 Investigation Challenge Cards
twink


Money, Money, Money Investigation


1. Using two of the coins each time, how many different amounts can you make?
Show which coins you used to make the totals and give each amount in pounds.
2. When you have found all the possible amounts, put them in order from lowest to highest.

3. Using three of the coins or notes each time, how many different amounts can you make?
Show which coins or note you used to make the totals and give each amount in pounds.
4. When you have found all the possible amounts, put them in order from lowest to highest.

5. Using two coins each time, how many different amounts can you make? Show which coins you use to make the totals and give each amount in pounds.
Answers can be given in any order but must show the coins used and give the total amount in pounds.

| $1 p+2 p=3 p=£ 0.03$ | $10 p+20 p=30 p=£ 0.30$ |
| :--- | :--- |
| $1 p+5 p=6 p=£ 0.06$ | $10 p+50 p=60 p=£ 0.60$ |
| $1 p+10 p=11 p=£ 0.11$ | $10 p+£ 1=£ 1$ and $10 p=£ 1.10$ |
| $1 p+20 p=21 p=£ 0.21$ |  |
| $1 p+50 p=51 p=£ 0.51$ | $20 p+50 p=70 p=£ 0.70$ |
| $1 p+£ 1=£ 1$ and $1 p=£ 1.01$ | $20 p+£ 1=£ 1$ and $20 p=£ 1.20$ |
| $2 p+5 p=7 p=£ 0.07$ | $50 p+£ 1=£ 1$ and $50 p=£ 1.50$ |
| $2 p+10 p=12 p=£ 0.12$ |  |
| $2 p+20 p=22 p=£ 0.22$ |  |
| $2 p+50 p=52 p=£ 0.52$ |  |
| $2 p+£ 1=£ 1$ and $2 p=£ 1.02$ |  |
| $5 p+10 p=15 p=£ 0.15$ |  |
| $5 p+20 p=25 p=£ 0.25$ |  |
| $5 p+50 p=55 p=£ 0.55$ |  |
| $5 p+£ 1=£ 1$ and $5 p=£ 1.05$ |  |

2. When you have found all the possible amounts, put them in order from lowest to highest.

| $£ 0.03$ | $£ 0.52$ |
| :--- | :--- |
| $£ 0.06$ | $£ 0.55$ |
| $£ 0.07$ | $£ 0.60$ |
| $£ 0.11$ | $£ 0.70$ |
| $£ 0.12$ | $£ 1.01$ |
| $£ 0.15$ | $£ 1.02$ |
| $£ 0.21$ | $£ 1.05$ |
| $£ 0.22$ | $£ 1.10$ |
| $£ 0.25$ | $£ 1.20$ |
| $£ 0.30$ | $£ 1.50$ |
| $£ 0.51$ |  |




1. Using three coins each time, how many different amounts can you make? Show which coins you use to make the totals and give each amount in pounds.
Answers can be given in any order but must show the coins used and give the total amount in pounds.

$$
\begin{aligned}
& 1 p+2 p+5 p=8 p=£ 0.08 \\
& 1 p+2 p+10 p=13 p=£ 0.13 \\
& 1 p+2 p+20 p=23 p=£ 0.23 \\
& 1 p+2 p+50 p=53 p=£ 0.53 \\
& 1 p+2 p+£ 1=£ 1 \text { and } 3 p=£ 1.03 \\
& 1 p+5 p+10 p=16 p=£ 1.16 \\
& 1 p+5 p+20 p=26 p=£ 1.26 \\
& 1 p+5 p+50 p=56 p=£ 0.56 \\
& 1 p+5 p+£ 1=£ 1 \text { and } 6 p=£ 1.06 \\
& 1 p+10 p+20 p=31 p=£ 0.31 \\
& 1 p+10 p+50 p=61 p=£ 0.61 \\
& 1 p+10 p+£ 1=£ 1 \text { and } 11 p=£ 1.11 \\
& 1 p+20 p+50 p=71 p=£ 0.71 \\
& 1 p+20 p+£ 1=£ 1 \text { and } 21 p=£ 1.21 \\
& 1 p+50 p+£ 1=£ 1 \text { and } 51 p=£ 1.51 \\
& 2 p+5 p+10 p=17 p=£ 0.17 \\
& 2 p+5 p+20 p=27 p=£ 0.27 \\
& 2 p+5 p+50 p=57 p=£ 0.57 \\
& 2 p+5 p+£ 1=£ 1 \text { and } 7 p=£ 1.07
\end{aligned}
$$

