

Year 6 Maths Assessment: Understanding Negative Numbers

Learning objective: To use negative numbers in context, and calculate intervals across zero.

Read each question carefully. Max is helping us solve these puzzles today! Show your working out clearly to gain full marks.

Max the monkey is organising a mountain expedition. He needs to track the temperature changes at different altitudes and manage the team's shared supply budget, which sometimes dips into an overdraft.

Word bank: Negative · Positive · Interval · Difference · Ascending · Descending · Number line · Below zero

1. The temperature at the base of the mountain is 4°C . As the team climbs higher, the temperature drops by 7°C . What is the new temperature? (2 marks)

2. Max looks at the digital thermometer. It reads -3°C . If the temperature rises by 5°C by midday, what will the new temperature be? (2 marks)

3. Put these temperatures in order, starting with the coldest: 2°C , -5°C , 0°C , -1°C , 3°C . (2 marks)

4. Max has £15 in the expedition fund. He buys a new map for £8 and a compass for £10. How much money is left in the fund? Show your answer as a negative number to represent the debt. (3 marks)

5. Calculate the difference between -8°C and 6°C . Explain your method using a number line. (4 marks)

6. Max records the temperature every hour. At 1:00 pm it is -2°C . By 4:00 pm, the temperature has dropped by 6 degrees. Then, by 7:00 pm, it rises by 4 degrees. What is the final temperature at 7:00 pm? Show your calculation steps. (7 marks)

7. Extended Writing: Imagine you are an explorer. Write a short diary entry (approx. 50 words) describing a day where the temperature falls below zero. Explain how you feel about the change in temperature and why negative numbers are important for scientists to use when measuring the weather. (5 marks)

Draw: Draw a vertical number line representing a thermometer ranging from -10°C to 10°C . Mark the point -4°C and the point 3°C on your drawing.

Extension challenge: Total: /25