Divisibility Rules

A number is divisible by. . .		Divisible	Not Divisible
2	if the last digit is even (0, 2, 4, 6, or 8).	3,978	4,975
3	if the sum of the digits is divisible by 3.	315	139
4	if the last two digits form a number divisible by 4.	8,512	7,518
5	if the last digit is 0 or 5.	14,975	10,978
6	if the number is divisible by both 2 and 3	48	20
9	if the sum of the digits is divisible by 9.	711	93
10	if the last digit is 0.	15,990	10,536

RECALL

Here is a number chart.

Every third number in the chart has a circle on it.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22			

The chart continues in the same way.

Here is another row in the chart.

Draw the missing circles.

71	72	73	74	75

Will the number **1003** have a circle on it?



APE

L.O. IDENTIFY COMMON FACTORS, COMMON MULTIPLES AND PRIME NUMBERS.

- SOME WILL EVEN: Problem solve using prime, multiples and factors.
- SOME WILL: Find quick ways to identify prime numbers (using multiple/factors knowledge)
- MOST WILL: Identify prime numbers.
- ALL WILL: Describe what a prime number is.

EXPLORE



1 a) Can Isla make more arrays if she uses 17 counters?

b) How many arrays can you make using 13 or 19 counters?

help

Use counters/cubes to make arrays.

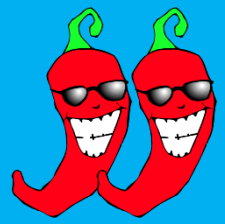
CHALLENGE!

Use calculations to explain your answers.

Intelligent Practice



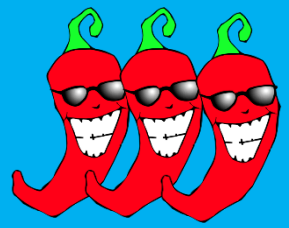
What are the prime numbers up to 100?



Calculate which numbers from 100 – 150 would be prime numbers.



APE



Is 1234 a prime number? Why/Why not?





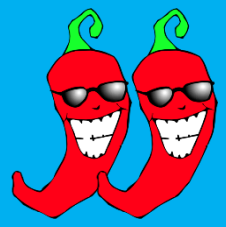
Describe how you can find out if a number is a prime number or not?
What method do you use?

Intelligent Practice



What are the prime numbers up to 100?

1,2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97,

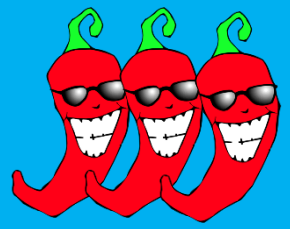


Calculate which numbers from 100 – 150 would be prime numbers.

101, 103, 107, 109, 113, 127, 131, 133, 137, 139, 149,



APE



Is 1234 a prime number? Why/Why not?





Describe how you can find out if a number is a prime number or not? What method do you use?

DIVE DEEPER 1

1)

1	5	6

Choose two cards each time to make the following two-digit numbers.

The first one is done for you.

an even number	5	6
an prime number		
a common factor of 60 and 90		
a common multiple of 5 and 13		

2)

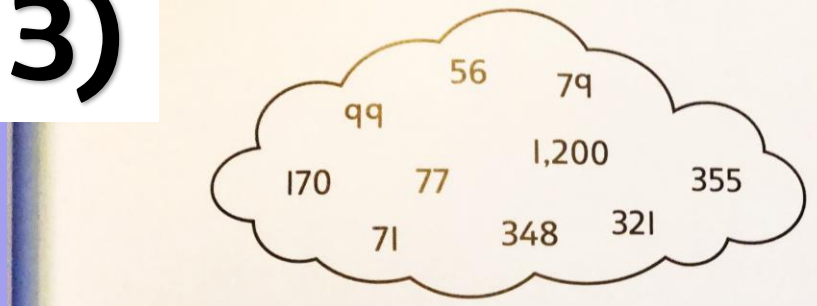
Write two numbers in each section of the table.

