Activity 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 0 | 0 | 0 | 0 | 0 | | 0 | 1 | 0 | 1 | 0 | | 0 | 0 | 1 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 1 | 1 | 1 | 0 | | 0 | 0 | 0 | 0 | 0 | |

1. Complete the missing binary values in the grid above.
2. Identify how many possible colours can be represented in this image?

Answer: 2 (Black and White)

Activity 2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 10 | 10 | 10 | 10 | 10 | | 11 | 11 | 11 | 11 | 11 | | 00 | 00 | 00 | 00 | 00 | | 01 | 01 | 01 | 01 | 01 | | 10 | 10 | 10 | 10 | 10 | | 11 | 11 | 11 | 11 | 11 | |

1. Complete the missing binary values in the grid above.
2. Identify how many possible colours can be represented in this image?

Answer: 4 Colours (Black, White, Dark Grey and Light Grey)

Activity 3

Below is a 3-bit bitmap image.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Key:   |  |  |  | | --- | --- | --- | | **0** |  | 000 | | **1** |  | 001 | | **2** |  | 010 | | **3** |  | 011 | | **4** |  | 100 | | **5** |  | 101 | | **6** |  | 110 | | **7** |  | 111 | |

1. Colour in the image above and identify the object:

Answer: Watermelon (Slice)

1. In the key above, identify the binary values that could be associated with each colour. The first two have been done for you.

Activity 4:

|  |  |  |
| --- | --- | --- |
| http://2.bp.blogspot.com/-2OYayNbdJ6c/VjJqUDlTIII/AAAAAAAAAYs/HiRT_Zv0BzU/s1600/1_bit.png  1 | 2 | 3 |
| 4 | 5 |  |

1. Put these images in order from most to the least bits stored per pixel.

Answer: 3, 4, 2, 5, 1

1. Complete the table below to identify how many colours can be stored based on the number of bits per pixel.

|  |  |
| --- | --- |
| **Bits per pixel** | **Maximum colours stored** |
| 1 | 2 |
| 2 | 4 |
| 3 | 8 |
| 4 | 16 |
| 5 | 32 |
| 6 | 64 |
| 7 | 128 |
| 8 | 256 |