

## Mastery

A scientist measures the depth of some objects below the surface of the sea. She records her measurements using negative numbers.

Object	Depth
Coral reef	-2 m
Shipwreck	-11 m
Pirate treasure	four times as deep as the coral reef
Sleeping shark	3 metres above the shipwreck

Which object is deepest? Explain your choice.

Is the sleeping shark deeper than the pirate treasure? Explain your reasoning.

A seagull is hovering 1 m above the surface of the sea. How far apart are the seagull and the coral reef?

Can you draw a picture to show this?

## Mastery with Greater Depth

A scientist measured the temperature each day for one week at 06:00.

On Sunday the temperature was  $1.6^{\circ}\text{C}$ .

On Monday the temperature had fallen by  $3^{\circ}\text{C}$ .

On Tuesday the temperature had fallen by  $2.1^{\circ}\text{C}$ .

On Wednesday the temperature had risen by  $1.6^{\circ}\text{C}$ .

On Thursday the temperature had risen by  $4.2^{\circ}\text{C}$ .

On Friday the temperature had fallen by  $0.9^{\circ}\text{C}$ .

On Saturday the temperature had risen by  $0.2^{\circ}\text{C}$ .

What was the temperature on Saturday?

### Fluency

- Fill in the missing numbers.

152, 102, 52, 2, \_\_\_\_, \_\_\_\_

-6, -4, \_\_\_\_, \_\_\_\_, 2, 4

\_\_\_\_, -1, 5, 11, \_\_\_\_

- Filip had £17.50 in bank account. He paid for a jumper that was £30. How much did he have in his bank account after?
- In a Science experiment, a class videoed a thermometer overnight. At 02:30 it read  $-12^{\circ}\text{C}$  and it was  $15^{\circ}\text{C}$  at 13:00. What was the difference in temperatures?

### Reasoning

- **Spot the mistake:**  
-75, -15, 35, 105  
What is wrong with this sequence of numbers?
- **True or false?**  
When I count backwards in 50s from 10 I will say -150.  
Explain how you know.
- A company decided to build offices underground as well as over ground. The manager says

If we build from 100 down to -100 then we will have 200 floors

Is he right? Convince me.

### Problem Solving

- **True or false?**  
The temperature is  $-6^{\circ}\text{C}$ . It becomes 5 degrees warmer. It is now  $-11^{\circ}\text{C}$ .  
Explain your answer using a drawing.
- Use  $<$ ,  $>$  or  $=$  to complete the statements

-5            5  
-4            -20