$$
\begin{aligned}
& 2 p+10 p+20 p=32 p=£ 0.32 \\
& 2 p+10 p+50 p=62 p=£ 0.62 \\
& 2 p+10 p+£ 1=£ 1 \text { and } 12 p=£ 1.12 \\
& 2 p+20 p+50 p=72 p=£ 0.72 \\
& 2 p+20 p+£ 1=£ 1 \text { and } 22 p=£ 1.22 \\
& 2 p+50 p+£ 1=£ 1 \text { and } 52 p=£ 1.52 \\
& \\
& 5 p+10 p+20 p=35 p=£ 0.35 \\
& 5 p+10 p+50 p=65 p=£ 0.65 \\
& 5 p+10 p+£ 1=£ 1 \text { and } 15 p=£ 1.15 \\
& 5 p+20 p+50 p=75 p=£ 0.75 \\
& 5 p+20 p+£ 1=£ 1 \text { and } 25 p=£ 1.25 \\
& 5 p+50 p+£ 1=£ 1 \text { and } 55 p=£ 1.55 \\
& \\
& 10 p+20 p+50 p=80 p=£ 0.80 \\
& 10 p+20 p+£ 1=£ 1 \text { and } 30 p=£ 1.30 \\
& 10 p+50 p+£ 1=£ 1 \text { and } 60 p=£ 1.60
\end{aligned}
$$

2. When you have found all the possible amounts, put them in order from lowest to highest.

| $£ 0.08$ | $£ 0.61$ | $£ 1.07$ | $£ 1.26$ |
| :--- | :--- | :--- | :--- |
| $£ 0.13$ | $£ 0.62$ | $£ 1.11$ | $£ 0.27$ |
| $£ 0.23$ | $£ 0.65$ | $£ 1.12$ | $£ 1.30$ |
| $£ 0.31$ | $£ 0.71$ | $£ 1.15$ | $£ 1.51$ |
| $£ 0.32$ | $£ 0.72$ | $£ 1.16$ | $£ 1.52$ |
| $£ 0.35$ | $£ 0.75$ | $£ 0.17$ | $£ 1.55$ |
| $£ 0.53$ | $£ 0.80$ | $£ 1.21$ | $£ 1.60$ |
| $£ 0.56$ | $£ 1.03$ | $£ 1.22$ | $£ 1.70$ |
| $£ 0.57$ | $£ 1.06$ | $£ 1.25$ |  |

(8)



1. Using three coins or notes each time, how many different amounts can you make? Show which coins or note you use to make the totals and give each amount in pounds.

## Answers can be given in any order but must show the coins used and give the total amount in pounds.

$1 p+2 p+5 p=8 p=£ 0.08$
$1 p+2 p+10 p=13 p=£ 0.13$
$1 p+2 p+20 p=23 p=£ 0.23$
$1 p+2 p+50 p=53 p=£ 0.53$
$1 p+2 p+£ 1=£ 1$ and $3 p=£ 1.03$
$1 p+2 p+£ 2=£ 2$ and $3 p=£ 2.03$
$1 p+2 p+£ 5=£ 5$ and $3 p=£ 5.03$
$1 p+5 p+10 p=16 p=£ 1.16$
$1 p+5 p+20 p=26 p=£ 1.26$
$1 p+5 p+50 p=56 p=£ 0.56$
$1 p+5 p+£ 1=£ 1$ and $6 p=£ 1.06$
$1 p+5 p+£ 2=£ 2$ and $6 p=£ 2.06$
$1 p+5 p+£ 5=£ 5$ and $6 p=£ 5.06$
$1 p+10 p+20 p=31 p=£ 0.31$
$1 p+10 p+50 p=61 p=£ 0.61$
$1 p+10 p+£ 1=£ 1$ and $11 p=£ 1.11$ $1 p+10 p+£ 2=£ 2$ and $11 p=£ 2.11$ $1 p+10 p+£ 5=£ 5$ and $11 p=£ 5.11$ $1 p+20 p+50 p=71 p=£ 0.71$
$1 p+20 p+£ 1=£ 1$ and $21 p=£ 1.21$
$1 p+20 p+£ 2=£ 2$ and $21 p=£ 2.21$
$1 p+20 p+£ 5=£ 5$ and $21 p=£ 5.21$
$1 p+50 p+£ 1=£ 1$ and $51 p=£ 1.51$

