

Coin Collection



Baseboard none

Resources Six British coins, or counters labelled as coins, with values:
1p, 2p, 5p, 10p, 20p and **50p** (one of each)

Puzzle 1 Which amounts less than **£1** cannot be made with these six coins?
For example, **4p** cannot be made.

Puzzle 2 You are allowed to add two extra coins to the six you already have, in order to be able to make every amount less than **£1**
What should these coins be?

Resources Five USA coins, or counters labelled as coins, with values (in cents):
1c (cent), **5c** (nickel), **10c** (dime), **25c** (quarter) and **50c** (half) – one of each

Puzzle 3 Which amounts less than **\$1** (dollar) cannot be made with these five coins?
For example, **2c** cannot be made.

Puzzle 4 You are allowed to add three extra **1c** coins to the five coins you already have, so you now have eight coins which are **1c, 1c, 1c, 1c, 5c, 10c, 25c, 50c**

This doesn't completely solve the problem of making every amount less than **\$1**
Which amounts less than **\$1** still cannot be made with these eight coins?

Puzzle 5 What is the smallest number of extra coins to be added to the eight you now have, to enable you to make every amount less than **\$1**, and what are those coins?

Resources Imagine a country where the currency has six coins with values:
1d, 3d, 6d, 12d, 24d, 30d

Puzzle 6 You have one of each of these six coins, which have a total value of **76d**

Which amounts less than **76d** cannot be made with these six coins?
For example, **2d** cannot be made.

Puzzle 7 What is the smallest number of extra coins to be added to the six coins you have, to enable you to make every amount less than **76d**, and what are those coins?

If you haven't guessed already, the country described here is Great Britain, where **d** is an 'old penny'. An 'old pound' contained 240 old pence, or 20 shillings. The coins were 1 old penny, 3 old pence (threepenny bit), six old pence (sixpence), 12 old pence (shilling), 24 old pence (two shillings or florin) and 30 old pence (half-crown or 'two and sixpence'). In addition there was a ten shilling note, a one pound note and a five pound note. Others included the farthing, half-penny, crown, and guinea.

[Answers](#)