Warm up Grade 6

Date: Sept 25

1) Compare using < or >

   a) +10 $>$ -20   b) -1 $>$ -16   c) +5 $<$ +30

      Big   Better

2) What is the lowest common multiple (LCM) between 4, 6?

$4 \rightarrow$ 4, 8, ⑫ 16, 20, 24. -- --.

$6 \rightarrow$ 6, ⑫ 18, 24----.

LCM (4,6) = l

3) Write the following in standard form

a) 3 trillion 2 hundered milllion 6 thousands six hundred

   3 _0 0 0_   _2 0 0_   _0 0 6_   _6 0 0_
      billion   million thousand   units

 b) 50 000 000 000 + 4 000 000 000 + 60 000 000 + 2000 + 6

   5 4   _0 6 0_ _0 0 2_ _0 0 6_

Homework Solutions
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#1a,b,c,d
#2a,b,c,d
#4a,b,c,d
#5a,b
#6a
#8

#9
#10
#13
#14

1) first 10 multiples of

a) 2: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

b) 5: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

c) 8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

d) 7: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70

2) First 6 multiples of

a) 12: 12, 24, 36, 48, 60, 72

b) 11: 11, 22, 33, 44, 55, 66

c) 16: 16, 32, 48, 64, 80, 96

d) 15: 15, 30, 45, 60, 75, 90

4) Which #s 21, 24, 45, 30, 42, 60, 84 multiples of?

a) 3: 3,6,9,12,15,18,21,24,27,30, 33, 36, 39, 42, 45, 48, 51, 54, 57,
     60, 63, 69, 72, 75, 78, 81, 84, ...

b) 12: 12, 24, 36, 48, 60, 72, 84

c) 7: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84

d) 15: 15, 30, 45, 60, 75, 90

6a) 3: 3,6,9,12,15,18,21,24,27,30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60
    4: 4, 8, 12,16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68
    6: 6, 12, 18, 24, 30, 36, 48, 54, 60, 66, 72, 78, 84, 90

12, 36, 60 are 3 common multiples of 3, 4, 6

8) 8:00 pm
Every 6min
8:06
8:12
8:18
8:24
8:30
8:36
8:42
8:48
8:54
9:00

8) 8:00 pm
Every 9min
8:09
8:18
8:27
8:36
8:45
8:54
9:03
9:12
9:17
9:26

Pg 57   #9 #10 #13 #14

3spiders

Spider 9) 8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

Ants   6: 6, 12, 18, 24, 30, 36, 48, 54, 60, 66, 72, 78, 84, 90

4ants

10) Draw a large Venn diagram with 2 overlapping loops.
Label the loops Multiples of 5   and Multiples of 6
Sort these numbers in the Venn diagram:
45, 24, 52, 30, 66, 15, 85, 90, 72, 60, 20, 38

Multiples of 5   Multiples of 6

85   38

          72

45   20   60   24

                          52

                30   66

15   90
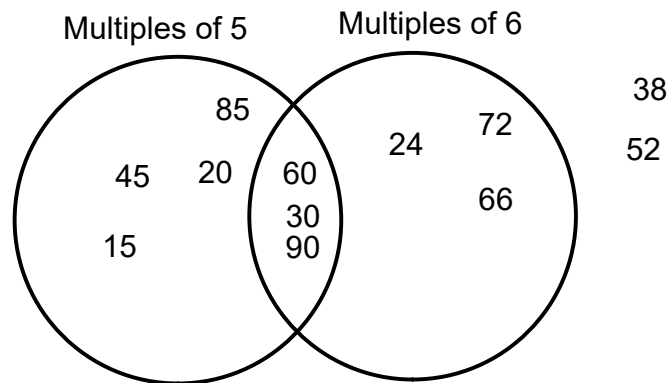
13) Common multiples of 8 and 3

8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, 104

3: 3,6,9,12,15,18,21,24,27,30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60

63, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99, 102

a) 32 is not in both list it is NOT a common multiple

b) 72 is in both list so it is a common multiple

c) 48 is in both list so it is a common multiple

d) 54 is not in both list it is NOT a common multiple

e) 66 is not in both list it is NOT a common multiple

f) 96 is in both list so it is a common multiple

14) Pack of 5 (Patties)

5: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80,

85, 90, 95, 100, 105, 110, 115, 120, 125

Pack of 8 (buns)

8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, 104, 112,

120, 128

24 packs of patties & 15 packs of buns

Ch.2 (Lesson 3: Exploring Multiples)

Specific Outcomes
- Demonstrate an understanding of place value for numbers greater than one million. (6N1)
- Solve problems involving large numbers, using technology. (6N2)
- Demonstrate an understanding of factors and multiples by:
  - determining multiples and factors of numbers less than 100
  - identifying prime and composite numbers
  - solving problems involving multiples. (6N3)
- Explain and apply the order of operations, excluding exponents, with and without technology (limited to whole numbers). (6N9)
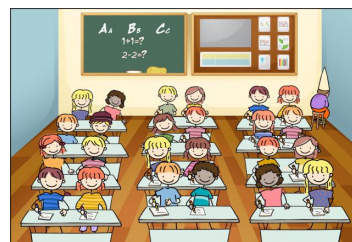
Today

Prime & Composite

Definition

Product - answer to a **multiplication** problem

- Factor – a number that is multiplied by another to give a product.
-        - a number that divides evenly into another number

ex) 7 x 8 = 56
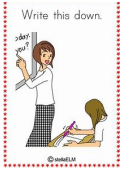
factors   product

ex) 56÷ 8 = 7

factors

Definitions

- **Prime Number** – a number that has only two factors, itself and 1.

  Example: 7 is **prime** because the only numbers that will divide into it evenly are 1 and 7.

  First few prime numbers
  2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37…

PRIME NUMBERS TO 100

Prime numbers are numbers that are only divisible by themselve and by 1.

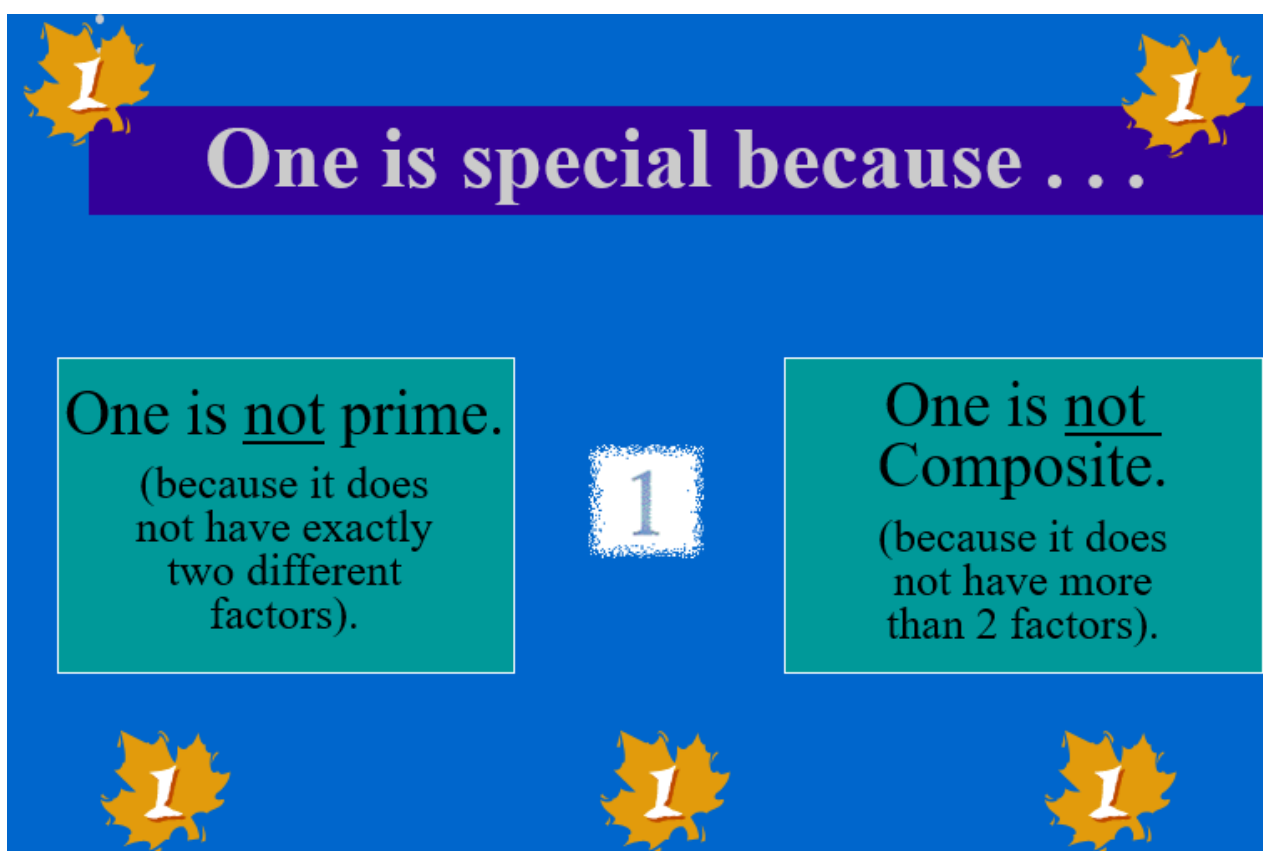|	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- **Composite number** – a number that has more than two factors.

