#### Learn about: How bearings are used to calculate position and direction

# Navigation

### Ships navigate from one port to another in a number of ways, including bearings.

#### A bearing is the angle between North and the direction an object is travelling in.

• As **North** is the start point, it is given the bearing 000°. Bearings are numbered clockwise until 359° when they arrive back at North and become 000° again.



- South is halfway around the compass, so is given the bearing 180°, which is half of 360°.
- West is three-quarters of the way around the compass, so is given the bearing 270°, which is three-quarters of 360°.

Use the compass to find the bearings in this questions.

Look at this boat. It needs to travel on a bearing of 090° to get to the lorry. The lorry needs to travel on a bearing of 270° to get to the boat. Use the compass to find the bearings.

**Navigation Question 1:** If you subtract one bearing from the other, what number do you get? Why?



Look at this boat. It needs to travel on a bearing of 045° to get to the lorry. The lorry needs to travel on a bearing of 225° to get to the boat. Use the compass to find the bearings.

**Navigation Question 2:** If you subtract one bearing from the other, what number do you get? Why?







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## Solutions to Bearings Questions

You will always get 180°, because these objects are in line with each other, and a straight line has 180°.



### **Remember!**

You must always use three digits when giving a bearing. This is in case a digit is dropped by accident. It makes sure the person receiving the message knows they have all of the information before proceeding and making a terrible mistake!

#### Look at the example below:

This ship receives instructions to travel on a bearing of 45°. This is only two digits. The captain of the ship doesn't realise there was a bad communication link, and the leading "2" has been lost; the instruction should read "travel on a bearing of 245°"! The captain hasn't done a check to make sure all three digits are present and so heads off in the wrong direction.



#### **Navigation Conclusions**

Ships use bearings to navigate the waters. When there is a straight line between two objects, there will be 180° between them. Bearings consist of three digits.



