

## Water and Weaponry

### Become an expert in your locality!

#### Student Introduction

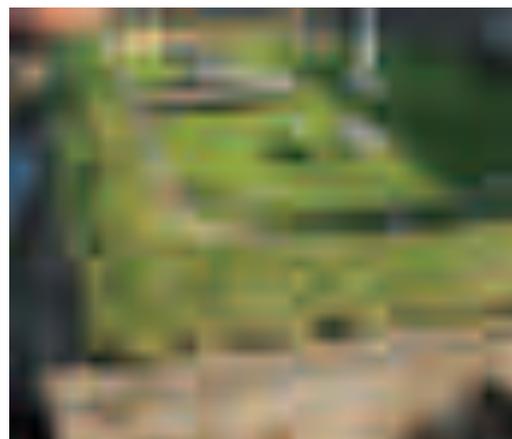
- ▶ You will be learning about the history of things that can be seen from the Wightlink Ferry.
- ▶ What military technology can you spot? Can you work out how it was used and what it tells us?
- ▶ Look at the information sheets to discover more about the history of the area; some sites have a specific focus on military technology, so you can explore a specific theme as well as the general local history.
- ▶ When you go back to school you can use what you've learned to undertake a further project or start one in your own locality.



#### INTRODUCTION

#### Thinking about defence and weaponry

What evidence can you see in these pictures that show this area has a history of defence? Discuss with a partner or make some notes.



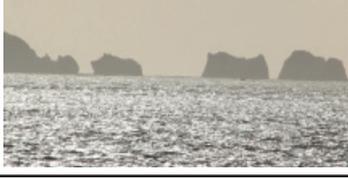
# Student Activity 1: What can I see on my Wightlink Crossing?

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**ON THE FERRY**

- ▶ On the left is the name and the picture of what you could see from the ferry from/to Yarmouth
- ▶ They are not in the order you will see them while you are crossing the Solent
- ✓ You need to link the picture on the left with its description on the right.



Draw a line from the photograph to its description		Description - ring the location
Fort Albert		Victorians used this to walk out to sea to get some fresh air from 1875 . It is on the <i>Mainland - Island - Solent</i>
Hurst Castle		Built in 1856 to support Hurst Castle, it has been split into flat for people to live in. It is on the <i>Mainland - Island - Solent</i>
Hurst Lighthouse		Built in 1872 to fire at ships and stop them getting anywhere near the Solent. It is on the <i>Mainland - Island - Solent</i>
Needles Battery		Built on a shingle bank in 1544 to stop ships coming into the Solent. It is on the <i>Mainland - Island - Solent</i>
Needles Light-house		To guide ships away from the shingle bank at the western end of the Solent. It is on the <i>Mainland - Island - Solent</i>
St James' Church		To guide ships away from the rocks at the western end of the Solent. It is on the <i>Mainland - Island - Solent</i>
The Needles		One of the defining images of the Isle of Wight. It is on the <i>Mainland - Island - Solent</i>
Yarmouth Castle		The church was rebuilt in 1635, it contains a statue that was meant for Louis XIV of France. It is on the <i>Mainland - Island - Solent</i>
Yarmouth Pier		Built by Henry VIII in 1547 to protect the town. It is on the <i>Mainland - Island - Solent</i>

