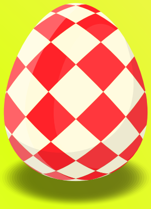
A Byte of...

iCompute Easter egg hunt



Free Easter Coding Activity with Scratch

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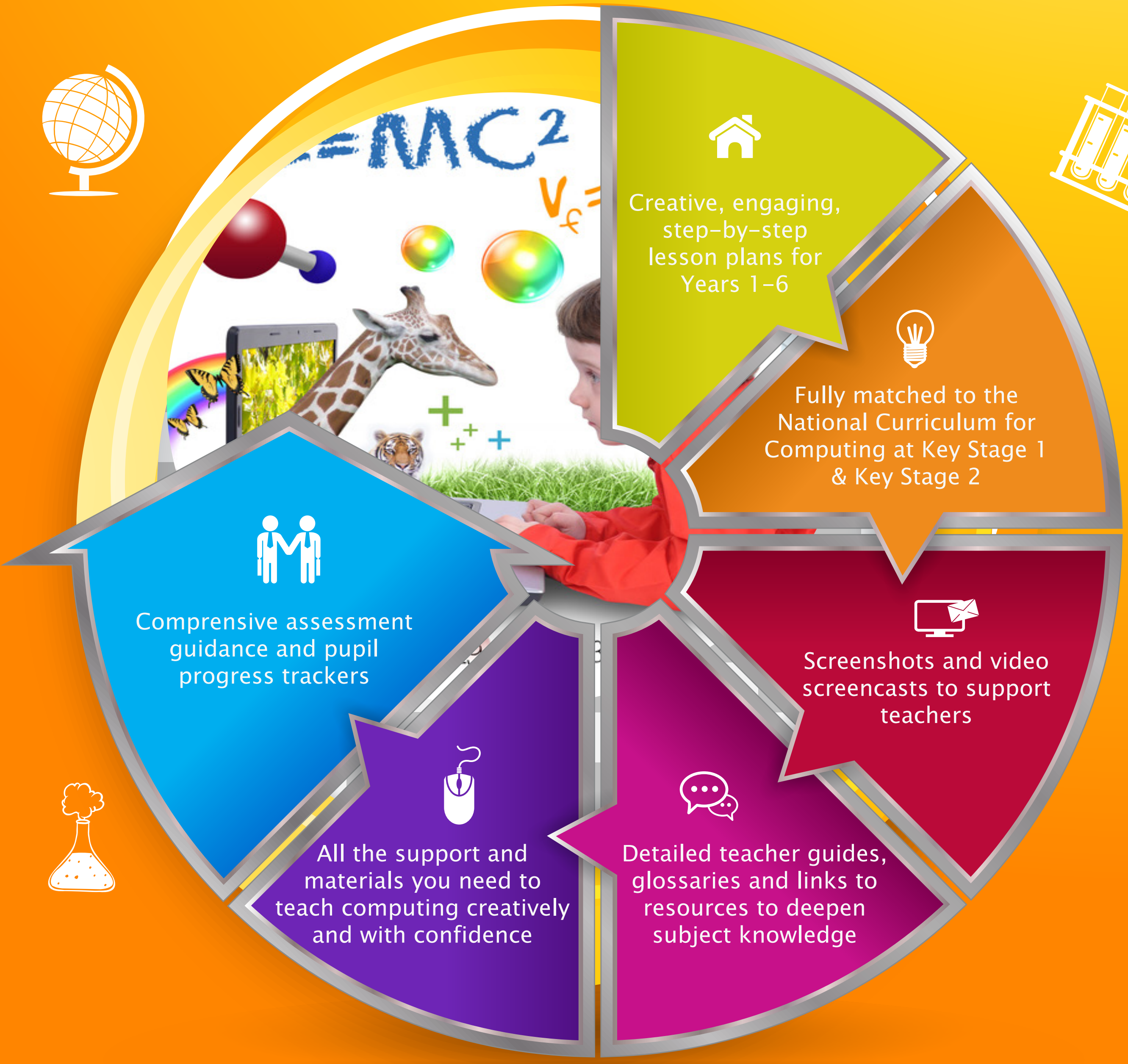

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Easter Egg Hunt

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Key Stage 1

Overview

In this seasonal unit the children use a BunnyBot Emulator to program the Easter Bunny to collect eggs on an Easter Egg Hunt.

They use sequence, selection and repetition, test and debug their work.

Objectives

- See p4 for a detailed breakdown of lesson assessment focuses and associated success criteria.

2014 National Curriculum for Computing at Key Stage 1 Programme of Study

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school

Assessment

P5 contains assessment guidance

Software/Tools

Suggested software & apps (see Preparation)

Curriculum Links

- Mathematics

Preparation

- Read the activity plan
- Spend some time familiarising yourself with the software you will be using
- Copy the pre-written template program file ProgramKS1.1.sb to the network for pupil access

Resources

- Book out any computers you may need, if necessary
- Ensure that any links to websites are not blocked
- Ensure that the software used is installed on all devices
- Support materials for each lesson – entitled: Resource <year.unit.lesson> (eg. ResourceKS1.1)

Links

Scratch
http://icomp.site/scratch

Resources

Computers; Scratch software (Links); ProgramKS1.1.sb; WorksheetKS1.1a; WorksheetKS1.1b; Bee-Bot (optional)

