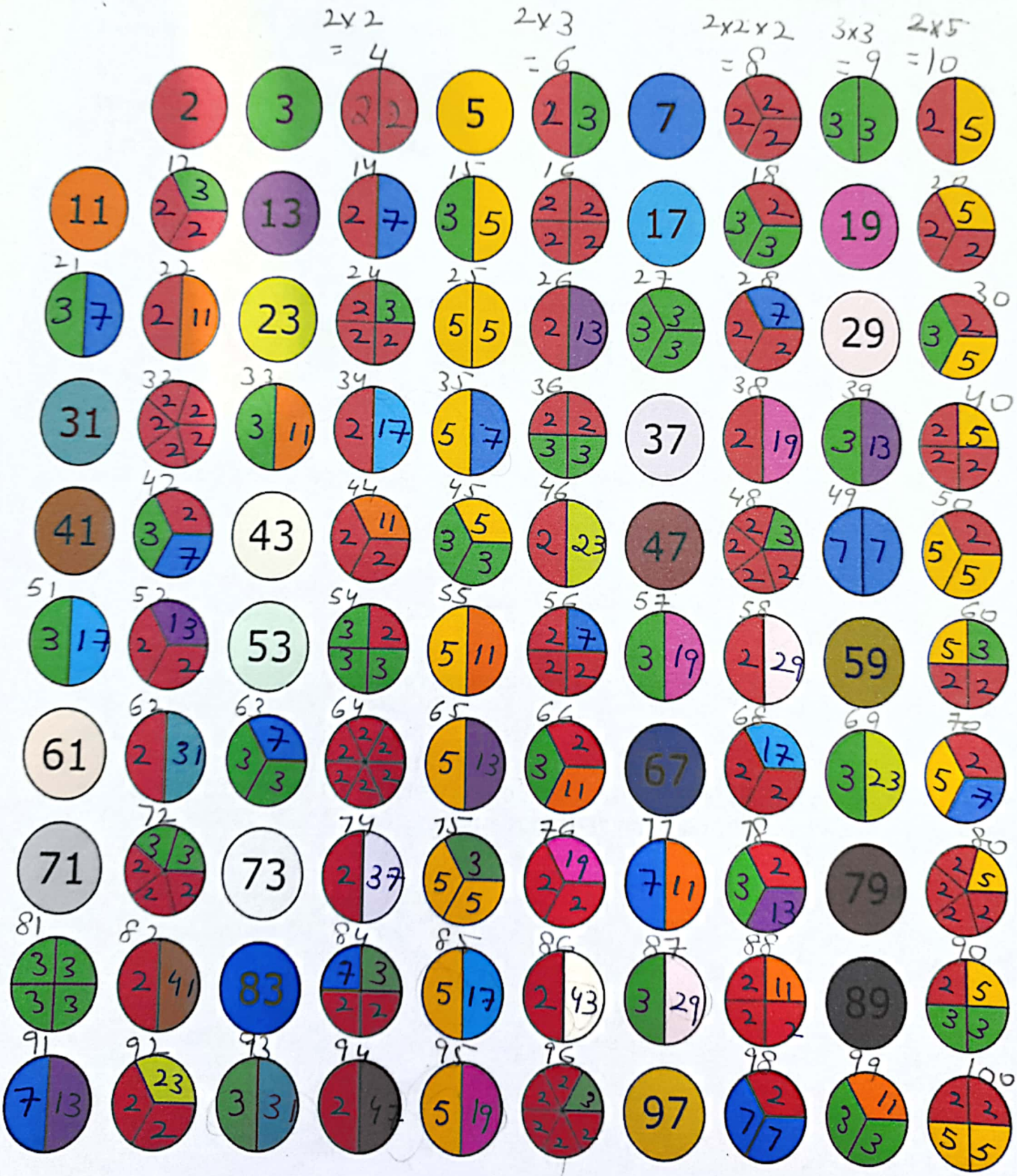
Ahsan 5-E

nrich

Xavi's T-shirt



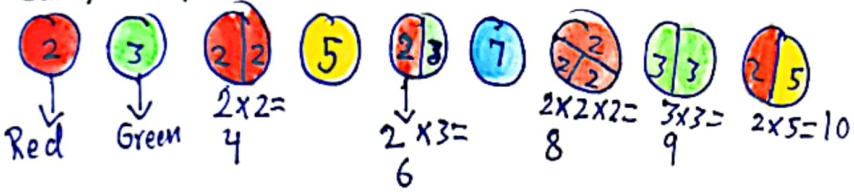
Xavi's T-shirt

Here are some questions you may like to consider:

What is special about the circles that are not split up?

They are all prime numbers.

Can you explain what is happening in the top row?



What do you notice about the colours in the fifth column?

All the circles in fifth column has yellow colour.

yellow → 5

All are multiple of 5, ending (unit's digit) in 5. 5, 15, 25, 35, 45, 55, 65, 75, 85, 95.

What is happening in the far-right column?

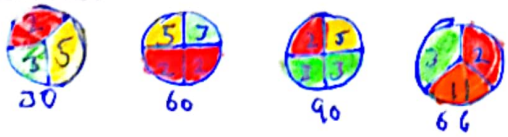
Red → 0 Yellow → 5

All the numbers in far right column multiples of 10.

Take a look at the colours of the first two circles (2 and 3).

a What is special about the circles/numbers that have these two colours?

b What is special about the circles/numbers that have *only* these two colours?

a 

→ All are even numbers.

b. 

All are multiple of 6

Why do multiples of 11 appear on a diagonal line?

In each row and column there are 10 numbers and multiples of 11 means 11 x 1 = 11, 11 is added to 11, 11+11=22. 22+11=33, that's why they are appearing in diagonal line.

Xavi's T-Shirt

Why do multiples of 9 appear on a diagonal line?

because difference between the numbers is 9.

Look at the circle that represents 8. The three parts are all the same colour.
How many other circles/numbers will also be split into three identical colours?

$3 \times 3 \times 3 = 27$ $\boxed{3^3}$

$2 \times 2 \times 2 = 8$ $\boxed{2^3}$

On the bottom row, 93, 94 and 95 appear as three consecutive circles/numbers, each split into two, and no colour is repeated.
Can you find a similar set of four consecutive circles/numbers where no colour is repeated? If not, why not?

NO, May be numbers higher than 10

3, 31, 2, 47, 5, 19 are all Prime numbers and prime numbers are assinged different colour codes.

I can find maximum 3 consecutive Numbers.
33, 34, 35 & 85, 86, 87

What other patterns can you see? Can you explain why they occur?

- Last column is the multiple of 10.
- One's digit in all the column is same.
- Colour codes are assinged for all the prime numbers blue 2 to 100. For 2 it's red, for 3 it's green and so on.