## Student Activity 2: How was this technology used?

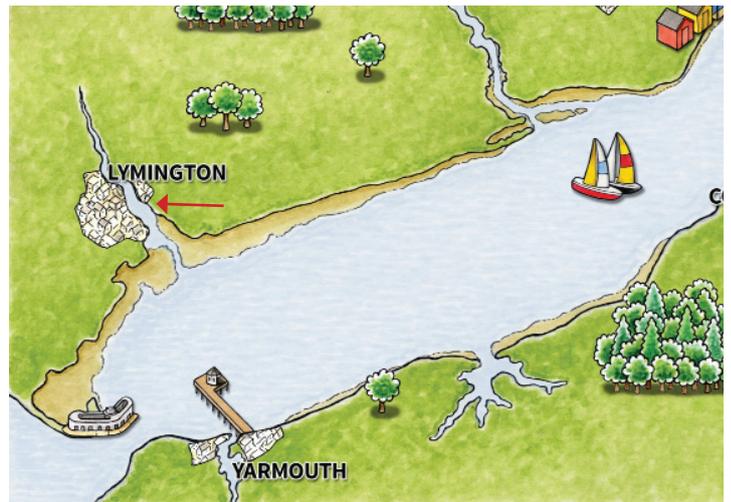
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### ON THE FERRY

- ▶ When you have worked out what each thing is, the next step is to work out a little more about the military technology you can see.
- ▶ Work out:
  1. how it was used
  2. what it tells us



Picture	Where is it?	How it was used	What it has	Chronology
<p>The Needles Battery</p> 	<input type="checkbox"/> By the sea <input type="checkbox"/> In the sea <input type="checkbox"/> On a hill	<input type="checkbox"/> Defending Britain <input type="checkbox"/> Attacking enemies <input type="checkbox"/> Evidence of attack	<input type="checkbox"/> Radar <input type="checkbox"/> Guns <input type="checkbox"/> Nothing	<input type="checkbox"/> Oldest <input type="checkbox"/> Middling <input type="checkbox"/> Still used
<p>Hurst Castle</p> 	<input type="checkbox"/> By the sea <input type="checkbox"/> In the sea <input type="checkbox"/> On a hill	<input type="checkbox"/> Defending Britain <input type="checkbox"/> Attacking enemies <input type="checkbox"/> Evidence of attack	<input type="checkbox"/> Radar <input type="checkbox"/> Guns <input type="checkbox"/> Nothing	<input type="checkbox"/> Oldest <input type="checkbox"/> Middling <input type="checkbox"/> Still used
<p>Yarmouth Castle</p> 	<input type="checkbox"/> By the sea <input type="checkbox"/> In the sea <input type="checkbox"/> On a hill	<input type="checkbox"/> Defending Britain <input type="checkbox"/> Attacking enemies <input type="checkbox"/> Evidence of attack	<input type="checkbox"/> Radar <input type="checkbox"/> Guns <input type="checkbox"/> Nothing	<input type="checkbox"/> Oldest <input type="checkbox"/> Middling <input type="checkbox"/> Still used
<p>Fort Albert</p> 	<input type="checkbox"/> By the sea <input type="checkbox"/> In the sea <input type="checkbox"/> On a hill	<input type="checkbox"/> Defending Britain <input type="checkbox"/> Attacking enemies <input type="checkbox"/> Evidence of attack	<input type="checkbox"/> Radar <input type="checkbox"/> Guns <input type="checkbox"/> Nothing	<input type="checkbox"/> Oldest <input type="checkbox"/> Middling <input type="checkbox"/> Still used



### The history of Lymington

The first settlement here is thought to be Buckland Rings, an Iron Age fort dating from about 600 BC. In Domesday Book 1086, Lymington is called "Lentune" and around 1200 it was granted a charter to hold a market. In 1585 Lymington became a Parliamentary Borough with two MPs, this was reduced to one MP in 1867 and the New Forest was added to the area he represented.

Salt has always been valued for flavouring and preserving. From the Middle Ages until the Nineteenth Century salt making was a major industry in Lymington and this added greatly to its wealth.

From the Nineteenth Century ship building has been an important feature of the town. As you can very easily see from the Wightlink ferry, this continues today but now it is mainly for leisure rather than industry.

There are three yacht clubs in the town and two more nearby. The prosperity that salt and ship building brought to the town means that Lymington has many delightful Georgian and Victorian buildings. The best thing is to explore the town on foot, remembering to look above the shop fronts and in the side streets.



