



**Hereford**  
SIXTH FORM COLLEGE

**OPTIONAL  
PREPARATORY WORK  
FOR  
A LEVEL/BTEC STUDY**

**ENTRY SEPTEMBER 2019**

## Hereford Sixth Form College Optional Preparatory Work

To help you make a well informed decision about your 2 year study programme we have prepared this booklet. The tasks are designed to show you what the typical content of your chosen course is. If you find the work interesting and enjoyable it's probably the right choice for you. If you don't find it interesting then you might want to consider a different course.

### **A LEVEL/BTEC COURSE PREPARATION**

If you have done well in your GCSEs, you may feel well prepared for A level/BTEC study, but there are new skills required to be successful at A level/Vocational. Many students find this jump quite daunting and it is sensible to make sure that you are fully prepared.

If you are reasonably quick at picking up new ideas/concepts and are able to understand and explain what is taught in class, you will do well at GCSE. However, A level/BTEC courses require applied thinking, analysis and opinion forming. Many students get a great deal of satisfaction from learning the advanced skills they require to do well at this level and they will tell you that their enjoyment increases with the difficulty. However, in order to succeed there are some important points to consider.

#### **Choose subjects you enjoy**

If you choose subjects you have a genuine interest in and aptitude for, you are more likely to find the work rewarding. If you lack this interest, you will find it hard to do the necessary reading and work required to get a top grade. Teachers will also expect you to have a personal interest in the subjects you are studying (as they do!).

#### **Revise Wisely**

Many students only put some concerted revision into the final months of their GCSE course and still manage to achieve good results. However, at A level/BTEC level, revision must be a regular part of your work routine. This is the reason Hereford Sixth Form College tests its students regularly throughout the academic year. The tests are not just about remembering information, but using it!

Time management is a new skill for students to acquire. Your timetable will not look as full as it did in Year 11 and every day you will have 'study periods' which we advise you to use as study periods. It takes some real discipline to use these wisely. Spending time when you get your timetable in September, considering how you can get all the homework assignments done and revising regularly can be the key to early success. At Hereford Sixth Form College, we provide our students with a planner to make sure all deadlines can be met whilst also factoring in time to relax and enjoy extracurricular activities.

#### **Learn to build on newly acquired knowledge**

You will be expected to think for yourself, dedicate time to reading about your subject and build on the work you have been introduced to in your lessons. This will mean using (or improving) your organisational and analytical skills. Whilst new concepts can be introduced in lessons and you may understand them when the teacher goes through them, it will only be when you go away and think about the concepts and then apply them for yourself that you will have reached a good A level/BTEC standard.

**Maintain a balance with extracurricular activities**

It is important to ensure you keep a balance between your academic work and other important activities that keep a healthy work-life balance. Regular exercise, pursuing your own personal interests, having time to help others by getting involved in voluntary work and doing valuable work experience are important in developing the soft skills needed for university life and beyond.

**Use your tutors well**

Your teachers will know that the transition between one level of learning and another is difficult. At Hereford Sixth Form College, we encourage students to talk to their teachers if they are finding it hard or are struggling with the workload. They will encourage you to use lessons/workshops to get some help. Your personal tutor will also be keen to talk to you and offer help. Be in lessons on time and see attendance at lessons as your first priority.

**Prepare before you start**

It is useful to look over your relevant GCSE subject notes over the summer to remind yourself of background information you should know. Regardless of the subjects you choose, it is important to read well and often.

A level/BTEC course students are expected to be independent learners. We recommend you read around the subject(s) to make sure you understand the wider context. There is also a wealth of information that can be found in museums, theatres, and libraries which are open to students over the summer holidays and at weekends. These opportunities can help develop your understanding and interest in your A level/Vocational subjects.

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## Art & Design (Fine Art) A Level

A level Art is an incredibly rewarding course for motivated students, however you should be prepared to work hard at developing your skills.

The main purpose of any Art course is to develop your ability to appreciate the visual world and to respond to it in a personal and creative way. The skills you will gain will be varied. Among them you will develop a working knowledge of materials, practices and techniques within Art. You will develop methods to interpret and convey your ideas and feelings and will be given opportunities to build on existing creative and imaginative skills. You will also develop a specialist vocabulary, knowledge and understanding of Art and its place in history and contemporary society.

### Potential areas of Study in Fine Art:

- Painting, drawing and mixed media including collage and assemblage.
- Sculpture,
- Land art, installation and construction,
- Printmaking
- Film, Video, Photography

**Over the next few days** we would like you to complete a small task. Our project theme is Object & Artefact and we will start off by looking at Natural Forms. We will look at other topics as we progress through the first term, such as urban environments, the figure and portraiture. You will need to show your **best artistic skills and ability** –this is the beginning of your coursework. **Please complete and bring this to your first art class.** Good Luck!!!!

| Natural Form Artists:<br>Suggestions   |
|--|
| William Cheselden (bone study)         |
| Laura Ferson (Rib Study)               |
| Van Gogh (Irises)                      |
| John Randall Bratby                    |
| Claude Monet (Dandelions)              |
| Zea Mays (Sweet Corn)                  |
| Myrtle Pizzey                          |
| Jim Dine (Flowers)                     |
| Gustav Klimt (Trees)                   |
| Peter Doig (Tress)                     |
| Albrecht Durer (Bird Wing)             |
| Nakota Hedrick (Skull)                 |
| Imants Tillers (Beech Forrest)         |
| Franklin Carmicheal (Autum in Orillia) |
| Dan Hays (Tress)                       |

We want you to begin producing work based on your own response to natural forms and the natural spaces. Drawing, photography and good observation will be an essential starting point from which you can develop your ideas. It's first hand observation work that you're interested in, not copies from photos or magazines.



**Outcomes of project:** YR1 TASK: Please note: in the first 4 weeks of the course, you will be on a probationary period to ensure that this is the right course for you. Make sure you work hard and to the best of your ability. We will review your work at regular intervals to monitor your progress.

- Complete one A3 tonal drawing. EG: bones/trees/bark/mushrooms/shells/seed pods such as poppies. Use materials that will create the strongest outcomes.
- Look at one of the listed artists overleaf and choose one of interest, select a piece of their work print it out, analyse by discussing line, tone, texture, shape, composition, colour and pattern and meaning. What it represents and the mood it has or what it reminds you of and what techniques you would like to use in your own work.

- 
- Extension: Produce 1 A3, well observed painting that develops on from your drawings and takes them further. Use your chosen artist to influence the style and technique you use.

Above all, enjoy yourselves and don't worry about perfection. We really look forward to seeing your progress in September

Please feel free to contact me if you have any further questions. Chris Bird – [ceb@hereford.ac.uk](mailto:ceb@hereford.ac.uk)

## Art and Design (Photography) A Level

# ● *Trace*

Produce a set of 24 creative photographs that interpret the theme of 'Trace'.

There is also a piece of written research to be completed. (outline side 2).

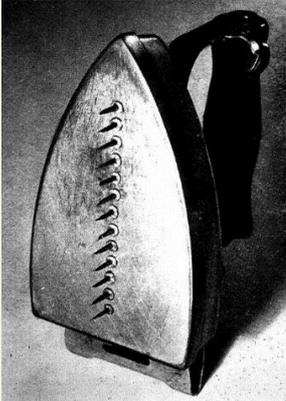
**Written work must be your own. Do not cut and paste or copy from an existing source.**

Your work should be presented electronically, eg. Word Doc, PDF, Powerpoint etc

You must include the following:

- A BRIEF Introduction defining the many meanings/interpretations of the word 'Trace'.  
An outline of how you intend to interpret it and a range of ideas for what you could Photograph.
- Research into the Photographer/Artist Man Ray (outline side 2).
- A set of photographs interpreting the theme 'Trace'. These must include both colour and black & white.

A conclusion that reflects upon positive/negative elements of your photographs and states how they interpret the theme 'Trace'. How **might** Man Ray's work be linked to 'Trace'. Can you see any connection between your own Photographs and the Work of Man Ray ?

|   |  |
|---|--|
| Artist:   | Man Ray  |
| Nationality/D.O.B/countries lived in and when:  |  |
| Media:  | What are <b>Photograms</b> (or <b>Rayographs</b> )   |
| Art Movement:   | <p>In Paris in the 1920's/30's which <u>two</u> <b>Art movements</b> was he influenced by and associated with ?</p> <p>List the <b>primary Artists</b> involved in each Art Movement (no more than 3 for each)</p> <p>What were the underlying principles (what was their work about) of these <b>Art movements</b> ?</p>  |
| <p>Significant Events:</p> <p>Society</p> <p>Political</p> <p>World</p> <p>Personal</p> | <p>How <u>might</u> his family's background have influenced his Readymade/Junk Art piece – <i>'Gift'</i> 1921</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><i>'Gift'</i> 1921</p> </div> <div style="text-align: center;">  <p><i>'Rayograph'</i> 1924'</p> </div> </div> <p>How <u>might</u> World War 1, and the two 'art movements' researched above have influenced his Photogram <i>'Rayograph 1924'</i> ?</p> |

**Extension Activities :**

24 Photographs exploring the Theme *'Discord'*.

Produce written research and analysis of the photographer *Takuma Nakahira*

# Biology A Level

We are really pleased that you have enrolled onto A Level Biology. You are required to complete the following tasks before your first Biology lesson on 5<sup>th</sup> September. At College you will need to start taking responsibility for your own learning and in Biology will be required to prepare notes before coming to lessons. The aim of this is for you to refresh your memory of some of the biology you learned at GCSE and to introduce you to the style of learning you will encounter on the A Level course.