$$
\begin{aligned}
& 1 p+50 p+£ 2=£ 2 \text { and } 51 p=£ 2.51 \\
& 1 p+50 p+£ 5=£ 5 \text { and } 51 p=£ 5.51 \\
& 1 p+£ 1+£ 2=£ 3 \text { and } 1 p=£ 3.01 \\
& 1 p+£ 1+£ 5=£ 6 \text { and } 1 p=£ 6.01 \\
& 1 p+£ 2+£ 5=£ 7 \text { and } 1 p=£ 7.01
\end{aligned}
$$

$$
2 p+5 p+10 p=17 p=£ 0.17
$$

$$
2 p+5 p+20 p=27 p=£ 0.27
$$

$$
2 p+5 p+50 p=57 p=£ 0.57
$$

$$
2 p+5 p+£ 1=£ 1 \text { and } 7 p=£ 1.07
$$

$$
2 p+5 p+£ 2=£ 2 \text { and } 7 p=£ 2.07
$$

$$
2 p+5 p+£ 5=£ 5 \text { and } 7 p=£ 5.07
$$

$$
2 p+10 p+20 p=32 p=£ 0.32
$$

$$
2 p+10 p+50 p=62 p=£ 0.62
$$

$$
2 p+10 p+£ 1=£ 1 \text { and } 12 p=£ 1.12
$$

$$
2 p+10 p+£ 2=£ 2 \text { and } 12 p=£ 2.12
$$

$$
2 p+10 p+£ 5=£ 5 \text { and } 12 p=£ 5.12
$$

$$
2 p+20 p+50 p=72 p=£ 0.72
$$

$$
2 p+20 p+£ 1=£ 1 \text { and } 22 p=£ 1.22
$$

$$
2 p+20 p+£ 2=£ 2 \text { and } 22 p=£ 2.22
$$

$$
2 p+20 p+£ 5=£ 5 \text { and } 22 p=£ 5.22
$$

$$
2 p+50 p+£ 1=£ 1 \text { and } 52 p=£ 1.52
$$

$$
2 p+50 p+£ 2=£ 2 \text { and } 52 p=£ 2.52
$$

$2 p+50 p+£ 5=£ 5$ and $52 p=£ 5.52$ $2 p+£ 1+£ 2=£ 3$ and $2 p=£ 3.02$ $2 p+£ 1+£ 5=£ 6$ and $2 p=£ 6.02$ $2 p+£ 2+£ 5=£ 7$ and $2 p=£ 7.02$

$$
5 p+10 p+20 p=35 p=£ 0.35
$$

$10 p+20 p+£ 2=£ 2$ and $30 p=£ 2.30$
$10 p+20 p+£ 5=£ 5$ and $30 p=£ 5.30$ $10 p+50 p+£ 1=£ 1$ and $60 p=£ 1.60$ $10 p+50 p+£ 2=£ 2$ and $60 p=£ 2.60$ $10 p+50 p+£ 5=£ 5$ and $60 p=£ 5.60$ $10 p+£ 1+£ 2=£ 3$ and $10 p=£ 3.10$

$$
5 p+10 p+50 p=65 p=£ 0.65
$$

$$
5 p+10 p+£ 1=£ 1 \text { and } 15 p=£ 1.15
$$ $10 p+£ 1+£ 5=£ 6$ and $10 p=£ 6.10$ $10 p+£ 2+£ 5=£ 7$ and $10 p=£ 7.10$

