

Max's Polar Expedition: A Negative Number Challenge

Learning objective: To interpret, order, and calculate with negative numbers in context, including temperature and money.

Join Max the Monkey on his journey to the icy peaks of the Frosty Mountains! Use your maths skills to help him calculate the temperatures and budget for his gear. Read each question carefully.

Answer Key: 1) C, 2) True, 3) 7, 4) B, 5) -3°C , 6) False, 7) A, 8) 12, 9) C, 10) -15. Max's journey proves that understanding numbers below zero is essential for explorers!

Word bank: integer · negative · positive · descend · ascend · difference · below zero · above zero

1. The temperature at the mountain base is -2°C . It drops by 5°C during the night. What is the new temperature? A) 3°C , B) -7°C^* , C) 7°C , D) -3°C (1 mark)

2. True or False: -10 is greater than -5. (1 mark)

3. Max has £5 in his pocket, but he owes his friend £2. If he spends his £5 to pay off part of the debt, what is his new balance (as an integer)? (1 mark)

4. Which sequence is ordered from coldest to warmest? A) -10, -5, 0, 5, B) -15, -10, -2, 4^* , C) 2, 0, -2, -4, D) -1, -2, -3, -4 (1 mark)

5. A thermometer reads -8°C . By noon, the temperature rises by 5°C . What is the temperature now? (1 mark)

6. True or False: The difference between 4°C and -4°C is 0°C . (1 mark)

7. Max finds a cave at an elevation of -12 metres. He climbs up 7 metres. Where is he now? A) -5 metres*, B) -19 metres, C) 5 metres, D) 19 metres (1 mark)

8. What is the difference between -3°C and 9°C ? (1 mark)

9. Which of these is the coldest temperature? A) -1°C , B) 0°C , C) -12°C^* , D) -9°C (1 mark)

10. If you start at -5 and count backwards by 10, what number do you reach? (1 mark)

Draw: Draw a vertical number line representing a mountain thermometer. Show Max the Monkey wearing a scarf at 0°C , and a 'Frosty Cave' located at -10°C .



Extension challenge: Explain why -20°C is considered 'colder' than -5°C , even though 20 is a larger number than 5. Justify your answer using the concept of distance from zero. What might happen to the accuracy of a scientist's research if they confused negative and positive values when recording data in the Arctic?