## Task 1: Classification

Use the following web address to complete the questions below:

<http://www.s-cool.co.uk/a-level/biology/classification/revise-it/kingdoms>

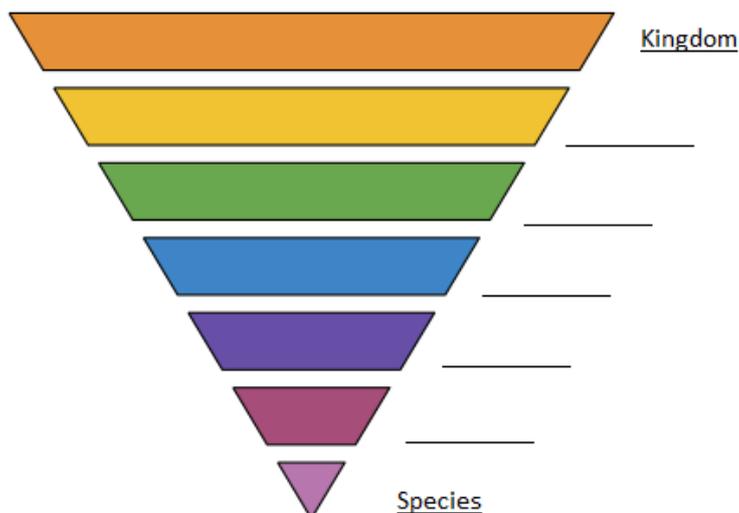
1. Name the five kingdoms:

.....  
.....  
.....

2. Complete the following table:

|                   | Animalia | Plantae | Fungi | Protoctista | Prokaryota |
|-------------------|----------|---------|-------|-------------|------------|
| Cell type         |          |         |       |             |            |
| Organisation      |          |         |       |             |            |
| Mode of nutrition |          |         |       |             |            |
| Example           |          |         |       |             |            |

3. Complete the following diagram of a hierarchical system to show how organisms are classified.



4. Which criteria do scientists use to put organisms into increasingly smaller groups?

.....  
.....  
.....

5. Complete the table below to show the classification of humans.

|         |  |
|---------|--|
| Kingdom |  |
|         |  |
|         |  |
|         |  |
|         |  |
|         |  |
| Species |  |

6. Define the term species.

.....  
.....  
.....

7. Which two taxonomic groups are used in the binomial naming (scientific name) of an organism.

.....  
.....

**Task 2: Evolution**

You will be given a copy of the text-book 'Biology for You' to use during the course. Attached is a photocopy of the pages in the book on Evolution. Your task is to make notes from these pages, summarising the findings of Darwin and Wallace and their theory of Natural Selection.

**Task 3: Adaptations**

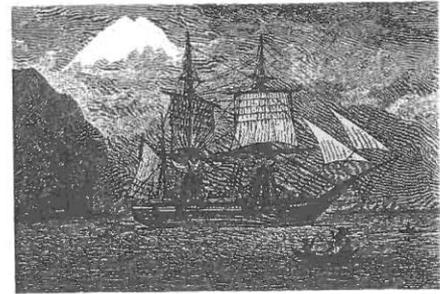
Using the internet choose two organisms and for each one make a bulleted list to show how they are adapted to their environment. Try to include behavioural adaptations as well as physical adaptations.

## ► Charles Darwin and the theory of evolution

**Charles Darwin** (1809–1882) was the naturalist on *HMS Beagle*, which sailed to South America and Australia on a scientific survey in 1832. The voyage was a revelation to Darwin because he was able to study vast numbers of animals and plants that he never knew existed. He collected fossils in the rocks which showed him that different life-forms had gone through many changes. What impressed Darwin most of all were the variations that existed between the species in a small group of volcanic islands about 600 miles off the coast of Ecuador.

These were the **Galapagos Islands**.

There was no life on these islands when they were originally formed by volcanic activity, so any life-forms must have reached the Galapagos by sea or air from the mainland.



*HMS Beagle*

## ► Darwin's finches

Among the many animals that Darwin studied on the Galapagos Islands were the finches. Darwin observed 13 different species of finch.

He suggested that one ancestral species of finch had reached the islands with the help of the prevailing south-east trade winds. Since there were no other birds on the Galapagos, the original finches found many food sources not being eaten by other species.

Darwin noticed how individual finches differed from one island to the next. One of the main differences was in the size and shape of their beaks.

Some had short, strong beaks with which they could crack open seeds. Others had long, thin beaks for catching insects. There was even one species, the woodpecker finch, which was able to use a cactus spine to probe insect larvae out of the bark of trees.

It seemed that on each island, the characteristics that best suited a particular finch to its environment were passed on to the offspring.

Darwin suggested that the finches had all developed from a common ancestor and that each type of finch had, over time, developed a type of beak adapted to exploit a particular food supply. This is a classic example of **adaptive radiation**.

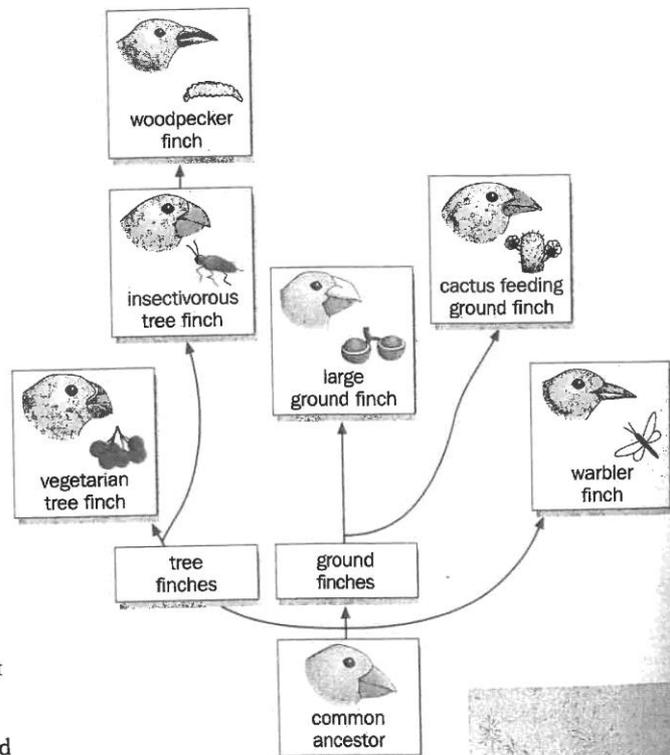
This led Darwin to draw conclusions about how evolution came about. At the same time, the British scientist **Alfred Wallace** had come to similar conclusions about the theory of evolution.

For some time, Darwin was reluctant to publish his ideas, but eventually, persuaded by Wallace, they jointly published their findings in a paper to the Linnaean Society in 1858.

Soon after, Darwin published his famous book '*The Origin of Species*'.

At the time it caused consternation, suggesting as it did that humans and apes could have evolved from a common ancestor.

With the passage of time, more and more scientists came to accept Darwin's ideas.



*Darwin's ideas on the descent of man were ridiculed at the time*

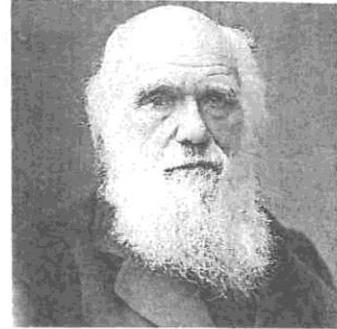
## ► Natural selection

Darwin and Wallace jointly proposed that species evolve by a process of **natural selection**.

The basic principle behind natural selection is that those organisms that are better adapted to their environment are more likely to survive and reproduce to produce successful offspring.

Natural selection can be summed up in a series of observations (O) and deductions (D).

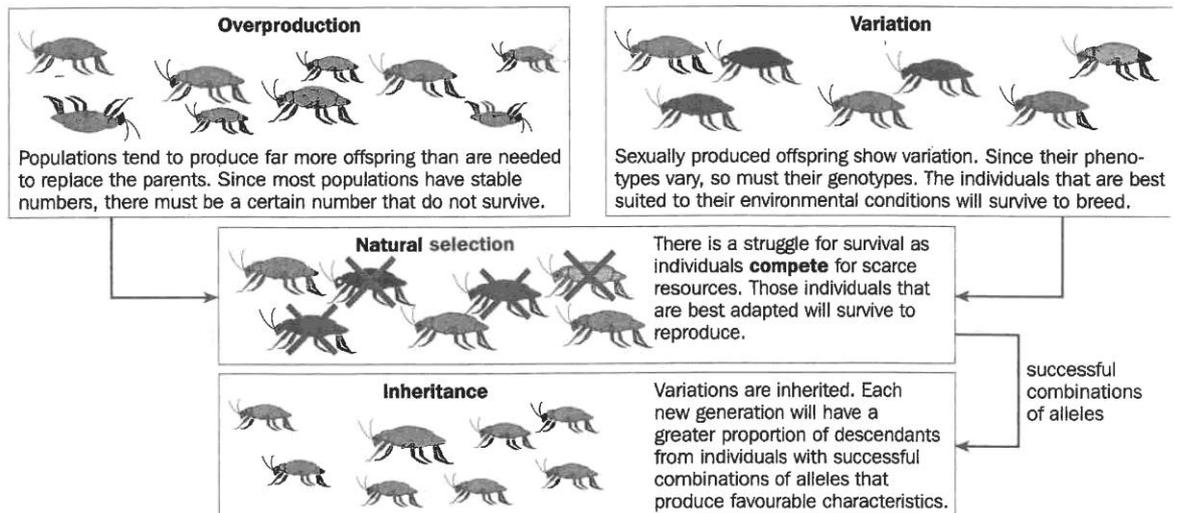
- All organisms produce far more offspring than are needed to simply replace the parents (O).
- Despite this tendency to increase, most populations maintain fairly constant numbers (O).
- There must be a 'struggle for existence' between individuals of the same species. They compete with each other for the means of survival. A number do not live long enough to reproduce (D).
- There is variation among the offspring of any species (O).
- Those individuals that are best adapted to their environment will be more likely to survive than others – 'survival of the fittest' (D).
- The survivors will be able to pass on the favourable characteristics to their offspring (D).
- Over successive generations, the characteristics of the population will slowly change (D).



