



Longley Park

SIXTH FORM ACADEMY

Creating Excellence Together,
through a culture of care

Get Ready For...

Applied Science



What will I study?

You will study all of the main sciences, Chemistry, Biology and Physics in detail. You will learn about how science knowledge and skills are used in a variety of scientific workplaces, analytical sciences and biomedical sciences.

The units covered on this course include:

Principles and Applications of Science I
Practical Scientific Procedures and Techniques
Science Investigation Skills
Laboratory Techniques and their Applications
Principles and Applications of Science II
Investigative Project
Contemporary Issues in Science
Physiology of Human Body Systems
Human Regulation and Reproduction
Diseases and Infections
Applications of Organic Chemistry
Practical Chemical Analysis

What can I do next?

Courses at University:

Biomedical Science, Pharmacy (BPharm), Environmental Science, Forensic Science, Nutrition and Dietetics, Physiotherapy, Medical Laboratory Science, Chemical Engineering, Biotechnology
Chemistry, Engineering, Biology, Physics.

Careers:

Biomedical Scientist
Pharmaceutical Scientist
Environmental Scientist
Forensic Scientist
Clinical Research Associate
Dietitian/Nutritionist
Physiotherapist
Medical Laboratory Technologist
Chemical Engineer
Biotechnologist

What additional opportunities will I have on my course?

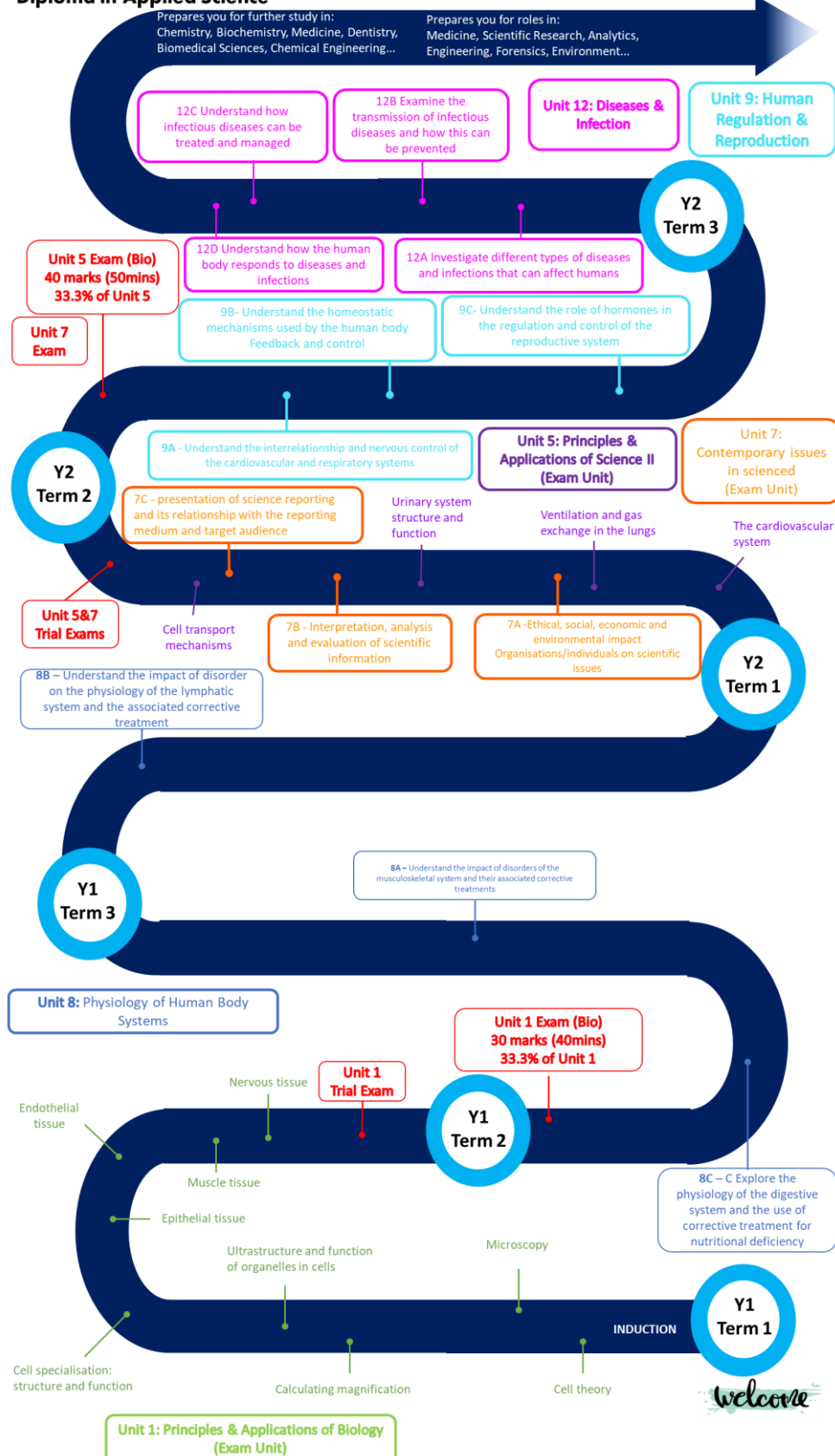
You will have a variety of opportunities to work with other students and learn collaboratively. A number of assignments have practical assessments so you will develop your practical skills in a number of applications such as Titrations, Chemical Compositional Analysis and General Scientific Investigations.