In terms of shops, Lymington now has a whole host of the typical high street names as well as a few local businesses. On Saturday there is a market with stalls all along the High Street, many of which are selling local produce. In the cobbled area near the quay you will find everything you need on a boat. St. Barbe Museum and Art Gallery in New Street, will give you a lot more information on local history, it is also able to host exhibitions of major art works that are often not see outside our largest galleries.

### What else was happening at the time?

The Iron Age was the last part of pre-History: the time before the discovery of writing.

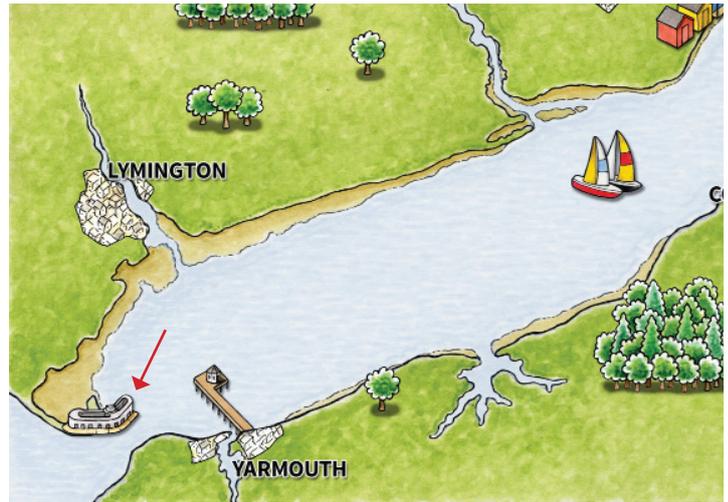
Before the Iron Age people got their food by hunting and gathering. In the Iron Age, people had learnt how to farm and this meant that they could stay in one place, rather being nomads. This led to the development of the first villages in Britain.

As the villages grew in size there were more things that needed organising. The granting of a charter by the king established local government and becoming a Parliamentary Borough allowed local people to participate in national government. The United Kingdom is the oldest Parliamentary democracy in the world.

Sailing has been one of the defining features of the Isle of Wight for nearly two hundred years. It was popularised by the Prince Regent and he continued to sail when he became King George IV in 1820. The first sailing regatta in the world was held in Cowes in 1799 and the town now hosts many world famous events: The Fastnet Race, the Admiral's Cup and Cowes Week. They are run from The Royal Yacht Squadron, one of the two castles built by King Henry VIII in Cowes as part of the defences of the Isle of Wight.

Many of our great national museums can display less than half of what they own. In recent years the Arts Council of England has been encouraging these national museums to loan some of their collection to smaller museums. In this way people can get to see our national treasures without having to go to London. St Barbe's in Lymington is one such place, Brading Roman Villa on the Isle of Wight is another.





### How & why was it built?

Hurst Castle was built by Henry VIII between 1541 and 1544. It was designed to protect the western entrance to the Solent and thereby the home of the Royal Navy at Portsmouth. There was already a strip of shingle projecting out into the Solent and this provided the base for the gun fortress. It was then less than a mile from Hurst Castle to the Isle of Wight. This meant that it was impossible for any ship to get past the guns in the castle.

As the threat from Europe declined, the castle was allowed to fall into disrepair. It was repaired in response to the perceived threat after the French Revolution of 1789. In the century that followed Hurst Castle was home to the ships the government used to try to stop the smuggling of tea, wine, brandy and sugar that entered Britain through the Solent.

### What else was happening at the time?

Britain became a Protestant country when Henry VIII made himself head of the Church of England in 1534. Our rivals, France and Spain, continued to be Catholic so they knew that any attack on Britain would be supported by the Pope. This increased the importance of the Royal Navy and Portsmouth in defending Britain.

So, it was important to defend the ships we had and protect the site where we could build new ships. To raise taxes the government put duties on everything that everyone wanted to buy that came from abroad, like brandy, tea, sugar and tobacco. For example, the duty on tea was so high it made it four times the price. This created the opportunity for people to smuggle the goods into the country without paying the tax. The government tried to stop smugglers, but everyone else was happy to help them and buy their goods.