ex) 8 is a composite number

$$1 \times 8 = 8$$

$$2 \times 4 = 8$$

so 8 has the factors 1, 2, 4, 8

6

How to model factors

Make different rectangles from the following numbers

1×16

1 | 16

a) 16 tiles can make   different rectangles

8

2

2×8

4

4

4×4

or
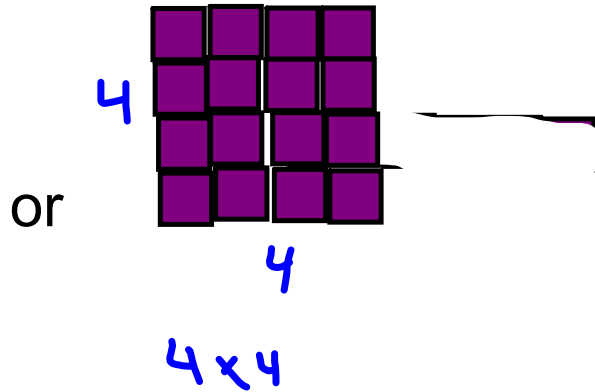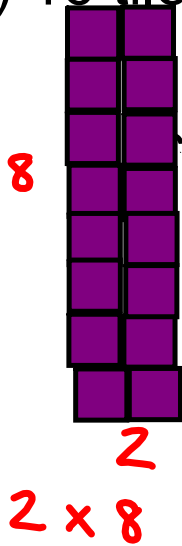
or

Area

16

1 X 16

2 X 8

4   X 4

Factors of 16 : __1, 2, 4, 8, 16__
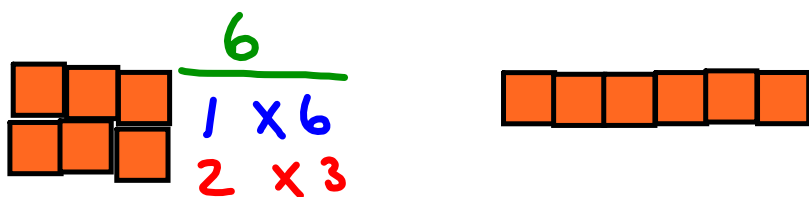
How to model factors   You try

Make different rectangles from the following numbers

a)   6 tiles can make   different rectangles

$$6$$
$$1 \times 6$$
$$2 \times 3$$

Factor of 6 $\Rightarrow$ 1, 2, 3, 6

You won't have to draw tiles as long as you can write what multiplies to get the product.