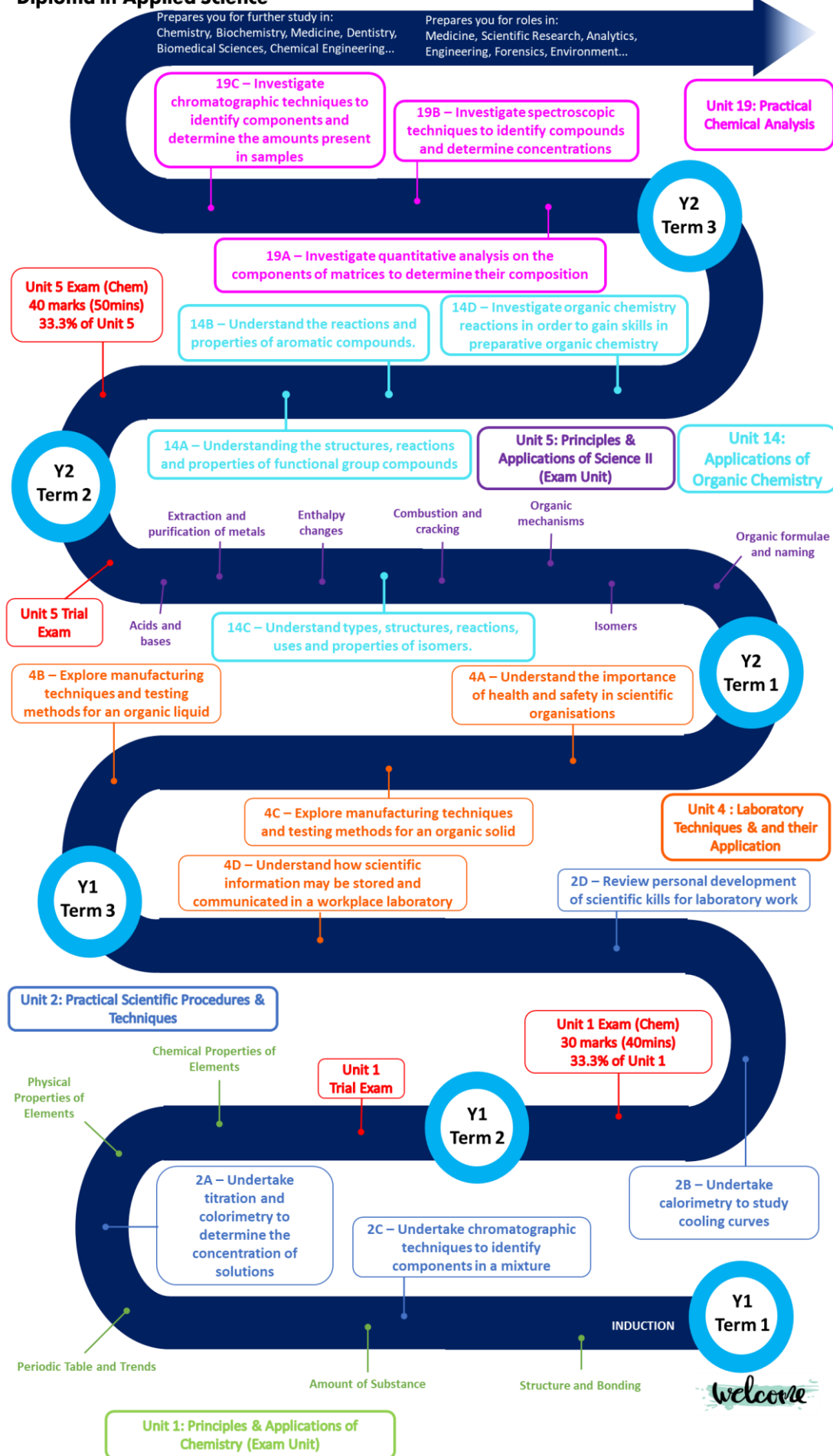
You will have the opportunity to engage with Employers in healthcare fields through talks and site visits as well as a number of interactions with universities to help shape your future plans. We also offer a trip to Yorkshire Wildlife Park to see how science and careers can interact in a variety of different fields.

