Value of Numbers:

Partitioning numbers in a variety of ways?

Using the place value words / headings

Examples:

46 – can be represented as 4 tens and 6 ones or as 46 ones (2 digits = 2 ways)

125 – can be represented as 1 hundred 2 tens and 5 ones **or** as 12 tens and 5 ones **or** as 125 ones. (3 digits = 3 ways)

Can you partition the following numbers in a variety of ways ?

- 65
- 82
- 91
- 10 (tricky)
- 77
- 1234

* 213
* 345
* 493
* 979
* 401 (tricky)
* 1306

Partitioning using numbers and number knowledge

Examples:

46 – can be represented as 40 + 6 **or** 30 + 16 **or** 20 + 26 **or** 10 + 36

Then we can talk about what patterns can we see (either side of the addition sign) and how we know they are correct – 30 + 16 => in 30 we have 3 tens and in 16 we have 1 ten and 6 ones which together makes 4 tens and then we have 6 ones = 4 tens and 6 ones = 46.

125 – can be represented as 120 + 5 **or** 100 + 20 + 5 **or** 110 + 10 + 5 **or** 110 + 15 **or** 90 + 30 + 5 **or** 90 + 35 …..

How many different ways can you partition the following numbers ? Can you find 5 ways for each ?

- 65
- 82
- 91
- 10 (tricky)
- 77
- 1234

* 213
* 345
* 493
* 979
* 401 (tricky)
* 1306

Using the 3 digits 4 , 1 , 5 - How many different numbers can you make ?

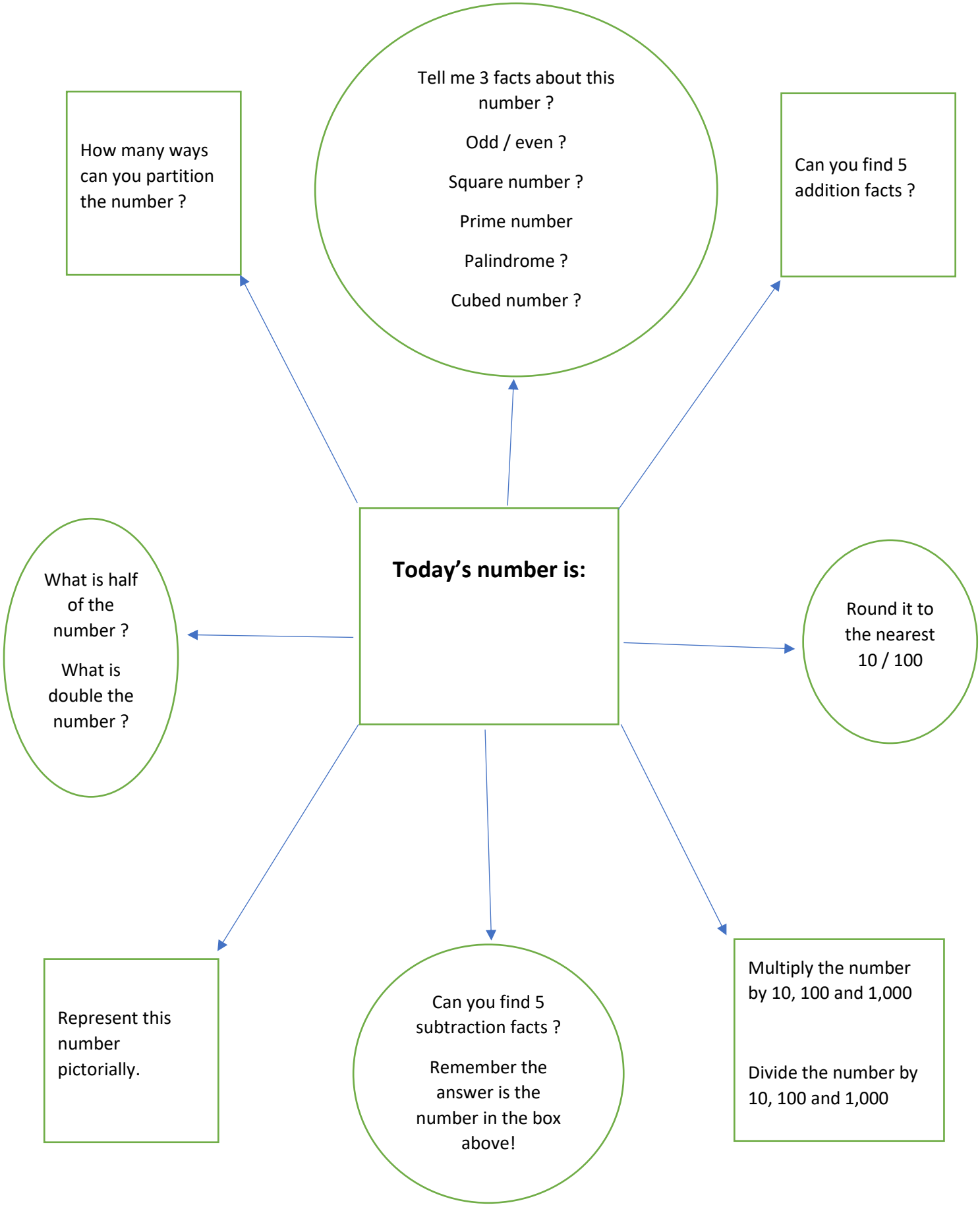
(have a conversation about the difference between a digit and a number)

- Do you know how many you should be able to find ? Can you prove it ?
- Can you do them in order ?

3 options = 6 numbers (3 options x 2 options x 1 option = 6 options)

145, 154 415, 451 514, 541

- Using the 3 digits 8 , 9 , 2 How many different numbers can you make ? Are they in order ?
- Using the 3 digits 1 , 6 , 7 How many different numbers can you make ? Are they in order ?
- Using the 3 digits 4 , 5 , 0 How many different numbers can you make ? Are they in order ? Are you sure these are all numbers? Can you make 6 different numbers this time ?
- Using the 4 digits 2 , 6 , 3 , 7 How many different numbers can you make ? Are they in order ?
- Using the 4 digits 9 , 1 , 5 , 4 How many different numbers can you make ? Are they in order ?
- Using the 5 digits 6 , 2 , 1 , 8, 9 How many different numbers can you make ? Are they in order ?
- Using the 5 digits 4 , 0 , 9 , 3, 7 How many different numbers can you make ? Are they in order ? What's different this time to the question directly above ? Why is this ?



Choose your own starting number. Questions stay the same – attempt what is applicable for your child.

Square number – product (answer) you get when you multiply a number by itself – 25 is a square number – 5 x 5

Cube number – product of an answer multiplied by itself 3 times – 8 is a cube number – 2 x 2 x 2

Palindrome – number which is the same forwards as it is backwards – 101, 898, 252

Prime Number – a number which has only 2 factors – itself and 1 - 13 is prime – only divisible by 1 and 13. 21 is not prime as it is divisible by 1 and 21 but it is also divisible by 7 and 3 (4 factors).