Target for this cycle Choose an item.

Name: Click here to enter text.

**Hexadecimal to Binary**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  | | --- | | **Define The term Hexadecimal** | |  | | **Why is hexadecimal used in computing?** | |  | | **Covert Binary to Hexadecimal - All** | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | **5** | | **1** |  |  |  |  | | **6** | **7** | **8** | **9** | **10** | |  | **7** |  |  | **A** | | **11** | **12** | **13** | **14** | **15** | |  |  | **D** |  |  | | **16** | **17** | **18** | **19** | **20** | |  |  | **12** |  |  | | | **Covert Binary to Hexadecimal - Zuckenberg** | |  | | **Covert Binary to Hexadecimal - Lovelace** | | **Convert the following. You can use the screen shot above to help you!** | | **Covert Binary to Hexadecimal- Turin** | | **1.1101 0011**  **2.0000 0010**  **3.0011 0011**  **4.0001 1000**  **5.0100 0110**  **6.0011 1101**  **Convert the following from Hexadecimal to binary**  **1.6**  **2.A**  **3.9**  **4A6**  **5.**  **B** | |

**Hexadecimal to Denary**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | **Hexadecimal conversions -Zuckerberg** | | |  |  |  |  | | --- | --- | --- | --- | | **Hexadecimal** | **Binary** |  | **Denary** | |  | 00000101 |  |  | |  | 00001110 |  |  | |  | 00011011 |  |  | |  | 00011100 |  |  | | |  | |  | | **Hexadecimal conversions -Lovelace** | | |  |  |  | | --- | --- | --- | | **Hexadecimal** | **Binary** | **Denary** | | A | 1010 |  | | 7 | 111 |  | | 2F | 101111 |  | | 4C | 1001100 |  | | D1 | 11010001 |  | | | **Hexadecimal conversions -Turin** | | |  |  |  | | --- | --- | --- | | **Hexadecimal** | **Binary** | **Denary** | | A | 1010 |  | | 7 | 111 |  | | 2F | 101111 |  | | 4C | 1001100 |  | | D1 | 11010001 |  | |  | 1001 | 9 | |  | 10001 | 17 | |  | 11011 | 27 | |  | 10001100 | 140 | |  |  | 212 | |  | 10011110 |  | |  | 11110010 |  | |  |  | 162 | |  |  | 99 | | 3F |  |  | | 8D |  |  | | AB |  |  | |  |  | 312 | |  |  | 511 | | |

**Character ASCII**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | **Define the term ASCII** | |  | | **What is ASCII used for** | |  | | **What is a character set? Find an image for this!** | |  | | **Task 1-Breaking the code! -ALL** | |  | | **Task 2-What is your name in binary? ALL** | |  | | **ASCII is a code for representing English characters as numbers. Convert the following! Zuckerberg** | | 65 83 67 73 73 32 105 115 32 97 32 99 111 100 101 32 102 111 114 32 114 101 112 114 101 115 101 110 116 105 110 103 32 69 110 103 108 105 115 104 32 99 104 97 114 97 99 116 101 114 115 32 97 115 32 110 117 109 98 101 114 115 | | **ASCII is a code for representing English characters as numbers. Convert the following! Lovelace** | | 65 83 67 73 73 32 109 97 107 101 115 32 105 116 32 112 111 115 115 105 98 108 101 32 116 111 32 116 114 97 110 115 102 101 114 32 100 97 116 97 32 102 114 111 109 32 111 110 101 32 99 111 109 112 117 116 101 114 32 116 111 32 97 110 111 116 104 101 114 46 | | **ASCII is a code for representing English characters as numbers. Convert the following! Turin** | |  | |

**Images-You will need to download the excel image sheet from.** [**www.computingsouthshields.com**](http://www.computingsouthshields.com)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | **What is a pixel?** | |  | | **What is resolution?** | |  | | **What is colour depth?** | |  | | **What is a bitmap?** | |  | | **Draw an 8x8 image- Place you screen shots in the space below. Zuckerberg** | |  | | **Draw a 16 X 16 image- Place you screen shots in the space below. Lovelace** | |  | | **Draw an 8 x 8 image AND 16 X 16 image. Place you screen shots in the space below. Turin** | |  | | **In what situations would computers need to store pictures?**  **How do computers store pictures when they can only use numbers?** | |  | | **Colour images can you figure out how?-Zuckerberg, Lovelace and Turin** | |  | | **Work in pairs to complete the colour images task-Zuckenberg and Lovelace** | |  | | **complete the colour images task-Turin** | |  | |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sound**   |  | | --- | | **Define the terms analogue and sampling** | |  | | **Complete the following questions Zuckerberg** | | 1. Explain how an analogue recording is made. 2. Why doesn’t a digital recording of a piece of music contain all of the sound available? 3. Explain what is meant by the ‘sample rate’. 4. What sample rate is standard for audio CDs? | | **Complete the following questions Lovelace** | | 1. Explain how an analogue recording is made. 2. Why doesn’t a digital recording of a piece of music contain all of the sound available? 3. Explain what is meant by the ‘sample rate’. 4. What sample rate is standard for audio CDs? 5. What is meant by the ‘bit depth’ and how does it affect the quality of the digital   Recording? | | **Complete the following questions Turin.** | | 1. Explain how an analogue recording is made. 2. Why doesn’t a digital recording of a piece of music contain all of the sound available? 3. Explain what is meant by the ‘sample rate’. 4. What sample rate is standard for audio CDs? 5. What is meant by the ‘bit depth’ and how does it affect the quality of the digital recording? | | **Describe this image! -Turin** | |  | |

**Compression**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  | | --- | | **Define the term compression** | |  | | **Why is file compression important? - Zuckerberg** | |  | | **What is the difference between lossless and lossy compression?** | |  | | **Complete the following question and table-Zuckerberg** | | 1. **This compression method is most commonly used to compress image, audio and video files:** 2. **Highlight the correct compression method associated with the file types below:**  |  |  |  | | --- | --- | --- | | **File type** | **Lossy** | **Lossless** | | **JPEG** |  |  | | **GIF** |  |  | | **MP3** |  |  | | **PNG** |  |  | |  |  |  | | | **Complete the following table –Love lace** | | |  |  |  |  | | --- | --- | --- | --- | | **Type** | **File Type** | **Compression Type** | **Explanation** | | **Bitmap** |  |  |  | | **JPEG**  **Joint Photographic Experts Group** | **.jpg** | **Lossy** | **Good for photographs.**  **Colour depth = 24 bits, RGB 16.7 million different colours.** | | **GIF**  **Graphic Interchange Format** |  |  |  | | | **Complete the following table-Turin** | | |  |  |  |  | | --- | --- | --- | --- | | **Type** | **File Type** | **Compression Type** | **Explanation** | | **Bitmap** | **.bmp** | **-** |  | | **JPEG**  **Joint Photographic Experts Group** | **.jpg** |  |  | | **GIF**  **Graphic Interchange Format** | **.gif** | **Lossless** |  | | **MP3** | **.mp3** | **Lossy** |  | | **PNG**  **Portable Network Graphics** | **.png** |  |  | | **PDF**  **Portable Document Format** | **.pdf** | **Supports both Lossy and Lossless compression** |  | | |



|  |  |  |  |  |  |  |  |  |  |  |
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| |  |  | | --- | --- | | **PAIR Assessment opportunity** | | |  | 4 | |  | | |  | 8 | |  | | |