05 Understanding Binary Numbers

Watch the video:

[Arduino Tutorial 5: Understanding and Working With Binary Numbers]

1) Answer the following Questions (Place your final answer in the table found at the end).
2) Build a four LED digital binary display in tinkerCAD, as described in the video at 21:00min.
3) Attach a video of your working display. You can not insert the video directly to this document but before submitting this document in Google Classroom you can attach additional files.

1.)

Do the following binary calculations (you may want to convert them to base-10 to check your answers):

a) $0+0=$ b) $1+0=$ c) $0+1=$ d) $1+1=$

Solutions

a) 0 b) 1 c) 1 d) 10

2.)

Try the following binary calculations:

10	1001	10	110	101
+1	+110	+10	+10	+11

3)

What does the binary equation $1+1+1=?$

4)

Use your result from 15 to do the following binary calculation.

$$\begin{array}{r} 111 \\ +1011 \\ \hline \end{array}$$

5)

Linda is converting a base-10 number to binary form and ends up with the number 100210. She knows that this can't be right because binary numbers are only made up of ones and zeroes. What should Linda's number actually be?

Answer Table:

1.	a)0	b)1	c)1	d)10	
2.	a)11	b)1111	c)100	d)1000	e)1000
3.	a)11				
4.	a)10010				
5.	101010				