Homework/Extension
Step 4: Negative Numbers

National Curriculum Objectives:

Mathematics Year 6: (6N5) Use negative numbers in context, and calculate intervals across zero
Mathematics Year 6: (6N6) Solve number and practical problems that involve 6N2 - 6N5

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)
Developing Place the given calculations in the correct column to support calculating intervals across zero. Intervals of up to and including ten.
Expected Place the given calculations in the correct column to support calculating intervals across zero. Intervals of any number.
Greater Depth Place the given calculations in the correct column to support calculating intervals across zero. Intervals of any number, including some use of halves as decimal numbers.

Questions 2, 5 and 8 (Varied Fluency)
Developing Find the missing amounts of money to support calculating intervals across zero. Intervals of up to and including ten.
Expected Find the missing amounts of money to support calculating intervals across zero. Intervals of any number, including some use of halves as decimal numbers in context.
Greater Depth Find the missing amounts of money to support calculating intervals across zero. Intervals of any number, including more use of halves as decimal numbers in context.

Questions 3, 6 and 9 (Reasoning and Problem Solving)
Developing Find combinations to prove whether a statement is correct using intervals across zero. Intervals of up to and including ten.
Expected Find combinations to prove whether a statement is correct using intervals across zero Intervals of any number.
Greater Depth Find combinations to prove whether a statement is correct using intervals across zero. Intervals of any number, including some use of halves as decimal numbers in context.

More Year 6 Place Value resources.

Did you like this resource? Don't forget to review it on our website.

Negative Numbers

1. Work out the answers to the calculations below and place them in the correct columns.

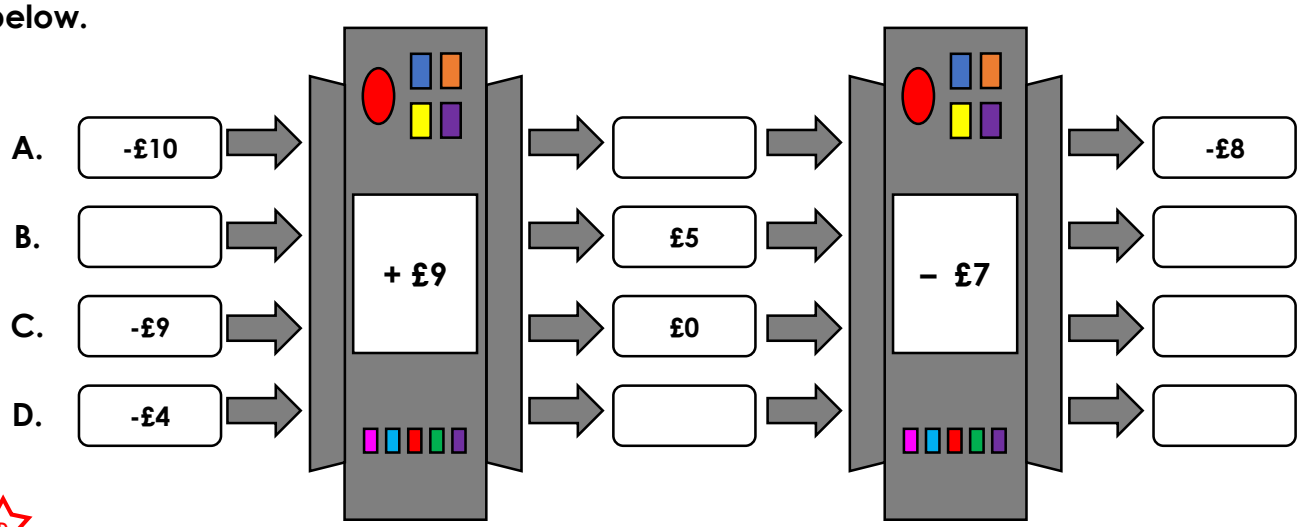
-9 + 8	-10 + 9	0 – -9
3 + -10	-7 + -2	-3 + -4

-5 or below	Between 0 and -5	0 or above

D

VF
HW/Ext

2. A bank has installed some function machines. Find the missing amounts of money below.



D

VF
HW/Ext

3. Dr Blake is trying to get a mixture to reach a temperature between 5°C and 9°C.

She says,

My mixture is currently at -9°C. I can reach a desired temperature by adding 2 chemicals to it.

