

# Negative Numbers

## Bill's Bank Balance

Aim: Using money to help Bill balance his bank account, count forwards and backwards on a whole pound scale number line to practise counting between positive and negative numbers.

### Using a Number Line

A number line can help when moving from positive to negative numbers. Count on the line from a negative number to 0, then to the positive number – and the other way - to help you add and subtract Bill's money for the week. Keep track as you go to see if he makes enough money to pay the supplier by Friday. Use coins to keep track of the bank balance as you go through Bill's spending for the week.

### Example:



### Balancing Bill's Bank Account

Bill is a chef at the 'Cheap as Chips' restaurant. He is good at cooking, but not as good at maths. He needs to order some food during the week, but wants help with keeping track of what he spends so that he has enough money to pay his supplier on Friday. Using the number line, help him with his adding and subtracting and keep a record of the totals as you go.



# Questions

1. On Monday, Bill makes pizza. He needs flour, cheese and tomatoes that cost a total of £12.00. If he has £8.00 to spend, can he afford the ingredients?

2. The supplier tells Bill that he doesn't have to pay until Friday. How much deficit (negative balance) does he have now?

3. The pizza night is a huge success and Bill makes £17.00. How much does he have to spend today?

4. On Tuesday, Bill makes vegetarian sausage and mash. The ingredients cost £11.00. How much does Bill have now?

5. Bill would like to make apple crumble on Wednesday. It costs £5.00 to make. He could also make bread and butter pudding which costs £2.00. The supplier wants Bill to pay him after the restaurant closes today instead of Friday. Which pudding can Bill afford to make? Explain why.

6. Bill decides to make the apple crumble. How much does he have to sell before he can pay the supplier?

7. Fortunately, Bill sells all of the crumble for £7.00 and pays his supplier. How much does he have to spend tomorrow?

8. He then decides to buy ice cream on Thursday from the same supplier. This costs him £9.00. But it's the middle of winter and he doesn't sell any. How much does he have now?

9. On Friday, the supplier needs his weekly payment and Bill only has leftover vegetables and some chicken in the kitchen. He decides to make some soup. How much soup does he have to sell before he can pay the supplier today?

10. If Bill sells £5.00 of soup, how much does he have at the end of the week?

**Challenge**

Before the restaurant closes on Friday night, the Electricity Company ask Bill to pay £10.00 for his lighting costs. How much does Bill have to earn to pay this? If Bill sells £5.00 of his ice cream, could he pay the company? Explain how you know this?

# Answers

- On Monday, Bill makes pizza. He needs flour, cheese and tomatoes that cost a total of £12.00. If he has £8.00 to spend, can he afford the ingredients?  
**No.**
- The supplier tells Bill that he doesn't have to pay until Friday. How much deficit (negative balance) does he have now?  
**-£4.00**
- The pizza night is a huge success and Bill makes £17.00. How much does he have to spend today?  
**-£4.00 + £17.00 = £13.00**
- On Tuesday, Bill makes vegetarian sausage and mash. The ingredients cost £11.00. How much does Bill have now?  
**£13.00 - £11.00 = £2.00**
- Bill would like to make apple crumble on Wednesday. It costs £5.00 to make. He could also make bread and butter pudding which costs £2.00. The supplier wants Bill to pay him after the restaurant closes today instead of Friday. Which pudding can Bill afford to make? Explain why.  
**Bill can only afford to make bread and butter pudding because he only has £2.00 and the crumble would cost £5.00.**
- Bill decides to make the apple crumble. How much does he have to sell before he can pay the supplier?  
**Bill must sell £3.00 of bread and butter pudding to pay the supplier.**
- Fortunately, Bill sells all of the crumble for £7.00 and pays his supplier. How much does he have to spend tomorrow?  
**£2.00 - £5.00 = -£3.00                      -£3.00 + £7.00 = £4.00**
- He then decides to buy ice cream on Thursday from the same supplier. This costs him £9.00. But it's the middle of winter and he doesn't sell any. How much does he have now?  
**£4.00 - £9.00 = -£5.00**
- On Friday, the supplier needs his weekly payment and Bill only has leftover vegetables and some chicken in the kitchen. He decides to make some soup. How much soup does he have to sell before he can pay the supplier today?  
**Bill must sell at least £5.00 of soup.**
- If Bill sells £5.00 of soup, how much does he have at the end of the week?  
**Nothing at all after he has paid the supplier.**

Challenge - **Bill could only pay for half of the lighting costs if he sells £5.00 of ice cream.**

# Negative Numbers

## Bill's Bank Balance

Aim: Using money to help Bill balance his bank account, count forwards and backwards on a pounds and 50pence scale number line to practise counting between positive and negative numbers.

