STUDYING @FRANKLIN

SCIENCE MATHS & ENGINEERING

Bridging work

Studying @Franklin Bridging Work

Preparing you for September on: GCSE Maths

A fantastic opportunity to widen your understanding of GCSE Maths, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either on paper, printed or electronically to your enrolment appointment. The work will take you around **1-2 hours** so plan your time to best suit you.

Submitting your work	• Write all of your notes from the video and working out on paper/digitally and bring a copy with you to enrollment. • Complete the google form quiz using the link in resources below. You can use a personal email address but ensure you enter your full name. • You only get one attempt at the quiz so ensure you have watched the full video before doing the quiz.
Topic / Context	Ratio and Proportion using the bar model method.
Task details	• **VIDEO LESSON:** Watch the video, make notes, and pause to answer the 'You Do' questions. https://drive.google.com/file/d/1ZZJOW0Ta9pajz4aWUCtspqAB8xNzTRqT/view?usp=drive_link • **QUIZ:** Complete the Google form quiz on sharing in a ratio. https://forms.gle/UNPmgJ9EWAYssEi76
Resources to help you	The video lesson linked above.
Presenting your work	You can make notes from the video either on paper or electronically using a device.

Studying @Franklin Bridging Work

Preparing you for September on:

A Level Maths & Further Maths

A fantastic opportunity to widen your understanding of mathematics, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either printed or electronically to your enrolment appointment. The work will take you around **three to four hours** so plan your time to best suit you.

Submitting your work	Complete the tasks on paper/handwritten or digitally on a tablet/iPad and bring a copy either paper or electronically to your enrolment appointment. **All mini quizzes** should be completed using the **same email address on each Google Form.**
Topic / Context	In this bridging work you will learn about the **binomial expansion.** This is a topic studied in A Level Mathematics and will give you the chance to acquire a new skill whilst getting a feel for what the course entails.
Task details and Resources	This task is split up into 5 distinct parts. Each part comes with a video. You are expected to: • **Make notes on the videos** by completing the '**You do' on each example**, these notes will be required either on your first lesson back ready to be uploaded. • **Complete all mini quizzes when asked,** again make sure you have all of your working out written out and ready to be uploaded. **Use the same email address on each Google Form.** **The links to both the videos and quizzes are on the document below.** **Note: You only have 1 attempt at each quiz.**

Lesson 1	**Video**	https://vimeo.com/529802396
	Mini Quiz 1	https://forms.gle/SVh1W4EYLKx5GLZ77
	Mini Quiz 2	https://forms.gle/1WW3vtXTLGQQR3dC9
	Mini Quiz 3	https://forms.gle/tGg5v63hwRsm7cF59

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Lesson 2	**Video**	https://vimeo.com/529802434
	Mini Quiz 1	https://forms.gle/Pz3EVnPsN2Tr6M1w6
	Mini Quiz 2	https://forms.gle/yR3f1fkGSAcmhAYR6

Lesson 3	**Video**	https://vimeo.com/529802342
	Mini Quiz 1	https://forms.gle/o6sQ2JQYX5adBF1CA
	Mini Quiz 2	https://forms.gle/maXr1yM3sMmw1Kho8

Lesson 4	**Video**	https://vimeo.com/529803621
	Mini Quiz 1	https://forms.gle/q2HdARTtDoFoBy797
	Mini Quiz 2	https://forms.gle/aQazWfr2DqfT3r846

Lesson 5	**Video**	https://vimeo.com/529803591
	Mini Quiz 1	https://forms.gle/n6RnvzCmogNbJBnZ6
	Mini Quiz 2	https://forms.gle/geqE6gsfHoKGY9fv9
	Mini Quiz 3	https://forms.gle/NqyRmuuafSxbbYu46

Presenting your work	As stated above, you are required to show all your working out. This is one of the key differences between GCSE and A Level Mathematics. You should use the 'I Do' part of the worked examples as a model of how to set your work out. You will be required to upload your written notes when you start the course.

Preparing you for Studying @Franklin in September on: A level Biology

A fantastic opportunity to widen your understanding of Biology, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either printed or electronically to your enrolment appointment. The work will take you around 5 hours so plan your time to best suit you.

Submitting your work	Complete the tasks on paper/handwritten or digitally and bring a copy either paper or electronically to your enrolment appointment. Please also take this to your first lesson on Monday 5th September. Expectation- To complete the task regardless of whether you attended the taster day.
Topic / Context	Cells, organelles and biological molecules are a fundamental part of the Biology course, understanding the molecules structure and functions it takes part in will enable you to relate this knowledge to more difficult concepts later on in the course. While cells form a good starting point to recap your GCSE knowledge while being able to extend this knowledge further at level 3. Tasks 1 and 2 will address these points. During Year 1 of the course, it's important to have an understanding of a light microscope and calculations you will be using in a practical aspect are in Task 3 There is 20% maths base in the biology course and Task 4 will allow you to show your maths skills gained in GCSE.
Task details	**Our expectation is that you complete your own work related to the following instructions**. PLEASE DO NOT PLAGARISE. **Go to the link below and complete:** Biology Bridging Task **Task 1 Recapping GCSE knowledge** – Looking at Cells, cell organelles and Biological molecules which are topics in the first term. **Task 2 Checking your GCSE knowledge** – Answering some exam style questions from GCSE on the topics you have recapped in task 1. **Task 3 Looking at Cells**- Refresh your knowledge on Microscopes and magnification calculations which are part of Unit 2. **Task 4 Maths for Biology**-Maths forms a significant part of the A Level Biology, so you will look to recap on topics from GCSE including standard form, area and volume calculations.

