

Max's Mountain Maths: Understanding Negative Numbers

Learning objective: To be able to count forwards and backwards with positive and negative whole numbers, including through zero.

Max the monkey is climbing up and down the icy peaks of the Frosty Mountains. Help him calculate his height and temperature changes by using your knowledge of negative numbers.

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

1. Max starts his climb at 3°C . As he climbs higher, the temperature drops by 7°C . What is the new temperature? (2 marks)

2. At the base of the mountain, the temperature is -4°C . By midday, it warms up by 6°C . What is the temperature at midday? (2 marks)

3. Max finds a hidden cave. The entrance is 2 metres above sea level. He climbs down a ladder into the cave, which is 5 metres deep. What is his position relative to sea level? (2 marks)

4. Order these temperatures from coldest to warmest: 4°C , -2°C , 0°C , -8°C , 1°C . (2 marks)

5. If Max has £5 in his pocket but buys a map for £8, his balance becomes negative. How much money does he owe? (2 marks)

Draw: Draw a vertical number line representing a mountain. Label the top 'Summit' at 10, the ground level 'Sea Level' at 0, and the bottom 'Deep Cave' at -5. Draw Max the monkey at the -2 mark.



Extension challenge: Max wants to climb from -5 metres to +5 metres. How many metres does he need to climb in total? Explain how you worked this out using a number line.