### Innovations they show or how they defend Britain

There are three innovations in military technology at Hurst Castle. Firstly, is that it was one of the first defences designed as a platform for guns rather than a castle for someone important to live in. It has 71 gun ports, but it only ever had 26 guns.

Secondly, it was designed to cope with being pounded by cannon balls: the rounded shape is very



strong and being low to the ground it was difficult to hit. Finally, it was built out into the sea to make it easier to hit ships that tried to pass.

### How is Hurst Castle used now?

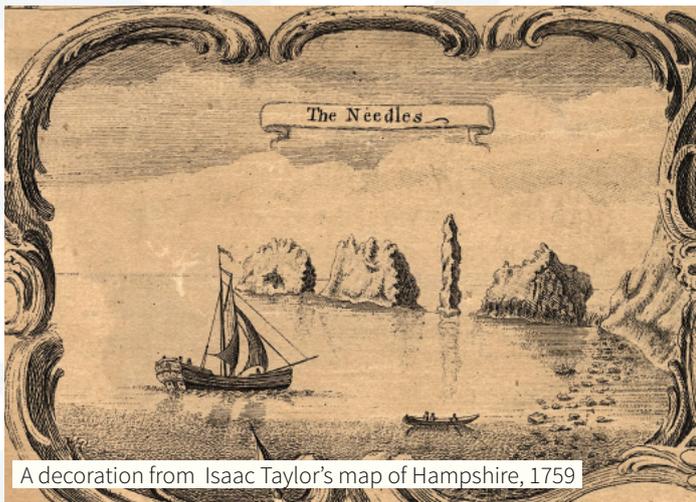


Hurst Castle is managed by Hurst Marine and is part of English Heritage. It is open from April to October and a visit will allow you to explore the full history of the wars and the guns from the Tudors to World War Two.

Lighthouses have played a big part in the history of our island nation and its trade. This is why Hurst Castle is home to the Trinity House museum of lighthouses.

All of this is set in the unique landscape of sandbanks, salt marshes and mud flats that are teeming with wildlife.





A decoration from Isaac Taylor's map of Hampshire, 1759



### Why is it there & how was it made?

The Needles are a row of three chalk rocks that rise about 30m out of the sea at the western tip of the Isle of Wight. They have been one of the defining images of the Isle of Wight for hundreds of years.

The Needles are visible from miles around as well as from the Wightlink ferries that run between Yarmouth and Lymington. The rocks were named after Lot's Wife, a needle-shaped rock in the middle, but this collapsed in the great storm of 1764. Had they always looked as they do today, Stegosaurus Rocks might have been a more suitable name.

The Isle of Wight is a geologists' paradise. At the Needles you can see very clearly how millions of years ago, the chalk was formed in layers and then, almost as long ago, turned on its edge. This is why there are black layers running diagonally through the chalk.

On the beach you can see the coloured sands which have been attracting people to the Island for 250 years. You can also take a boat trip to get a closer look at The Needles and the lighthouse.



Above them, on the top of the cliff and almost hidden from view is the Needles Battery one of the many sets of guns that defended the UK. This protected the entry to the Solent until 1954 and is now owned by

the National Trust. However, what was kept secret in the 1950s and 60s, was that the Needles became the test site for new weapons and the rockets in Britain's space programme. Britain found the exploration of space too expensive but did develop the Trident nuclear missile system. You can see the concrete buildings that were used to test the rockets. They face out to sea, so that the roar and the flames were less likely to be noticed.



### What else was happening at the time?

You may find it hard to believe, but 150 years ago geology was seen as the biggest threat society had ever faced. This was because many Christian religions taught that the Bible was literally true.

James Ussher, Archbishop of Armagh from 1625 to 1656, made a careful study of the events and people in the Old Testament. From this he concluded that God had created the Earth at around 6pm on 22nd October 4004BC.

