

Create snowflake patterns using Code-It

# Computing

## Knowledge organiser

**Learning Lens:** Computer Science—Computer Science (Code it—course E)  
**Class:** 5

### Previous Knowledge

Scratch

### The key skills we want pupils to use during this topic:

Understand and create algorithms

Use loops to create detailed pictures

### Project Hook or 'Wow' memory

Create mathematical patterns using circles and compasses.

### Learning Steps

### Key Knowledge (answers)

Introduction to Algorithm, create sprites in code-it and experiment with behaviours  
Create a simple animated underwater scene (lesson 2)

Play Follow the Algorithm game (lesson 1) and explore issues raised. students will be programming their own Fish Tank. They'll begin by learning how to put some sprites on the screen, then they will make them move. Finally, they'll customize their fish tank to add extra creatures want.

Use events to make sprites move around the screen based on user input

Alien Dance Party with Sprite Lab (lesson 3) Create an interactive animation using sprites, behaviours, and events and Identify actions that correlate to input events. begin by reviewing how to put sprites on the screen, then they assign them behaviours and learn to change those behaviours when an event is initiated. (code it lesson 3)

Nested loops  
create intricate designs using the Artist.

This **context-setting**—create intricate designs using the Artist and create their own designs. (Code it lesson 8 and 9) Break complex tasks into smaller repeatable sections. Combine simple shapes into complex designs with nested loops. Count the number of times an action should be repeated and represent it as a loop.

Functions- understand why combining chunks of code into functions can be a helpful.

Conditionals

Final piece

### Key vocabulary

**Behaviour -**

An action that a sprite performs continuously until it's told to stop

**algorithm -**

A list of steps to finish a task

**Sprite -**

A graphic on the screen with a location, size, and appearance.

**Event -**

An action that causes something to happen

**Function -**

A piece of code that you can easily call over and over again

**Conditionals -**

Statements that only run under certain conditions.

**Loop -**

The action of doing something over and over again

### Statutory Requirements

use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

