Will you find the three objects that the Atlas' technical team has hidden in the map layer 'European Maritime Day in My Country 2023'?

Latitude	Longitude	Object found	Notes	Image
53.430000	-7.930000	Sextant	**Country** Ireland **Event** Round-Ireland Coastal BioBlitz for World Ocean Day	
40.63209851	22.72994803	Compass	**Country** Greece **Event** Greek schools in a maritime alliance	
59.329444	18.068611	Ship radar	**Country** Sweden **Event** Co-Creating Better Blue	
Common theme to all objects		Navigation		

Imagine someone else would like to play the game. Can you explain to them what the latitude and the longitude are and how this will help them find the objects?

- **Latitude** is a north-south position measured from Earth's Equator.
- **Longitude** is an east-west position measured from the Prime Meridian (imaginary line that goes from the North Pole to the South Pole, passing through the city of Greenwich in England).

By having both the latitude and the longitude, it is possible to find any specific location on Earth.

Source: https://education.nationalgeographic.org/resource/navigation/

Can you think of three other navigation instruments that are being used on ships?

Some examples are

- the Global Positioning System (GPS);

- the echosounder;

- the electronic chart.

How do these different instruments support navigation?

Instrument	How it supports navigation
Sextant	A sextant is a traditional navigational tool. It measures the angle between two objects, such as the horizon and a celestial object such as a star or planet. This angle can then be used to calculate the ship's position on a nautical chart. [1]
Compass	A compass' magnetized needle points to Earth's magnetic poles. By knowing the general directions of north and south, navigators can estimate east and west. [1]
Radar	Radar is a system that measures the time it takes to bounce electromagnetic waves off an object and back to a receiver. The waves that reflect back to the receiver indicate the object's distance. [1]
Global Positioning System (GPS)	GPS, or global positioning system, is a satellite-based navigation system. A GPS device receives a signal from the satellites, and it calculates position based on the time it takes for the signal to transmit and the exact position of the satellites. [1]
Echosounder	The most common system for measuring water depth, and preventing collisions with unseen underwater rocks, reefs, etc., is the echosounder. These sonar systems use a transducer (a vibrating plate, that turns electricity into sound and vice versa) that is usually mounted on the bottom of a ship. Sound pulses are sent from the transducer straight down into the water. The sound reflects off the seafloor and returns to the transducer. The time the sound takes to travel to the bottom and back is used to calculate the distance to the seafloor. Water depth is estimated by using the speed of sound through the water (approximately 1,500 meters per second) and a simple calculation: Distance = speed x time/2 The product is divided by two because the measured time is the round-trip time (from the transducer to the seafloor and back to the transducer). [2]
Electronic Nautical Charts	Ships have long been required to carry nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. The advent of electronic charts in the 1990s provided ships with additional information, including real time information which could be displayed on screens on Electronic Chart Display and Information Systems (ECDIS). [3]

[1] https://education.nationalgeographic.org/resource/navigation/

[2] https://dosits.org/galleries/technology-gallery/observing-the-sea-floor/echosounder/

[3] https://www.imo.org/en/OurWork/Safety/Pages/ElectronicCharts.aspx