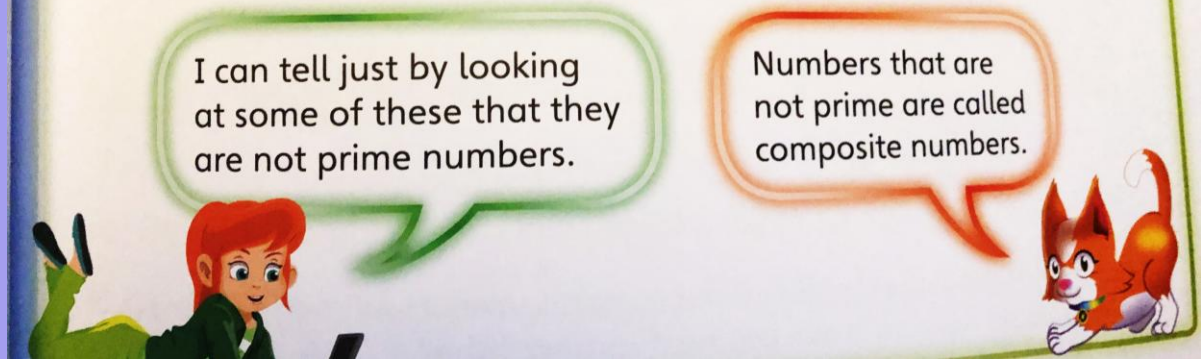
	Factor of 100	Not a factor of 100
Prime number		
Not a prime number		

Which section can have no more numbers in it?

3)

Look at these numbers. Which numbers are prime?





DIVE DEEPER 1

1)

1	5	6

Choose two cards each time to make the following two-digit numbers.

The first one is done for you.

an even number	5	6
an prime number	6	1
a common factor of 60 and 90	1	5
a common multiple of 5 and 13	6	5

2)

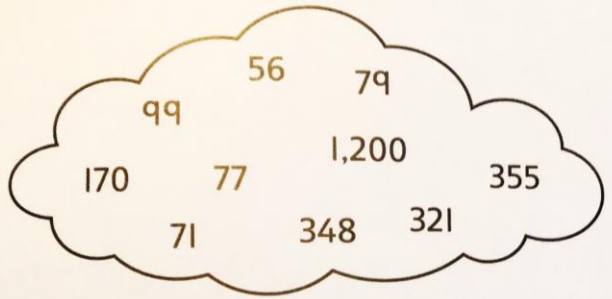
Write two numbers in each section of the table.

	Factor of 100	Not a factor of 100
Prime number		
Not a prime number		

Which section can have no more numbers in it?

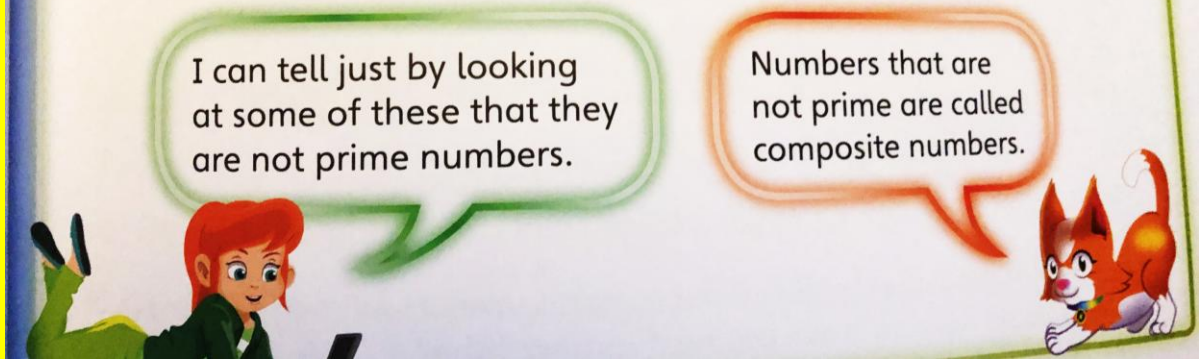
3)

Look at these numbers. Which numbers are prime?