Example list the factors of 48

$$48$$

1 X 48
2 x 24
3 X 16
4 x 12
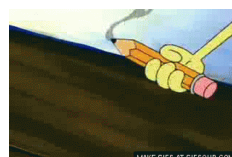6 x 8

Factors of 48 are 1, 2, 3, 4, 6, 12, 16, 24, 48

Class/Homework

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#1b, c, d, f, g, h

#3) Write the factors of 80 then write yes or no beside a - h

#5 HINT multiples of 12 may help to determine

Practice

You may use Colour Tiles or counters to model your solutions.

1. List all the factors of each number.

a) 6   b) 9   c) 25   d) 30   e) 12

f) 50   g) 28   h) 98   i) 20   j) 63

2. **a)** Name a prime number.
Explain how you know it is a prime number.

b) Name a composite number.
Explain how you know it is a composite number.

3. Which numbers below are factors of 80?
How do you know?

a) 2	b) 3	c) 4	d) 5
e) 6	f) 8	g) 9	h) 10

4. Which of the numbers 2, 3, 4, 5, 6, 8, 9, 12, 15, 17, and 19 are factors of:
   a) 24?   b) 38?   c) 45?   d) 51?
   What strategy did you use to find out?

5. Eggs are packaged in cartons of 12.
   Which of these numbers of eggs can be packaged
   in full cartons? How do you know?

   a) 96   **b)** 56   **c)** 60   **d)** 74

6. Write 3 numbers between 30 and 50 that have:
   a) exactly 2 factors each   b) more than 2 factors each

7. Write 3 numbers less than 100 that have exactly 4 factors each.

8. Sort these numbers as prime or composite.
   How did you decide where to place each number?
   59   93   97   87   73   45

9. Between 20 and 28 students signed up for the chess club.
   The students could not be divided exactly
   into groups of 2, 3, 4, or 5.
   How many students signed up for the chess club?
   Show your work.

10. How many numbers between 70 and 80 are prime numbers?
    What numbers are they?
    Explain how you know they are prime numbers.

11. How many days in September have a prime number date? How many have a composite number date? Show how you know.

| September						
Su	M	Tu	W	Th	F	Sa
					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

12. How can you tell that 32 and 95 are not prime numbers without finding their factors?

13. Brigitte and Stéphane play a game with this spinner.
Brigitte gets a point if the pointer lands on a prime number.
Stéphane gets a point if the pointer lands on a composite number.
The first person to get 20 points wins. Who is more likely to win?
How do you know?
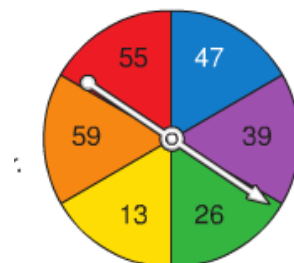
14. A student said, "All prime numbers except for the number 2 are odd.
So, all odd numbers must be prime numbers."
Do you agree with the student? Explain.
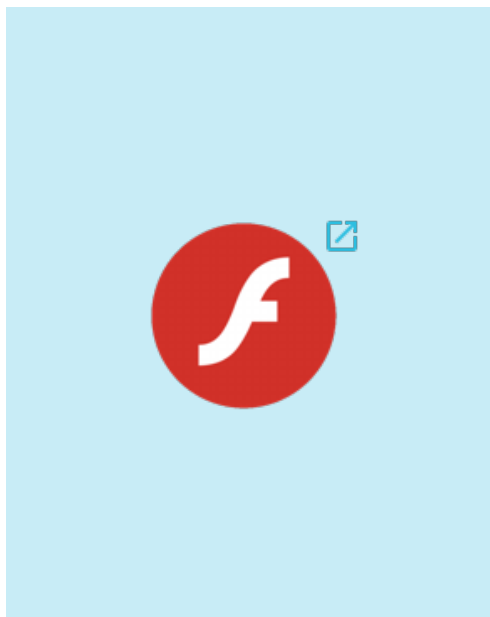
15. Copy this Carroll diagram.

	Prime	Composite
Even		
Odd		

Sort the numbers from 2 to 30.

Attachments

Integer questions for practice Solutions.notebook