

To be able to identify multiples, factors, composite numbers and prime number.

Knowledge :

Prime Numbers

Composite Numbers

Factors

Multiples

Task one: Write a definition for each and give examples.

Task Two:

Circle the multiples of 5

25 32 54 175 554 3000

What do you notice about the multiples of 5?

7,135 is a multiple of 5. Explain how you know.

Task Three:

Write 10 multiples of 3, 7, 9 and 8. Do you notice anything? Are there any patterns?

Challenge:

Use 0 – 9 digit cards. Choose 2 cards and multiply the digits shown.

What is your number a multiple of?

Is it a multiple of more than one number?

Find all the numbers you can make using the digit cards.

Use the table below to help.

	0	1	2	3	4	5	6	7	8	9
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										

### Always, Sometimes, Never

- The product of two even numbers is a multiple of an odd number.
- The product of two odd numbers is a multiple of an even number.

Eva's age is a multiple of 7 and is 3 less than a multiple of 8

She is younger than 40

How old is Eva?

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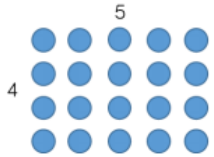
Factors

Multiples

Task one: Write an example for each.

Task Two:

If you have twenty counters, how many different ways of arranging them can you find?



How many factors of twenty have you found by arranging your counters in different arrays?

Circle the factors of 60

9, 6, 8, 4, 12, 5, 60, 15, 45

Which factors of 60 are not shown?

Fill in the missing factors of 24

$1 \times \underline{\quad}$        $\underline{\quad} \times 12$

$3 \times \underline{\quad}$        $\underline{\quad} \times \underline{\quad}$

What do you notice about the order of the factors?

Use this method to find the factors of 42

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Task Three:

Write factors for the numbers 32, 45, 48, 26 40

Challenge:

Here is Annie's method for finding factor pairs of 36

1	36
2	18
3	12
4	9
5	X
6	6

When do you put a cross next to a number?

How many factors does 36 have?

Use Annie's method to find all the factors of 64

**Always, Sometimes, Never**

- An even number has an even amount of factors.
- An odd number has an odd amount of factors.

**True or False?**

The bigger the number, the more factors it has.

To be able to identify multiples, factors, composite numbers and prime number.

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Task one: Write an example for each.

Task Two:

- 
- ' Use arrays to find the common factors of 12 and 15  
Can we arrange each number in counters in one row?

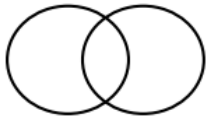


- Yes- so they have a common factor of one.  
Can we arrange each number in counters in two equal rows?



We can for 12, so 2 is a factor of 12, but we can't for 15, so 2 is not a factor of 15, meaning 2 is not a common factor of 12 and 15  
Continue to work through the factors systematically until you find all the common factors.

- ' Fill in the Venn diagram to show the factors of 20 and 24



- Where are the common factors of 20 and 24?  
Use a Venn diagram to show the common factors of 9 and 15

Task Three:

Write factors for the numbers 34, 49, 21, 250

Challenge:

True or False?

- 1 is a factor of every number.
- 1 is a multiple of every number.
- 0 is a factor of every number.
- 0 is a multiple of every number.

I am thinking of two 2-digit numbers.

Both of the numbers have a digit total of six.

Their common factors are:

1, 2, 3, 4, 6, and 12

What are the numbers?

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Task one: Write an example for each.

Task Two:

Use counters to find the factors of the following numbers.

5, 13, 17, 23

What do you notice about the arrays?

A prime number has exactly 2 factors, one and itself. A composite number can be divided by numbers other than 1 and itself to give a whole number answer.

Sort the numbers into the table.

2 3 5 9 15 24 29 30

	Prime	Composite
Exactly 2 factors (1 and itself)		
More than 2 factors		

Put two of your own numbers into the table.

Why are two of the boxes empty?

Would 1 be able to go in the table? Why or why not?

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Task Three:

List the prime numbers from 0 - 100

Challenge:

Find all the prime numbers between 10 and 100, sort them in the table below.

End in a 1	End in a 3	End in a 7	End in a 9

Why do no two-digit prime numbers end in an even digit?

Why do no two-digit prime numbers end in a 5?

Dora says all prime numbers have to be odd.



Her friend Amir says that means all odd numbers are prime, so 9, 27 and 45 are prime numbers.



Explain Amir's and Dora's mistakes and correct them.