Your Learning Journey

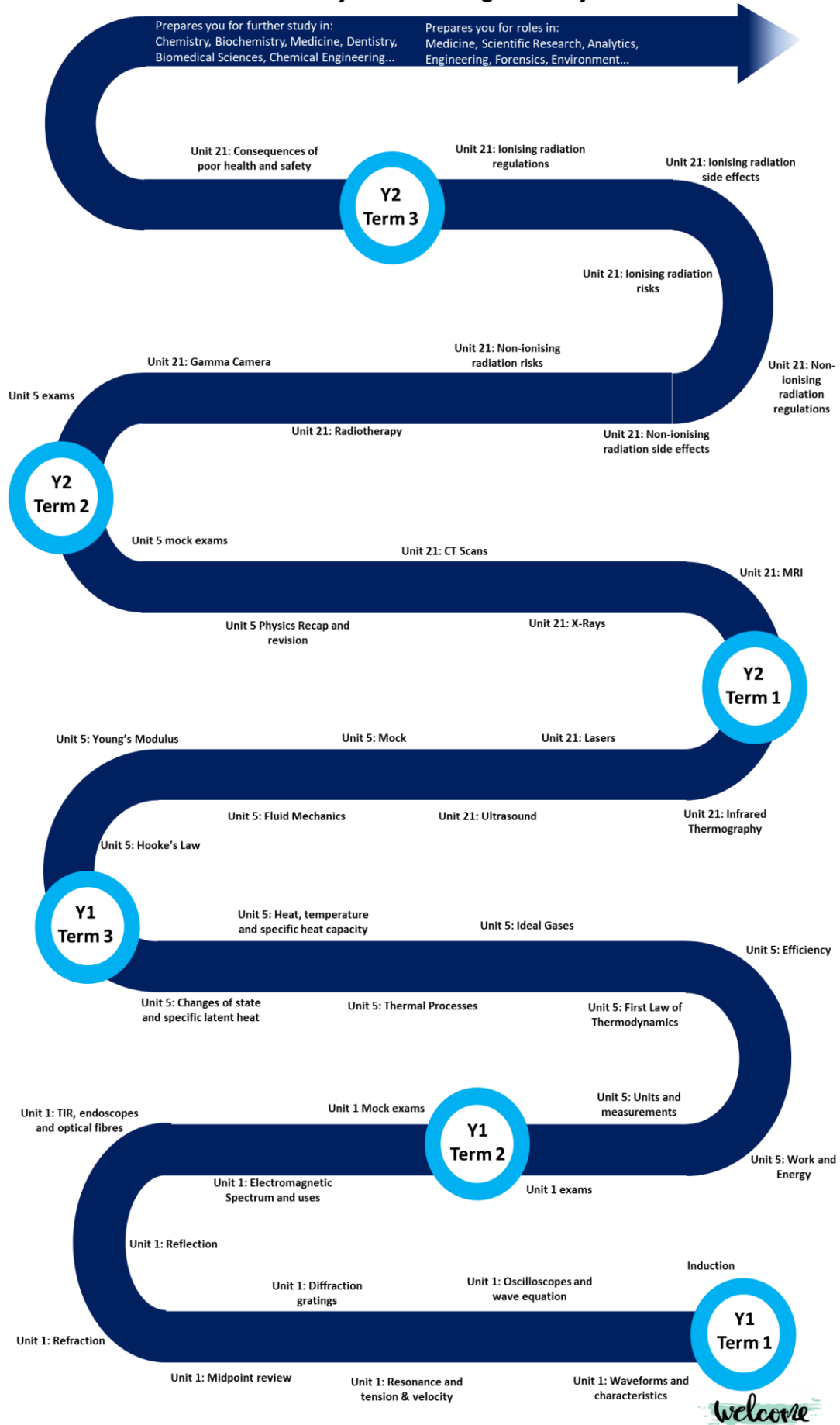
BTEC Level 3 National Extended Diploma in Applied Science