### Using a Number Line

A number line can help when moving from positive to negative numbers. Count on the line from a negative number to 0, then to the positive number – and the other way – to help you add and subtract Bill's money for the week. Keep track as you go to see if he makes enough money to pay the supplier by Friday. Use coins to keep track of the bank balance as you go through Bill's spending for the week.

### Example:



### Balancing Bill's Bank Account

Bill is a chef at the 'Cheap as Chips' restaurant. He is good at cooking, but he is not confident at maths. He needs to order some food during the week. Bill wants help with recording what he spends so that he has enough money to pay his supplier on Friday. Using the number line, help him with his adding and subtracting and keep a record of the totals as you go.



# Questions

1. On Monday, Bill makes pizza. He needs flour, cheese and tomatoes that cost a total of £12.50. If he has £8.00 to spend, can he afford the ingredients?

2. Bill sends the supplier the £8.00. The supplier tells Bill that he doesn't have to pay the rest until Friday. How much deficit (negative balance) does he have now?

3. The pizza night is a huge success and Bill makes £17.50. How much can he spend today?

4. On Tuesday, Bill makes vegetarian sausage and mash. The ingredients cost £11.50. How much does Bill have left to spend now?

5. Bill would like to make apple crumble on Wednesday. It costs £5.50 to make. He could also make bread and butter pudding which costs £1.50. Which pudding can Bill afford to make? Explain why.

6. Bill decides to make the apple crumble instead. How much money does he have to make so that he can still pay the supplier?

7. Fortunately, Bill sells all of the crumble for £7.50 and pays his supplier. How much does he have to spend tomorrow?

8. He then decides to buy ice cream on Thursday from the same supplier. This costs him £8.00 but it's the middle of winter and he doesn't sell any. How much does he have now?

9. On Friday, the supplier needs his weekly payment. Bill only has leftover vegetables and some chicken in the kitchen. He decides to make some soup. How much money does he have to make from selling soup before he can pay the supplier today?

10. If Bill sells £5.50 of soup, how much does he have at the end of the week?



**Challenge**

Before the restaurant closes on Friday night, the Electricity Company ask Bill to pay £11.00 for his lighting costs. How much does Bill have to earn to pay this? If Bill sells £5.00 of his ice cream, could he pay the company? Explain how you know this?

# Answers

- On Monday, Bill makes pizza. He needs flour, cheese and tomatoes that cost a total of £12.50. If he has £8.00 to spend, can he afford the ingredients?  
**No.**
- Bill sends the supplier the £8.00. The supplier tells Bill that he doesn't have to pay the rest until Friday. How much deficit (negative balance) does he have now?  
**-£4.50**
- The pizza night is a huge success and Bill makes £17.50. How much can he spend today?  
**-£4.50 + £17.50 = £13.00**
- On Tuesday, Bill makes vegetarian sausage and mash. The ingredients cost £11.50. How much does Bill have left to spend now?  
**£13.00 - £11.50 = £1.50**
- Bill would like to make apple crumble on Wednesday. It costs £5.50 to make. He could also make bread and butter pudding which costs £1.50. Which pudding can Bill afford to make? Explain why.  
**Bill can only afford to make bread and butter pudding because he has £1.50 to spend and the crumble would cost £5.50 to make.**
- Bill decides to make the apple crumble instead. How much money does he have to make so that he can still pay the supplier?  
**Bill must make £4.00 from the apple crumble so that he can still pay the supplier.**
- Fortunately, Bill sells all of the crumble for £7.50 and pays his supplier. How much does he have to spend tomorrow?  
**£1.50 - £5.50 = -£4.00     -£4.00 + £7.50 = £3.50**
- He then decides to buy ice cream on Thursday from the same supplier. This costs him £8.00 but it's the middle of winter and he doesn't sell any. How much does he have now?  
**£3.50 - £8.00 = -£4.50**
- On Friday, the supplier needs his weekly payment. Bill only has leftover vegetables and some chicken in the kitchen. He decides to make some soup. How much money does he have to make from selling soup before he can pay the supplier today?  
**Bill must sell at least £4.50 of soup.**
- If Bill sells £5.50 of soup, how much does he have at the end of the week?  
**-£4.50 + £5.00 = £1.00**

Challenge - **Bill could pay for just over half of the lighting costs if he sells £5.00 of ice cream because he needs £11.00 to pay and he has £1.00 at the end of the week.**  
**£11.00 - £5.00 - £1.00 = £5.00**

# Negative Numbers

## Bill's Bank Balance

Aim: Using money to help Bill balance his bank account, count forwards and backwards on a pounds and 10 pence scale number line to practise counting between positive and negative numbers.

