

# Maritime Futures

*Working with employers to integrate real world maritime knowledge, skills and experience into a mainstream secondary school curriculum*



# Maritime Futures

*Rachel Kitley, Principal CEC*

## **Our curriculum and employment work:**

- Is anchored in our local environment
- Introduces KS3 children to maritime employment possibilities
- Offers opportunities to explore and learn through the maritime sector





# TIME FUTURES KS3

## Science

What is the science behind maritime exploration?  
What stress does diving put on our bodies and how do forces operate under water?  
How does pioneering science support the underwater study of our maritime heritage?  
How does science enable maritime artefacts to be preserved?

### Visit from the Shipwreck Museum

A professional maritime artefact diver visits the academy to talk to students about their work and how science supports them.

## Technology

What makes maritime technologies so advanced?  
How is the maritime industry supporting aerodynamic international development?  
How do I use an electrical circuit as a control device for maritime safety?  
What is the science behind a hovercraft?  
Can I use planning, preparation and quality task design to work out how a boat sails?

### Technology in action visit to CECAMM

Students visit CECAMM (Centre of Excellence for Composites, Advanced Manufacturing and Marine) and engage in a carousel of practical activities to explore the links between technology and the maritime industries. Activities include working hovercraft and lighthouse, operating miniature working hovercraft and lighthouse, planning and making a floating prototype boat and exploring advanced technologies used today in boat building industries.

### Boat field trip on the Solent

This unique visit takes all students out on a boat to see the varied coastal features on the north coast of the Isle of Wight. The students hear from local experts about how the coastal management techniques were conceived, funded and received by the local people. Students judge how effective the coastal management techniques are and their potential impact on residents. The tour is led by the Cowes Harbour Master who brings his extensive knowledge of the workings of Cowes Harbour.

## Geography

What makes our maritime environment unique?  
How has the Isle of Wight coastline changed over time?  
How is land used in Cowes?  
How effective is coastal management in Cowes?

## History

How did maritime skills and warfare bring people together from across the world in the Tudor period?  
How did naval warfare make Tudor England multicultural?

## Geography

How can maritime connect the world?  
Where do the ships we can see in the Solent come from?  
How does shipping contribute to the economy?  
How has containerisation accelerated globalisation?

## History

How has maritime changed the world?  
How did ships help migrants travel to Britain in the past?  
Why has travel by water been significant in the development of Britain?

## Science

Is our maritime environment vulnerable?  
How do environmental changes affect our coastal wildlife?  
How can our future be wilder?  
How can I be a citizen scientist?

### Visit from the Hampshire and Isle of Wight Wildlife Trust

Students learn about the impact of global environmental change on our local environment here on the Isle of Wight. We study marine life as an indicator of the health of our sea and how our marine life is unique and important.

## Geography

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Where do the ships we can see in the Solent come from?  
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## History

How did maritime skills and warfare bring people together from across the world in the Tudor period?  
How did naval warfare make Tudor England multicultural?

### Visit to the Mary Rose in Portsmouth

This visit is a student led enquiry into how students can independently draw inferences from the artefacts found on the wreck of the Mary Rose. Students will have a guided tour of the museum and each student will have their own thematic focus, for example technology. Each theme will be drawn back to wider inferences about life in Tudor England and address any misconceptions about the perceived mono-cultural nature of Tudor England. Students learn how England was a maritime lead and attracted people from around the world.

## SAILING CLUB

## REGATTA

## Technology

How do the properties of materials affect the design solutions to a problem?  
How do we join together parts of boats?  
Which properties of materials are best suited to boat manufacturing and why is this?  
How do forces between particles affect the properties of materials?

### Technology in action visit to CECAMM

Students visit CECAMM (Centre of Excellence for Composites, Advanced Manufacturing and Marine) and experiment with different types of metals and joints to investigate the properties of materials.

## Science

What impact have advances in material science and technology had on the maritime industry?  
How do the properties of aramid and carbon fibres lend themselves to uses in the maritime industry?  
How are marine composites used?  
What are the advantages and disadvantages of marine composites?

### Technology in action visit to CECAMM

Students visit CECAMM (Centre of Excellence for Composites, Advanced Manufacturing and Marine) and research and produce glass and gel coat moulding of hulls.

## SAILING CLUB

## Technology

What are modern materials and creating hulls?  
How do boats of different shapes perform according to their design?  
How can something be so strong?  
What are different types of hulls?  
How can a structure be strengthened with the correct use of different materials?

## SAILING CLUB

What are our maritime skills and how can we improve our creativity?  
How does Art record significant maritime events and what impact does this have on how we remember history?

## REGATTA

## YR8

## History

How has maritime changed the world?  
How did ships help migrants travel to Britain in the Tudor period?  
How did naval warfare make Tudor England multicultural?

## YR8

## YR9



# Maritime Futures

*Tom Harding – Assistant Principal CEC*

**A curriculum that is a rich tapestry, interweaving robust disciplinary knowledge, employer knowledge and skills, employer expertise and real world learning opportunities:**

- The design and build of yachts informed by disciplinary knowledge
- Real life employment related tasks:
  - A crewpot meal
  - Coastal defence management and its impact on tourism
  - Presenting work to employers / experts for review / critique
- Employers mentoring students throughout the year with their projects



# Maritime Futures

*Nigel Harley – MD Harley Raceboats*

- Engage local businesses to make them aware of maritime studies at CEC
- Provide avenues for marine businesses to participate in the maritime curriculum at CEC
- Add relevance and context to maritime studies
- Inform students of career opportunities in the marine industry and the transferability of these skills to other industries and career paths
- Encourage and inform students of activities and pursuits that surround them in the maritime environment



# Maritime Futures

*Iain Mackinnon – Secretary - Maritime Skills Alliance*

- The MSA is created, owned & funded by employers to develop and promote qualifications & apprenticeships
- Strong interest for years in getting the right partnership with schools - with mixed success
- Government + Industry  
“Maritime 2050” strategy reinforcing those aims



# Why Maritime Futures matters to the MSA

1. Ormiston are casting their net wide, & that's exactly what we need to show young people the full scope of the sector
2. Their approach can be tailored for different parts of the country to suit different local economies
3. A credible qualification which counts in school "league tables" is one of our ambitions
4. ***They're excited about it! So are we, and that makes for a great partnership***







"I was inspired by the trip to CECAMM where we learnt about the jobs that people are training for locally and the amazing equipment we could use."

**Maisey**



## Maritime Futures

**Rachel Kitley**

*Principal, Cowes Enterprise College*  
**rkitley@cowesec.org**

**Iain Mackinnon**

*Secretary, Maritime Skills Alliance*  
**iain@maritimeskills.org**  
Tel: 0208 99 88 77 2  
[www.maritimeskills.org](http://www.maritimeskills.org)



"I really enjoyed the talk from an ex student of CEC who is now a naval architect and seeing that I too can do something like this."

**Chloe**



"I never thought I would ever learn to sail!" **Holly**

"I am so lucky to have been able to discover what the world of maritime has to offer and I really enjoyed learning about hull design."

**Riley**

