|  |
| --- |
| Binary Practice Worksheet |

# **DECIMAL to BINARY and BINARY to DECIMAL**

**Converting Tips:**

* An easy method for converting from decimal to binary is to repeatedly subtract the greatest power of 2 less than your decimal number until you are left with 0. Then, draw the number of bits you need for the binary number and fill each slot that corresponds to a power of 2 you subtracted with 1 and everything else with 0
* An easy method for converting from binary to decimal to decimal is to label each bit slot with the power of 2 it corresponds to and then add together the powers of 2 that correspond to slots filled with a 1

**Note:** When working with binary, we will only be using unsigned representation

**Binary to Decimal**

Convert 38 to binary using 8 bits.

Convert 101 to binary using 8 bits.

**Decimal to Binary**

What is 00001011 in decimal?

What is 01010100 in decimal?

What is 11 + 1 in binary?

# **BINARY FAST FACTS**

What is the smallest and largest integer that can be represented with 4 bits?

How many bits are in a byte?

How can we store 18 in 4 digit binary?

What is ASCII?

What is Unicode? Why was it created?