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Resources to help you	If you did not attend the taster lesson, please come to reception at Franklin College to collect the task/access using the website.

AQA GCSE Specification	AQA A Level Specification
Bitesize AQA GCSE Biology	KeyStageWiki
CGP Head Start to A-Level Biology	Savemyexams AQA Biology

Presenting your work	Tasks 1-4 can be either handwritten or a printed out electronic copy. Please bring either your handwritten copy **or** printed electronic copies to enrolment and your first lesson on Monday 5th September.

	PLEASE DO NOT PLAGIARISE
Extension Tasks to stretch and challenge you	If you have completed the above to the best of your ability, feel free to try this extension task (*this is optional*). Read the Epigenetics Article- here and summarise in your own words. Do ot write anything/words you do not understand.
Massive Open Online Courses **(MOOCs)**	MOOCs are Massive Open Online Courses. You might enrol and complete the following to push you a little further. **An Introduction to Biochemistry**: The molecules of life-Link

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Preparing you for September on: A level Chemistry

A fantastic opportunity to widen your understanding of Chemistry, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either printed or electronically to your enrolment appointment. The work will take you around **2-3 hours** if you plan your time to best suit you.

Submitting your work	Complete the tasks on paper/handwritten or digitally and bring a copy either paper or electronically to your enrolment appointment. Please also take this to your first lesson in September. All students who wish to enrol on the Chemistry course are required to complete this task. Students who did not attend Taster Day are required to complete this task.
Topic / Context	This lesson will ensure you have the fundamentals of Chemistry pinned. You will look at bonding, amount of substance and balancing equations.
Task details	Please follow the link to the worksheets: **A-level Chemistry Bridging Work**
Resources to help you	GCSE Chemistry revision such as BBC Bitesize
Presenting your work	Work should be either: - Completed on paper and brought to lesson (number questions) - Print and complete on paper - Complete online then print and bring to lesson in September
Extension Tasks to stretch and challenge you	Try these on-screen practicals: Making Aspirin Virtual Lab & Titration Virtual Lab You will get a chance to complete both practicals in the lab during your course.

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Preparing you for September on: A level Physics

A fantastic opportunity to widen your understanding of Physics, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either printed or electronically to your enrolment appointment. The work will take you around **2 hours** so plan your time to best suit you.

Submitting your work	Complete the tasks on paper/handwritten or digitally and bring a copy either paper or electronically to your enrolment appointment. Please also take this to your first lesson in September.
Topic / Context	**Maths skills for Physics** This task will help us gauge your current understanding of the mathematical techniques from GCSE Maths that you'll use in A Level Physics nearly every lesson.
Task details	Please complete the following by either: • Printing a copy • Make a copy and completing electronically Physics Bridging Work
Presenting your work	If possible, print this document and complete the questions, bring them to your enrolment appointment and hand in at your first lesson. If you aren't able to print this out then complete your answers on paper, your only issue will be Q10 where you need to add the line of best fit to the graph, here sketch the graph as accurately as possible and add the line of best fit on. For all questions **show all working**, this will mean for any questions you get wrong I can see why and therefore be better at helping you later.
Extension Tasks to stretch	If you have completed the above to the best of your ability, feel free to try this extension task (this is optional).

and challenge you	Complete this Seneca task (link below) that includes the 'Maths for Physics' above and introduces what we'll do in the first few lessons in September https://app.senecalearning.com/dashboard/class/et8doowyg4/assignments/assignment/1e43a770-4bfa-4bb4-8e59-123e93836598
Massive Open Online Courses **(MOOCs)**	MOOCs are Massive Open On-line Courses You might enrol and complete the following to push you a little further (this is optional). Motion under gravity - OpenLearn

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Preparing you for September on: BTEC Diploma in Applied Science (Double) and Extended Certificate (Single)

A fantastic opportunity to widen your understanding of Applied Science, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either printed or electronically to your enrolment appointment. The work will take you around **4-5 hours** so plan your time to best suit you.

