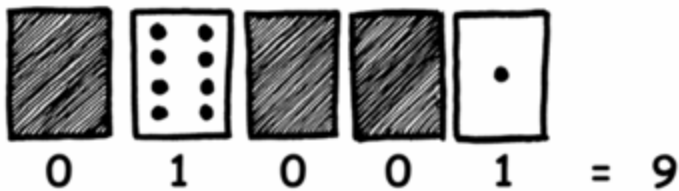Name _____

Binary Numbers Activity

Learning Target: I can convert binary numbers into decimal numbers
The binary system uses zero and ones to represent whether a card is face up or not. 0
shows that a card is hidden, and 1 means that you can see the dots.

For example:

So the binary number 01001 is equivalent to the number 9.

1. Rewrite the following binary numbers in base ten. Use the binary cards to help you.
    a. 10010

    b. 10101

    c. 00100

    d. 10000

2. Rewrite the following base ten numbers in binary. Use the binary cards to help you.
    a. 23

    b. 15

    c. 31

    d. 32

    e. 56

3. Put your thinking cap on: What number do you think is represented by binary number
below?
                            1010000

4. Can you figure out the values of the following numbers represented by the cypher below?

Write in base TEN.

☒☑☒☒☑ =
(☑=1, ☒=0)

⇧⇩⇧ =
(⇧=1, ⇩=0)

○○○○○ =
(◉=1, ○=0)

⌂⌂⌂ =
(⌂=1, ⌐=0)

☹ =
(☺=1, ☹=0)

👍👎👍👎 =
(👍=1, 👎=0)

➕➕✖➕ =
(➕=1, ✖=0)

⏑⏑⏑⏑⏑ =
(⏑=1, ⏒=0)

▲▼▲▼▼ =
(▲=1, ▼=0)

♠♠♠♠♠ =
(♠=1, ♣=0)

5. Tom is trapped on the top floor of a department store. It's just before Christmas and he wants to get home with his presents. What can he do? He has tried calling, even yelling, but there is no one around. Across the street he can see some computer person still working away late into the night. How could he attract her attention? Tom looks around to see what he could use. Then he has a brilliant idea—he can use the Christmas tree lights to send her a message! He finds all the lights and plugs them in so he can turn them on and off. He uses a simple binary code, which he knows the woman across the street is sure to understand. Can you work it out?
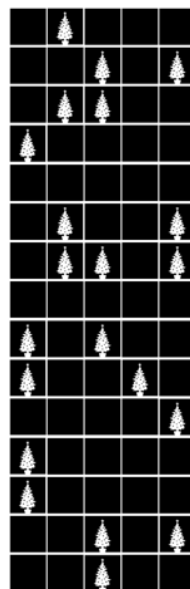
1	2	3	4	5	6	7	8	9	10	11	12	13
a	b	c	d	e	f	g	h	i	j	k	l	m
14	15	16	17	18	19	20	21	22	23	24	25	26
n	o	p	q	r	s	t	u	v	w	x	y	z

Message:

____ ____ ____ ____   ____ ____   ____ ____ ____ ____ ____ ____ ____

Spicy Challenge 🌶️

What is this number? 1 0 1 0 1 1 1 0 1 0

Muy Caliente 🌶️ 🌶️

What is the number 1287 in binary?