



Maritime  
Futures

# HOW *to* GUIDE

How to design a  
careers driven and local  
context curriculum



APRIL 2022

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# INTRODUCTION

An effective curriculum helps students to be educated for life.

At Cowes Enterprise College we believe there is no single best approach to curriculum design but that there are common principles of well-designed curricula which provide a framework for creating, developing and evaluating a local careers driven curriculum.

# MARITIME FUTURES KS3

## Geography

How does maritime make our community unique?  
How is Cowes high street influenced by the maritime industry?  
What does land use tell us about how maritime influences the economy of Cowes?

## 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?

## 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?

YR7

### 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 in action visit to CECAMM: Sea Rescue

**Maritime Electronics:** Students visit CECAMM (Centre of Excellence for Composites, Advanced Manufacturing and Marine) and engage in a practical activity to explore the links between technology and the maritime industries. Students tour the industry standard facilities, hear careers talks and build electrical circuit boards which result in a light sending an SOS signal.

### SAILING CLUB

## Art

Who are our maritime heroes?  
How can maritime inspire our creativity?  
How does Art record significant maritime people and what impact does this have on how we remember history?

### 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?

### REGATTA

YR8

## 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?

## 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?

### Technology in action visit to CECAMM: Sea Rescue

**Naval Architecture:** Students visit CECAMM (Centre of Excellence for Composites, Advanced Manufacturing and Marine) and participate in a carousel of activities to explore naval architecture. In particular, students learn about welded joint structures, how to set a lathe or mill and how a CNC (computer numerical control) machine is programmed.

## 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 to the Mary Rose in Portsmouth

This visit is an student led enquiry into how students can independently draw inferences from the artefacts found on the wreckage of the Mary Rose. Students will have a guided tour of the museum and each student will have their own thematic focus, for example multiculturalism or warfare 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.

## 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 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.

### REGATTA

YR9

## 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

What are modern methods of sealing and creating hulls?  
How do boats of different weights float according to their shape?  
How can something be both light and strong?  
What are different methods of coating the hull of a boat?  
How can a styrofoam model be coated with the correct materials using a variety of different infusion methods?

### Technology in action visit to CECAMM: Sea Rescue

**Maritime Engineering and Composites:** Students visit CECAMM (Centre of Excellence for Composites, Advanced Manufacturing and Marine) and participate in a carousel of three activities and experiment with different types of metals and joints to investigate the properties of materials. They learn about a working marine engine, solder electrical components to repair helm equipment and experiment with composite materials to repair boat hulls.

## 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?

### SAILING CLUB

KS4



1

## What's your big idea?

At Cowes Enterprise College, our big idea is a KS3 local context curriculum based on learning through the maritime industry. This reflects our ethos that values authentic work relevant to the real world. It's a broad offer and is delivered in discrete subjects, with interdisciplinary links, through an enquiry approach via projects and expeditions.

### Develop your own big ideas by considering:

As a school based on the coast of the Isle of Wight, with a panoramic view of the Solent and a long history of links with the maritime industry, choosing to make links with this sector was easy. For us it gave our students connection to their local context along with access to a dynamic, outward looking, international industry based locally. This might be different for your local context, use local people as well as staff to help formulate ideas for a curriculum connected to your local context.

Check that your chosen direction can be securely connected to the existing National Curriculum and that the rigour of the subjects you already deliver is maintained. We were able to look at Science, Technology and the Maths existing curricula as a starting point combining the Humanities (particularly Geography) element too.

We were fortunate enough to draw heavily from the Maritime 2050 government report to help us articulate the need in the maritime industry for more school based education to contribute, in a small way, to the wider national employment gap. There may not be an equivalent document but it is vital to use labour market information to inform your curriculum development to ensure the pathways exist for students once they leave a school setting.





## How do you sell the concept to key stakeholders?

Once you have arrived at your 'big idea' it is important you gather a team of experts around you. For the curriculum to be relevant it needs input from those who are at the cutting edge of development in that area. At Cowes Enterprise College we assembled a maritime advisory board to consult on the curriculum development ideas our teachers had. This meant we made sure we were meeting the industry need as well as enriching and deepening our own curriculum and student experience.

