# Year 4 Spring 2 Computing– Computational Thinking

## Big Question

### What can I create with algorithms? Quizzes? Games?

### Key Vocabulary for the unit:

**Abstraction:** Identifying the important detail and ignoring irrelevant information.

**Algorithm** design: Creating a formula or set of instructions to solve the problem.

**Code (computer):** A set of instructions written in programming language, to tell a computer what to do.

**Code blocks:** A visual representation for a section of code that performs a certain job. They can be snapped together to build a program.

**Computational thinking:** A method of tackling a complex problem, to devise a solution which both computers and humans can understand.

**Computer:** Electronic machines that accept and process information to produce an output, and then store the results.

**Decompose:** To break something down into smaller chunks.

**Pattern recognition:** Identifying similarities and recurrences in data.

**Problem:** A matter or situation that needs to be resolved.

### Powerful knowledge/skills for this unit:

♦ To know that combining computational thinking skills can help you to solve a problem.

♦ To understand that pattern recognition means identifying patterns to help them work out how the code works.

♦ To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.

### What I should already know from Year 3:

♦ To understand what machine learning is and how it enables computers to make predictions.

♦ To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times.

♦ To know that abstraction is the removing of unnecessary detail to help solve a problem.

### Useful diagrams for the unit:



Data without any identification, order or sequence.



Sequence of dance moves:

Decomposition:

Pattern recognition: