COWES ENTERPRISE COLLEGE
AN ORMISTON ACADEMY
Educate for life

CASE STUDY

Cowes Enterprise College
Maritime Futures careers curriculum

APRIL 2022

Maritime Futures

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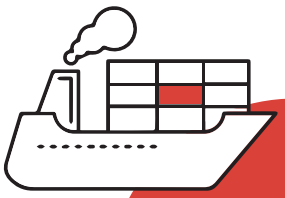
Cowes Enterprise College, an Ormiston Academy, is an 11-19 non-selective school based in Cowes on the Isle of Wight. With a unique position overlooking the Solent and panoramic views of the New Forest across to Portsmouth we were looking to connect our curriculum to our local environment taking into account the history, geography and thriving maritime industry on our doorstep.

Cowes is a town with international renown and became the world's first centre for yachting with the foundation of the Royal Yacht Squadron in 1815, and Cowes Week continues to be a significant event in the international yachting calendar. Cowes has a long and illustrious reputation as an industrial maritime town that specialises firstly in boat building, but which also has diversified into modern maritime technologies and manufacturing such as off shore wind turbine production.

Cowes Enterprise College developed the Maritime Futures curriculum to bring the wealth of careers opportunities in the maritime sector into the classroom and marry the rigorous knowledge that forms the science, technology, history and geography curriculum with employer encounters and meaningful careers education.

WHAT IS THE NEED FOR THE MARITIME SECTOR?



95%

of all goods that arrive or leave the UK do so by sea

The UK is one of the world's leading maritime nations. Its status is built upon our geography, a remarkable historical foundation and a large and vibrant economy.

But leading maritime nations only hold that position because they adapt and plan for the future. So, the UK is looking far ahead, to allow it to support and grow the maritime sector with strength and determination.

Maritime 2050 is a maritime strategy to take the UK into the second half of the 21st century. The strategy identifies a need for a 'greater emphasis' on STEM subjects linked to the maritime sector "to create the training that equips the maritime workforce with the skills that will be needed in the future."

"For UK maritime firms, an ageing population makes the challenges they already face in promoting the sector as an attractive career choice amongst young people even more acute. With firms competing to recruit from a relatively smaller pool of young people in future, the maritime sector will have to make itself increasingly attractive to recruit future seafarers from within the UK."

Whilst the maritime sector is hugely important and rapidly growing there are not enough skilled workers to fill these positions. It is predicted that there will be a Marine skills shortage of over 300,000 seafarers by 2050 [Robert, 2018] and currently a shortage of 147,000 workers [World Maritime University, 2019]. The maritime industry also has a history of gender inequality. Recent figures show that women only make up 2% of the global maritime industry, with the majority of women working in ferries and cruise ships. [Maritime UK, 2018].

Alongside an ageing workforce there is a need for a clear pathway for young people to join the maritime sector. Our Maritime Futures curriculum goes someway to addressing this with young people aged 11 to 16.

WHAT IS THE EDUCATIONAL NEED?

As a coastal and island school Cowes Enterprise College has specific local context challenges we sought to address through this new curriculum.

Research presents a concerning situation regarding attainment and coastal location. Those living on the coast are less likely to go to university and disadvantaged pupils have higher performance in non-coastal locations.

According to the Education Policy Institute (November 2020) report “the type of place pupils live in is a strong predictor of their academic attainment and progress compared to solely deprivation and ethnicity.”

There is an opportunity for coastal schools to work to meet this educational need through a local careers driven curriculum.


WIGHT

WHAT IS OUR SOLUTION?

We've created a broad and sustainable curriculum that is anchored in our local maritime context. We call it Maritime Futures.

Maritime Futures aims to:

- Build self-efficacy
- Create positive associations with local economic opportunities
- Illustrate the purpose of theoretical knowledge and motivate pupils who otherwise wouldn't see the relevance of theory
- Provide rigorous and challenging knowledge and techniques to underpin practical application
- Give pupils wide educational building blocks rather than narrow job training

We achieve these aims through:

Teaching national curriculum subjects through immersion in maritime topics at Key Stage 3:

For example:

- **Science and Technology:** Design and build of yachts informed by disciplinary knowledge.
- **History:** Looking at migration by sea and a case study of the Mary Rose.
- **Geography:** Studying containerisation, coastal defences and tourism in our local context.

