Level 1 – Simple inputs: Burst the bubbles

Overview

In this lesson, pupils make a game in which they make bubbles disappear by clicking on them as they float up the screen. They will learn that objects can be programmed to perform actions at the start or when they are clicked on.

Learning objectives

- To combine start events and click events to make a simple game.

Links to CAS progression pathways

Programming and development

- Knows that users can develop their own programs, and can demonstrate this by creating a simple program in an environment that does not rely on text. (AL)
- Executes, checks and changes programs. (AL)
- Understands that programs execute by following precise instructions. (AL)

Links to Curriculum for Excellence

- I understand that sequences of instructions are used to control computing technology. (TCH 0-14a)
- I can develop a sequence of instructions and run them using programmable devices or equivalent. (TCH 0-15a)

Success criteria

ALL I can write code to make a bubble disappear when it is clicked on, or to make a bubble move when my program starts.

MOST I can combine code to make a bubble move when my program starts and disappear when it is clicked on.

SOME I can write code to make three bubbles move when my program starts and pop when they are clicked on.

Key vocabulary

code, object, action, click, start event, click event

Starter

Show pupils a finished *Burst the bubble* game made using step 8 (the Build step) of this lesson, and give some of them a chance to play it on the interactive whiteboard. Ask the rest of the class to describe what is happening.

Key questions

- What objects are on the screen?
- What is happening at the start of the game?

- How is the user 'popping' the bubbles?
- When we click on the bubbles, what happens to them?

Main learning

Show pupils the first step of the lesson. Run the code and click on the bubble to 'burst' it. Then ask pupils to tell you what is happening in the code. Draw out the key term 'click event' and ask pupils to tell you what the elements required in a click event are (a target object, an object block and an action block).

Ask pupils how they can make all three bubbles burst when clicked, and remind them that they will need a separate click event for each bubble. Then have pupils complete the next steps of the lesson on their own, completing their own click events by filling in the missing elements.

Move on to look at the start event and ask pupils to remind you how to write code to make the bubble move up from the start of the game. Complete the start event block with them, run the code and check that the bubble is moving upwards from the outset.

Now bring together all the learning and explain to pupils that for the program to work as intended, they will need to combine the two events: we want the bubbles to float up the screen *and* to pop when we click them. Challenge pupils to add code blocks to both the start event and click event on the screen to achieve this effect. For the next steps, remind them that they can add multiple different objects to a start event to make several different bubbles move up from the start of the game.

Using the Build step

You can use the Build step of the lesson to challenge pupils to recreate the game from scratch by choosing objects from the design palette and adding in the events themselves, choosing how the objects move around the screen, and deciding what happens when they are clicked.

Key questions

- Which events have you used?
- What do you want the bubbles to do at the start?
- What do you want to happen to the bubbles when you click on them?
- What is the difference between a start event and a click event?

Plenary

Ask pupils to demonstrate their app to a partner or to the whole class, and explain what the code does. If you haven't already, as an extension activity, use the final step to challenge them to make the bubbles move in different directions at the start or when clicked.

Key questions

- Can you explain how your code works by finishing these sentences? 'I used a click event to...', 'I used a start event to...'.
- Which way do you want the bubbles to move at the start? Which event will we need to change to make that happen?