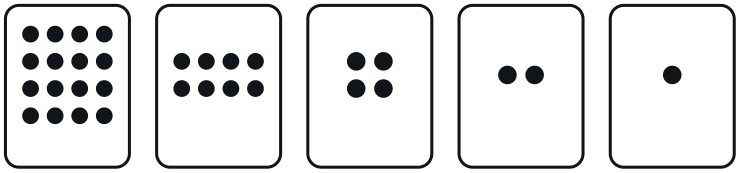
Names (pair) _____ Date _____

Dot Cards



16 8 4 2 1

Remember

A card **face up** means 1 and a card **face down** means 0. To get the number, add up the dots on the cards that are face up. A number written with zeros and ones is in **binary**, and each digit is a **bit**.

1 IN PAIRS Look at the cards from right to left: 1, 2, 4, 8, 16. What is the rule? How many dots would the next card to the left of 16 have, and the one after it?

Rule: _____ next cards: ☐ ☐

2 IN PAIRS **Show the number.** One of you says a number and the other turns the cards. Write 1 for a card face up and 0 for a card face down.

Number	16	8	4	2	1
5	☐	☐	☐	☐	☐
9	☐	☐	☐	☐	☐
12	☐	☐	☐	☐	☐
17	☐	☐	☐	☐	☐
31	☐	☐	☐	☐	☐
0	☐	☐	☐	☐	☐

Names (pair) _____ Date _____

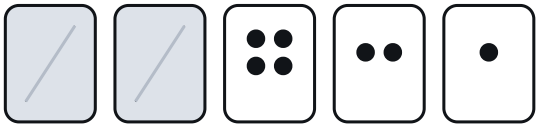
3 ON YOUR OWN **Which number is it?** A grey card is face down.



$01010_2 =$ ☐



$11001_2 =$ ☐



$00111_2 =$ ☐



$10000_2 =$ ☐

4 IN PAIRS What is the largest number you can show with 5 cards? And with 6 cards? What do you notice?

5 cards: ☐ 6 cards: ☐

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5 IN PAIRS **Counting.** Using three cards 4, 2, 1, write the numbers from 0 to 7 in order. Which card turns over at every step, and which one least often?

Number	0	1	2	3	4	5	6	7
Binary	☐	☐	☐	☐	☐	☐	☐	☐

The Binary Cards app · otooly.com/binary-cards

Counting mode: add one dot at a time and watch how often each card turns over. Practise reading numbers in **Which number is it?** mode.

★ ON YOUR OWN **Exit card.** The cards show 10110. Which number is it? ☐