Origami and Code
Curriculum Links

Curriculum Area: Visual Arts
Strand: Construction
Strand Unit: Making constructions, Looking and responding

Curriculum Area: Mathematics
Strand: Shape and space
Strand Unit: 2-D shapes, Angles

Curriculum Area: Primary Language
Strand: Oral Language
Element: Communicating, Understanding, Exploring and using
Strand: Reading
Element: Exploring and using

Learning Objectives

The children should be enabled to

- List the problem-solving skills used by computer scientists and coders *(computational thinking skills)*
- Describe the term origami and recognise that it's the process of transforming a square sheet of paper into a figure
- Demonstrate the ability to break down problems to help identify key steps in solving them
- Organize the steps in folding an origami figure into the correct order *(sequence)*
- Test their sequenced steps to identify any errors to correct
- Construct an origami figure using their own sequenced steps

DreamSpace

Origami and Code
Episode Description

In our first episode of DreamSpace ByteSize, Michael and Niamh introduce you and your class to the idea of solving problems like computer scientists and coders. They use four key skills when solving problems and this episode is focusing on our first one, *decomposition* i.e., breaking problems down into easier steps. We are going to be practicing this skill by introducing origami, the Japanese art of paper folding.

We will learn how to fold ourselves our very own paper dog but not before we break our problem down into its key steps and put our instructions into the correct order or sequence.

During our review, we reflect on how we could have improved our dogs and what to do if we encounter an error in our sequenced instructions.

WALT: We Are Learning To Make Origami

Concepts

Decomposition: Decomposition is about breaking down problems into smaller, more manageable parts, and then focusing on solving each of these smaller problems. We can break a complex problem down until the smaller parts are so simple, they become easy to solve. The solutions to each of these smaller, and simpler, problems build up to a solution to the big problem we started with. Decomposition helps make large problems much less intimidating!

Sequence: When designing instructions or algorithms, it is important to make sure that all the steps are presented in the correct order. This is known as sequencing. It is crucial that the steps in instructions and algorithms are performed in the right order, otherwise they will not work correctly. A computer can only do what it is programmed to do. If the steps are programmed in the wrong sequence, the computer will perform the tasks in this sequence, even if this is incorrect.

Differentiation

• There are 3 available versions of this episode's associated worksheets. Each of these require a different level of reading, writing and sequencing.

Reflection

• **What other problems could we break down to help us solve them?**
• **Why was it important to make sure our instructions were in the correct order?**

Assessment

Formative:
• Oral Discussion
• Key Step Identification
• Reflection
Summative:
• Sequencing Instructions
• Origami Construction

Resources

• DreamSpace ByteSize Episode 1
• Worksheets pp. 9 – 22
• Glue
• Scissors
• Extra square sheets of paper

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