

## What is Long Division?

Long division is a method used to divide larger numbers by smaller ones. It helps you find out how many times one number fits into another and what is left over, called the remainder.

## Step-by-Step Guide to Long Division:

### Step 1: Set It Up

Write the number you are dividing (the dividend) inside the long division symbol (the 'house'), and write the number you are dividing by (the divisor) outside to the left.

### Step 2: Divide

Look at the first digit or group of digits in the dividend. Ask yourself: How many times does the divisor fit into this number? Write the number above the division symbol.

### Step 3: Multiply

Multiply the number you just wrote on top by the divisor. Write the result below the number you divided from.

### Step 4: Subtract

Subtract the number you just multiplied from the number above it. This gives you the remainder.

### Step 5: Bring Down

Bring down the next digit of the dividend next to the remainder you just calculated. You will use this new number for your next calculation.

### Step 6: Repeat

Repeat the process: divide, multiply, subtract, and bring down, until you have worked through all the digits of the dividend.

### Step 7: Conclusion

If there are any digits left and the divisor cannot divide into the new number anymore, that number is your remainder, and you can express the answer as a whole number and the remainder, or convert it into a decimal if you like.

## Example of Long Division

Let's divide 154 by 7:

1. Set it up: 154 inside the long division house and 7 outside.
2. Divide: 7 goes into 15 two times, so write 2.
3. Multiply: 2 times 7 equals 14, write it below 15.
4. Subtract: 15-14 equals 1, write it below.
5. Bring down: Bring down the 4, making it 14.

6. Divide again: 7 goes into 14 exactly 2 times, write 2 up.
7. Multiply: 2 times 7 equals 14, below 14.
8. Subtract:  $14 - 14$  equals 0.

No more digits to bring down, so we have finished!

The answer is:  $154 \div 7 = 22$ .

## **Practice Makes Perfect!**

Try practicing with different numbers! The more you practice long division, the easier it will become. Don't be afraid to ask for help if you get stuck.