Chemical A	+ 6°C
Chemical B	+ 8°C
Chemical C	+ 5°C
Chemical D	+ 7°C
Chemical E	+ 10°C

Is she correct?
Find combinations to prove your answer.

D

RPS
HW/Ext

Negative Numbers

4. Work out the answers to the calculations below and place them in the correct columns.

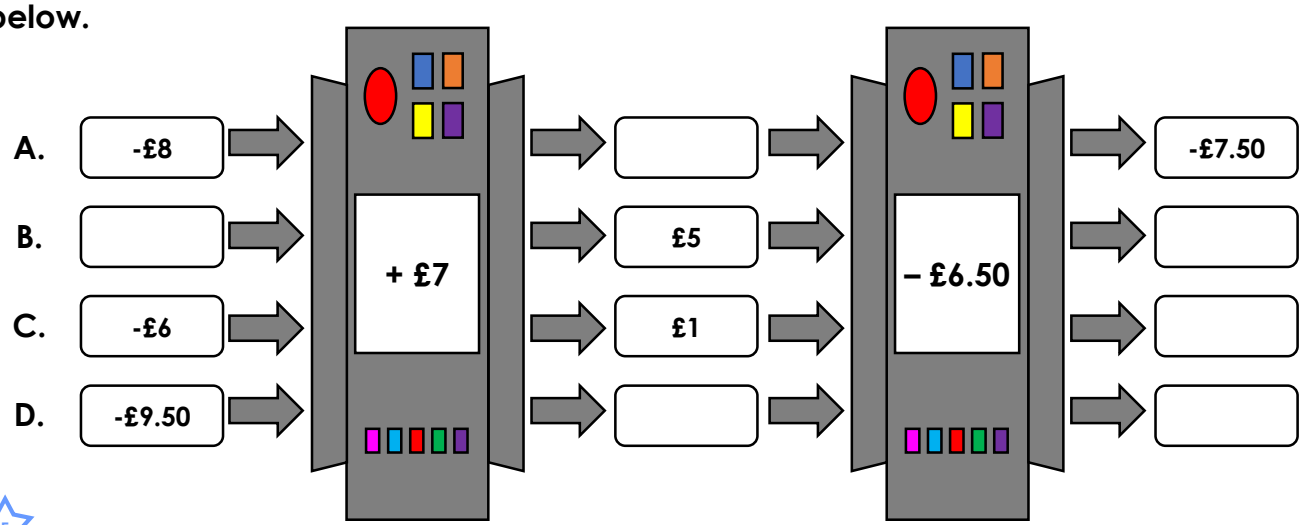
-3 + 9	-10 – 16	7 – -9
3 + -12	-17 + -2	-9 + -4

-10 or below	Between 0 and -10	0 or above

E

VF
HW/Ext

5. A bank has installed some function machines. Find the missing amounts of money below.



E

VF
HW/Ext

6. Dr Banner is trying to get a mixture to reach a temperature between 5°C and 12°C.

He says,

My mixture is currently at -17°C. I can reach a desired temperature by adding 3 chemicals to it.

Chemical A	+ 2°C
Chemical B	+ 11°C
Chemical C	+ 7°C
Chemical D	+ 4°C
Chemical E	+ 13°C
Chemical F	+ 9°C

Is he correct?
Find combinations to prove your answer.