We consulted a range of stakeholders for input at draft stage including student and parent voice in order to persuade stakeholders, including teachers, parents, governors and the local community, that there are strong, transferable arguments for a local careers driven curriculum.

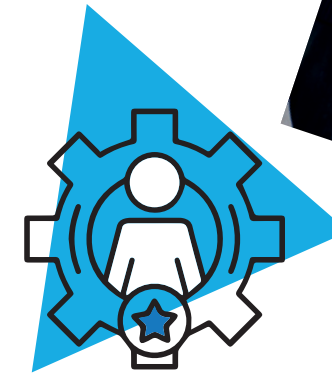


Image: Permanent Secretary of State for Education, Susan Acland-Hood visiting Cowes Enterprise College in 2021.



# 3

## HOW CAN CAREERS TEACHING ADD RELEVANCE?



### How can careers teaching add relevance?

At Cowes Enterprise College, our curriculum is relevant and exciting. All of our KS3 students complete projects in industry standard facilities, present work to experts for review and are taught and mentored by employers throughout the year. Employers also make guest visits to speak to our students.

#### Consider where careers teaching can add relevance to your big idea:

We selected our industry partners carefully ensuring there was a robust curriculum link to what they could offer our students and we had to be convinced that work with external providers did add to the depth of knowledge students gained in the classroom. This meant that there were tangible links for students to see and experience between the robust knowledge they were learning in classrooms and a real industry and career.

Look carefully around you for your local facilities. Use existing networks of parents and governors to discover hidden connections. An example of a key local partner for us is CECAMM (Centre of Excellence for Composites, Advanced Manufacturing and Marine). At CECAMM, students are able to put into practice theory learnt in both technology and science lessons. There will be a range of dynamic industry based in your locale - it is a matter of finding them.

Local employer relations are very important to a careers driven curriculum. Combined with labour market information, employers will see the benefit of working cooperatively with schools for their own community outreach and future recruitment. Through these links we were able to highlight employment, apprenticeship and degree opportunities to our students which may have otherwise gone unnoticed.



# CAREERS

The eight Gatsby benchmarks of good career guidance

- 1 A stable careers programme
- 2 Learning from career and labour market information
- 3 Addressing the needs of each pupil
- 4 Linking curriculum learning to careers
- 5 Encounters with employers and employees
- 6 Experiences of workplaces
- 7 Encounters with further and higher education
- 8 Personal guidance



4



## How can you embed careers teaching for all students?

At Cowes Enterprise College, we have mapped careers across and beyond the curriculum for Years 7 to 13

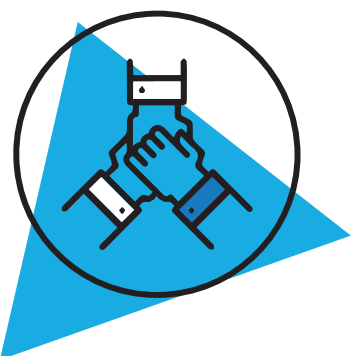
**Realise**  
How embedded and wide ranging is your careers work? Use the Compass tool to audit your current provision: <https://compass.careersandenterprise.co.uk/info>

**Reflect**  
What do you need to do next to deliver excellent careers teaching in your school across the Gatsby benchmarks?

**Remember**  
A well-conceived curriculum driven by careers will meet the Gatsby benchmarks. It is essential to invest in careers. Ensure that there are the appropriate leadership positions and structures in place across the school to support your careers work.

**React**  
Does anything feel like a barrier and how can you move through this?

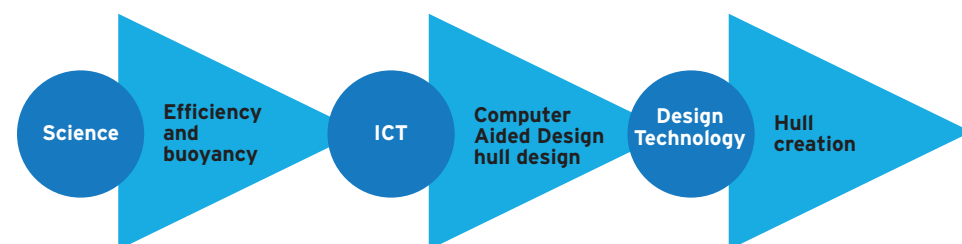




## Could interdisciplinary planning support your big idea?

At Cowes Enterprise College, our broad curriculum develops learning from the National Curriculum and beyond through discrete subject delivery, but also has an interdisciplinary focus on learning through the theme of maritime across relevant subjects.