Geology told us that the Earth was millions of years older than this. While the churches could ignore geology, fossil hunters were finding dinosaurs and these too were also religious dynamite.



This was because they were not mentioned in the Bible but were clearly too large for humans to have been unaware of. So most Christian religions came to an accommodation of science by no longer teaching that the Bible is literally true.

Now we race to the other end of time and the Island again had a part to play. World War Two was brought to an end in 1945 when the Americans dropped atomic bombs on the Japanese cities of Hiroshima and Nagasaki.

After World War Two the focus of international politics moved from Europe to America and Russia. America and Russia competed with each other in every way possible, except war. Each country tried to develop the most powerful weapons and to explore space.

As an ally of America, Britain was able to help in both these areas and the test site at the Needles on the Isle of Wight played a part.

The development and the maintenance of nuclear weapons costs a lot of money. This is why the replacement for Trident is a controversial issue.



**How and why were they built?**

What we see today is the test site for rockets that would launch either missiles at an enemy or a satellite into space. Rocket engines are a more powerful form of jet engine. They work by burning their fuel and expelling it at very high pressure, whereas a jet, sends out hot air at high pressure. The test sites face out to sea, so that the roar and the flames were less likely to be noticed. The rockets were made in East Cowes but the new technology had to be tested to make sure it was reliable. These concrete buildings were testing that the rocket engines produced enough power to get the rocket off the ground and to its destination.

**Innovations they show, or how they defend Britain**

World War Two was brought to an end with bombs dropped from an aeroplane. The next step was to invent bombs that could fly from their base to their target without a pilot. The bomb would be carried on a rocket. The Needles site was used to develop the rockets that could be used to fly the bombs or to get satellites into space. In this way The Needles played a part in the development of Britain's nuclear weapons. These weapons were designed to do something else that was new: deter an enemy from attacking in the first place and so reduce the chance of war being started. And finally, the Needles Rocket testing site is part of the only challenge that humans have yet to complete: the exploration of space.

**What else was happening at the time?**

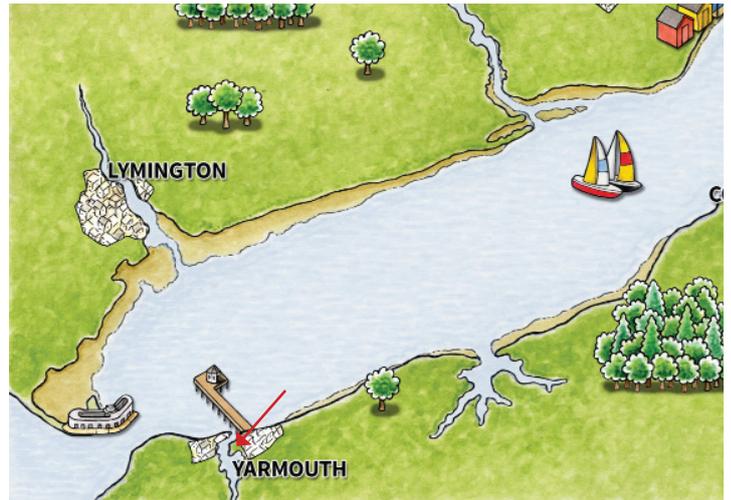
It is estimated that more than 60 million people died in World War II. It was brought to an end in 1945 when the Americans dropped atomic bombs on the Japanese cities of Hiroshima and Nagasaki. No one thought this was the end of war for ever. However, governments had to find ways of winning wars without killing so many of their own people. This was a difficult task. Moving to the present day, many countries are concerned that Iran and North Korea are trying to develop the type of weapons developed at The Needles rocket site.

**How is the area used today?**

The Needles Battery is managed by the National Trust. It was opened to the public in 1982. A lot of the work needed was done by the Nation Trust Youth Group, this is made up of school children and teachers.