Charles Darwin, the great British naturalist



Alfred Russel Wallace (1823–1913)



Darwin was unable to explain the origin of variation or how it was passed on from one generation to the next, since there was no knowledge of genetics at that time.

The theory of evolution by natural selection is still generally accepted today.

The modern interpretation takes into account advances in modern genetics and is called **neo-Darwinism**.

The modern definition of evolution refers to changes in the gene frequencies of a population, which may or may not lead to the formation of a new species.

## **Business Studies A Level & BTEC National Extended Certificate**

To prepare effectively for studying Business at Hereford Sixth Form College you will need to complete the following activity before the start of term:

- Gain a working knowledge of current business affairs by regularly reviewing the business news on the following websites:

[www.bbc.co.uk](http://www.bbc.co.uk)

[www.telegraph.co.uk](http://www.telegraph.co.uk)

[www.marketingweek.co.uk](http://www.marketingweek.co.uk)

Select TWO businesses that are in the news and write a one page A4 summary for each explaining why they are in the news, what the challenges are and how they plan to deal with these challenges.

# Chemistry A Level

- Please have a go at all the questions. Answer on a separate sheet, so that you have space to show your working clearly. Hand in your work in your first Chemistry lesson.

## Formulae of Ionic Compounds

You should practise the skills you learned at GCSE, to make sure:

- a. You can predict the charge on a simple ion from an element's group in the periodic table.
- b. You have **memorised** the formulae of the following common polyatomic ions:

sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), carbonate ( $\text{CO}_3^{2-}$ ), hydroxide ( $\text{OH}^-$ ), ammonium ( $\text{NH}_4^+$ )

- c. You can deduce the formula of an ionic compound by finding the numbers of oppositely charged ions needed to balance the charges out.

Links to help you: <http://freesciencelessons.co.uk/charges-on-ions/> and <http://freesciencelessons.co.uk/formula-of-ionic-compounds/>

**Check:** can you, for the following compounds, decide whether or not they are ionic and, if they are, deduce or recall the charges on the ions and hence work out the formulae?

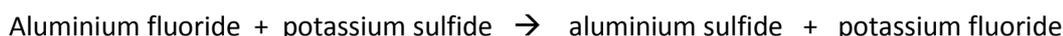
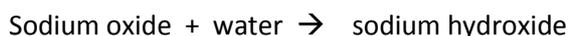
| Compound        | Is it ionic ? (Y/N) | Ion Charges (if applicable) | Formula |
|-----------------|---------------------|-----------------------------|---------|
| Calcium iodide  |                     |                             |         |
| Carbon dioxide  |                     |                             |         |
| Aluminium oxide |                     |                             |         |
| Sodium sulfate  |                     |                             |         |

## (1) Balancing Chemical Equations

You should practise writing balanced symbol equations for simple reactions. At A-level, every equation you write will have to balance, meaning that there are equal numbers of atoms of each element involved, on either side of the equation.

Links to help you: <http://freesciencelessons.co.uk/balancing-chemical-equations/> and <http://www.wikihow.com/Balance-Chemical-Equations>

**Check:** can you get correctly balanced equations for the following?



- **We will test you on formulae and equations at the end of your first week in A-level Chemistry.**

## Maths Skills for Chemistry

**There is a lot of maths involved in chemistry at A-level.** The examples below are not chemical ones but they illustrate the kind of manipulations you will have to be able to carry out. **If you don't yet have these skills, please be aware that it's going to require a lot of extra work to develop them.**

*It is very important to show your working fully in answering these questions.*

1. Speed = distance / time. Use this relationship to find how far a cormorant can travel in 20 minutes, if it is flying at 15.8 km per hour.

2. If a Labrador grows at a steady rate, we can write an expression for its mass:

$$\text{mass (m)} = \text{birth mass (m}_0\text{)} + \text{growth rate (R)} \times \text{time (t)} \quad \text{i.e. } \boxed{m = m_0 + Rt}$$

If a Labrador weighs 17.6 kg after 180 days and its growth rate is 0.0950 kg per day, what was its birth mass?

3. If  $AB^2/C = K$  write an expression for B.

4. An average quince weighs 47.1g. A standard crate full of quinces weighs 3920g. An empty crate weighs 450g. What is the average number of quinces per crate? Give your answer:

(i) To 3 significant figures      (ii) To the nearest whole quince      (iii) To 2 decimal places

5. Put the following numbers in standard form:      356,000      0.00714

6. Express the following as conventional numbers:       $1.04 \times 10^5$        $2.22 \times 10^{-4}$

7. What is 247g in kg?

8. What is 4.45g per  $\text{cm}^3$ , in mg per  $\text{cm}^3$ ?

9. Calculate:       $28 \div (-4)$        $(-50) \times (-6)$        $(-10) - ((-20) / 10)$

10.  $A = B - CD$ . Find the value of C when  $A = -10$ ,  $B = -80$ ,  $D = +2$

11. If I have eaten 30% of my Stinking Bishop cheese, and I now have 140g left, what mass of Stinking Bishop did I have to start with?

## Classical Civilisation A Level

Read Homer's Iliad, BOOK 1: THE PLAGUE (lines 1 – 200)



Write a news report or dialogue with one of the characters about

- the cause of the plague
- its effects
- the proposed solution and the reactions of Agamemnon and Achilles

*Use plenty of detail from the text in your report (including brief direct quotes), but include commentary and discussion too. You should aim to complete 2 sides of A4. The piece should be handwritten unless you word process your exams.*

*Note: You can access/download a free copy of The Iliad here:  
<http://www.poetryintranslation.com/PITBR/Greek/Illhome.htm>*

# Computer Games Development & Cyber Security BTEC National Extended Certificate

This course provides you with an opportunity to study in the field of Computer Science through the context of *Games Development & Cyber Security*. Cyber Security is often in the news and there is a recognised need for specialists to be trained to enter this industry. Games Development is an exciting area of Computer Science. This course will utilise industry standard tools, such as *Unity*, to enable students to gain firm foundations for further study or employment.

This qualification is a two year vocational course and is equivalent to one A Level i.e. the Distinction\* with this qualification is worth the same UCAS tariff points as the A\* grade at A Level.

There are four units studied over two years, which include *Games Development, IT Systems Security and Encryption, Computer Science Principles* and *Computer Systems Fundamentals*.

- 42% of the work is assessed through internal assessment involving both written and practical tasks.
- 58% is assessed through external assessment involving two written examinations.
- Final grades of Pass, Merit, Distinction or Distinction\* are awarded.

## **Preparing for written assessment**

**Task 1:** In your assessments, you will be asked to **describe, explain, justify, evaluate** (among others). These are referred to as **Command Verbs** and it is **essential** that you have a very clear understanding of the differences to maximise your grade potential.

1. **Research BTEC assessment verbs and give definitions of the 4 verbs listed above.**
2. **Do the same for another assessment verb (from the BTEC list) of your own choosing**

## **Principles of Computer Science – Unit 1 (mandatory externally assessed - exam)**

**Task 2:** One of the most important skills for you to develop is that of Computational Thinking. As an exercise, please look up the following link

<https://tinyurl.com/ycnh8qv8> **Computational Thinking: Cut Hive Logic Puzzles**

It's an interesting description of solving logic puzzles. Please work through the pages and tackle the Harder Puzzle on page 13.

## **Fundamentals of Computer Systems– Unit 2 (mandatory externally assessed - exam)**

**Task 3:** We'll be covering a lot about computer security. As a starter, please work through the 10 Worst Computer Viruses of all time. Make brief notes on these (a paragraph on each) to demonstrate to your teacher your ability at note taking.

<https://tinyurl.com/y88q8u3x> **10 Worst Computer Viruses of All Time**

The textbook that supports the course is:

'BTEC National Computing Student Book - 2016 specification' Pearson ISBN 978-1-292-16692-6

A class set will be available for you to use in the classroom and the College library have a number that you can take out on loan.

## Computer Science A Level

This course provides you with an opportunity to study for and gain an academic qualification in the field of Computer Science. In addition to learning about computer science topics and programming concepts, this course also utilises industry standard tools, such as Visual Studio and C#, to enable you to gain firm foundations for either further study or employment.

- ▶ 80% of the work is assessed through external examinations taken at the end of the second year.
- ▶ 20% is assessed through coursework which commences in the Summer term in the first year and is usually submitted during April of the second year.

The following tasks are to help get you organised, set-up and ready to start learning Computer Science.

