**Class 1 Notes**

*Techfios*

**Binary Number Conversion**

**Notes:**

* How do we get the numbers? Start from right to left

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 |
| 256 | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |

* If you turn on a number put 1
* If you turn off a number put 0

1. Decimal to Binary

Convert 18 to Binary Number

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 64 | 32 | 16 | 8 | 4 | 2 | 1 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| 0 | 0 | 1 | 0 | 0 | 1 | 0 |

Therefore, **18 = 0010010**

2. Binary to Decimal

Convert 00101 to Decimal (Remember RIGHT TO LEFT)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| **64** | **32** | **16** | **8** | **4** | **2** | **1** |

Take the number you turned on and add the numbers

4+1= 5

Therefore, 00101 = 5

**HEX Conversion**

https://www.mathsisfun.com/hexadecimals.html

**Relation between Hex and Color**

https://www.mathsisfun.com/hexadecimal-decimal-colors.html