Building future skills

Scratch lesson plan – Code Playground

BARCLAYS

Lesson overview

In this lesson, students will add the remaining code to a game in Scratch called "Building future skills“. They'll help a character, Api Chappy, find hidden keys to access a castle. This project introduces students to variables, timers, and interactive storytelling through movement and clues. By the end of the lesson, students will understand how to use variables, control blocks, and sprite interactions to create engaging games.

Time	Key learning outcomes	Resources
45 mins	• Learn to use variables for scoring and timer systems • Understand how to code movement and interactions between sprites • Explore storytelling through animations and clues.	• Laptops or desktop computers • Access to Scratch website - https://scratch.mit.edu

Content

Introduction

Introduce the concept of the game:

"Today, we're going to help Api Chappy find hidden keys by completing the code to a game where you collect keys before time runs out."

Real-life connection:

"Think of games where you race against time to collect objects, like treasure hunts or escape room challenges. That's what we're building today"

The activity in this project is to create a game where the object is to solve clues and find keys. The coding will include variables as well as sprite control.

In this project you'll learn how to make a timer to control how long the game lasts.

Scratch practical

Ask the children to log into Scratch and find the starter project, link is provided in the workbook.
Show the building future skills video as a guided lesson pausing regularly when the pupils need to catch up.

- Children should be able to follow along with the workbook or the guided lesson video
- By the end of the lesson children should be able to create a working program showcasing the building future skills activity.

Activity – building future skills

This project uses a number of features to create a clue solving game.

- Demonstrate how to program the character's movement using arrow keys
- Explain the use of variables and that there are two within the game, the score and time.

Ask the children for other examples when variables can be used. E.g. number of lives, quiz questions and answers.

"What happens if you change the numbers in the movement blocks? How does it affect speed?"

Scratch practical

Using the video and workbooks support the children to follow the instructions and complete the coding project. Have them think of other ways to enhance the project if they have extra time.

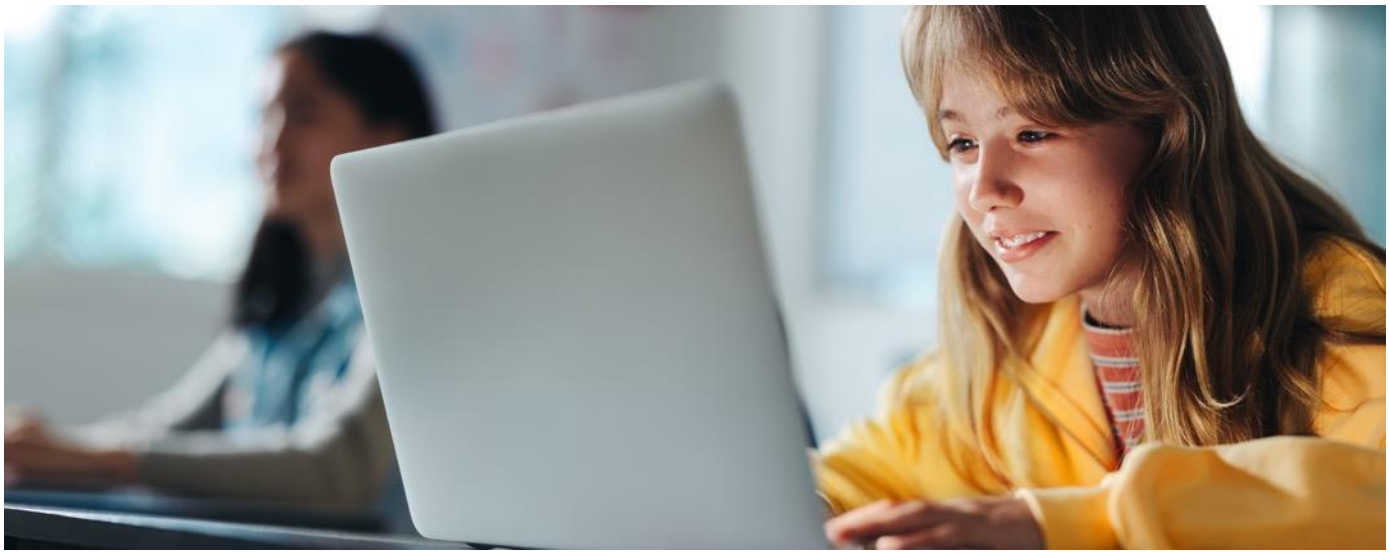
Activity wrap up

Prepare to share your project with the class

- Why is a timer important in this game?
- How does it make it more challenging?

Encourage customisation

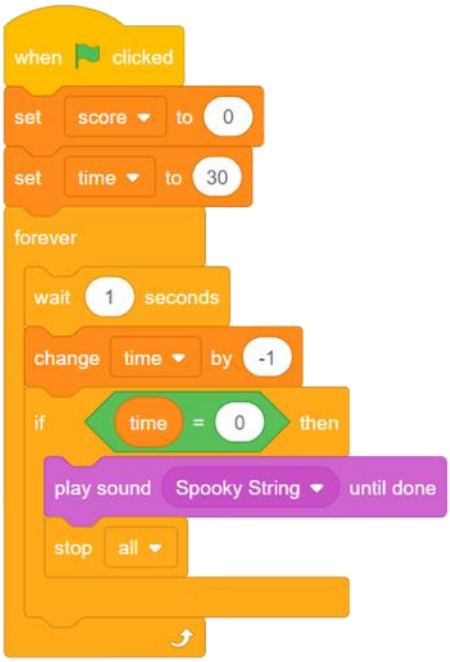
- Make the score increase by 10 for every key collected
- Add sound effects or animations when a key is found
- Create a second level with a new backdrop and harder challenges.



Code snippets

Api Chappy

Backdrop



Summary

The following information is an example of what a child at an expected level would be able to demonstrate when completing these activities with additional examples to demonstrate how this would vary for a child with emerging or exceeding achievements.

Assessment guidance

Differentiation – Lower ability/ASN

- Provide screenshots of the key blocks with colour-coded tabs
- Focus on coding movement and a simple scoring system
- Pair students with peers for collaborative support.

Differentiation – Higher ability/extension

- Challenge students to add a delay before the timer starts
- Introduce sound effects that play at specific score milestones
- Encourage students to write more efficient code or design multiple levels.

Plenary

- What made the game fun or challenging to build?
- How do variables like score and time improve the game experience?
- What other features could you add to make the game more exciting?

Assessment questions

1. How do you use variables in this project?
2. What block did you use to make the timer count down?
3. How does Api Chappy give clues?
4. What feature would you add to make the game more interactive?