

Investigating Common Factors

- To solve these puzzles, you may need to make more than one list of numbers.
- Read all the clues for each puzzle before you begin.
- The boxes to the right of the clues show you how many digits the number has.

Clues

Workspace

1 Puzzle A

- Less than 30
- 3 is a factor
- 4 is a factor
- Ones digit is 2 more than the tens digit

2 Puzzle B

- Even
- Less than 60
- Shares all the factors of 15
- Product of the digits = 0

3 Puzzle C

- Less than 10
- Common factor of 15 and 18
- Not a square number

4 Puzzle D

- Common factor of 8 and 9

How Many Factors?

Number	Factors	Number of Factors
24		<input type="text"/>
16		<input type="text"/>
10		<input type="text"/>
13		<input type="text"/>
25		<input type="text"/>
12		<input type="text"/>
7		<input type="text"/>
1		<input type="text"/>

Cuisenaire® Rods

W White

Red

Green

Purple

Yellow

Dark Green

Black

Brown

Blue

Orange

Prime Numbers Less Than 100

- 1 Put a box around 1 because it is neither prime nor composite.
- 2 Circle 2 and cross out the other multiples of 2.
- 3 Circle 3 and cross out the other multiples of 3.
- 4 Continue in the same way with each remaining number (in order) that has not been crossed out.

The circled numbers are prime. The crossed-out numbers are composite.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Save this chart for future reference.

Multiples and Divisibility

List the first 11 multiples in order for . . .

1 2:

2 5:

3 10:

Look for patterns in the multiples.

4 What can you say about the digits of the multiples of 2?

5 What can you say about the digits of the multiples of 5?

6 What can you say about the digits of the multiples of 10?

Use the patterns you have noticed to answer each question *yes* or *no* for the number 129,380.

7 Is it a multiple of 2? _____

8 Is it a multiple of 5? _____

9 Is it a multiple of 10? _____

Multiples and Digit Sums

Clues

Workspace

1 Puzzle A

- Greater than 30, but less than 60
- Multiple of 3
- Sum of the digits is a multiple of 3
- Product of the digits = 35

2 Puzzle B

- Less than 75, but greater than 45
- Sum of the digits is a multiple of 3
- Multiple of 3
- Product of the digits = 0

3 Puzzle C

- Greater than 60, but less than 90
- Sum of the digits is a multiple of 3
- Product of the digits = 8

4 Puzzle D

- Greater than 40, but less than 46
- Sum of the digits is a multiple of 3
- Multiple of 3