Escape The Dragon

Activity Structure – 45min

Activity	Timing
Warm up Game	5 mins
Introduce Story and Project	10 mins
Main Activity	25 mins
Final test & debug	throughout
Share with group	5 mins

Overview

Can you avoid the dragon's fireballs and reach the treasure? Tap on the main character to make them jump out of the way and move closer to the treasure.
The instructions are detailed because lots of the characters' actions are coordinated. We have tried to keep them simple and to the point to make it as easy as possible for tutors.
If your class has lot of new coders we'd recommend doing the simple version.

Learning Objectives

- To start to use the stop block.
- To confidently use all four start blocks.
- To coordinate actions between different characters.

National Curriculum / EYFS Curriculum Links

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Warm up game: Traffic Light Game

- You'll need the following: flashcards (wait, stop and all four start blocks)
- Tell the children that today you are going to have a go at 'coding' them. They will be your 'characters'.
- Pick three children to demonstrate how the game works.
- Ask the children to move around the space. Depending on how calm your children are they could walk, hop, skips etc. Tell them to follow the coding instructions you give them (hold up).
- Stop, wait and green flag are quite simple. On tap – the children have to be tapped by you before they can move again. On bump – pick a sensible child to have the job of 'bumping' the children to trigger them to move. Messaging – hold up (send) the messaging card.

Introduction (discuss the project together, share ideas and create excitement)

- *Have you ever played a computer game? What's going to happen in my game?* Play the project.
- Let's look at the code for the knight. There are three different start blocks. *Why do you think this is?* Let's look at each line of code. *What does each one do?* Check the children understand that the [stop] block only effects the character which has it as part of its code.
- *Can you work out which character sends the orange message that triggers the knight to say 'I got the treasure'?* It's the treasure chest. Let's look at treasure's code.
- *Who else receives the orange message?* All the characters do (knight, dragon and fireball) because they all do something when the knight reaches the treasure.
- *What do the dragon and the fireball do when the knight reaches the treasure?*
- *Why does the knight's orange message code include a [stop] block?* If it didn't the Knight would continue its previous code and flash when it [bumps] the treasure chest. The [stop] block stops the code which makes the knight flash.

Escape The Dragon

Main Activity Key questions and teaching

1. Choose an appropriate background from the library.
2. Select, edit or draw a main character, a prize, a fireball and a baddie. Set a time limit for this.
3. *How will you explain the instructions for how to play the game? [Record a sound] or use the 'Add text' icon?* Add the instructions.
4. Position the characters on the screen. Make sure the dragon is in front of the fireball.
5. Let's start coding. We'll do the **dragon** first: *What will your dragon say when you press the green flag?*
6. **Fireball** [Green Flag, Slow, Left 17, Go Home, Wait 15, Repeat Forever] *What speed will you choose for your fireball? You may need to change this later when you test and debug your game.*
7. **Knight** [Start on Tap, Up 5, Right 2, Wait 5, Down 5]. When they are debugging and testing their game encourage the children to experiment with the time of the [wait] blocks for the fireball and knight. They may also need to tinker with the size of the knight and the fireball.
8. *What will happen to the knight when the fireball hits him? How could we code this?* [Start on Bump, Wait 2, say 'You got me', flash, Go Home] Less experienced coders could just do [On Bump, Go Home]
9. When the knight reaches the treasure, we will need to send a message to the other characters so that they can react.
10. **Treasure chest:** [Start on Bump, Send Orange Message]
11. *What should the dragon do when the knight reaches the treasure?* Let the children decide what they'd like their baddie to do. **Dragon:** [Start on Orange Message, (Choose a reaction) Hide].
12. **Fireball** [Start on Orange Message, Hide, Stop].
13. **Knight:** [Start on Orange Message, Stop, Say].

Teaching points

- The children will need to coordinate the actions of the different characters. To make it as simple as possible we have tried to teach the code in the sequence it runs in the game. This means there is some switching between characters as you code.
- The children don't need to have a knight, dragon and treasure as their characters. They could have a wizard, girl and a football, etc. whatever they would like.
- Remember to position the dragon in front of the fireball.
- Testing and debugging as you go along is important for this project.
- There are lots of opportunities to affect the difficulty of this game by varying the size and speed of the different characters. *How does the difficulty affect the fun of playing the game?* Too easy and it is boring; too difficult and players may give up.
- Have code sheets available to help the children if they need it.

Possible Extensions

- Use a message block to create a 'button' for controlling the knight.
- Create an iceball and a fireball (children will need to use the timer effectively so there is enough time between the two balls).
- Have a celebration page. Could the children code this independently?

To Simplify

- Have just three characters: hero, baddie and a projectile. The baddie doesn't need any code.
- **Hero:** [Start on Tap, Up 6, Wait 5, Down 6] and [Start on Bump], (Choose effect)]
- **Fireball:** [Start on Green Flag, Left 17, Home, Wait 15, Repeat Forever] Can the children experiment with using the wait block and speed blocks?

Finishing up

Share projects. *How did you find today's project? What was the best bit? What was the trickiest bit?*