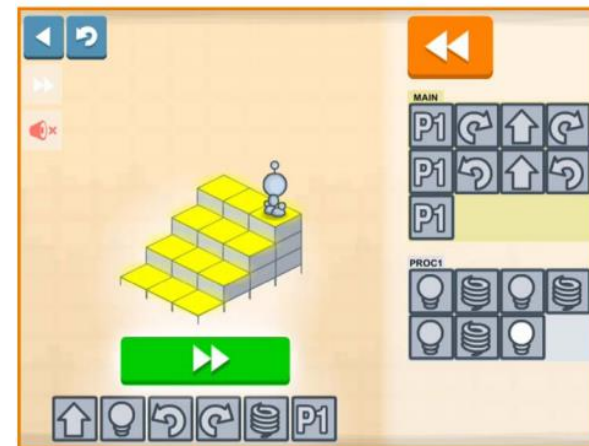
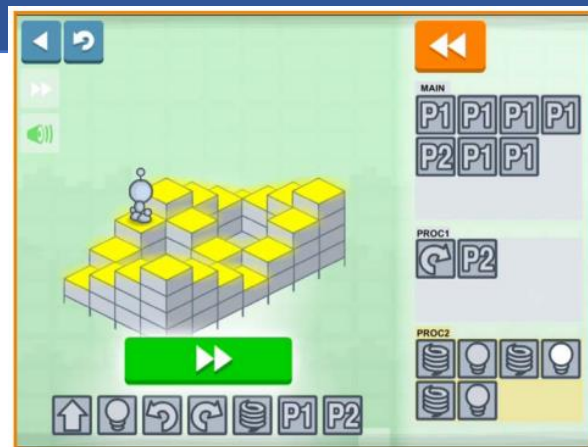
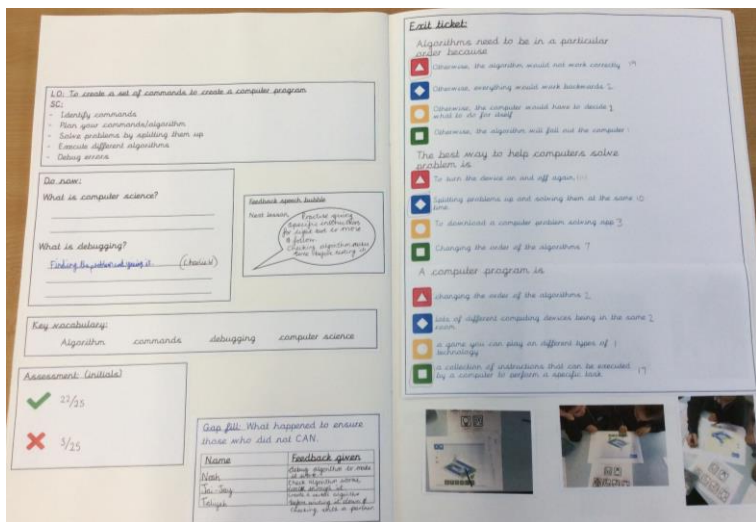
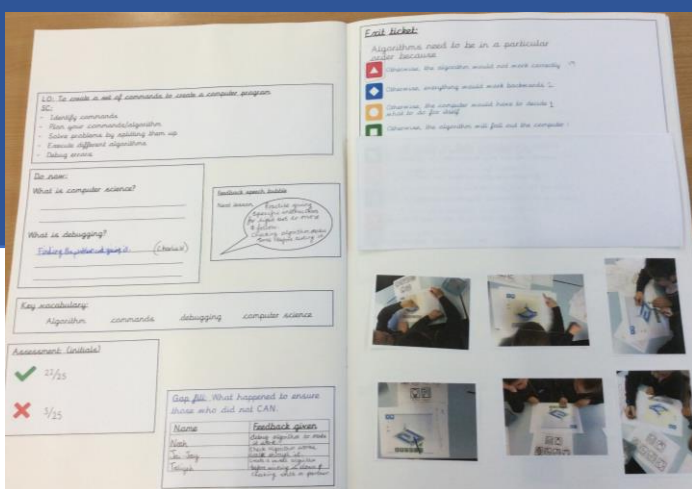


Designing a mazes with a sequence of instructions and test the simple program.

Tip: This is a table. Try using the colour fill tools in 'Borders and Shading'

Year 3 expectation: Produce a sequence of instructions that result in planned outcomes. Program a short a sequence of commands that results in a planned effect. Program and test a simple program. Create algorithms to solve simple problems

