

Instructions Session 2 Bitmap Images

Taken from Data Representation: Bitmap Images

<https://www.stem.org.uk/resources/elibrary/resource/35838/data-representation-bitmap-images>

Colouring activity from Teach Computing London

<https://teachinglondoncomputing.org/pixel-puzzles/>

Introduction

In this session you will look at how images are made on computers using picture elements or, more commonly known as, pixels. If you have access to a computer you can follow the computer based activity. If you do not then you can follow the unplugged activity. Either way you will begin a journey into understanding how computers display images.

Preparation

For this session you will need these files:

Presentation-Understanding_Bitmap_Images

Worksheet_Computer_Graphics

Answers_Computer_Graphics

Spreadsheet_Understanding_Bitmap_Images (If using a computer)

Without a computer replace Spreadsheet_Understanding_Bitmap_Images with:

colourbynumber1

colourbynumber1_Solution

colourbynumber2

colourbynumber2_Solution

You will need pencil crayons or felt tips for this exercise.

This is an unplugged session. That means it is designed to not need a computer.

1. Open the presentation. This has information to help explain tasks and also follows the flow of the session.
2. Complete the starter task (Worksheet_ComputerGraphics).
3. Check your work using Answers_Worksheet_Computer_Graphics.
4. Read the theory on slide 4 explaining pixels.
 - **If using a computer and you are able to open the spreadsheet** (Spreadsheet_Understanding_Bitmap_Images) using slides 5 to 13, work through the spreadsheet as directed.

- **If not using a computer.**
- Before you continue with the presentation complete the worksheet titled Simple Colour By Number Pixel Puzzle Picture 1S: Mini-beasts. Note that you are asked to colour in a pattern or 'algorithm'. This is an important step as you are replicating what a computer may do.
- Check your work against the solution.
- Next complete the worksheet titled Colour By Number Pixel Puzzle Picture 3S: Mini-beasts.
- Again check your work against the solution.
- Now read through the rest of the presentation. The colouring activity replaced the spreadsheet and should help you understand the concept of resolution when it is explained.