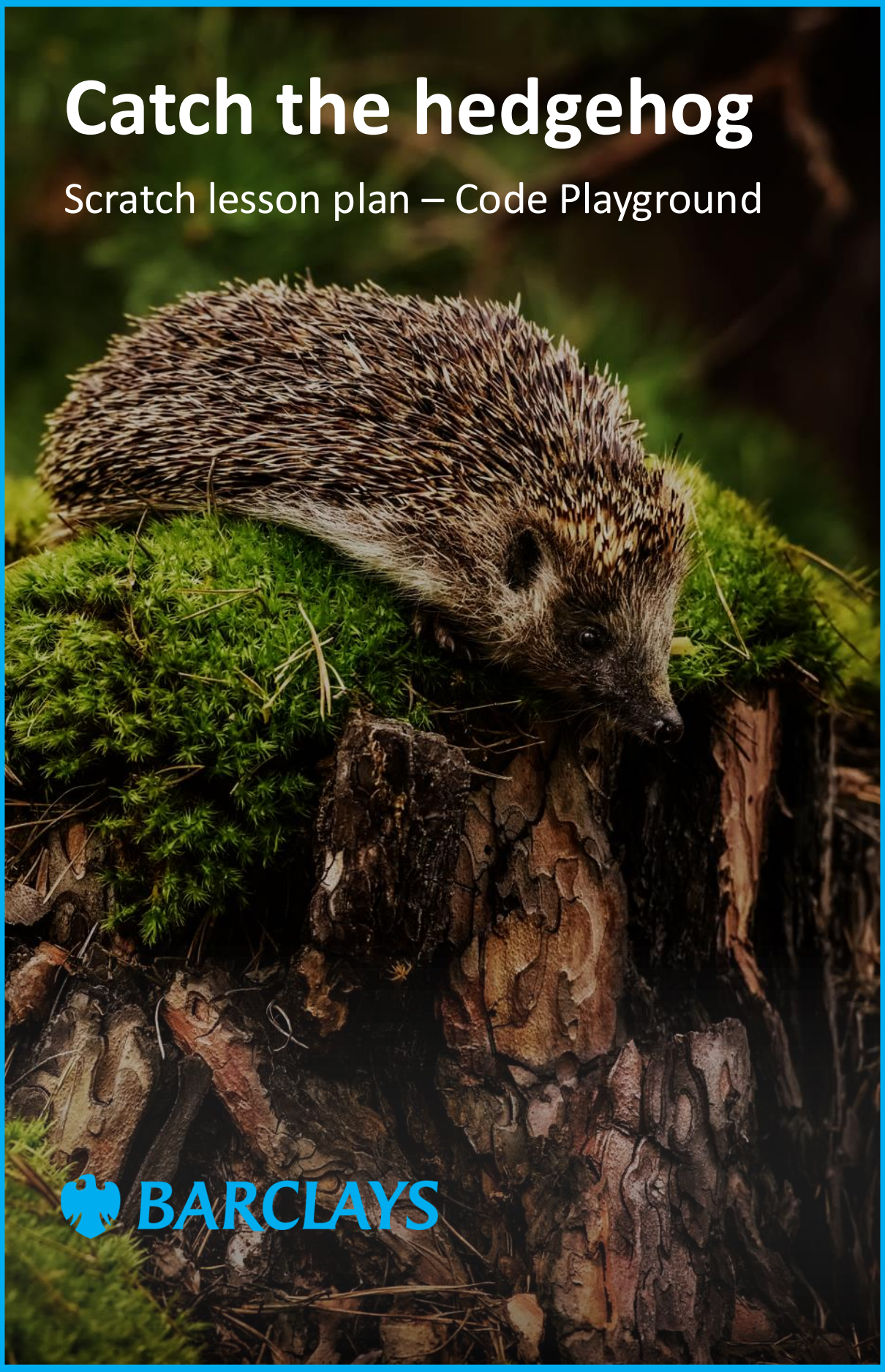
Catch the hedgehog

Scratch lesson plan – Code Playground



BARCLAYS

Lesson overview

In this lesson, students will create an interactive game in Scratch called "Catch the hedgehog," where a player-controlled character attempts to catch a moving hedgehog. They will learn how to program sprites to move randomly, implement collision detection to trigger events, and use variables to create a scoring system. By the end of the lesson, students will understand how these concepts come together to create a dynamic and engaging game.

Time	Key learning outcomes	Resources
40 mins	• Program a sprite to move unpredictably using random blocks. • Use sensing blocks to create interactions between sprites. • Track the player's score using Scratch variables.	• Laptops or desktop computers • Access to Scratch website - https://scratch.mit.edu

Content

Introduction

Begin with a discussion about games with moving targets: You could tie this into PE activities such as dodge ball.

"In many games, you need to catch something moving, like catching coins or tapping characters before they disappear. Today, we'll make a game where you try to catch a hedgehog"

The activity in this project is to create a game where the object is to catch hedgehogs. The project uses sensing to determine when the hedgehog is caught and a point can be scored.