$$
5 p+10 p+£ 2=£ 2 \text { and } 15 p=£ 2.15
$$

$$
5 p+10 p+£ 5=£ 5 \text { and } 15 p=£ 5.15
$$

$$
5 p+20 p+50 p=75 p=£ 0.75
$$

$20 p+50 p+£ 1=£ 1$ and $70 p=£ 1.70$
$20 p+50 p+£ 2=£ 2$ and $70 p=£ 2.70$

$$
5 p+20 p+£ 1=£ 1 \text { and } 25 p=£ 1.25
$$

$20 p+50 p+£ 5=£ 5$ and $70 p=£ 5.70$

$$
5 p+20 p+£ 2=£ 2 \text { and } 25 p=£ 2.25
$$

$20 p+£ 1+£ 2=£ 3$ and $20 p=£ 3.20$

$$
5 p+20 p+£ 5=£ 5 \text { and } 25 p=£ 5.25
$$

$20 p+£ 1+£ 5=£ 6$ and $20 p=£ 6.20$

$$
5 p+50 p+£ 1=£ 1 \text { and } 55 p=£ 1.55
$$

$$
5 p+50 p+£ 2=£ 2 \text { and } 55 p=£ 2.55
$$

$20 p+£ 2+£ 5=£ 7$ and $20 p=£ 7.20$

$$
5 p+50 p+£ 5=£ 5 \text { and } 55 p=£ 5.55
$$

$50 \mathrm{p}+£ 1+£ 2=£ 3$ and $50 \mathrm{p}=£ 3.50$

$$
5 p+£ 1+£ 2=£ 3 \text { and } 5 p=£ 3.05
$$

$50 \mathrm{p}+£ 1+£ 5=£ 6$ and $50 \mathrm{p}=£ 6.50$

$$
5 p+£ 1+£ 5=£ 6 \text { and } 5 p=£ 6.05
$$

$50 p+£ 2+£ 5=£ 7$ and $50 p=£ 7.50$

$$
5 p+£ 2+£ 5=£ 7 \text { and } 5 p=£ 7.05
$$

$£ 1+£ 2+£ 5=£ 8$
$10 p+20 p+50 p=80 p=£ 0.80$
$10 p+20 p+£ 1=£ 1$ and $30 p=£ 1.30$
2. When you have found all the possible combinations, put them in order from smallest to largest.

| $£ 0.08$ | $£ 0.53$ | $£ 0.75$ | $£ 1.16$ | $£ 1.55$ | $£ 2.15$ | $£ 2.60$ | $£ 5.03$ | $£ 5.30$ | $£ 6.02$ | $£ 7.10$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $£ 0.13$ | $£ 0.56$ | $£ 0.80$ | $£ 1.25$ | $£ 1.60$ | $£ 2.21$ | $£ 2.70$ | $£ 5.06$ | $£ 5.51$ | $£ 6.05$ | $£ 7.20$ |
| $£ 0.17$ | $£ 0.57$ | $£ 1.03$ | $£ 1.26$ | $£ 1.70$ | $£ 2.22$ | $£ 3.01$ | $£ 5.07$ | $£ 5.25$ | $£ 6.10$ | $£ 7.50$ |
| $£ 0.23$ | $£ 0.61$ | $£ 1.06$ | $£ 1.21$ | $£ 2.03$ | $£ 2.25$ | $£ 3.02$ | $£ 5.11$ | $£ 5.52$ | $£ 6.20$ | $£ 8$ |
| $£ 0.27$ | $£ 0.62$ | $£ 1.07$ | $£ 1.22$ | $£ 2.06$ | $£ 2.30$ | $£ 3.05$ | $£ 5.12$ | $£ 5.55$ | $£ 6.50$ |  |
| $£ 0.31$ | $£ 0.65$ | $£ 1.11$ | $£ 1.30$ | $£ 2.07$ | $£ 2.51$ | $£ 3.10$ | $£ 5.15$ | $£ 5.60$ | $£ 7.01$ |  |
| $£ 0.32$ | $£ 0.71$ | $£ 1.12$ | $£ 1.51$ | $£ 2.11$ | $£ 2.52$ | $£ 3.20$ | $£ 5.21$ | $£ 5.70$ | $£ 7.02$ |  |
| $£ 0.35$ | $£ 0.72$ | $£ 1.15$ | $£ 1.52$ | $£ 2.12$ | $£ 2.55$ | $£ 3.50$ | $£ 5.22$ | $£ 6.01$ | $£ 7.05$ |  |