Objectives

- To give instructions to a virtual programmable toy
- To use sequence, selection and repetition in programs

Success Criteria

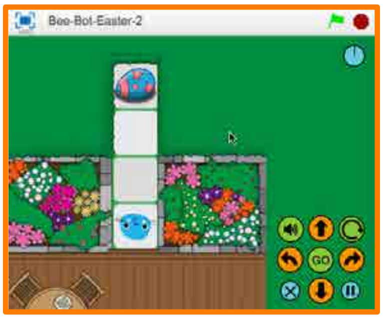
- The children can guide an onscreen object to collect eggs

Vocabulary

Instruction, forward, backward, turn, step, program, algorithm, execute, test, debug; repeat

1

- Show the children a real BeeBot and remind them about how instructions are given to BeeBot using buttons
- The instructions are entered before the program is executed (by pressing 'Go')
- Explain that BeeBot 'remembers' each set of instructions she has been given
- Unless you clear her 'memory' the new instructions are added to all of the other instructions you have also given
- Model how to clear BeeBot's memory by selecting ⊗



2

- Show the children ProgramKS1.1.sb (a BeeBot app emulator adapted to BunnyBot)
- Display ResourceKS1.1 and explain how to move BunnyBot
- Explain that the instructions for using the Scratch program are the same as using a real BeeBot (if you followed Step 1) and the children need to imagine they are BunnyBot to help them work out how to move and turn
- Chose the first level and model how to play it, thinking out loud and working with the children to select the instructions BunnyBot needs
- Say the instructions out loud as you enter them and scribe them on the board as arrows
- Tell the children that this set of instructions is an **algorithm** for getting the BunnyBot to the Easter Egg (refer to KS1 iAlgorithm unit)
- We are giving the BunnyBot our algorithm in a way it can understand, using buttons
- This is **programming** the BunnyBot
- We can find out if we've got it right by **testing** our program (this can be in our heads and/or by **executing** our **program** – pressing 'Go')
- If we have made a mistake we put it right: we **debug** it
- Point out the timer (top right) and explain that the faster the children can get the Easter Bunny to the egg, the more stars they earn

3

Core

- Hand out WorksheetKS1.1a
- The children open Scratch, load ProgramKS1.1.sb and immediately save it to their own names (this is to prevent them making any changes to the code that may make no longer work)
- They then work their way through each of the levels programming BunnyBot to collect the eggs
- Once they have finished all levels, they repeat the last level again but this time they plan in advance the algorithm they will be programming by cutting and sticking the commands using WorksheetKS1.1a

Harder

- Challenge some children to complete all levels, planning their algorithms and talking them through, before entering and executing them as programs
- Look at the instructions they have designed on WorksheetKS1.1a and identify (consecutive) commands that are **repeated** by circling them and writing the number of times those instructions are repeated
- Encourage some children to try to achieve 3 stars by completing the levels against the clock

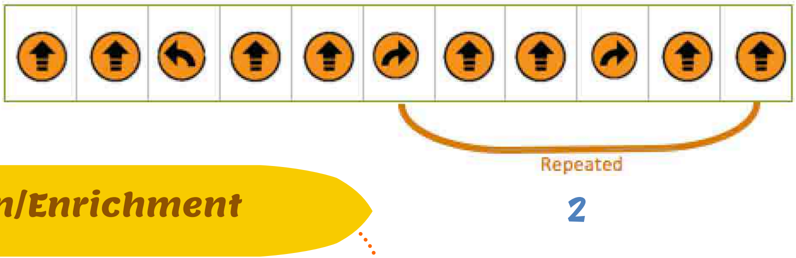
Easier

- Some children could work on perfecting levels 1-3 in as few moves, with as few mistakes, as possible

4

Plenary

- Gather back and invite the children to share some of their algorithms (WorksheetKS1.1a) with the class
- Talk through them and describe how each will make BunnyBot move and turn
- Do the rest of the class think the algorithm will get the Bunny to the egg?
- Invite the children to swap algorithms and complete the level by programming the algorithms
- Was it correct?
- Could it be improved?
- Are any consecutive instructions **repeated**? How many times?



Extension/Enrichment

- The children could work with a partner and compare instructions for the same level
- Do both sets of instructions achieve the same outcome?
- Which is better? Why?
- The children could design their own mini BunnyBot floor mats using squared paper and a cut-out BunnyBot (WorksheetKS1.1b)
- They could draw/place obstacles on the mats and draw instructions to get the BunnyBot from a start to end point of their choice

Assessment

Record of progress Write names in the appropriate box, with jottings on children on children whose attainment differs markedly from their group.	Expectations What children know, understand and can do
Some children will have not made as much progress and will:	✶ Read a set of instructions and sometimes predict the correct outcome ✶ Produce instructions but sequence them incorrectly or make assumptions ✶ Give a limited set of simple instructions to a virtual programmable toy
Most children will:	✶ Read a set of instructions and usually predict the correct outcome ✶ Produce a set of instructions that others can usually follow ✶ Give simple instructions to a virtual programmable toy
Some children will have progressed further and will:	✶ Read a set of instructions and predict the correct outcome ✶ Produce an accurate set of instructions using agreed language that others can follow ✶ Recognise repetition in algorithms ✶ Give longer instructions using directional language to a virtual programmable toy

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