Using projects to apply knowledge:

- Evidence has shown that real-world learning, particularly integrating work and careers education, increases students' understanding, by providing them with meaningful opportunities to apply their knowledge. It also can help students understand more about employment opportunities by helping them to develop the requisite knowledge and skills that will enable them to plan and manage their lifelong career journey (Andrews, 2011; Hooley et el., 2011). Furthermore, project based learning allows students' understanding to widen as they are given meaningful opportunities to apply, interpret and solve problems situated in the real world. [Rogers & McGrath, 2021].
- We use a variety of projects that build on the knowledge learnt in curriculum subjects e.g. the design and build of model boats in design technology using concepts taught in science; presentations on coastal defences to local planning officers using concepts taught in geography.

Embedding careers throughout the KS3 curriculum:

- Local employers / maritime experts routinely deliver lessons with students having employer encounters with a wide variety of careers.
- Our careers portal, OAT Futures, aims to broaden horizons and raise awareness of the career opportunities available throughout England, thereby removing geographical barriers which can present obstacles to students and prevent them from taking those next steps. The interactive website has also introduced young people to the breadth of maritime careers both onshore and offshore and made them aware of the wealth of opportunities in the local economy.

Creating a coherent pathway:

We're working with Pearson on developing a Maritime Level 2 qualification (for first teaching in 2024), so that students who have found maritime stimulating at Key Stage 3 can continue to develop their interest at Key Stage 4. The qualification is broad enough that young people learn valuable transferable skills and knowledge, but signals intent to maritime employers and is valued by them.

WHAT IS THE IMPACT SO FAR?

83%

found the most useful aspect of the maritime curriculum was that it taught them about different jobs

Better attainment and progress

Science attainment:

- In Years 7 and 8, two mixed ability trial groups for each year group were used to initially introduce the Maritime Futures Curriculum on a pilot.
- For Year 7, the average assessment score across the year group for all students not in the pilot was 48 out of 80 (60%) for the topic and for those involved was 63 out of 80 (79%). This shows the Maritime Futures Curriculum increased attainment by 19%.
- For Year 8, the average assessment score across the year group for all students not in the pilot was 51 out of 80 (64%) and for those involved was 60 out of 80 (75%). This shows the Maritime Futures Curriculum increased attainment by 11%.
- The 2 groups where we'd trialled delivering the content with a more practical and relevant focus on science, using maritime as the content, were the highest scoring of the 10 groups for both year groups.

Better student motivations

To assess the student approach to their learning we use an attitude to learning score, ranging from 1 to 4. Attitude to learning grade 1 descriptor is enthusiastic and grade 2 is good.

Design Technology attitude to learning:

- In 2018-2019, the proportion of grade 1 (enthusiastic attitude to learning) awarded was 10% for disadvantaged students and 21.5% for non-disadvantaged students.
- In 2019-20 following the introduction of the full Maritime Futures curriculum, the proportion of grade 1 (enthusiastic attitude to learning) awarded for disadvantaged students was 35.4% and non-disadvantaged was 37%.
- Average attitude to learning of the Maritime Futures cohort improved by 16%.

Positive students

Year 9 students completed an online survey:

- 83% found the most useful aspect of the maritime curriculum was that it taught them about different jobs.
- 57% said the most useful way that the curriculum helps with learning is to show what different employers expect and 42% said that it helps them to understand learning better.
- 67% of respondents said yes or maybe to selecting the option to study a maritime qualification in Year 10.

WHAT IS THE IMPACT SO FAR?