### Task 1 – Folders and Dividers

- Get organised by obtaining two lever arch files along with 10-part dividers to organise your work. You **don't** have to carry these to and from every lesson. You may find it convenient to carry a smaller ring binder to and from college and then you can transfer your notes into the relevant folders on a regular basis.
- Take and print (black and white is fine) a photo of these files and dividers to prove you are prepared. It is essential that you keep yourself organised.

### Task 2 – Install Visual Studio Community

- Go to <https://visualstudio.microsoft.com/vs/community/> and download and install Visual Studio Community (current version at time of writing was VS Community 2017)
- After enrolment (once you have a college username and password) you can go to <https://imagine.microsoft.com/en-us/catalog> and sign up. Signing up for Imagine gives you free access to all sorts of Microsoft products and services. *Note: [username@hereford.ac.uk](mailto:username@hereford.ac.uk) is the format of your college email address.*
- Open Visual Studio 2017 Community and then take a screenshot and print it (black and white is fine) and bring it in to your first lesson to prove that it is installed on your computer.

### Task 3 – Your future in Computing

- Watch these videos:
  - Choose Computer Science - <http://tinyurl.com/yca48czv>
  - Computer Science education - <http://tinyurl.com/qbsg7px>
- Write a short report (no longer than a page of A4) describing why you want to study Computer Science.
- Bring a printout of this work to submit in your first lesson.

Task 4 – Please complete the questionnaire on the next page and hand in during your first lesson.

You are not expected to have programmed before however it is useful to know what experience (if any) you do have. Please answer all questions you are able to.

1. In which languages have you programmed previously?

.....  
 .....  
 .....

2. For each of the following programming concepts rate your level of experience/expertise in your chosen language.

| Concept   | Not familiar with it | Some experience | Good at it |
|---|----------------------|-----------------|------------|
| Input from keyboard and Output to screen.   |                      |                 |            |
| Branching (If..Else or Case statements).  |                      |                 |            |
| Iteration – loops. Repeating sections of code several times (e.g. For, While and Repeat). |                      |                 |            |
| Using in-built functions (e.g. maths functions).  |                      |                 |            |
| Writing your own functions and procedures (subroutines).                                  |                      |                 |            |
| Using parameters (passing values to functions or procedures).                             |                      |                 |            |
| Manipulating strings (joining, splitting and searching in one string for another).        |                      |                 |            |
| Using Arrays or Lists to store and manipulate collections of values.                      |                      |                 |            |
| Reading and writing text files.   |                      |                 |            |
| Working with Records and Fields (possibly with databases).                                |                      |                 |            |
| Drawing and graphics.   |                      |                 |            |
| Animation.  |                      |                 |            |
| Writing classes.  |                      |                 |            |

3. In what contexts have you written programs?

| Context                       | Tick all that apply |
|-------------------------------|---------------------|
| Exercise or project at school |                     |
| For own interest              |                     |
| Software in use by others     |                     |
| Other:                        |                     |

4. Briefly describe the most complex program you've written.

.....  
 .....  
 .....  
 .....

# Criminology Diploma

In preparation for the year ahead, you need to complete the following task ready for your tutor for the start of your course next week:

1. Research a crime that is prevalent in the media over the weekend.
2. Make notes on the offence, offender(s) and victim(s)
3. Write a short paragraph on why you think the crime occurred (what drove the offender to commit the act) and what punishment if any, the offender should receive, stating your reasons why. If they have already been to court, comment on the result and say why it was an appropriate ruling or not, with reasons why.
4. Watch one of the following and be prepared to feedback to class
  - a. The acclaimed Netflix programme 'Making a Murderer'
  - b. The documentary on Amanda Knox <https://youtu.be/LQFNbu4BMWl>
  - c. <http://dai.ly/x4rrfjz> Inside Death Row with Trevor McDonald

## Dance – BTEC National Extended Certificate

Watch the Fosse clip “Sing sing sing” from you tube –

<https://www.youtube.com/watch?v=PaAO6kDLYR8>

From this clip, create a phrase lasting no less than 32 counts that includes key elements such as;

- travelling movements
- form of Elevation
- Arm positions
- Certain movements that stand out to you.

Perfect this phrase ready to perform to Kim Owen at the end of week 1.

## Drama and Theatre Studies A Level

Welcome to A Level Drama and Theatre Studies. In order to help you understand the way you will be learning and the kind of extra work that will be required of you during your studies, you need to complete the task below before your first lesson next week.

### Task:

Find a play that you have never read before (avoid Shakespeare and GCSE set texts because we will assume you have read these already). Find a play that you think you may like but challenge yourself in this – does the play even look like a play on the page? If not, you may be on to a winner but there are a lot of interesting texts – be curious and don't stick to what you would normally go for.

Read the play and complete the information below:

What happens in the play? Give a short account of the action (if there is no obvious action, just write down what you understood generally about characters, relationships and/or ideas.)

What are the themes of the play? In what ways are these themes explored?

Why did you choose this play? Has it surprised you in any way? Did it challenge you? In what ways?

Choose one section of the play – no more than two pages of text – and write three performance ideas for at least three lines that you think are important. You can consider the following: voice (tone, volume, pace, pitch, emphasis, pause, inflection), physicality (facial expression, eye contact, stance/posture, gesture, body language, physical contact, gait), stage position and relationship with other characters on stage and with the audience.

## Economics A Level

- It is a big leap from GCSE to A Levels
- Most of you will be new to studying Economics
- It helps to familiarise yourself with economic issues before starting the A Level Economics course
- Economic issues are constantly in the news
- You can use this to prepare for the course



### Enrolment task:

Identify an **economic news story** in the media e.g. on the **BBC News** or **Sky News** site (be **selective**), which particularly interests you and.....

- Briefly state **why** you selected this news story;
- **Summarise** the main economic issue(s) in the news item (100-150 words) **in your own words**;
- Briefly seek to **explain** the economic issues in the news item (100-150 words);
- **Identify** any economics questions you would like to raise regarding the news article.

**Bring of the news item and your response to this task to your first Economics lesson at Hereford Sixth Form College**

*Here are some suggested media sources (the Metro is not a preferable source!):*

- **BBC News:** [www.bbc.co.uk/news/business/economy](http://www.bbc.co.uk/news/business/economy)
- **Sky News:** <http://news.sky.com/business>
- **Channel 4:** [www.channel4.com/news/business](http://www.channel4.com/news/business)
- **The Economist:** [www.economist.com/topics](http://www.economist.com/topics) (register to get some access free)
- **Daily Telegraph:** [www.telegraph.co.uk](http://www.telegraph.co.uk)
- **Financial Times:** [www.ft.com](http://www.ft.com) (register to get a number of articles free)
- **The Guardian:** [www.guardian.com](http://www.guardian.com)
- **The Independent:** [www.independent.co.uk](http://www.independent.co.uk)
- **Cityam:** [www.cityam.com](http://www.cityam.com)

Need further help deciding on whether you want to study **AL Economics**? Take a look at these **AL Economics** websites for students to help you decide:

**Economics Online:** <http://www.economicsonline.co.uk/>

**Economics Help:** <http://www.economicshelp.org/>

## Engineering Cambridge Technical Extended Certificate

This piece of work should be completed before your first lesson; it will help prepare you for the Mathematical aspects of your course. It is a worksheet that covers basic algebra and includes worked solutions so that you can use the answers to help you and check your work. The worksheet comes from Integral, an on-line resource that your teacher will give you the log-in to later in the course. Please bring your work with you to the first lesson. At the end of the worksheet there are three sample questions, please complete these and have them ready to hand in so that your teacher can mark them.

1. Simplify the following expressions:

- (i)  $2x + 3y - x + 5y + 4x$
- (ii)  $5a - 2b + 3c - 2a + 5b$
- (iii)  $4p + q - 6p - 5q + 5p + 4q$

2. Multiply out the brackets and simplify where possible:

- (i)  $3(2x + 3y)$
- (ii)  $4(3a - 2b) - 3(a + 2b)$
- (iii)  $p(2p - q) + 2q(p - 3q)$

3. Multiply out these expressions.

- (i)  $(x + 1)(x - 3)$
- (ii)  $(x + 2)(2x + 1)$
- (iii)  $(x - 3)(x - 4)$
- (iv)  $(3x + 2)(x - 2)$
- (v)  $(2x + 1)(4x - 1)$
- (vi)  $(1 - 2x)(1 + x)$
- (vii)  $(3 + 2x)(x - 1)$
- (viii)  $(5x - 3)(2x + 5)$

4. Factorise the following expressions:

- (i)  $10ab + 5ac$
- (ii)  $2x^2 + 4xy - 8xz$
- (iii)  $3s^2t - 9s^3t + 12s^2t^2$

5. Simplify the following as much as possible:

- (i)  $\frac{2a2b}{4ab^2}$
- (ii)  $\frac{12p^2r^3}{9pqr}$
- (iii)  $\frac{x^2y + xy^2}{x + y}$
- (iv)  $\frac{a}{2b} \times \frac{3bc}{a^2} \times \frac{a}{6c}$

6. Factorise:

- (i)  $3xy + xy^2$
- (ii)  $4a^3b + 2a^2b^2 + a^4b^2$
- (iii)  $2x^2 - xy + 2xy - 6$

7. Simplify:

- (i)  $\frac{a^2 - b^2}{a^3b - a^2b^2}$
- (ii)  $\frac{ax - 3ay}{(x + y)(x - 3y)}$