Submitting your work	Complete the tasks highlighted in this document on paper/handwritten or digitally and bring a copy either paper or electronically to your enrolment appointment. Please also take this to your first lesson in September. To demonstrate that you are suitable for this course and have the drive to be successful on this course, you are asked to bring this work to enrolment. Even if you have not managed to make the 'Taster Day' sessions, you are still required to bring the work to enrolment.
Topic / Context	Topics that you will learn/research are related to the content in Unit 1, which is an examined unit studied in year one of the two-year course. 1. **Cells and Cell Specialisation** Cells that have a distinctive structure and provide unique functions in the body. They work together in groups to form different tissue types, for example in nerves or muscles. These tissues form organs, which support bodily functions. 2. **Atomic Structure and Bonding** the atomic structure of any element is made up of a positively charged nucleus surrounded by electrons revolving around it. 3. **Waves and the Electromagnetic Spectrum** Electromagnetic energy travels in waves and spans a broad spectrum from very long radio waves to very short gamma rays. The human eye can only detect only a small portion of this spectrum called visible light.

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Task details	Click on each of the 3 links below to access the tasks. Complete all the sections on all of the 3 parts. Evidence of completion (whether paper of electronic) needs to be shown at enrolment. Part 1 Part 2 Part 3
Resources to help you	All of the resources needed for the tasks are on the task document.
Presenting your work	To present your completed task, you should have a portfolio of work with all 3 parts included and completed to show at enrolment.
Extension Tasks to stretch and challenge you	If you have completed the above to the best of your ability, feel free to try this extension task: https://learn.genetics.utah.edu/ Find an interesting part of this website and design a PowerPoint (of Google Slides) explaining what you are interested in.
Massive Open Online Courses **(MOOCs)**	MOOCs are Massive Open Online Courses. You might enrol and complete the following to push you a little further you will find these on your part 3 – Preparing you for studying @Franklin. Human Anatomy: Musculoskeletal Cases Biology & Biotechnology Courses

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Preparing you for September on:

CTEC Engineering

A fantastic opportunity to widen your understanding of engineering, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either printed or electronically to your enrolment appointment. The work will take you around **three to four hours** so plan your time to best suit you.

Submitting your work	Complete the tasks on paper/handwritten or digitally and bring a copy either paper or electronically to your enrolment appointment. Please also take this to your first lesson in September.
Topic / Context	**Maths skills for Engineering** This task will help us gauge your current understanding of the mathematical techniques from GCSE Maths that you'll use in Engineering, both in the examined units in January and for many assignments throughout the course. **Materials** In Unit 11 of the course, we investigate material properties and how these properties relate to their uses in a variety of Engineering scenarios. In this task you will look at some key material properties definitions and examples of when these properties are important.
Task details and Resources	These are the resources you will need for the bridging task in the section further down this document. Bridging Work **Maths for Engineering**: You will need a scientific calculator and possibly your notes from GCSE Maths. Here are some links for support: https://www.youtube.com/watch?v=ayjtBJ0UcqE https://www.cyberphysics.co.uk/general_pages/si_prefixes.html https://www.bbc.co.uk/bitesize/guides/zgbggk7/revision/4 https://www.mathsisfun.com/algebra/trigonometry.html For the **Materials task** the following links may be helpful Video: https://www.youtube.com/watch?v=BHZALtqAjeM Weblink: Material Properties (the-warren.org)

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Preparing you for September on:

BTEC Applied Human Biology

A fantastic opportunity to widen your understanding of Human Biology, prepare for September, and demonstrate your ability to us at enrolment!

Please complete the work and bring a copy either printed or electronically to your enrolment appointment. The work will take you around **three hours,** so plan your time to best suit you.

Submitting your work	Complete the tasks on paper/handwritten or digitally and bring a copy either paper or electronically to your enrolment appointment. Please also take this to your first lesson in September. Expectation- To complete the task regardless of whether you attended the taster day.
Topic / Context	In Year 1 you will explore the biological principles that underpin human biology. You will also investigate the effect of antimicrobial agents on the growth of microorganisms, by selecting and applying knowledge of microorganisms and infectious diseases. You will then draw on your wider scientific understanding and skills to plan and carry out a range of practical techniques. In Year 2 you will further develop your understanding of human biology. You will continue to develop your skills in researching and evaluating with respect to the impact of health issues, initiatives, and scientific reporting. You will explore the muscular, skeletal, endocrine, and nervous systems, their associated disorders and the role of homeostasis in controlling and coordinating the body systems.
Task details	Go to the link below and complete Bridging work for BTEC Applied Human Biology
Resources to help you	Review BBC Bitesize GCSE Biology to help prepare. https://www.bbc.co.uk/bitesize/examspecs/zpgcbk7

Presenting your work	Work should be presented neatly
Extension Tasks to stretch and challenge you	If you have completed the above to the best of your ability, feel free to try this extension task (*this is optional*). **How to Prevent Food Allergies** **Feeding infants allergenic foods may be the key to preventing allergies** https://www.scientificamerican.com/article/how-to-prevent-food-allergies/ Read the scientific article and write a half A4 page summary. Write in layman's terms.