Sense of place and learning

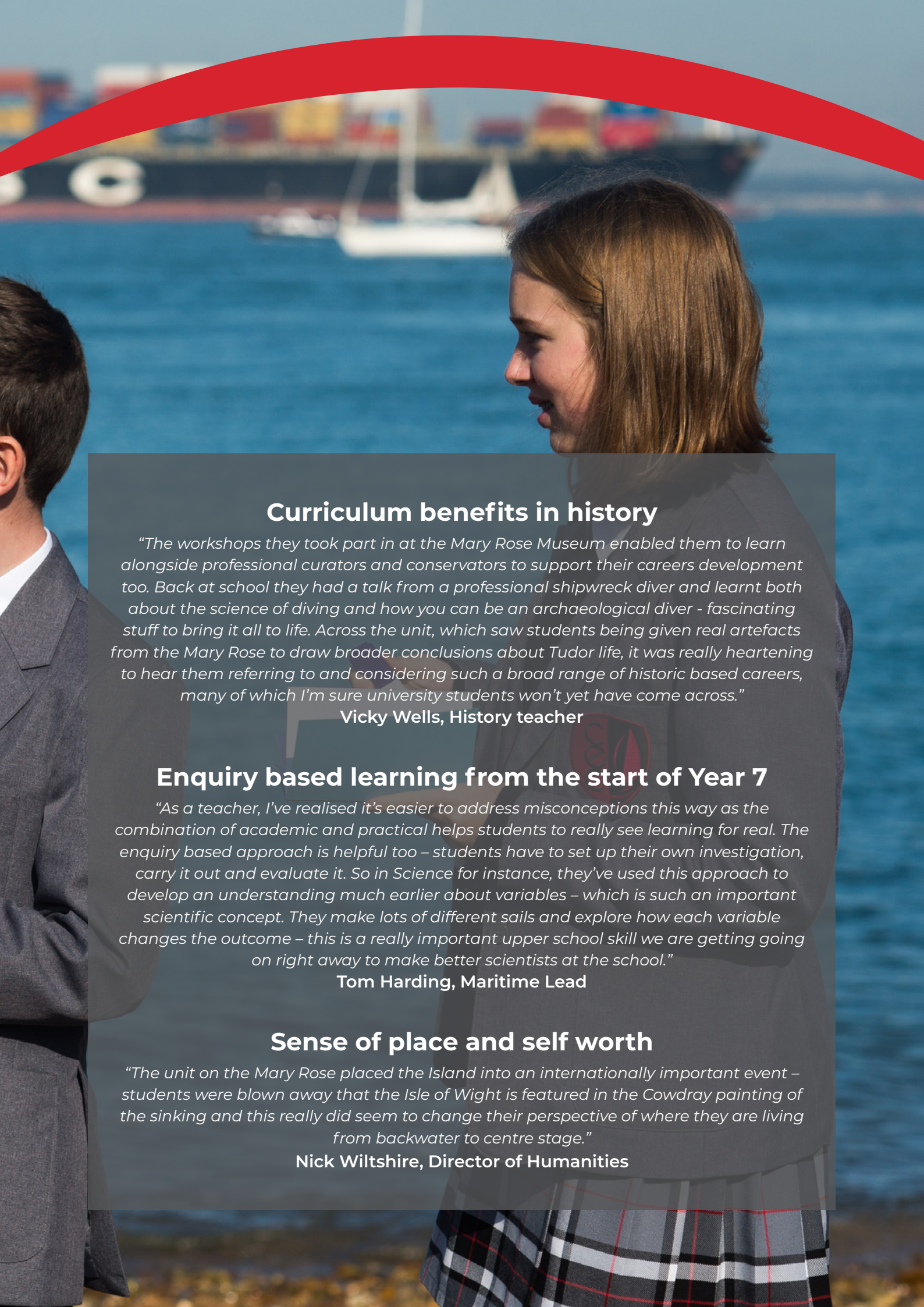
"Name a school in the country that teaches the key topic of globalisation at KS3 by literally looking out of the classroom window and tracking online where the containers we see have come from, are going to and what they are shipping. Our children used to feel completely isolated on the Island but now they feel completely connected to the world outside, and understand difficult concepts better because of the way we are teaching – there is nothing dry about this so it's relevant, interesting and memorable."

Kelly Wiltshire, Deputy Director and Head of Geography

Better student motivations

"All of this has revolutionised how our students respond to DT and I know it's improved their ability to engage with, remember and do well at my subject area. As someone that worked in industry for years, I can see that this curriculum mirrors the way Design Technology and engineering works for real in industry."

