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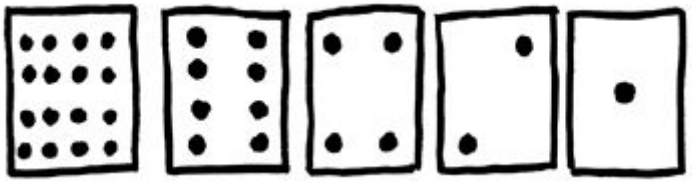
Introduction to Binary
Work Sheet: 05-P-02-WS

cspathshala
Bringing computational thinking to schools

Working with Binary



1. Based on the given cards above as reference, try to answer the given decimal number in Binary

Decimal	Binary
9	01001
5	00101
22	10110
7	00111
11	01011

2. Given the set of above cards:-
   a. What is the biggest number you can make with them? 31

   b. What is the smallest number you can make with them? 0

   c. Is there more than one way to get a number using these cards?
   For example 9 can be obtained in the decimal system by doing 7+2 or 5+4 or 4+2+1 etc..Can do that with Binary?

   No. There is only 1 way to make a number

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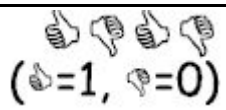
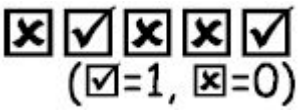
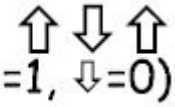
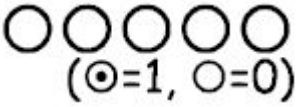
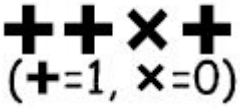
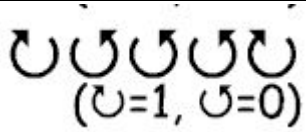
3. Try to work out these coded numbers:

Code	In Binary	In Decimal
 (👍=1, 👎=0)	**1010**	**10**
 (☑=1, ☒=0)	**01001**	**9**
 (⇧=1, ⇩=0)	**101**	**5**
 (⊙=1, ○=0)	**00000**	**0**
(📪=1, 📭=0)	**10**	**2**
(☺=1, ☹=0)	**0**	**0**
 (✚=1, ✖=0)	**1101**	**13**
 (↻=1, ↺=0)	**10001**	**17**
(▲=1, ▼=0)	**10100**	**20**
(♠=1, ♣=0)	**11111**	**31**

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4. Try making the numbers 1, 2, 3, 4 in order. Can you work out a logical and reliable method of flipping the cards to increase any number by one?

   To increase any number by one, turn all the cards from right to left until you turn one face up with dots.

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