79

71

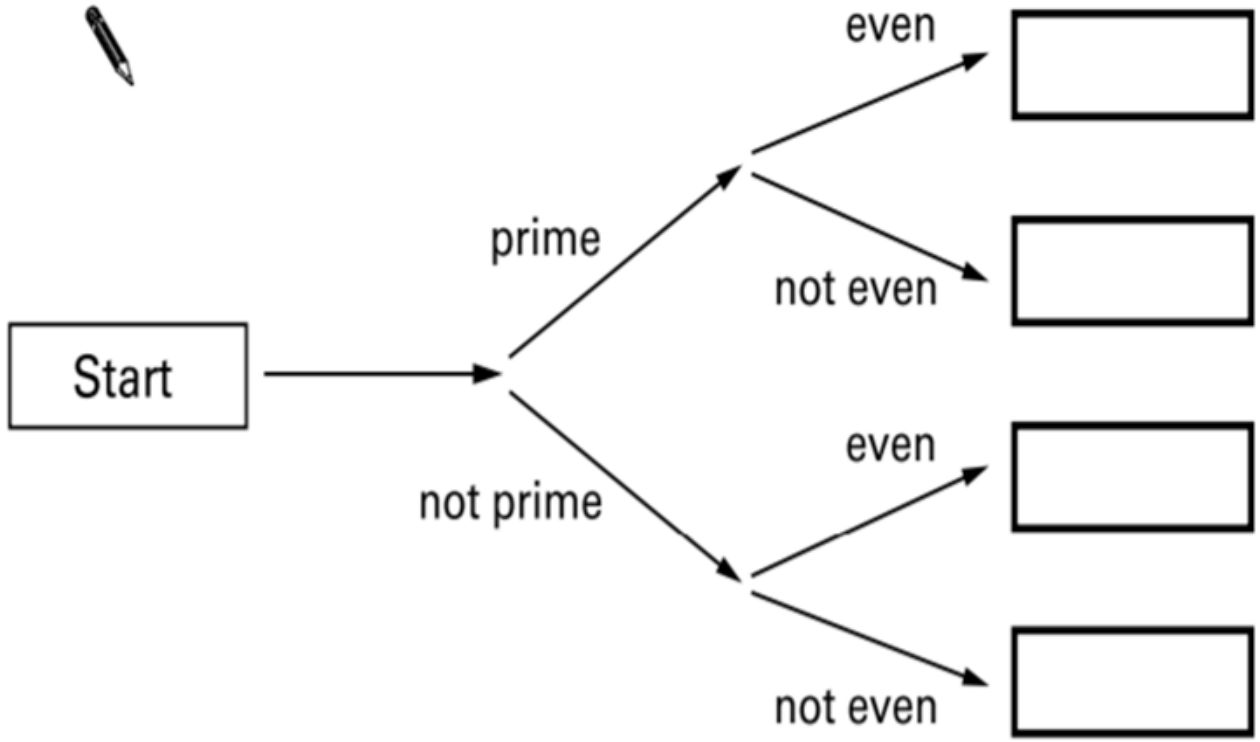


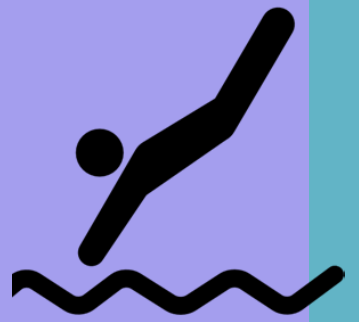
[2001]

Write these three numbers in the correct boxes.

You may not need to use all of the boxes.