Biology Learning Journey

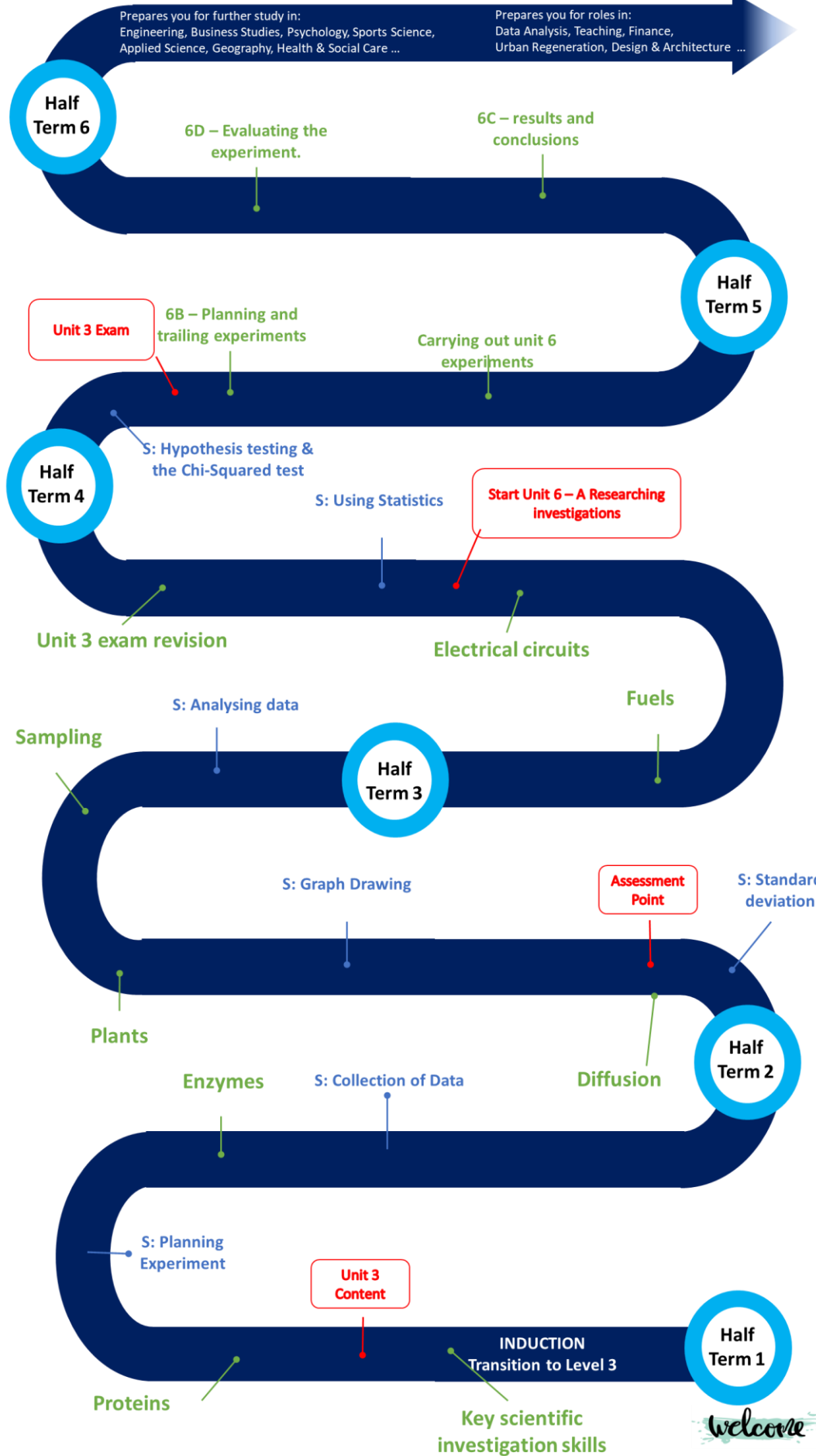




BTEC Physics Learning Journey



Unit Three and Six Learning Journey



Some tasks to keep your knowledge fresh

Preparation for unit 1 – Chemistry

Atomic Structure

Draw a basic atom and label with the following:

- Protons
- Neutrons
- Nucleus
- Electrons

What is ionic bonding?