A visit to the site will allow you to explore how weapons changed over time as well as finding out about how the men lived, while they were doing this vital work. There is a tea room, which will provide refreshments with one of the best views in Britain.



### How and why it was built

Yarmouth Castle was built by King Henry VIII in 1547. It is quite small, almost square in shape, only 30m across with a small courtyard in the middle.

At first it had 15 guns and a garrison of 30 men, as well as one arrow head bastion on the land side. The guns fired out of narrow holes in the wall that faced the sea.

Richard Worsley was made Captain of the Island by Elizabeth I in 1558. By this time the castle was too small to have the new bigger cannons, so he filled in the courtyard, to make a platform that could hold them.



On the land side of Yarmouth Castle, Worsley also built the Master Gunner's House to provide better accommodation.

### What else was happening at the time?

There are three important factors at this time. Firstly, because Henry VIII founded the Church of England in 1534, the Pope encouraged France and Spain to attack England to make it Catholic again.

Secondly, cannons had revolutionised warfare. The castles, that had been so strong for so long, could be blasted apart in a couple of hours. This meant that the shape of castles had to change.

Thirdly, it was feared that the Isle of Wight could be used as a stepping stone for the conquest of the whole of Britain.

This is why Henry VIII also built forts in Sandown, East Cowes and West Cowes.



### Innovations they show, or how they defend Britain

Cannons fire in straight lines and so are easy to aim. They can be fired along the length of the walls to stop an enemy getting near to the walls. Yarmouth Castle was one of the first castles in Britain to be designed using straight lines.

The first castles designed to cope with cannon fire had been round, because this is the strongest shape. The use of straight lines is seen even more clearly in the defences built by Queen Elizabeth I at Carisbrooke Castle.

The arrow head bastions mean there is nowhere for an attacker to stand near the castle that is safe.

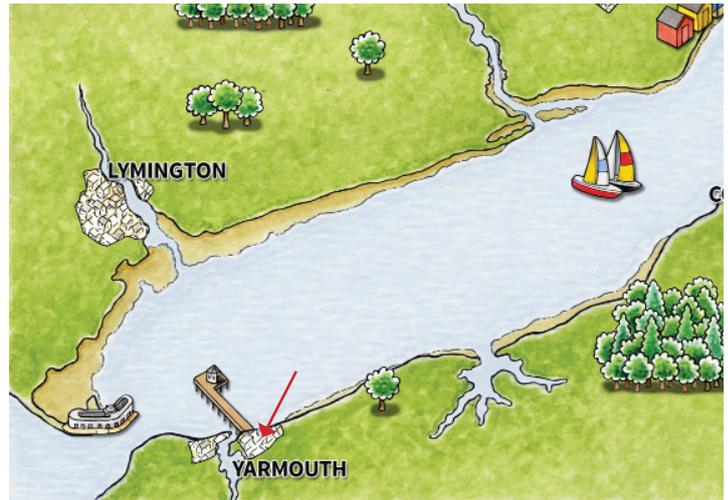
### How is the castle used today?

Very little of Yarmouth Castle can be seen from the town.

Its entrance is in Quay Street, just after the George Hotel, but the best view by far is from the Wightlink ferry.

A visit will allow you to explore how the castle's guns worked as well as what it was like to live in the castle.

Yarmouth Castle is one of the four properties on the Isle of Wight managed by English Heritage, the others are: Carisbrooke Castle, Osborne House and Appuldurcombe House.



**The History**



Yarmouth is one of the oldest towns in the Island. We know that in 991, it was paying taxes to Ethelred the Unready. After the Norman Conquest

in 1066, buildings were again made of stone, like they had been in Roman times.

The shape of Yarmouth's streets today, date from that time. The town was given official recognition by the charter of 1135 and from the Middle Ages until 1832, it had one of the three MPs on the Island.

Yarmouth was attacked by the French in 1544 and to the shame of the town, they stole the church bells. To protect the town and the Island, Henry VIII built Yarmouth Castle in 1547. Admiral Robert Holmes was governor of the Isle of Wight from 1667 to 1692. He captured a ship heading to France and took its cargo.

