

# Winter Wonderland: Dancing Penguins and Penguin Knock-Down

## Activity Structure – 50min

Activity	Timing
Introduce Project	10 mins
Penguin Dance	15 mins
Penguin Knock Down	25 mins
Final test & debug	throughout

### Overview

The children will incorporate their crafted penguins into their code projects. They will create an interactive Winter Fair with a dancing penguins animation (page 1) and a fun penguin 'knock-down' game (page 2).

\* Consider the age and experience level of your children and decide whether you will teach both the animations or just one.

### Learning Objectives

- To use different 'Start On' blocks.
- To make a character move and play a sound at the same time.
- To use an object from the real world in their coding.

### National Curriculum links

- **Spoken Language** To maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- **Computing:** children will use technology purposefully to create, organise, store, manipulate and retrieve digital content

### EYFS Curriculum Links

- **Communication and Language:** Responds to instructions involving a two-part sequence.
- **Technology:** Completes a simple program on a computer.

### Introduction: Dancing Penguins (discuss the project together, share ideas and create excitement)

- *Has anyone been to a Winter or Christmas Fair? What was it like? Were there any games?*
- *Today we are going to create an interactive Winter Fair on our tablets. They'll be plenty of entertainment with dancing penguins and some fun games to play.*
- *The first project we are going to make is 'Dancing Penguins'. Watch the project.*
- *Are the penguins doing the same thing or something different? Are they doing their dance at the same time? We can say that the penguins' movements are **synchronised**.*
- *Let's look at the code for the three penguins - what do you notice? They all have the same code. If you have a more experienced group you could demonstrate how to copy-code from one character to another using drag and drop.*
- *Did anyone notice which block I had at the end of the code for each penguin? Can anyone guess what it might do? Explain that it is a repeat forever block. If you have new coders discuss and demonstrate how the repeat forever block works.*

# Winter Wonderland: Dancing Penguins

## Main Activity Key questions and teaching

1. Select a winter themed background.
2. Select the penguin character you made during the craft sessions. Add three penguins to the project. *Do they all look the same or have you distinguished them?*
3. Position your penguins.
4. *What song will you sing for the penguins to dance to?* [Start on Green flag, Play Recorded Sound, Repeat Forever]
5. *Let's get our penguins moving.* Drag down a green flag block. Try out different combinations of the movement blocks to create a 'routine'. You can also play around with the 'value' of each movement block.
6. Let the children tinker with creating a routine for their penguin. *Does anyone know how to 'reset' their penguins to the start position? How many turns do I need to make to do a full turn? (12).*
7. It's probably best not to have a movement value higher than 10 as you want to keep the penguin character's movements quite confined.
8. Once you are happy with your penguin's movements add a repeat forever block and test it.
9. Copy or drag and drop the first penguin's code to the two remaining penguins. Test and debug the project.
10. That's it! All done. Early finishers could add further details such as snowflakes/ balls, a polar bear or rotating sun in the background, etc.

## Teaching points

- Consider the penguins positioning. What is the best position to show off your dance routine?
- Encourage the children to test and debug throughout.
- Support younger children to drag and drop the code to copy it from penguin 1 to the two remaining penguins.
- If you have one penguin moving much faster than the others check that you haven't accidentally dragged and dropped more than one line of code into it.

## Possible Extensions

- Could you use speed blocks to vary your penguins' movements?
- Can you create a falling snow effect?
- Distinguish the penguins from one another by editing them in the Scratchjr Paint Editor.
- Children may like to draw their own wintery background.

## To Simplify

- Keep the penguins in their rectangles, i.e. don't add drawings of feet or wings.
- Choose a limited number of motion blocks for the children to use and have these in front of them on the flashcards, including green flag and repeat forever block.

# Winter Wonderland: Penguin Knock-Down

**Introduction: Knock-down penguins** (discuss the project together, share ideas and create excitement)

- Show the children the project. *What do I need to do in this game? Have you ever played a game like this before?*
- Let's have a closer look at the code. *Which start blocks have I used? How do you think they work? I've used three different 'start' blocks.* Have the start block flashcards ready and run through Start on Green Flag, Start on Tap and Start on Bump. Check the children understand each one.
- Show the children the project again. *Can you work out which start block I used for each character?*

## Main Activity Key questions and teaching

1. Select a wintery' background from the library. Older children could edit the background using the Scratchjr Paint Editor.
2. Select three of the penguin characters. Older children could have the option to just use two penguins and to select or draw a third character in keeping with the winter theme (a snowman, Father Christmas, a reindeer, etc.)
3. Position the penguins on the screen.
4. Let's code the penguins. Point out that we have used two different start blocks because we want the penguins to do two different things (start moving on the 'Green Flag' and 'Hide' 'On Bump').
5. All the penguins have the same code so encourage the children to drag and drop between characters to copy the code.
6. *Now let's draw the snowball. How could I create a snowball?* Use the Paint Editor draw a circle. Fill the circle in white to look like a snowball (if the background is very white choose a blue to make the snowball otherwise you won't be able to see it).
7. Code the snowball. *Which start block should we use? How will we get the ball back to its original position ready to go again? How many movements up should your ball make?* Encourage the children to test and debug their game to ensure it works. They may need to play around with the positioning of their characters on the screen.
8. All finished. Well done!

## Teaching points

- Prompt the children to evaluate the effectiveness of their game. *Is it too easy/difficult? Do you need to adjust the position of your penguins? Is your snowball too big/small? How could you adjust the speed of your snowball?*
- Encourage the children to test and debug throughout.
- Support younger children to drag and drop to copy their code across from one character to another.

## Possible Extensions

- Children who are staying for the afternoon could attempt the advanced version of the project (if they run out of time they should have time later in the afternoon to complete the project). *Can you knock the hats off the penguins and snowmen?*
- Draw each hat as a separate character. Carefully position the hats and penguins (the hats need to be floating just above the penguins' heads).
- Code for the hats: [Start on Green Flag, Move Right, Repeat Forever] [Start on Green Flag, Up 1, Down 1, Repeat Forever] [Start on Bump, Pop, Hide]
- Test that the snowball hits the hats.

## To Simplify

- When creating the penguin character don't add feet or wings.
- Focus your support on the least experienced coders. Sit less confident coders near the tutor and ask your TA to circulate amongst the more experienced coders.