9 17 20





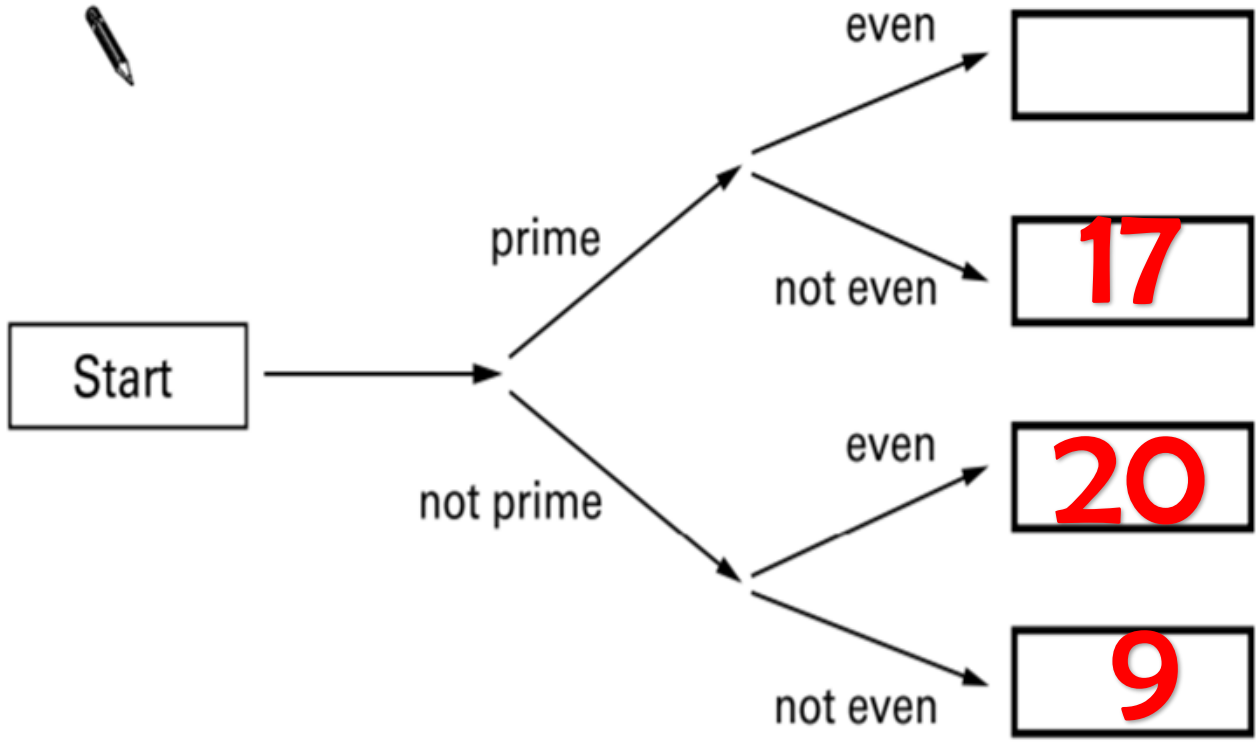
Dive Deeper 2

[2001]

Write these three numbers in the correct boxes.

You may not need to use all of the boxes.

9 17 20



Dive Deeper 2

Ext:
What numbers could you put in the empty box?

Two Primes Make One Square

Age 7 to 11
Challenge Level ★★

Flora had a challenge for her friends.
She asked, "Can you make square numbers by adding two prime numbers together?"

Ollie had a think.
"Well, let me see... I know that 4 = 2 + 2. That's a good start!"

Have a go yourself. Try with the squares of the numbers from 4 to 20.

Bailey said:
"I made the square numbers out of cubes and tried taking a prime number of cubes away and seeing if it left a prime number of cubes."

Dina said:
"I wondered whether noticing that 2 is the only even prime number was important."

Shameem said:
"I listed the prime numbers up to 100 and then I listed the squares of the numbers from 4 to 20."