

Achieving success in Science subjects at A-level.

A-level sciences are demanding subjects and it takes a good deal of hard work by both students and teachers to achieve the kind of grade that is required to enter a top university or to study medicine or veterinary science, for example.

The good news is that the Science Department at TGGs has an excellent record of achievement and we can help you gain the best grades possible at A-level. In order to do this though you may have to make commitments that other students working in other subjects do not have to make. This will mean preparing work over the summer break, and may mean giving up a lunch time each week in order to receive extra support with particularly difficult parts of the syllabus.

The Science Department knows that it is important to gauge the strength of your understanding as early on as possible. It means that we can give you the support that you need from the very beginning. Not every student needs support, some may need it occasionally and some may need it regularly.

In order to make a decision about the level of support you need, we will do two things. First, we ask you to complete the summer work available on the school VLE. The VLE may be accessed through the TGGs website: Home page → Students' → VLE.

The user name and password for accessing the VLE are as follows:

User name: VLE01 (zero one)

Password: Summer15

If you are intending to study **Biology**, go to the 'Home/Courses/Biology/New Year 12 – Summer Transition Work' section of the VLE. Information about the task is also attached.

If you are intending to study **Physics**, the task is attached.

If you are intending to study **Chemistry** go to the 'Home/Courses/Chemistry Key Stage 5/ Chemistry Summer Work' section of the VLE. There are instructions about what you need to do in the 'Please read' document at the top of the page.

After approximately two weeks in school, you will be given a short test based on the transition work and work that you have covered in class. Using the scores from the tests we will then make a decision about the level of support we feel you need.

Enjoy your summer, and we look forward to seeing you in September.

Yours sincerely

Mrs K Bumby
Head of Science & Biology

Dr A Sullivan
Head of Chemistry

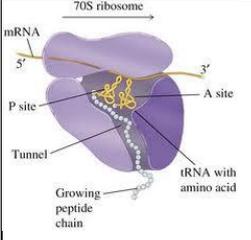
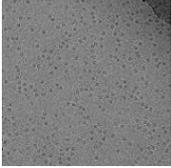
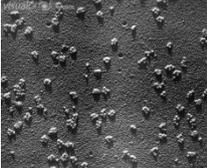
Mr R Baker
Head of Physics

A level Biology

Transition Work

In September, you will be able to purchase an AS textbook through school. In the meantime, please use the Internet and scanned pages which may be accessed through the school VLE to complete the following.

- Construct a table with the following headings which summarises the structure and function of the following cell structures: nucleus, smooth endoplasmic reticulum, rough endoplasmic reticulum, Golgi apparatus, lysosome and mitochondrion. An example has been given:

Name of organelle	Labelled diagram	Image seen when viewed with a...			Structure	Function
		Light microscope	Transmission electron microscope	Scanning electron microscope		
ribosome	 <p>70S ribosome</p> <p>mRNA</p> <p>5'</p> <p>3'</p> <p>P site</p> <p>A site</p> <p>Tunnel</p> <p>Growing peptide chain</p> <p>tRNA with amino acid</p>	Not visible			The smallest organelle in the cell. Made of rRNA and protein, divided into two subunits.	Site of protein synthesis. mRNA from the nucleus carries the code to determine which amino acids are joined together to form a protein

- Describe and explain digestion in each part of the alimentary canal.
- Write summary notes on 'Carbohydrates: monosaccharides, disaccharides and polysaccharides'.

Y12 Physics Transition work

We will be using isaacphysics.org to help to assess you and provide specific feedback. You will need to click on this link and set up an account:

<https://isaacphysics.org/account?authToken=K3XEXX>

You will see that 3 Assignments have been set up for you that you will need to complete before September 5th. Read on to find out how I would like you to attempt completing the assignments fully.

This transition work will help develop essential skills you will need to be successful in physics. Watch the clips and then try the Isaacphysics questions.

Assignments:

1) **Units**

<https://www.alevelphysicsonline.com/quantities-and-units>

2) **A Level transition – skills**

This assignment tests the following:

a) Rearranging equations

<https://www.youtube.com/watch?v=HyH9-5tnS0A>

b) Standard form and prefixes

<https://www.youtube.com/watch?v=RMmuVrUfaWU>

c) Converting units

<https://www.youtube.com/watch?v=dzR7rcO2-fl>

d) Gradients and Intercepts of Graphs

e) Equations of Graphs

https://www.youtube.com/watch?v=SDOeITzW_MA

f) Area Under the Line on a Graph

<https://www.youtube.com/watch?v=d-eggj5-K8>

3) **Getting to grips with Significant Figures**

<https://www.youtube.com/watch?v=Pml4Z4BJibc>

Good Luck!

Mr Baker
Head of physics