Water safety

Scratch lesson plan – Code Playground

BARCLAYS

Lesson overview

In this lesson, students will use Scratch to create a game that highlights important water safety messages. They will program a lifeboat to rescue individuals in danger while managing player score and lives through variables. Students will learn to use broadcast messages, loops, and conditional logic to build an interactive game. Teachers will guide students through the project using the workbook and instructional video.

Time	Key learning outcomes	Resources
45 mins	• Understand and apply broadcast messages to control sprite actions • Use variables to track score and lives • Program sprite interactions using conditional logic • Incorporate creativity and problem-solving to enhance the game.	• Laptops or desktop computers • Access to Scratch website - https://scratch.mit.edu.

Content

Introduction

Today, we'll build a game called Water safety Code Playground. You'll program a lifeboat to move, it will monitor the water to keep people safe while you highlight those in danger and share water safety messages.

"Water safety is essential, and this game helps us learn how to stay safe while coding a fun project."

This activity uses broadcast messages and loops to teach a water safety message. The starter project already has a selection of examples already coded. The lesson demonstrates how to set up the game and code some additional sprites. More confident students can add additional risks to their completed game.

You can tie this project into conversations around water safety as well as wider topics around people who help us.

Scratch practical

Ask the children to log into Scratch and find the starter project as described in the workbook. Show the water safety 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 water safety activity.

Activity – Water safety

The water safety project is not only a good way to learn about coding with variables and using multiple sprites to both score points and lose lives. it is also a good way to demonstrate or learn knowledge of water safety ,through both the coding and use of the completed project.

Class question

"What are some dangers at the beach that we could include in our game?"

Encourage pupils to think of their own water safety tips to add to the project and to enhance the game.

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.

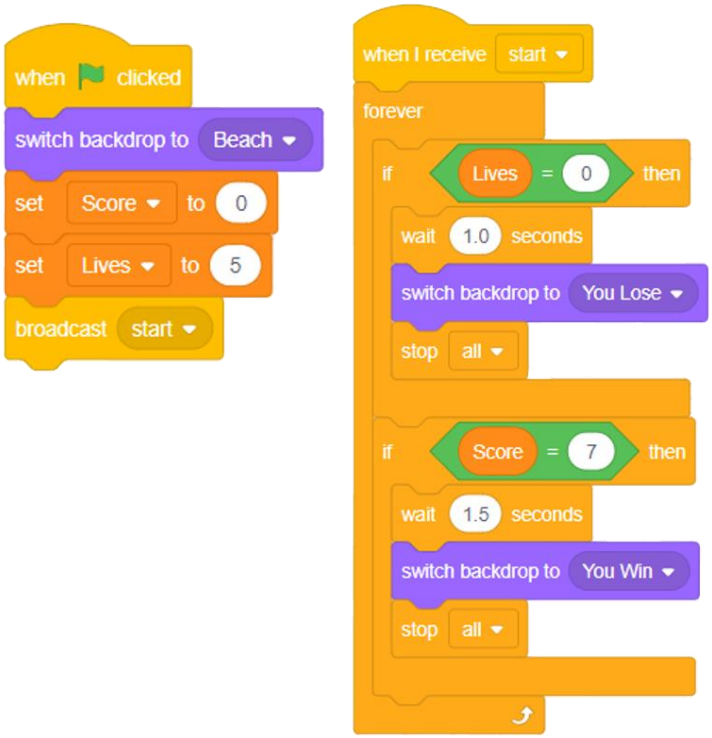
"Why do you think showing water safety messages is important in this game?"

Encourage customisation

- Add additional sprites in danger, each with unique messages
- Program a timer to challenge players to rescue as many people as possible within a set time
- Introduce levels where the lifeboat moves faster or new hazards appear.

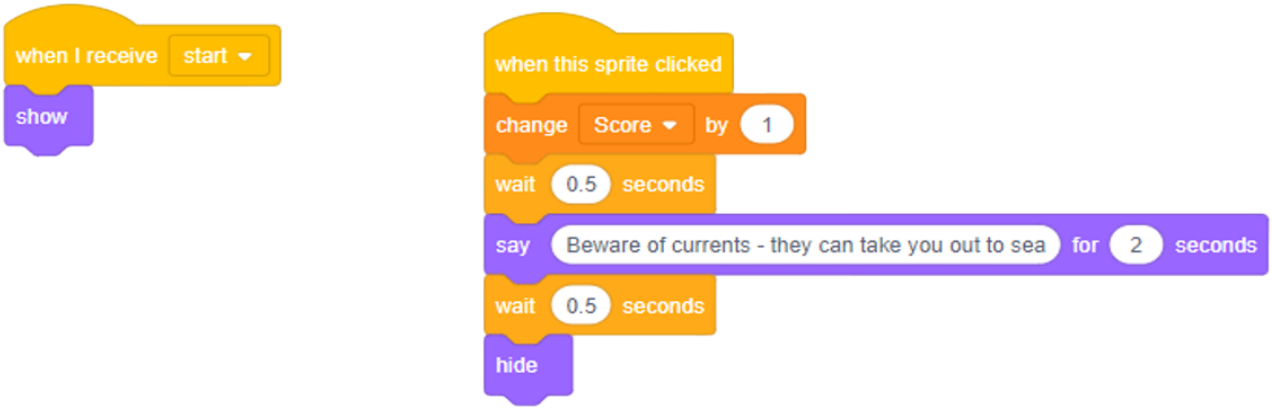
Code snippets

Game set up



Lifeboat

Ben



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

- Focus on adding and coding the lifeboat and one sprite in danger
- Provide pre-made starter code to simplify the activity
- Pair students for extra support and collaboration.

Differentiation – Higher ability/extension

- Challenge students to design new levels with increasing difficulty
- Encourage them to use advanced features like sound effects or complex conditions
- Ask them to create a narrative or theme around the game.

Plenary

- "What coding blocks did you use to make the lifeboat and Ben interact?"
- "How did you use variables to track the score and lives?"
- "What other features would you add to make the game more fun or educational?"

Assessment questions

- How did you program the lifeboat to move and interact with other sprites?
- What blocks did you use to track the score and lives?
- How did broadcast messages help organise the game's events?
- What improvements or customisations did you add to the game?