In this project you'll learn how to make a sprite move randomly, how to catch it, and how to keep score.

How to tie these concepts to a real world example: "Think of a fairground game where you try to catch a moving prize. What makes it challenging and fun?"

Scratch practical

Ask the children to log into Scratch and set up their work space with appropriate sprites and backgrounds. Show the Catch the hedgehog 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 catch the hedgehog game.

Activity – catch the hedgehog

This project uses a number of features to create a fun hedgehog catching game.

- Sprite selection: Guide students to choose or create sprites for the character that is going to catch the hedgehog
- Coding the character: Demonstrate how to program the character's movement using arrow keys or touch inputs.

Programme the hedgehog with random movements.

Explain how to use sensing blocks to detect when a hedgehog is caught and implement a response (e.g. target disappears, score increases).

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

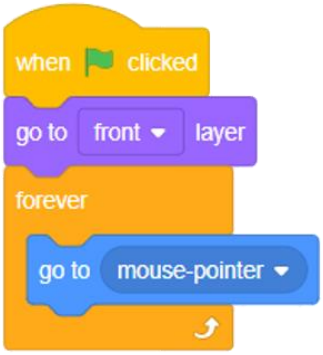
- Does the hedgehog move too quickly? Adjust the wait block
- Does the catcher move smoothly? Try changing the step size.

Encourage customisation

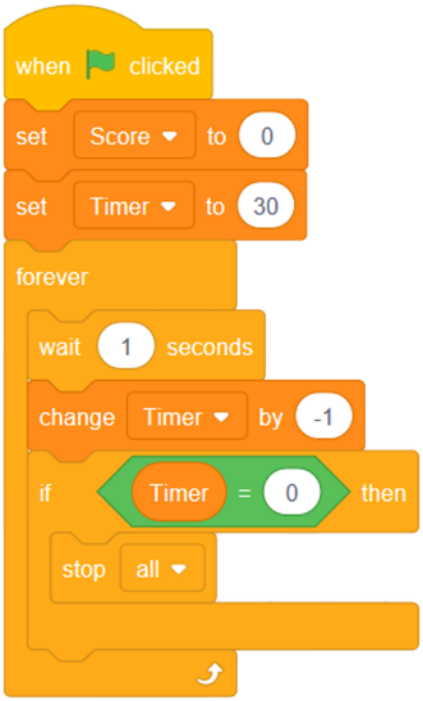
Add sound effects, change the hedgehog sprite’s costume when caught, or increase the difficulty by reducing the wait time.

Code snippets

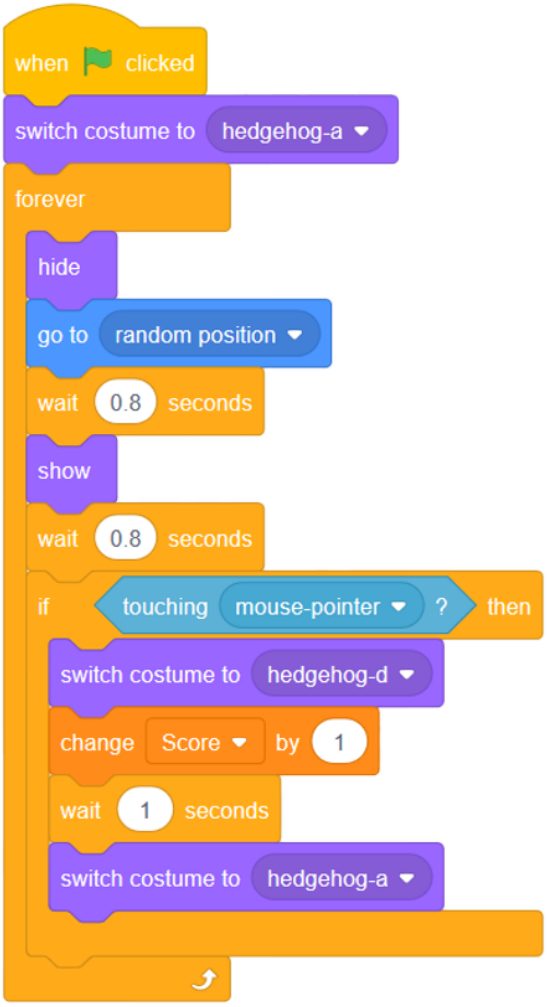
Goalie glove



Background



Hedgehog



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 visual guides showing where to find blocks
- Focus on programming the hedgehog's random movement before adding collision detection or a scoring system
- Pair students for collaborative learning.

Differentiation – Higher ability/extension

- Challenge students to create multiple levels with increasing difficulty
- Introduce additional variables, such as a timer or lives
- Encourage them to add animations or effects when the hedgehog is caught.

Plenary

- What made the game fun or challenging?
- What happens when you adjust the wait time for the hedgehog's movement?
- How would you make the game harder or easier?

Assessment questions

- What block did you use to make the hedgehog move randomly?
- How did you program the game to know when the catcher touched the hedgehog?
- How does the score variable work? What happens when you catch the hedgehog?