Andy Green, Head of Design Technology



Curriculum benefits in history

"The workshops they took part in at the Mary Rose Museum enabled them to learn alongside professional curators and conservators to support their careers development too. Back at school they had a talk from a professional shipwreck diver and learnt both about the science of diving and how you can be an archaeological diver - fascinating stuff to bring it all to life. Across the unit, which saw students being given real artefacts from the Mary Rose to draw broader conclusions about Tudor life, it was really heartening to hear them referring to and considering such a broad range of historic based careers, many of which I'm sure university students won't yet have come across."

Vicky Wells, History teacher

Enquiry based learning from the start of Year 7

"As a teacher, I've realised it's easier to address misconceptions this way as the combination of academic and practical helps students to really see learning for real. The enquiry based approach is helpful too – students have to set up their own investigation, carry it out and evaluate it. So in Science for instance, they've used this approach to develop an understanding much earlier about variables – which is such an important scientific concept. They make lots of different sails and explore how each variable changes the outcome – this is a really important upper school skill we are getting going on right away to make better scientists at the school."

Tom Harding, Maritime Lead

Sense of place and self worth

"The unit on the Mary Rose placed the Island into an internationally important event – students were blown away that the Isle of Wight is featured in the Cowdray painting of the sinking and this really did seem to change their perspective of where they are living from backwater to centre stage."

Nick Wiltshire, Director of Humanities

WHAT IS THE IMPACT SO FAR?

Positive students

"At CECAMM [Centre of Excellence for Composites, Advanced Manufacturing and Marine] it was like being on a real apprenticeship but in Year 7."

"[CECAMM] really helped you to have an in depth experience. It was incredible to work with people who are professionals and we got so involved because it was interactive. It's really cool to see for real what happens in work and to learn this way."

"It's like we can learn the whole Island history through this while also still learning better in subjects and working out what jobs we might want to do."

"It's definitely motivated me to work harder in lessons because it's been fun and interesting and I've remembered it better because it kind of sticks in your mind and also some of the learning is really difficult but it helps to do it in this way as it makes sense when you see it for real."

"It was this visit [CECAMM] which made me think I should consider a maritime career. By the end of the day I thought 'this is it – I'm going to find out everything I can about being a maritime engineer and do this job!

"By adapting my sails and hulls I really understood the science we'd been learning about sail designs and have a pretty good understanding of something that seems quite difficult."

"School can be a little bubble that doesn't reflect the real community and...this has helped me to connect up our place we live in to the world – how amazing is it that the Mary Rose sank so close we'd have seen it happen from the school site if we'd stood there then. I had no idea that where I'm from is so special and that something so important happened right here – that is amazing."

"I've loved actually being able to ask questions to experts for real and have them directly answer them – like the diving expert."

CONCLUSION

We have found our students are engaged and inspired by first hand embedded experiences with employers. The Maritime Futures curriculum helps break down some of the barriers students might face when looking to join the maritime industry but also supports learning by giving rich real world examples of how the knowledge they gain can be used.

Students have been better motivated alongside demonstrating improved attainment and progress. The strong sense of place and learning that has been highlighted by the Maritime Futures curriculum has been invaluable to students. Project based learning allows students' understanding to widen as they are given meaningful opportunities to apply, interpret and solve problems situated in the real world [Roger & McGrath, 2021] and that has certainly been the case so far on this project. Real-world learning, particularly integrating work and careers education, helps students understand more about the employment opportunities by helping them to develop the requisite knowledge and skills that will enable them to manage their lifelong career journey [Andrews, 2011].

The challenge which now faces us is that the maritime industry is dynamic and developing and we must ensure that the Key Stage 3 Maritime Futures curriculum stays up to date and relevant to the changes in industry.

Find out more

For our full 'How to Guide' and Maritime Futures curriculum map go to:
https://cowesec.org/curriculum/maritime-futures

For the OAT Futures Career Portal see: https://oatfutures.co.uk

If you would like to hear more about a local maritime curriculum please contact Tom Harding, Maritime Futures Curriculum Lead on tharding@cowesec.org or by phone: 01983 203103