Questions to be marked

- 1) Simplify  $3(2a + b) - 2(b - 3a)$
- 2) Expand  $(2x - 1)(3x + 2)$
- 3) Factorise  $2ab^2 - 4a^3b^7$

## Solutions

$$1. \text{ (i) } 2x+3y-x+5y+4x=(2x-x+4x)+(3y+5y) \\ =5x+8y$$

$$\text{(ii) } 5a-2b+3c-2a+5b=(5a-2a)+(-2b+5b)+3c \\ =3a+3b+3c$$

$$\text{(iii) } 4p+q-6p-5q+5p+4q=(4p-6p+5p)+(q-5q+4q) \\ =3p$$

$$2. \text{ (i) } 3(2x+3y)=6x+9y$$

$$\text{(ii) } 4(3a-2b)-3(a+2b)=12a-8b-3a-6b \\ =9a-14b$$

$$\text{(iii) } p(2p-q)+2q(p-3q)=2p^2-pq+2qp-6q^2 \\ =2p^2+pq-6q^2$$

$$3. \text{ (i) } (x+1)(x-3)=x^2-3x+x-3 \\ =x^2-2x-3$$

$$\text{(ii) } (x+2)(2x+1)=2x^2+x+4x+2 \\ =2x^2+5x+2$$

$$\text{(iii) } (x-3)(x-4)=x^2-4x-3x+12 \\ =x^2-7x+12$$

$$\text{(iv) } (3x+2)(x-2)=3x^2-6x+2x-4 \\ =3x^2-4x-4$$

$$\text{(v) } (2x+1)(4x-1)=8x^2-2x+4x-1 \\ =8x^2+2x-1$$

$$\text{(vi) } (1-2x)(1+x)=1+x-2x-2x^2 \\ =1-x-2x^2$$

$$\text{(vii) } (3+2x)(x-1)=3x-3+2x^2-2x \\ =2x^2+x-3$$

$$\text{(viii) } (5x-3)(2x+5)=10x^2+25x-6x-15 \\ =10x^2+19x-15$$

$$4. \text{ (i) } 10ab+5ac=5a(2b+c)$$

$$\text{(ii) } 2x^2+4xy-8xz=2x(x+2y-4z)$$

$$\text{(iii) } 3s^2t-9s^3t+12s^2t^2=3s^2t(1-3s+4t)$$

$$5. \text{ (i) } \frac{2a^2b}{4ab^2} = \frac{\cancel{2} \times \cancel{a} \times a \times \cancel{b}}{\cancel{4} \times \cancel{a} \times \cancel{b} \times b} = \frac{a}{2b}$$

$$\text{(ii) } \frac{12p^2qr^3}{9pq^2r} = \frac{\cancel{12} \times \cancel{p} \times p \times \cancel{q} \times \cancel{r} \times r \times r}{\cancel{9} \times \cancel{p} \times \cancel{q} \times q \times \cancel{r}} = \frac{4pr^2}{3q}$$

$$\text{(iii) } \frac{x^2y+xy^2}{x+y} = \frac{xy(\cancel{x+y})}{\cancel{x+y}} = xy$$

$$\text{(iv) } \frac{a}{2b} \times \frac{3bc}{a^2} \times \frac{a}{6c} = \frac{\cancel{a} \times \cancel{3} \times \cancel{b} \times \cancel{c} \times \cancel{a}}{2 \times \cancel{b} \times \cancel{a} \times \cancel{a} \times \cancel{c} \times \cancel{c}} = \frac{1}{4}$$

$$6. \text{ (i) } 3xy+xy^2=xy(3+y)$$

$$\text{(ii) } 4a^2b+2a^2b^2+a^4b^2=a^2b(4a+2b+a^2b)$$

$$\text{(iii) } 2x^2-xy+2xy-6y^2=(2x-3y)(x+2y)$$

$$7. \text{ (i) } \frac{a^2-b^2}{a^2b-a^2b^2} = \frac{(a+b)(a-b)}{a^2b(a-b)} \\ = \frac{(a+b)}{a^2b}$$

$$\text{(ii) } \frac{ax-3ay}{(x+y)(x-3y)} = \frac{a(x-3y)}{(x+y)(x-3y)} \\ = \frac{a}{x+y}$$

# English Language A Level

For your English Language enrolment homework, we would like you to complete the following two tasks:

## Task 1: Short story / article collection

### Task 2: About me planning task

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## Task 1: Short story / article collection

As part of your coursework, you will eventually be writing either two short stories or two newspaper / magazine articles. To prepare for this task, you will begin by collecting and annotating published short stories and/or articles by professional writers.

Therefore, to start this coursework preparation, we would like you to do the following:

1. Collect **one** professional / published short story *or* **one** professional / published article.

(You can find articles in magazines, newspapers, or on online sources. You can find short stories in anthologies, collections of short stories in larger books, magazines, or on online sources. If using an online medium, please make sure the texts are by published writers.)

2. **Annotate** your published story or article in as much detail as possible. You should annotate **language features** the authors have used and how these language features relate to **genre conventions, audience and context**.

(If your stories or articles are more than a page, please choose **1-2** pages to annotate. Some stories can be 20 pages long and for this task, we only require that you annotate a couple of pages!)

---

### Task 2: About me planning task

For this task, we would like you to **create a plan** for a writing task. This writing task will involve you telling us about yourself and so careful **planning** and **preparation** is required as it will be the first piece of writing you will produce for your teacher. This task is to create a plan only; you will do the writing part in class and in timed conditions. Things you might put into your plan *could* include:

- Your background
  - Your family / friends
  - Your hobbies and interests
  - Your aspirations
  - Any unique information about yourself that you'd like to share
- 

**Please make sure that you do this work before you start the course. We look forward to meeting you soon!**

## English Literature A Level

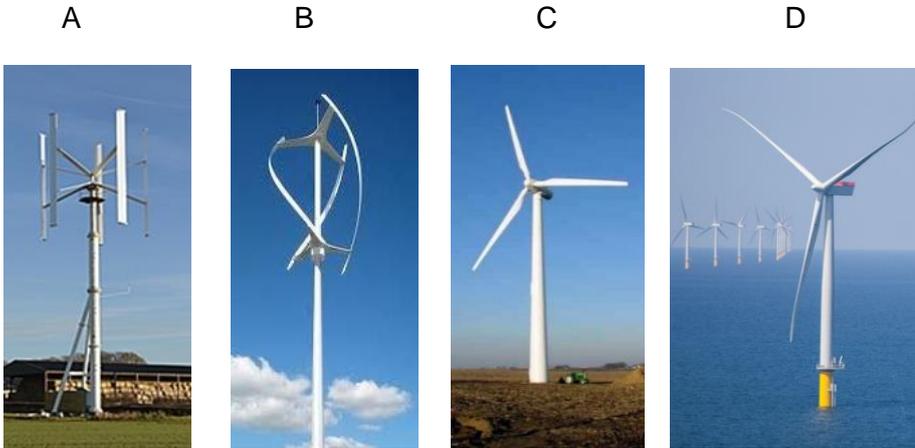
Read '*A Streetcar Named Desire*' by Tennessee Williams. You can buy a copy from the College Library or read it online.

You will be tested on your knowledge of the play in the first week of term; we will expect you to know the plot and key themes and to have a basic understanding of the characters and the relationships between them.

# Environmental Science A Level

New technology in electricity generation Name .....

1. One of the challenges facing environmental engineers is to develop technology which can harness the energy in **renewable sources**, such as wind.



- <http://www.dpaonthenet.net/article/106769/Power-train-optimisation-for-vertical-axis-wind-turbines.aspx>
- <https://www.quora.com/Why-arent-Vertical-Axis-Wind-Turbines-more-popular>
- <http://plainswindeis.anl.gov/guide/basics/index.cfm>
- <http://www.sunwindenerav.com/offshore-wind-enerav/total-offshore-wind-capacitiv-europe-sta>

a) the wind turbines in the pictures above to their descriptions.

| Description of turbine                   | Letter |
|--|--------|
| Horizontal axis aerogenerator, off-shore |        |
| Vertical axis aerogenerator              |        |
| Horizontal axis aerogenerator, on-shore  |        |
| Helical vertical axis aerogenerator      |        |

(3 marks)

(ii) Which type(s) of wind turbine is most commonly used to generate electricity?

..... (1 mark)

b) (i) What are the advantages of horizontal axis wind turbines (HAWT) over vertical axis wind turbines (VAWT)?

.....  
 ..... (2 marks)

(ii) Suggest the type of location where VAWTs may be used and why.

.....  
 ..... (2 marks)

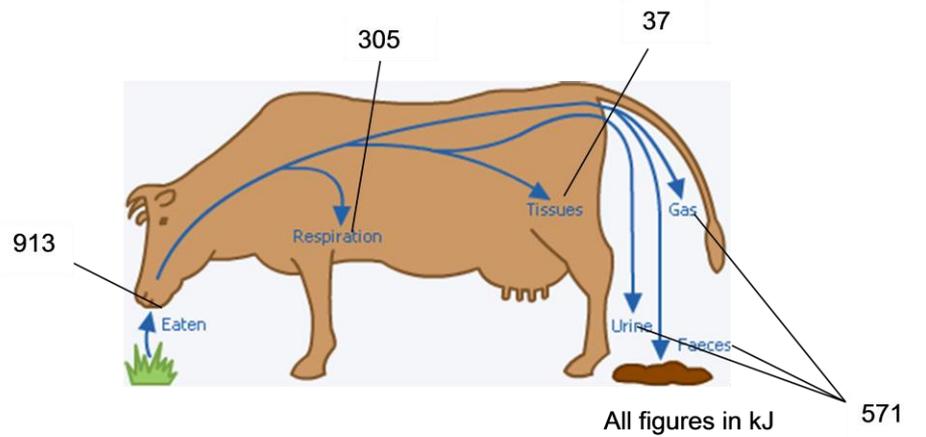
c) Describe two environmental problems which wind turbines can cause.