The most interesting item was a statue of Louis XIV, the King of France and the most powerful man in Europe. Louis XIV was far too important to sit while the whole statue was carved, so the body with its rich clothes had already been completed in Italy. The stone on the face was left uncut.

Robert Holmes had his own face put on the statue and it now stands for all to see in Yarmouth Parish church. Holmes' house is now the George Hotel and stands just off the main square.



Yarmouth is a charming town that has changed very little for hundreds of years. The most recent big change to Yarmouth was the opening of the pier in 1876.



The shops and restaurants are all locally owned rather than being national chains. In this way Yarmouth has a character all of its own and is easy to explore from the Wightlink Terminal.

**What else was happening at the time?**

Our knowledge of when towns existed and their names comes mostly from our kings wanting to know how much tax they could collect.

Two of the most well-known tax inspections were Danegeld and Domesday book. In 1086 there were only sixteen villages of 30 or more people on the Island and by 1801 it was only about 20 000. With such a small population it may seem strange to us that the Isle of Wight was so well represented in Parliament.

For thousands of years Britain's enemies have mostly been south of us. So, the defences of the Isle of Wight have always been kept up to date. When Henry VIII founded the Church of England in 1534, this increased the chances of attacks from Catholic countries like France and Spain. To help protect the Island, Henry VIII built two forts in Cowes, the one in Yarmouth and one in Sandown. This is now Sandown Zoo, which explains why its walls are so much larger than they really need to be to protect the tigers inside.

The Victorians were convinced that sea air was good for the health, this is why so many seaside towns built piers in the second half of the Nineteenth Century. The piers at Sandown and Yarmouth are still open to the public and Ryde Pier is the terminal for the Wightlink's Fastcat. There also used to be piers at Seaview, Shanklin and Totland.

## POST VISIT TASKS

There are four factors that have facilitated the development of weapons over time, specialisation, trade, government and war. Students could be asked to consider the following questions. These questions address each history skill. In their answers the students will need to use the facts and understanding they gained on the crossing, using the resources provided, any visits they might have made during their stay on the Island and any site they have studied near their school.

Skill	Questions
<b>Chronology</b>	<ul style="list-style-type: none"> <li>Describe how military technology changed between the 1500 and 2000?</li> <li>How much did military technology change between 1500 and 2000?</li> <li>Where in the chronology does the site you have studied near your school fit?</li> </ul>
<b>Continuity and Change</b>	<ul style="list-style-type: none"> <li>Identify one weapon that was used from 1500 to 2000. Then explain why.</li> <li>How did the design of the defences in the Solent change between 1500 and 2000? Then explain why.</li> <li>What are the similarities and differences between the site you have studied near your school and the ones you saw in the Solent?</li> </ul>
<b>Cause and Consequence</b>	<ul style="list-style-type: none"> <li>What caused the design of defences in the Solent to change? Then explain how it changed them.</li> <li>What were the main consequences of the development of cannons?</li> <li>What caused the British build forts in the sea?</li> <li>What events influenced the site you have studied near your school and the features you have seen in the Solent</li> <li>How did the development of aeroplanes change the design of forts?</li> </ul>
<b>Interpretation and Significance</b>	<ul style="list-style-type: none"> <li>Identify a turning point in the development of Military Technology. Then explain why.</li> <li>Explain why the development of cannons was a turning point in military technology.</li> <li>Do you think that attack or defence was the main purpose of the weapons in the Solent?</li> </ul>
<b>Asking questions</b>	<ul style="list-style-type: none"> <li>What question would you like to find the answer to about the defences in the Solent?</li> <li>Think of one question you could ask about all the features you have studied.</li> </ul>

The simpler questions are in **green** and should be accessible to all students; the one in **amber** develops the answers to these questions. The questions in **red** require the highest level of thinking and knowledge.

