

Max's Mountain Maths: Understanding Negative Numbers

Learning objective: To count forwards and backwards through zero, including the use of negative numbers.

Max the monkey is climbing the frosty peaks of the 'Number Mountain'. Help him solve these puzzles by thinking about the temperature and his height above or below sea level.

Max is climbing Mount Frosty. At the base of the mountain, the temperature is 5°C . As Max climbs higher, the air gets colder. For every 100 metres he climbs, the temperature drops by 2°C . When Max reaches the snowy summit, the temperature has dropped by 8°C from the base. Meanwhile, in the valley below, the explorer Finn the dolphin is swimming in a deep underwater cave, 3 metres below sea level. Max wants to know how far apart their positions are on a number line.

Word bank: negative · positive · zero · degree · below · above · interval

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

2. Write the following temperatures in order from coldest to warmest: -2°C , 4°C , -5°C , 0°C , 2°C . (2 marks)

3. Finn is at -3 metres (below sea level). He swims up 5 metres. What is his new position relative to sea level? (2 marks)

4. Max has $\pounds 3$ in his pocket, but he owes his friend $\pounds 5$ for a map. If he pays his friend back, what is his new balance? (2 marks)

5. Explain why -10 is smaller than -2 using the number line. (2 marks)

Draw: Draw a vertical number line representing Mount Frosty. Mark 0 at sea level, show Max at 5 metres above, and Finn at 3 metres below.



Extension challenge: Max finds a hidden treasure chest. He starts with -£5 (debt). He finds a gold coin worth £10 and spends £2 on a snack. Calculate his final total and explain how he moved from a negative balance to a positive one.