.....  
 ..... (2 marks)

Total 10

**The impacts of eating meat, dairy products and fish**

a) Calculate the efficiency of a cow, in producing meat or milk, from the data given below.



[http://target.raf.mod.uk/v2/furniture/factfiles/FK\\_Bio\\_Ser\\_2.gif](http://target.raf.mod.uk/v2/furniture/factfiles/FK_Bio_Ser_2.gif)

$$\text{Energy Efficiency} = \frac{\text{energy output (milk or meat)}}{\text{energy input (grass/ feed)}} \times \frac{100}{1}$$

.....% (2 marks)

b) Some animals are more efficient than others at producing meat. The table shows how much edible meat is produced from one Kg of feed for three farmed species.

| Farmed animal species                    | Silver carp   | Chicken  | Beef cattle   |
|--|---|--|---|
|  |  |  |  |
| Edible meat (Kg) produced per Kg of feed | 0.45  | 0.20   | 0.03  |

(i) Which species has the greatest growth efficiency? ..... (1 mark)

Producing high quality food to feed the human population is very demanding on the Earth's energy resources, especially if we feed as secondary consumers.

c) Use the information on this page and your own knowledge to discuss the implications for the Earth's resources of human beings eating large quantities of meat.  
(Use own paper) (5 marks)

d) There are nutritional reasons for eating a range of foods.  
Give two **environmental** reasons for raising livestock.

.....

..... (2 marks)

Total 10

## French – A Level

### LES PAYS ET LES TERRITOIRES FRANCOPHONES

Name at least ten countries where French is spoken.

Example: la Côte d'Ivoire

How much do you know about the influence of France and French people on the rest of the world? Underline the thirteen French inventions from the list of sixteen below.

*l'accordéon*

*la carte à puce*

*la machine à coudre*

*le stéthoscope*

*le croissant*

*le parachute*

*la boîte de conserve*

*la douche*

*le parc d'attractions*

*le téléphone portable*

*l'hélicoptère*

*la poubelle*

*le restaurant*

*le sac à dos*

*le bikini*

*la calculatrice*

Match up eight of the inventions with texts A-H.

A: Louis Réard, ingénieur suisse et dessinateur de mode, invente le maillot de bain deux-pièces.

B: Trois frères, Victor, Alfred et Gabriel Lafuma, inventent un accessoire essentiel pour les écoliers, les ados, et ceux qui vont en vacances: un sac à porter sur le dos.

C: A la fin du 19ème siècle le préfet de Paris déclare que les Parisiens doivent mettre leurs déchets ménagers dans une grande boîte qui prend son nom: il s'appelle Eugène Poubelle.

D: L'inventeur Roland Moreno adore les gadgets et crée une carte avec un microcircuit électronique. Sans lui, pas de carte de crédit ni de carte SIM.

E: Un homme d'affaires, M. Boutin, décide l'ouverture d'un jardin de loisirs à Paris, le Tivoli. C'est l'arrière-grand-père des parcs à thème comme Disneyland!

F: Avec cet appareil inventé par le docteur Laënnec, on peut écouter les bruits du coeur et des poumons.

G: Paul Cornu est le premier à piloter un appareil à hélices, pendant quelques secondes. C'est assez pour entrer dans l'histoire de l'aviation.

H: Aujourd'hui, un Français mange plus de 50 kilos d'aliments en boîte par an, ceci grâce à Nicolas Appert qui stérilise pour la première fois des aliments dans des pots en verre, pour nourrir les armées napoléoniennes.

## Tasks

1. Create a list of new vocabulary from the descriptions of the inventions.  
Example: un dessinateur **designer**
2. Write a list of the verbs used in the descriptions and translate them into English, using a dictionary to help (Collins free Online Dictionary, wordreference or a hard copy of a dictionary, if you have one).

### Present tense exercises

Fill in the gaps in the sentences below by putting the verbs in the brackets into the correct form.

Example:

Elle aime lire les romans de science-fiction. (**aimer**)

- 1) Mes frères et moi . . . . . la télé tous les soirs. (**regarder**)
- 2) Mon cours de français . . . . . à 11h le mercredi. (**finir**)
- 3) . . . . . –tu la cuisine italienne? (**aimer**)
- 4) Vous . . . . . m’aider à préparer le dîner. (**pouvoir**)
- 5) Elles . . . . . assez d’argent pour acheter une nouvelle voiture.  
(**avoir**)
- 6) Je . . . . . mon manteau et mon écharpe car il fait froid. (**mettre**)
- 7) Ma prof d’anglais . . . . . très gentille. (**être**)
- 8) Il n’ . . . . . pas l’espagnol. (**apprendre**)
- 9) . . . . . –ils de la natation demain? (**faire**)
- 10) Elle . . . . . au cinéma samedi prochain. (**aller**)

# Geography A Level

## Geography of Hereford Sixth Form College Campus

To complete this task you will need to register with digimap which is a subscription mapping site available to our students, (see overleaf). You will not be able to use digimap until you have enrolled at college, but you may wish to make an early start on the task by being observant as you walk round the college campus and using google maps to work out the location (see below).

**TASK:** Write a mini essay of about 500 words describing the geography of Hereford Sixth Form College campus. There should be one section about the physical geography of the campus and another on the human geography. The questions below are to give you ideas and get you thinking. Do not list or bullet point. **Write your essay in full sentences and paragraphs. Type your work ideally in a word document and complete it by 11<sup>th</sup> September 2019.** The aim of this task is to familiarise you with a powerful online mapping tool and start to get you thinking as a geographer!

### Sources of information:

Digimap website – Ordnance Survey Maps  
Digimap website – Historical Ordnance Survey Maps  
Digimap website – Geological maps  
Google Maps and any other useful websites or books  
Your own observations as a geographer on campus

## Physical Geography of the college campus

**Location of the campus – What is the latitude and longitude of the campus?** - Latitude measures how far locations are from the equator in degrees. Latitude ranges from 0° at the equator to 90° N at the North Pole or 90° S at the South Pole. Longitude measures distance west or east from the prime meridian (which is at Greenwich, London) in degrees. It is either west or east and goes from 0° at London to 180° in the Pacific Ocean. Click to create a “pin” on any location in *google maps* to get the latitude and longitude eg this shows Burger King in Cardiff City Centre has a latitude of 51.5° N and a longitude of 3.2° W (the minus means west for longitude readings and south for latitude readings).



**What is the altitude above sea level in metres?** – look for contour lines and spot heights on the Ordnance Survey maps.

**What is the name of the hill the campus is located on?** – place names are shown on Ordnance Survey maps.

**What is the land area of the campus in m<sup>2</sup>?** Digimap has measurement tools (see sidebar – make sure you use the area tool not the distance one!) that will calculate this. Or you can print out a map of campus and draw a grid on it and estimate the area by counting the number of grid squares it covers. Your answer should be in metres squared (m<sup>2</sup>)

**What is the bedrock (solid) geology?** – use the *information icon* to click on the geological map on digimap to discover the geology at a site. You should be able to find out the name of the rock (rock unit), the type of rock, and the age of the rock. Digimap will just tell you the name of the geological epoch (time period) – google this to find out how many years ago the rock under our feet was formed.

**What is the superficial geology?** – Superficial geology means the sediment that rests on top of the rocks. Sediment is normally deposited by rivers or ice. Use the *information icon* to click on the geological map on digimap to discover what sort of superficial geology (sediment) covers part of the college campus near Folly Lane at a site.

**In which river drainage basin is the campus?** – When rain lands on the college campus it will flow along the surface downhill to a river. Which river drains the rainwater from the college campus? Look very carefully at the contour lines on the Ordnance Survey map to see which way the ground the college is built on is sloping and where the water will go.

## Human Geography of the college campus

**What is the approximate population of the college?** - How many students and staff work on the college campus each day?

**What is the population density of the site in persons per m<sup>2</sup>?** - Population density = population ÷ land area (see physical geography section above for this).

**How has this place changed?** - What was this place like before the 3 colleges were built? The Technical College opened on Folly Lane in the mid 1950s. Our Sixth Form College opened in 1973. Use historical Ordnance Survey maps on digimap to discover what this place was like/used for before the colleges were built. Is there anything left on campus from before the 3 colleges were built?

