



INVESTIGATION



10 p change



MathSphere

Investigate 10p change



I've just been to the sweet shop.

I spent 40p on sweets.

I gave the shopkeeper 50p.

I was given 10p change.

What coins could I have been given?

What coins can you use to make 10 pence?



Well, I was given 10 one pence pieces and its weighing my pockets down so much I've got to lie down!



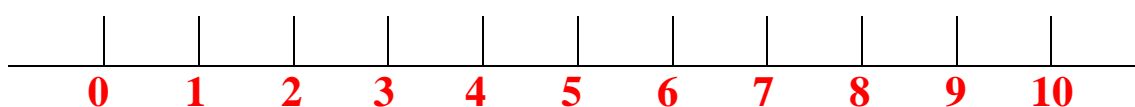
Some Ideas

Work in a methodical way, recording your results carefully as you go.

It is a good idea to go through all the possibilities in order, starting with the highest value coin (10p), and then the next highest (5p) and seeing which other coins can be used to make 10 pence.

How do you know that you have got all the ways of getting a 5p piece in your change?

A number line might help here.



When you have found all the possible ways can you change the amount of change?

Perhaps start with 3p change

Then move to 4p change

Then 5p.....

And find all the possibilities for each amount.

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Answer guide 1

Here are some possible answers and notes for guidance.

This is a good investigation to carry out in years 2 or 3, when children have gained confidence in counting up to ten and adding small numbers together.

It would be very useful to have a set of plastic coins available.

Children could record their results in a number of ways - perhaps drawing the coins, or just writing down their values.

eg $5p + 2p + 2p + 1p = 10p$

Once again being systematic is the key to answering this investigation.

To begin with most children will work in a fairly random way, collecting coins that equal 10 pence. After a while they should be encouraged to work in a more systematic way.

If they enjoyed this challenge then they could go on to investigate how to make other amounts: it would be better to start with small amounts

Eg make 1p 1p

make 2p 1p and 1p or 2p

make 3p 1p, 1p and 1p or 2p and 1p

make 4p 1p, 1p, 1p and 1p or 2p, 1p and 1p or 2p and 2p

Answer guide 2

Change to the value of 10 pence:

10p

5p 5p

5p 2p 2p 1p

5p 2p 1p 1p 1p

5p 1p 1p 1p 1p 1p

2p 2p 2p 2p 2p

2p 2p 2p 2p 1p 1p

2p 2p 2p 1p 1p 1p 1p

2p 2p 1p 1p 1p 1p 1p 1p

2p 1p 1p 1p 1p 1p 1p 1p 1p

1p 1p 1p 1p 1p 1p 1p 1p 1p 1p