

HEADSTART

huish



CORE MATHS

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What is Core Maths?

<https://amsp.org.uk/universities/core-maths>

This qualification gives you the mathematical skills to tackle problems in a variety of authentic situations. It enables you to strengthen the mathematical knowledge and skills you learnt at GCSE so you can apply them to the problems you may encounter in further study, life and employment.

“It’s not just skills for the exam.”

WHAT DO THESE A LEVEL COURSES HAVE IN COMMON?	Content Overview	Assessment Overview	
	<ul style="list-style-type: none">• Modelling• Statistics• Finance• Working with exponentials• Working with graphs and gradients• Geometry and measures• Risk• Estimation• Problem solving• Communicating solutions• Use of technology	 Introduction to Quantitative Reasoning (01)* 72 marks 2 hour written paper	50% of total Level 3 Certificate
 Chemistry  Business  Biology  Physics  Psychology  Geography  Sociology  Economics They all need #coremaths skills		 Critical Maths (02)* 60 marks 2 hour written paper	50% of total Level 3 Certificate

The specification followed at Huish

<https://www.ocr.org.uk/qualifications/core-maths/a-mei-level-3-certificate-h868/>

HUISH HEADSTART TASKS

Core Maths at Huish is a 1 year course, usually as a 4th subject alongside 3 A levels. Read through the information and try the **TASKS** in each section. This will better prepare you for starting Core Maths and/or help you decide if it's the right course for you.

SECTION A – TASTER QUESTIONS – **TASK 1**

SECTION B – NUMBERS IS THE NEWS – **TASK 2 and 3**

SECTION C – GCSE REVISION – **TASK 4 and 5**

The estimate/suggestion is to spend about 4 hours on these tasks.

If you have any questions please email andrews@richuish.ac.uk

SECTION A – TASTER QUESTIONS

TASK 1 Classic Core Maths questions to make you think

Have a think about how you would answer these questions. There can be range of answers to Core Maths questions, justifying your decision making process is necessary. Keep all your notes and calculations, be ready to share and compare your ideas in class.



Some people try to walk 10 000 steps a day to keep fit.

How long does it take to walk 10 000 steps?

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Here are some data from a trial of a new eczema cream. 90 people either used the new cream or a cream that was already commonly used for eczema.


	New cream	Old cream
Improvement	25	34
No improvement	15	16

Is the new cream better than the old cream?



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Bob is about to buy a new car. He reads that cars drop in value by about 20% a year.



Is it true that his car will be worth 80% less than the new value after 4 years?

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There is a 63% chance of a major earthquake in the San Francisco area sometime in the next 30 years. Your friend suggests going on holiday to San Francisco.



Would you go?

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Denise wants to buy a new lock for her bike. She can buy the cheapest model which has 3 reels with the digits 0–9, the mid-priced model which has 4 reels with the digits 0–9, or the deluxe lock which has 5 reels with the digits 0–9.

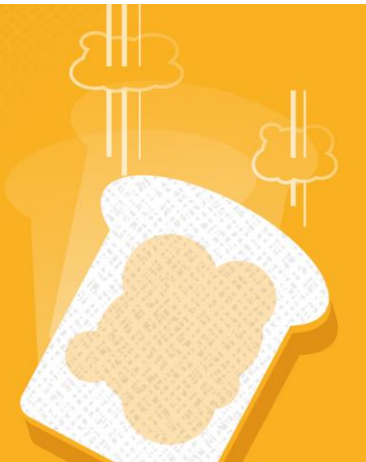


How long would it take someone to guess the combination on each of these locks?

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Murphy's Law says that if you drop a piece of toast it is more likely to land butter side down.

How could you test this?



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Here is a link to a practice quiz for TASK 1. <https://forms.office.com/e/Gsejw9JSSm>

At the start of the term I will ask you to complete this quiz again and results will be recorded then.

SECTION B – NUMBERS IN THE NEWS



Core Maths is about the maths we see in everyday life. **More or Less** is an ideal radio programme to improve awareness of the maths and statistics all around us. Tim Harford explains - and sometimes debunks - the numbers and statistics used in political debate, the news and everyday life.

TASK 2



When can you trust statistics?

Watch the video <https://www.bbc.co.uk/ideas/videos/when-can-you-trust-statistics/p09l3k0c>

TASK 3









Here is an example of a 'Question inspired by a news story'! Do you trust the numbers in the news? Do you have the maths skills to be able to check the numbers in the news? Try the quiz.



Here is a link to a practice quiz for TASK 2 and TASK 3. <https://forms.office.com/e/1JeiAUChFY>
At the start of the term I will ask you to complete this quiz again and results will be recorded then.

Cost of pasta and tinned tomatoes jumps as shop prices rise

Work out the missing prices and percentages below.



	 Spaghetti/ pasta 500g	 Tinned tomatoes 400g	 Potatoes 2.5kg	 Basket of 15 items
Standard range				
Average 2021 price	51p	35p	96p	<input type="text"/>
Average 2022 price	<input type="text"/>	45p	98p	£17.16
Change	 <input type="text"/> 41%	 <input type="text"/>	 2p 2%	 <input type="text"/> 8%

<http://quibans.blogspot.com/2022/02/quibans-104-basket-case.html>

SECTION C – GCSE REVISION

TASK 4 Topics at GCSE level to know well before starting Core Maths

Thank you to BBC Bitesize for these short online tests. Below are the most relevant and necessary topics to get to grips with before starting Core Maths. Try each test, by clicking on the links below. A calculator is allowed for all questions. Aim for 100%, revise a topic if needed and then try test again.

 Test	 Revise	Try again >	Done <input checked="" type="checkbox"/> Scores
Number Approximation https://www.bbc.co.uk/bitesize/guides/zscq6yc/test Standard form https://www.bbc.co.uk/bitesize/guides/z8scdxs/test Financial maths https://www.bbc.co.uk/bitesize/guides/ztkmpbk/test			
Algebra Using and interpreting graphs https://www.bbc.co.uk/bitesize/guides/zpmfgdm/test Algebraic formulae https://www.bbc.co.uk/bitesize/guides/z36vcj6/test			
Ratio, proportion and rates of change Ratio in context https://www.bbc.co.uk/bitesize/guides/zpxyrwx/test Percentages https://www.bbc.co.uk/bitesize/guides/z9rjxfr/test Direct and inverse proportion https://www.bbc.co.uk/bitesize/guides/zqd6srd/test			
Geometry and Measure Units of measure https://www.bbc.co.uk/bitesize/guides/zcwhy4j/test 2-dimensional shapes https://www.bbc.co.uk/bitesize/guides/zgbd2nb/test 3-dimensional shapes https://www.bbc.co.uk/bitesize/guides/zqjhy4j/test Circles, sectors and arcs https://www.bbc.co.uk/bitesize/guides/zt6vcj6/test			
Probability Probability https://www.bbc.co.uk/bitesize/guides/zsrq6yc/test			
Statistics Representing data https://www.bbc.co.uk/bitesize/guides/zc7sb82/test Analysing data https://www.bbc.co.uk/bitesize/guides/zwhgk2p/test			
Problem solving Solving 'number' problems https://www.bbc.co.uk/bitesize/guides/zwpr8mn/test Solving 'graphical' problems https://www.bbc.co.uk/bitesize/guides/z3jpv9q/test Solving 'geometric' problems https://www.bbc.co.uk/bitesize/guides/z8hgk2p/test Solving 'statistical' problems https://www.bbc.co.uk/bitesize/guides/zydtfcw/test			

TASK 5 Optional Extra GCSE Questions

If you are confident with GCSE Maths, wordy questions and enjoy problem solving you are likely to get a high grade in Core Maths. About 30% of Core Maths will be new skills not seen at GCSE. The following GCSE questions look similar to parts of some Core Maths questions. Give them a try and then see the solutions to check.

Try Questions 4, 15, 19, 21 <https://ocr.org.uk/Images/563120-question-paper-paper-4.pdf>

Solutions <https://ocr.org.uk/Images/563142-mark-scheme-paper-4.pdf>

Try Questions 5, 7, 9, 11 <https://ocr.org.uk/Images/563121-question-paper-paper-5.pdf>

Solutions <https://ocr.org.uk/Images/563143-mark-scheme-paper-5.pdf>

Try Questions 1, 2, 3, 7, 8, 16 <https://ocr.org.uk/Images/563122-question-paper-paper-6.pdf>

Solutions <https://ocr.org.uk/Images/563145-mark-scheme-paper-6.pdf>

Thanks for trying the Core Maths Headstart. If you have any questions please email andrews@richuish.ac.uk