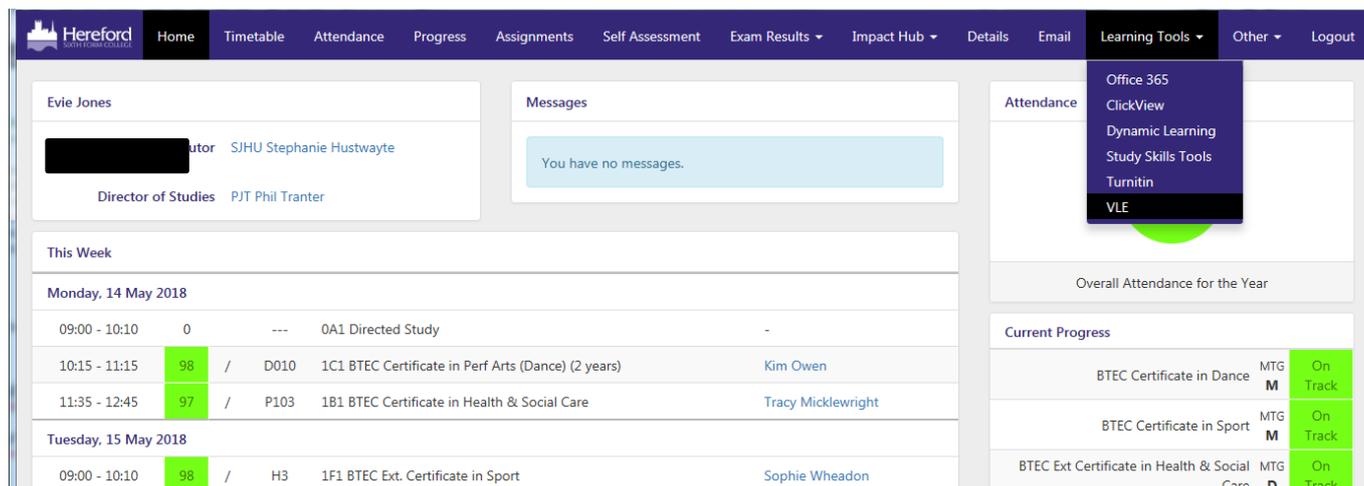
**How is the college campus represented/branded?** – look on google images – what kind of images appear near the top of the search page. How does the college portray and brand itself? What is the logo? What does it represent? What are the main buildings on campus named after? Why?

ARI (June 2019)

Full instructions on how to access digimap can be found on the geography section of the Virtual Learning Environment (VLE). Once enrolled at college you can access the VLE.

**From inside college:**

Log on to a college computer. Your username will be your initials and a four digit number. You can find your username on your college ID card. You will set up your password on the enrolment day. Open the Internet and the default page will be the student portal. This contains details of your timetable and other details. On the top of the screen pull down the menu “Learning Tools” and select VLE.



**From outside college:**

Log onto a computer and go to the main college webpage ([www.hereford.ac.uk](http://www.hereford.ac.uk)). From here select the Student Portal and log on using your college username and password. Once on the student portal select the VLE as described above. You may have to enter your username and password details a second time when you enter the VLE from outside college.

Once on the VLE go to the geography area and select “Department Information”. You will see a link to “How to log onto digimap” where you will find the full instructions.

◀ Latest Updates

Edexcel 1

**Department Information**

**Department Information**

-  [Student Handbook](#)
-  [WJEC Teachers Guidance Booklet](#)
-  [Geography Careers](#)
-  [Geography Library Leaflet](#)
-  [Digimap intro task](#)
-  [Geography DVD Database](#)
-  [Edexcel Geography Specification](#)
-  [Enrolment Task: Geography of HSFC Campus](#)
-  [Course Expectations Letter 2017 and reply slip](#)
-  [How to log onto digimap](#)

## Geology A Level

Thoroughly read through the summary of plate tectonics in a nut shell.

This is found in the teachers companion on pages 7-9 at the following web address.

Print it out please and bring it in,

[https://volcanoes.usgs.gov/vsc/file\\_mgr/file-139/ThisDynamicPianet-TeachingCompanionPacket.pdf](https://volcanoes.usgs.gov/vsc/file_mgr/file-139/ThisDynamicPianet-TeachingCompanionPacket.pdf)

Explore the following web resources to learn more about the tectonic earth <http://nhb-arcims.si.edu/ThisDynamicPianet/>  
<http://topex.ucsd.edu/erthO/DynamicPianet.pdf>

Ensure you are comfortable with the basics of tectonics which are described in these documents. Print out relevant resources and bring in to college in your folder.

Print out the colour geological timescale of the Phanerozoic in colour. Only the Phanerozoic key is needed (1page)

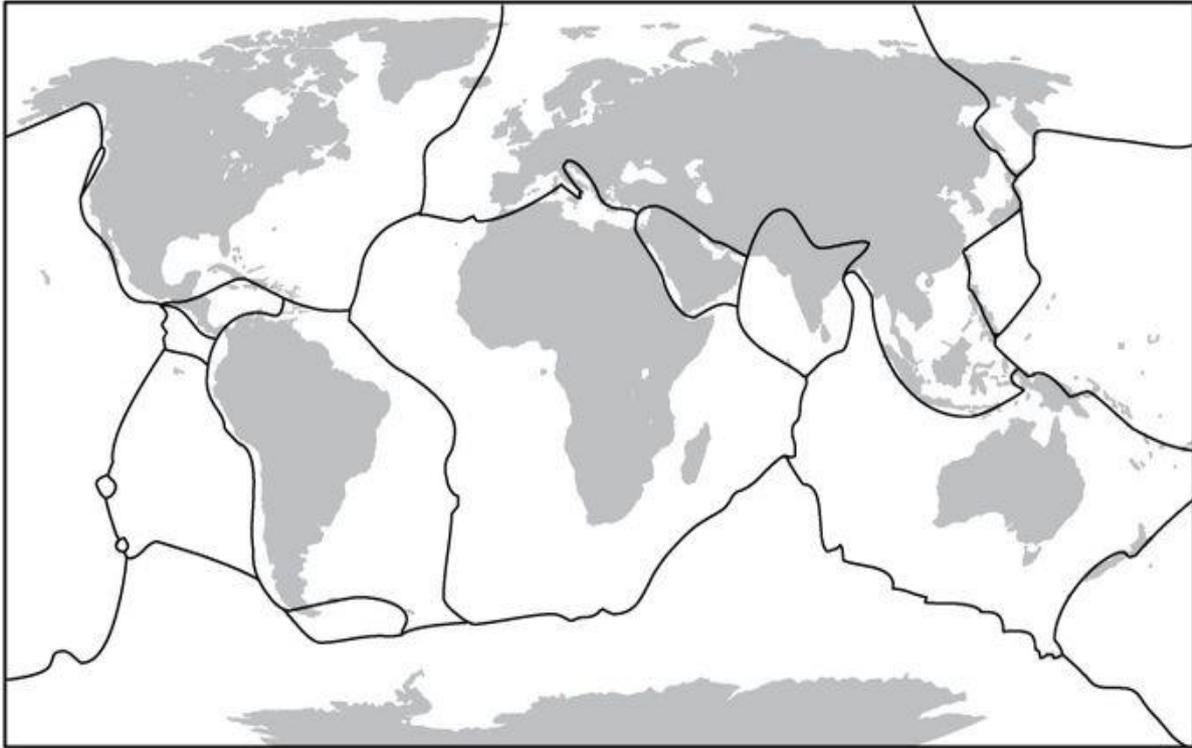
<http://www.bgs.ac.uk/discoveringGeology/time/timechart/phanerozoic/home.html>

Print out a colour geological map centred on the area where you live, choose an appropriate scale <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Use the key to identify the rocks in your local area and write a sentence or two about them using the interactive map. You can use the internet to learn more about your local geology if you wish and are welcome to include that also.

Fill in the names of the tectonic plates and do the colour key on the following document. Try and learn the names and locations of the major tectonic plates, for a quiz during the first week.

## Tectonic Plates



\* Number (or colour code) the tectonic plates listed below, then label them (or colour them) on the map.

- |   |   |   |   |                                       |
|---|---|---|---|---------------------------------------|
| <input type="checkbox"/> Pacific Plate  | <input type="checkbox"/> Arabian Plate    | <input type="checkbox"/> North American Plate | <input type="checkbox"/> Indian Plate     | <input type="checkbox"/> Nazca Plate  |
| <input type="checkbox"/> African Plate  | <input type="checkbox"/> Australian Plate | <input type="checkbox"/> South American Plate | <input type="checkbox"/> Antarctic Plate  | <input type="checkbox"/> Cocos Plate  |
| <input type="checkbox"/> Eurasian Plate | <input type="checkbox"/> Caribbean Plate  | <input type="checkbox"/> Juan de Fuca Plate   | <input type="checkbox"/> Philippine Plate | <input type="checkbox"/> Scotia Plate |

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## German A Level

Tasks for new German A level students to complete before their first lesson

### 1) Reading exercise – Mobile phones:

#### Lehrer darf Schüler-Handy einkassieren

Darf ein Lehrer das Handy eines Schülers über das Wochenende wegsperren? Ein Gericht sagt: Ja.

Viele Kinder und Jugendliche haben ihr Handy in der Schule dabei. Wenn es während des Unterrichts in der Tasche bleibt und nicht klingelt, ist das in Ordnung. Ein Junge allerdings hat das Gerät im Unterricht in den Händen gehabt und damit gestört. Daraufhin kassierte sein Klassenlehrer das Telefon ein.

Der Schulleiter entschied, dass das Handy übers Wochenende weggeschlossen bleibt. Der Junge bekam das Gerät erst mal nicht wieder. Erst am Montag konnte die Mutter das Telefon abholen. Der Junge wollte das so nicht akzeptieren und zog vor Gericht. Er beschwerte sich, denn er war plötzlich nicht mehr erreichbar, wie er sagte. Seine Eltern unterstützten ihn.