Year 4

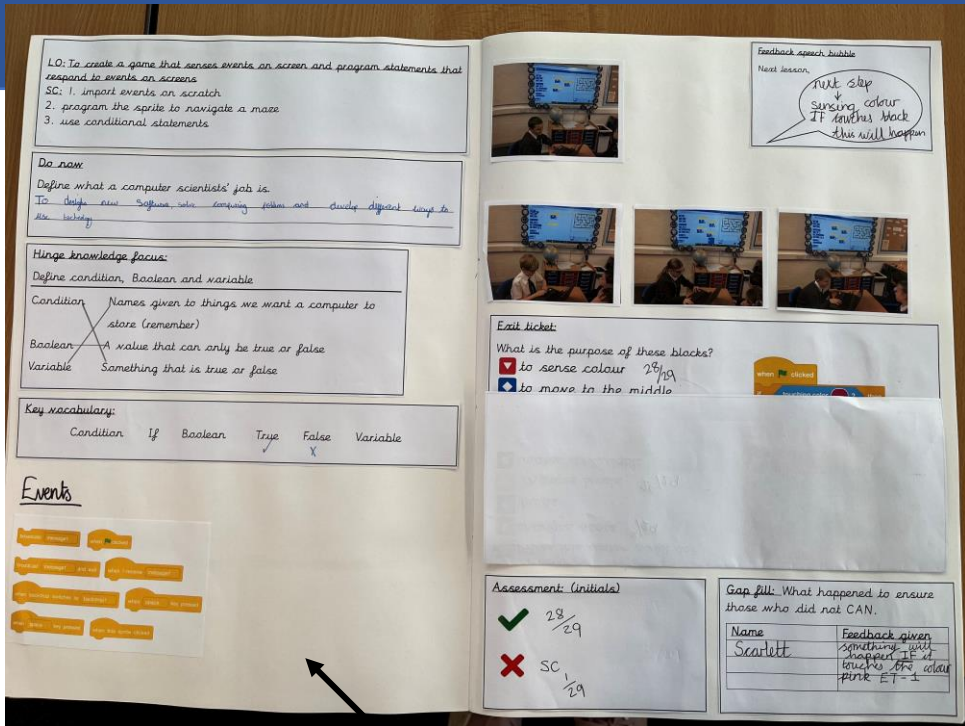


Predicting the outcome of a given algorithm or program and correctly identify if repetition is involved.

All learning is recorded in a journal detailing the structure of the lesson and include pictures of the children's work.

Year 4 expectation: Use sequence, selection and repetition in computer programs. Predict the outcome of a given algorithm or program and correctly identify if repetition is involved. Understand the difference between the internet and internet services e.g. the world wide web. Identify a number of computing devices inside and outside of the classroom and identify some common forms of input and output. Understand that computers store data as numbers

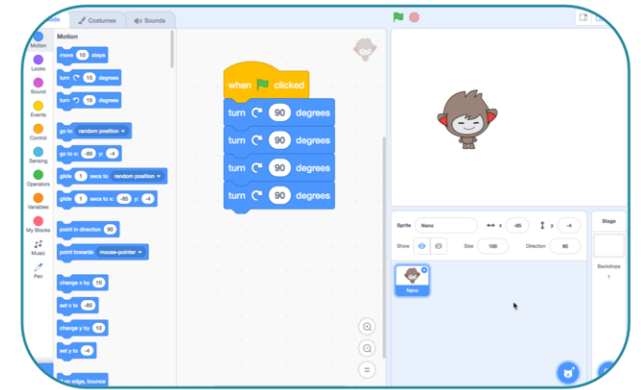
Year 5



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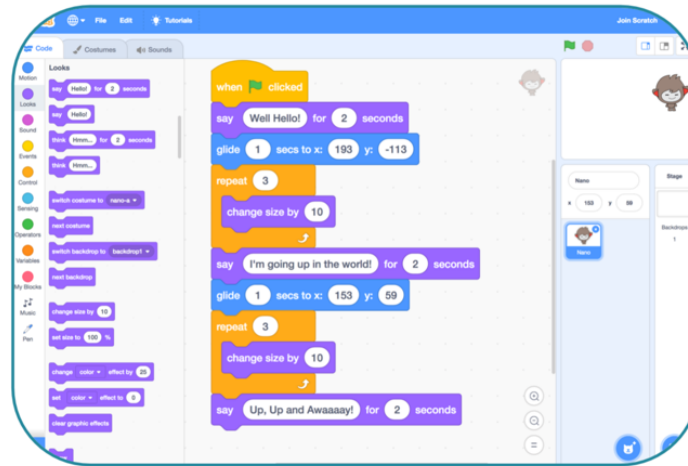
Debug 1

Ben wants Nano to rotate when he presses the space bar.
But isn't going anywhere!
What is wrong with his code?



Debug 2

Debbie want to move to the middle of stage when the flag is clicked, growing as he moves.
It works the first time she clicks the flag but not when she clicks it again!
What is wrong with her code?



Amending computer programs through debugging and correct errors.

Year 5 expectation: Write and amend computer programs. Program a number of algorithms that achieve a specific outcome. Use repetition, variables and conditional statements in computer programs. Test computer programs and correct any errors. Know that the World Wide Web consists of many websites and that web pages can be accessed using the internet. Know that web pages are formatted using a type of 'code'.

Year 6

Planning sheet for creating a computer game.

Date: 07.10.2021
14

Feedback speech bubble
Next lesson, due to high number of absences, we will likely release this lesson.

L.O.: To identify that the behaviour of computers should be planned and that programs are developed according to a plan.

Do It Now:
Name 5 different ways to stay safe when using technology.
1. Do not give away personal information. 2. Report any suspicious activity.
3. Always update your software. 4. Avoid using the same password.
5. A Cyber Community with people you know in person. - Noah

Key Vocabulary:
Design plan logical operators variables

Learning Activity:
we used scratch to: create a world, a game, adjust the size and create a game where the paddle bounces, catches and eats the prey. - Courtney

Exit Ticket:
Link didn't work, so did a vocab related ET instead

Assessment: (initials)
15 out of 19
7 covid absences

Gap fill:
clarity on key vocab (bones)
Name: HH, LJ, NB, K
Feedback given: algorithm = set of instructions.
Multiple covid absences
Reteach opportunity

Game What is its name? Aim What is the games purpose? End How do you win? How do you lose?		Sprites What Sprites will you need? Description Possible Code	
Import image, draw or describe Backgrounds		Variables What variables will you need? Name Description	

Uses iteration (repeats and loops)

Stages split into smaller problems

Conditional statements
if

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Year 6 expectation: Write and amend more complex computer programs to create a variety of outcomes. Decompose 'problems' by splitting them into smaller 'problems' and designing solutions for each part. Use iteration (repeats and loops), variables and conditional statements (if..then) in computer programs. Test computer programs and correct most errors.