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What is covalent bonding?

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What is metallic bonding?

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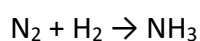
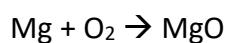
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Draw a dot cross diagram to show the bonding in sodium chloride, NaCl. (Na has 11 electrons, Cl has 17)

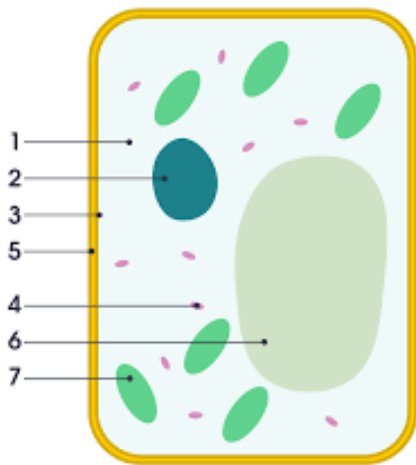
Draw a dot cross diagram to show the bonding in water, H₂O. (H has 1 electron, O has 8)

Balance the following equations



Preparation for unit 1 – Biology

Label the organelles that are part of a plant cell



Draw and label a Root hair cell

Describe how its structure is related to its function.

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Draw and label a neurone.

Describe how its structure is related to its function.

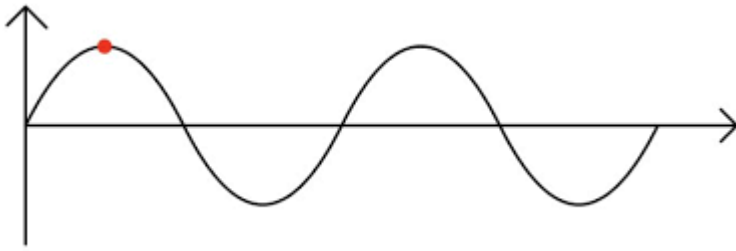
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Preparation for unit 1 – Physics

Label the below on the right to show the amplitude and wavelength:



How would you define the amplitude of a wave?

.....
.....

How would you define the frequency of a wave and what are the units of frequency?

.....
..... Units:

The wave shown is a transverse wave. What is the other type of wave called?

.....

Wave speed can be calculated using the equation: $n = f \times \lambda$

n is the wave speed in m/s

f is the frequency in Hz

λ is the wavelength in m.

Use this information to calculate the following:

The speed of a wave with a frequency of 10 Hz and a wavelength of 2 m

.....
.....

The speed of a wave with a frequency of 0.4 Hz and a wavelength of 0.06 m

.....
.....

The frequency of a wave with a wave speed of 120 m/s and a wavelength of 30 cm

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How can I go the extra mile to prepare for my course?

Useful Websites:

[GCSE Biology \(Single Science\) - BBC Bitesize](#)

[GCSE Chemistry \(Single Science\) - BBC Bitesize](#)

[GCSE Physics \(Single Science\) - BBC Bitesize](#)

You should hopefully have completed BBE bitesize but if there are any areas that you know you can still work on keep looking at these.

Additional Reading For Your Interest

There are some really interesting videos on the HomeScience channel on YouTube.



Or if you are on TikTok search for #science.

For more specific science videos BTEC Applied Science Help is a really great start to get to grips with some of the core units.

What else can I do to prepare for starting Sixth Form? What our students say

“Get ready emotionally, it is different from school!”

“Be confident. Put yourself out of your comfort zone and meet new people; you will meet lots of new people when you get here”

“Start looking at Universities/ Careers now! It will give you a focus when you start at Sixth Form”

“You will need to be more independent and be able to manage your time differently to school. Start building those skills now!”



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Additional Opportunities

We offer a variety of different opportunities to enrich your time with us and support your next steps:

- ~A variety of Clubs and Societies through Project You
- ~Employer immersion visits & Trips to employers
- ~Work Experience & Placement
- ~Trips to Universities
- ~Guest Speakers
- ~Leadership through the Student Ambassador Programme
- ~ Independent Learning Centre with IT, books and journals, quiet and group study + Seminar Rooms
- ~Health and Fitness Activities in our onsite gym
- ~Duke of Edinburgh
- ~Career Ready internship Programme
- ~ Access to wellbeing, academic tutorial, and careers support