E

RPS
HW/Ext

Negative Numbers

7. Work out the answers to the calculations below and place them in the correct columns.

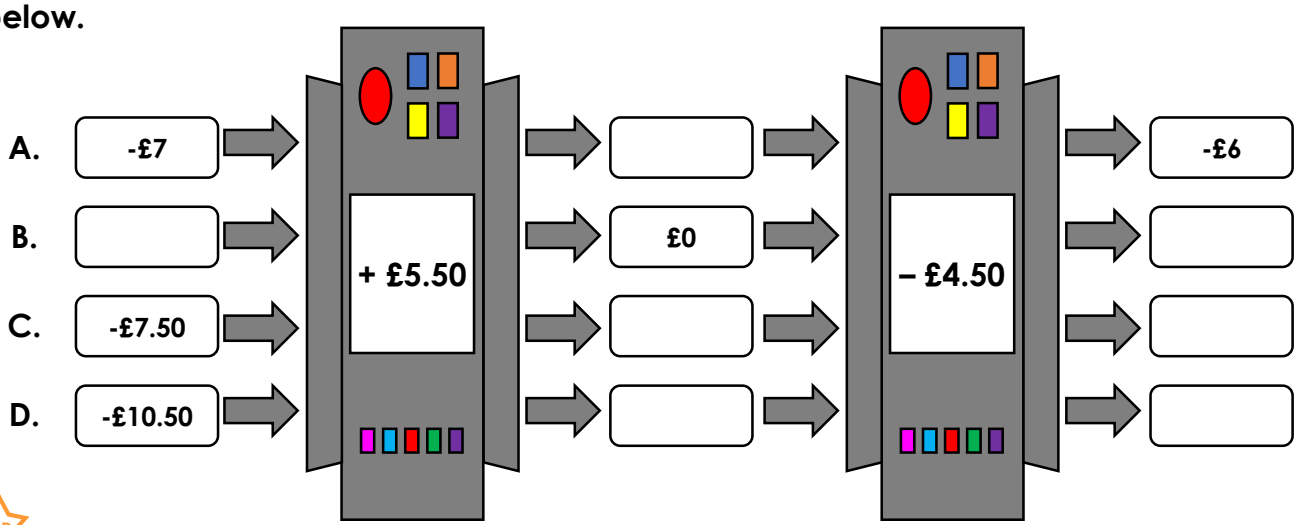
-4 + 12	-9.5 – 12	12.5 – -7
4.5 + -13	-13.5 + -2.5	-4 + -5

-10 or below	Between 0 and -10	0 or above

GD

VF
HW/Ext

8. A bank has installed some function machines. Find the missing amounts of money below.



GD

VF
HW/Ext

9. Dr Parker is trying to get a mixture to reach a temperature between 7°C and 13.5°C.

She says,

My mixture is currently at -19°C. I can reach a desired temperature by adding 4 chemicals to it.

Chemical A	+ 3.5°C
Chemical B	+ 11.5°C
Chemical C	+ 6.5°C
Chemical D	+ 13°C
Chemical E	+ 7.5°C
Chemical F	+ 9°C

Is she correct?
Find combinations to prove your answer.

GD

RPS
HW/Ext

Homework/Extension
Negative Numbers

Developing

1. -5 or below: 3 + -10 = -7; -7 + -2 = -9; -3 + -4 = -7
Between 0 and -5: -9 + 8 = -1; -10 + 9 = -1
0 or above: 0 – -9 = 9
2. A. -£1
B. -£4, -£2
C. - £7
D. £5, -£2
3. Various answers, for example: Dr Blake is correct.
He could add chemicals D and E to his mixture which would increase the temperature to 8°C as -9 + 7 + 10 = 8.

Expected

4. -10 or below: -10 – 16 = -26; -17 + -2 = -19; -9 + -4 = -13
Between 0 and -10: 3 + -12 = -9
0 or above: -3 + 9 = 6; 7 – -9 = 16
5. A. -£1
B. -£2, -£1.50
C. £1, £5.50
D. -£2.50, -£9
6. Various answers, for example: Dr Banner is correct.
He could add chemicals A, E and F to his mixture which would increase the temperature to 7°C as -17 + 2 + 13 + 9 = 7.

Greater Depth

7. -10 or below: -9.5 – 12 = -21.5; -13.5 + -2.5 = -16
Between 0 and -10: 4.5 + -13 = -8.5; -4 + -5 = -9
0 or above: -4 + 12 = 8; 12.5 – -7 = 19.5
8. A. -£1.50
B. -£5.50, -£4.50
C. -£2, - £6.50
D. -£5, -£9.50
9. Various answers, for example: Dr Parker is correct.
He could add chemicals A, B, C and F to his mixture which would increase the temperature to 11.5°C as -19 + 3.5 + 11.5 + 6.5 + 9 = 11.5.