

Max's Mountain Maths: Understanding Negative Numbers

Learning objective: To count backwards through zero to include negative numbers and solve problems involving temperature and money.

Read about Max the monkey's mountain adventure. Use your knowledge of the number line to help Max solve his maths puzzles. Remember: when we go below zero, the numbers get smaller in value but look larger in size!

Max the monkey is climbing the Snowy Peak to see the sunrise. At the base of the mountain, the temperature is 5°C . As Max climbs higher, the temperature drops by 8°C . Max needs to check his thermometer to see how cold it is! Later, Max finds a lost coin purse. He has $\text{£}2$, but he owes his friend Leo $\text{£}3$ for some lunch. Max is worried he has a negative balance in his pocket.

Word bank: negative · positive · zero · below · above · difference · decrease · increase

1. If the temperature at the base is 5°C and it drops by 8°C , what is the new temperature on the mountain? (2 marks)

2. Max has $\text{£}2$ and owes Leo $\text{£}3$. If he pays Leo back, how much money does he effectively have? Write this as a negative number. (2 marks)

3. Order these temperatures from coldest to warmest: 4°C , -2°C , 0°C , -5°C , 2°C . (2 marks)

4. What is the difference in degrees between -3°C and 4°C ? (2 marks)

5. If the temperature is -1°C and it rises by 5°C , what is the new temperature? (2 marks)

Draw: Draw a vertical thermometer showing the temperature at -4°C , 0°C , and 3°C , marking each clearly on the scale.



Extension challenge: Max decides to hike down the mountain. If he starts at -3°C and the temperature rises by 1°C every 10 minutes, how long will it take for the temperature to reach 2°C ? Explain your working out.