### Using a Number Line

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### Example:



### Balancing Bill's Bank Account

Bill is a chef at the 'Cheap as Chips' restaurant. He is good at cooking; he is not as good at maths. He needs to order some food during the week, but wants help with recording what he spends so that he has enough money to pay his supplier on Friday. Using the number line, help him with his adding and subtracting and keep a record of the totals as you go.



# Questions

1. On Monday, Bill makes pizza. He needs flour, cheese and tomatoes that cost a total of £12.80. If he has £8.70 to spend, can he afford the ingredients?

2. The supplier tells Bill that he doesn't have to pay until Friday. How much deficit (negative balance) does he have now?

3. The pizza night is a huge success and Bill makes £17.50. How much does he have to spend today?

4. On Tuesday, Bill makes vegetarian sausage and mash. The ingredients cost £11.30. How much does Bill have now?

5. Bill would like to make apple crumble on Wednesday. It costs £5.30 to make. He could also make bread and butter pudding which costs £1.90. Which pudding can Bill afford to make? Explain why.

6. Bill decides to make the apple crumble. How much does he have to sell before he can pay the supplier?

7. Fortunately, Bill sells all of the crumble for £7.60 and pays his supplier. How much does he have to spend tomorrow?

8. He then decides to buy ice cream on Thursday from the same supplier. This costs him £8.70. But it's the middle of winter and he doesn't sell any. How much does he have now?

9. On Friday, the supplier needs his weekly payment and Bill only has leftover vegetables and some chicken in the kitchen. He decides to make some soup. How much soup does he have to sell before he can pay the supplier today?

10. If Bill sells £5.50 of soup, how much does he have at the end of the week?

**Challenge**

Before the restaurant closes on Friday night, the Electricity Company ask Bill to pay £11.20 for his lighting costs. How much does Bill have to earn to pay this? If Bill sells £5.00 of his ice cream, could he pay the company? Explain how you know this?

# Answers

- On Monday, Bill makes pizza. He needs flour, cheese and tomatoes that cost a total of £12.80. If he has £8.70 to spend, can he afford the ingredients?  
**No.**
- The supplier tells Bill that he doesn't have to pay until Friday. How much deficit (negative balance) does he have now?  
**-£4.10**
- The pizza night is a huge success and Bill makes £17.50. How much does he have to spend today?  
**-£4.10 + £17.50 = £13.40**
- On Tuesday, Bill makes vegetarian sausage and mash. The ingredients cost £11.30. How much does Bill have now?  
**£13.40 - £11.30 = £2.10**
- Bill would like to make apple crumble on Wednesday. It costs £5.30 to make. He could also make bread and butter pudding which costs £1.90. The supplier wants Bill to pay him after the restaurant closes today instead of Friday. Which pudding can Bill afford to make? Explain why.  
**Bill can only afford to make bread and butter pudding because he has £2.10 to spend and the crumble would cost £5.30 to make.**
- Bill decides to make the apple crumble. How much does he have to sell before he can pay the supplier?  
**Bill must sell £3.20 of bread and butter pudding to pay the supplier.**
- Fortunately, Bill sells all of the crumble for £7.60 and pays his supplier. How much does he have to spend tomorrow?  
**£2.10 - £5.30 = -£3.20      -£3.20 + £7.60 = £4.40**
- He then decides to buy ice cream on Thursday from the same supplier. This costs him £8.70. But it's the middle of winter and he doesn't sell any. How much does he have now?  
**£4.40 - £8.70 = -£4.30**
- On Friday, the supplier needs his weekly payment and Bill only has leftover vegetables and some chicken in the kitchen. He decides to make some soup. How much soup does he have to sell before he can pay the supplier today?  
**Bill must sell at least £4.30 of soup.**
- If Bill sells £5.50 of soup, how much does he have at the end of the week?  
**-£4.30 + £5.50 = £1.20**

Challenge - **Bill could only pay for just over half of the lighting costs if he sells £5.00 of ice cream because he needs £11.20 to pay and he has £1.20 at the end of the week.**  
**£11.20 - £5.00 - £1.20 = £5.00**