Pixels and Shapes
Curriculum Links

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

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

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

Learning Objectives

The children should be enabled to
- Discuss what it means to focus on important details and why it's important to do so when solving problems
- Define what a pixel is and how we use them to show images, video and text on screens
- Identify and create pixelated 2-D shapes based on descriptions that outline their key details and characteristics
- Select the key details and characteristics of a classmate or friend when planning to recreate them in pixel form
- Design and draw a 16 x 16-pixel version of one of their classmates or friends

DreamSpace

Pixels and Shapes
Episode Description

In our third episode of DreamSpace ByteSize, Michael and Niamh introduce you and your class to our third problem solving skill used by computer scientists and coders, **abstraction** i.e., focusing on the important details. We are going to be practicing this skill by learning all about pixels and how we can use them to create and design shapes and characters.

We will design our very own pixel art characters but not before we learn all about pixels, create pixel shapes and list all the important details that we want to include in our character.

During our review, we reflect on how we could have improved our characters and why it was important to focus on what we wanted to include as we only had a limited number of pixels.

WALT: We Are Learning To Design Pixel Characters

Concepts

Abstraction: Abstraction is all about simplifying things to help us manage complexity. It requires identifying what the most important aspects of a problem are and hiding the other specific details that we don't need to focus on. The important aspects can be used to create a model, or simplified representation, of the original thing we were dealing with.

Pixels: A 'pixel' (short for 'picture element') is a tiny square of one colour. Lots of these pixels together form the digital images we see on our screens.

Differentiation

- There are 2 versions of Task 2 in this episode's associated worksheets to allow for students to either draw or write the key details they are going to focus on when designing their pixel characters. Differentiated expectations for students' pixel characters should also be considered.

Reflection
- **Why was it important to plan what we were going to focus on before we made our pixel characters?**
- **Why do you think pixels can only be one colour?**

Assessment
Formative:
- Oral Discussion
- Shapes Discussion
- Reflection

Summative:
- Pixel Shape Creation
- Pixel Character Creation

Resources
- DreamSpace ByteSize Episode 3
- Worksheets pp. 29 - 33
- Colours/Markers