Dragon knight challenge

Scratch lesson plan – Code Playground

BARCLAYS

Lesson overview

In this lesson, students will create a Scratch project called dragon knight challenge. Using concepts of variables and motion, students will help a knight avoid the dragon and score points. This lesson integrates the dragon knight workbook and instructional video to guide students through the activity.

Time	Key learning outcomes	Resources
45 mins	• Program sprite movement and interactions using keyboard controls • Use if statements and conditions to implement game logic • Create and manage variables to track progress (e.g. score, lives).	• Pencil and paper/printout of workbook • Laptops or desktop computers • Access to Scratch website - https://scratch.mit.edu

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Lesson introduction

Today, we'll create a project called dragon knight challenge. The project aims to use variables to keep track of time score and lives for a knight who attempts to avoid getting caught by a dragon.

> **Class question:**
>
> How do variables work in coding? What are they for and why might we use them?

This project uses a starter project which sets up the basics. Students with more confidence may wish to further customize or adapt their project either through alternate backgrounds or custom sprites.

> You could tie this to other parts of the curriculum. Perhaps through real life recreations of the dragon knight challenge game in real life. One student acts as the dragon and the other students attempt to evade them. See how many points they can score in a fixed time limit.

Scratch practical

Ask the children to log into Scratch and set up their workspace as described in the workbook.

- Children should have some understanding of variables from previous projects

- By the end of the activity they should be able to demonstrate a completed version of the dragon knight challenge program.

Activity – Dragon knight challenge

Students should start by loading the starter dragon knight challenge project. By following along to the video and using the instructions in the workbook they will add in the controls to the knight sprite for motion. They will also code variables for time, lives and score.

- How do they make the score go up or the lives go down?
- How do they make the timer function correctly.

Scratch practical

Students program the knight to follow the arrow keys using Scratch's motion blocks. This establishes player control.
Students add variables to act as a count down timer whilst recording score and tracking lives.

Activity wrap up

Prepare to share your game with the class.

Extension ideas:

Add animations or sound effects when the knight is caught/escapes the dragon

Create additional levels or ones that are more complex with extra dragons
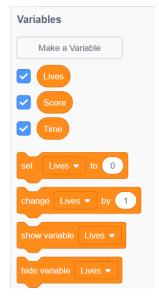
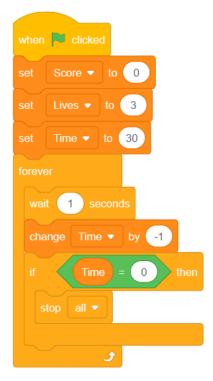Create an introduction with instructions on how to play.

Code snippets

Knight

Variables

Game set up

Scoring

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	Differentiation – Higher ability/extension
• Focus on programming basic movement for the knight before adding variables • Pair students to collaborate and share ideas.	• Challenge students to design additional levels with more dragons. Encourage them to add additional variables to control the speed or difficulty of the dragons • Add music or sound effects to enhance the game.

Plenary

- "What coding blocks did you use to control the knight and make them move?"

- "How did you implement the timer as well as scoring and lives variables in your game?"

- "What did you learn about motion and variables in scratch?"

Assessment questions

- How did you program the knight to follow the arrow keys?

- What blocks were used to create a timer?

- How does the scoring system work, and why is it important?

- What new features would you add to make the game more exciting?