### Example of a Year 7 Interdisciplinary link



Remember interdisciplinary teaching can help students to make links across subjects and the world of work, demonstrating why knowledge from one subject is important in another:

- How can you make sure planning across subjects keeps a focus on conceptual understanding and subject links?
- How can you ensure a consistent methodology and language is used across subjects?
- How can you enable students to see the strength of each individual discipline but in a connected way?
- What subjects are best suited to making interdisciplinary links around your big idea?



# 5

## COULD INTERDISCIPLINARY PLANNING SUPPORT YOUR BIG IDEA?

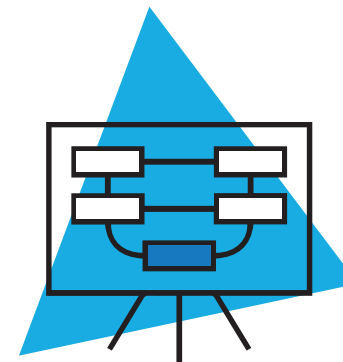
### Pitfalls of an interdisciplinary curriculum

- Try not to feel like you need to involve every subject
- Avoid surface area links that do more damage than good
- Prevent driving an interdisciplinary model forward without having grounded knowledge from subject leads
- Preserve the integrity of individual subjects



# 6

## WHAT CAN SENIOR LEADERS DO TO SUPPORT CURRICULUM CHANGE?



### What can senior leaders do to support curriculum change?

At Cowes Enterprise College, we provide weekly co-planning time for all teachers to enable them to work together to plan our Maritime Futures curriculum, including across subject areas. We have also created leadership responsibility roles to facilitate subject level change. We understand that this curriculum will cost more and budget accordingly, fundraising locally to support this.

#### How can this work for you?

- How will you empower staff to step forward?
- What CPD is needed to build teacher knowledge and confidence?
- Can teachers be given additional planning time?
- What can be taken away from middle leaders to enable greater capacity to implement change?
- What resources will help support the change?



# 7

## APPENDIX

### WHAT ARE THE STAGES FOR IMPLEMENTATION?

#### What's the big idea?

- Discuss initial ideas with external employers and industry consultants
- Map out the big idea of the curriculum with middle leaders and teachers
- Identify key knowledge and skills along with overall learning journey steps

#### How do you sell the concept to key stakeholders?

- Re-engage employer and industry contacts to consult on the draft curriculum
- Get a variety of stakeholder voice

#### How can careers teaching add relevance?

- Check that any employer engagement or student experience is tightly linked to the curriculum
- Use local facilities to enhance your provision.
- Ensure you utilise your employer links with older students too, to secure their destinations.

#### How can you embed careers teaching for all students?

- Audit your current provision
- Do you meet the Gatsby benchmarks?
- Is there the investment and leadership structure to ensure the careers delivery will be effective?
- Identify and remove barriers

#### Could interdisciplinary planning support your big idea?

- Identify links carefully across subjects. Don't force the connection else it runs the risk of being surface level
- Ensure the subject curriculums have consistent language to aid students in linking their learning across disciplines

#### What can senior leaders do to support curriculum change?

- Make sure that staff feel empowered to take the lead in their curriculum with appropriate CPD
- Look to develop capacity to ensure middle leaders are freed up to drive forward the changes
- Enable a culture of creativity and experimentation

For Cowes Enterprise College Case Study and Maritime Futures curriculum map go to:

<https://cowesec.org/curriculum/maritime-futures>

For Cowes Enterprise College Careers Resource go to:

<https://cowesec.org/for-students/destinations>

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