Ein Gericht in Berlin hat nun entschieden: Die Sache geht in Ordnung. Ein Lehrer darf das Handy tagelang wegsperren. Grundrechte des Schülers sollen nicht verletzt worden sein. Der Vorfall wird sich zudem nicht wiederholen, sagt das Gericht. Der Schüler hat die Schule inzwischen verlassen. Er ist heute 18 Jahre alt. Als er das Handy abgenommen bekommen hatte, war er in der neunten Klasse. Der Junge meint, dass er in seiner Ehre verletzt und gedemütigt worden ist.

Tasks:

- 1) Read the text and underline all the nouns (words with capital letters) in one colour and all the verbs in another colour.
- 2) On a separate piece paper, make a list of the verbs and nouns with their genders and find the meanings of them using a dictionary or by an online dictionary, such as leo.org.
- 3) Answer these questions in English:
  - a) Who said it is ok for teachers to keep students' mobiles over the weekend?
  - b) When is it allowed to have mobiles in lessons? (2 details)
  - c) Why did the teacher confiscate the boy's mobile? (2 details)
  - d) When was the mobile collected and by whom?
  - e) Which year was the boy in at school when this happened?  
How old is he now?
  - f) How did the incident make him feel?

## 2) Present tense exercises:

Fill in the gaps with using the verbs in the brackets in the correct form.

**Example:**  du schon lange in dieser Stadt? Ich  hier seit einem Jahr. [*leben / wohnen*]

1.)  du morgen in die Schule? Dann  ich dir dein Buch. [*kommen / bringen*]

2.)  du schon zu Hause?  du zum Essen? [*sein / kommen*]

3.)  ihr morgen ins Training? Wir  immer! [*kommen / kommen*]

4.) Ich  in meinem Zimmer und  für die Schule. [*sitzen / lernen*]

5.) Es  ihm keinen Spaß. Er  lieber mit seinen Freunden. [*machen / spielen*]

6.) Meine Frau  nach Hause und  das Abendessen. [*gehen / kochen*]

7.) Ich  Jan und  25 Jahre alt. [*heißen / sein*]

8.)  du mir deinen Schlüssel? Ich  meinen nicht. [*geben / finden*]

9.) Meine Eltern  noch im Urlaub,  aber morgen zurück. [*sein / kommen*]

10.) Ich  Äpfel,  aber keine Tomaten. [*mögen / essen*]

## Health & Social Care BTEC Level 3 - National Diploma

Choose two physiological disorders from the list below and then research and answer the following questions:

1. What procedures to health professionals use to help diagnose this health disorder?
2. How many people in the UK suffer from these disorders?
3. Are males and females affected equally by these disorders?
4. At what age to people tend to develop these disorders?

### Physiological Disorders:

- (a) Diabetes Type 2
- (b) Chronic Obstructive Pulmonary Disease
- (c) Rheumatoid arthritis
- (d) Asthma
- (e) Coronary heart disease
- (f) Bowel Cancer



# Health & Social Care BTEC Level 3 - National Extended Certificate



Research stages of development and complete the summary table below to identify at least *one key feature* for each area of development at each stage.

| Stage                         | Areas of Development - Key Features |                          |                       |                    |
|-------------------------------|-------------------------------------|--------------------------|-----------------------|--------------------|
|                               | Growth and Physical Development     | Intellectual Development | Emotional Development | Social Development |
| Infancy (0-2 years)           |                                     |                          |                       |                    |
| Early Childhood (3-8 years)   |                                     |                          |                       |                    |
| Adolescence (9-18 years)      |                                     |                          |                       |                    |
| Early Adulthood (19-45 years) |                                     |                          |                       |                    |

## History – Medieval/Early Modern World – A Level

This task is to be completed and handed in on your first History lesson. You may write or type your work, but please put your NAME clearly at the top and next to the title as above. You should aim to keep your response to no more than three sides of handwritten.

Your task is to read, 1, understand, analyse and evaluate a contemporary account of an event that took place at Clermont (now Clermont-Ferrand) in modern day France in the year 1095.

The account is of a speech, or sermon, given by Pope Urban II to several hundred nobles and churchmen on November 27th, 1095. The account, or chronicle, was written by Robert of Rheims (a monk) around 1107, and is likely to have been based on a variety of sources including eye-witness accounts. Robert himself may have been present at Clermont.

The source begins by directly quoting the words of Urban and continues to do so until Robert adds some commentary of his own, eventually returning to Urban's direct speech-or, at least, Robert's version of it. These key terms will help you understand the context of Robert's account of the Sermon, but you might have to look up some other words.

\*Franks: Urban's word for the inhabitants of north-western Europe, comprising roughly modern-day northern France, Belgium, Netherlands, Luxembourg and Germany.

\*Persians ("a race from the Kingdom of..."): Urban's term for the Seljuk Turks-a Sunni Muslim confederation (collection of mini-states) that ruled much of central Asia and modern-day Turkey from 1071 onwards.

\*Greeks: Urban's term for the rulers and inhabitants of the Byzantine Empire- the eastern part of the old Roman Empire centred on the city of Constantinople, or modern day Istanbul.

\* Holy Sepulchre: Church in Jerusalem reputed to be the site of Christ's burial and resurrection.

\* Scripture: the Bible.

\* Laymen: Church-goers, but not priests bishops, monks nuns etc.

\*Remission of Sin: freedom from having to do penance (punishments) for sins in the eyes of the church.

Answer the following questions in full sentences using short quotations from the chronicle to illustrate your answer.

1) Why, according to Urban, was there a need for the Franks to act? (You should explain your answer with examples, and look for more than one reason). (5 marks)

2) What different incentives and benefits does Urban imply Franks will get if they respond positively to his appeal for them to act? Explain your answer with examples. (10 marks)

3) What techniques does Urban use (according to Robert's version) to motivate the Franks to respond positively to his appeal to act? Explain your answer with examples. (10 marks)

4) What type of person does Urban seem to be targeting in his appeal for the Franks to act? Explain your answer. (5 marks)

5) Jerusalem and the Holy Lands had been under Muslim control since the 7th Century with relatively free access allowed to Christian pilgrimage sites such as the Church of Holy Sepulchre, and there is very little evidence of Muslim persecution of Christian pilgrims, although a party of 7,000 pilgrims was attacked in 1064. There was, however, increasing division and rivalry between the two main Muslim Caliphates (states) for control of the Holy Lands, and Seljuk power in Asia Minor (present-day Turkey) had recently collapsed after the death of Malik Shah in 1092.

**How does this information help you explain the likely motives of Urban II when he made this speech, as well as the tone and content of the speech itself?** Explain your answer using examples from the Chronicle. (10 marks)

6) Robert's account of Urban's speech was written at least 10 years after the event itself, and is one of 5 accounts-all of which differ from one another in some way. Robert's Chronicle was written some years after the Crusaders' capture of Jerusalem in 1099, and at a time when there was a need to recruit more Franks to live in Jerusalem and the new Crusader Kingdoms. Robert's Chronicle stresses much more the atrocities (violent acts) carried out by Muslims, compared to the other accounts of Urban's sermon. **How might this information affect the value of Robert's chronicle as evidence of Urban's sermon?** Explain your answer. (10 marks)



## History - Modern World - A Level

This task is to be completed and handed in on your first History lesson. You may write or type your work, but please put your NAME clearly at the top and next to the title as above. You should aim to keep your response to no more than three sides if handwritten.

Your task is to analyse, compare and evaluate two contemporary sources on the attitude of American colonists to their “mother country” (i.e. Great Britain) in the decades prior to the outbreak of the American Revolutionary War and Declaration of Independence in 1776. Read this background information first, then read the sources carefully and answer the questions as fully as you can.

**Background:** before their Declaration of Independence in 1776 the thirteen American Colonies were effectively part of the British Empire and subject to laws and regulations enforced by the British Parliament in London. The Colonies’ Head of State was the King (George III after 1760) who issued Royal Charters (legal documents) binding the Colonies to the British Crown. In theory, the British navy controlled and regulated all trade between the Colonies and other countries – for example, all goods exported from America had to be transported on British ships and some even had to be checked at British ports before being sold onto European markets. The British felt that the colonies should exist to boost British trade – a policy known as mercantilism. On paper, therefore, Britain had a great deal of control over the American colonies. In reality, most of them were largely self-governing (each colony had its own legislature (Parliament) and there was a great deal of smuggling of goods in and out of North America, often tolerated by British customs officials – especially if they were bribed to turn a blind eye.

Britain’s main rival for control of lands in North America was France, who held much of Canada. The two countries went to war three times in the 18<sup>th</sup> Century, mainly over European issues, but each one spilled over into North America. Between 1756 and 1763 Britain fought a victorious war alongside the Colonies against France and Spain – the Seven Years’ War. Britain gained the whole of Canada and it seemed the relationship between Britain and the Colonies was strong. Many colonists were relieved to have defeated hostile native American tribes, and as many were Protestants, were also pleased that Britain had prevented them from being ruled by Catholic France. However, success in wars had created a problem for the British. Americans now wanted to expand westwards where they would come into conflict with Native Americans, who usually responded by attacking European settlers on the borders. These borders would have to be protected, which would cost money – which the British felt should be paid for by the Colonists. American colonists also felt less dependent on the British for protection from French Canada.

Now read the two contemporary sources carefully and answer the questions below:

**All questions worth 5 marks.**

**Source A: Peter Kalm, a Swedish biologist travelling in North America between 1748-51.**

*For the English colonies...have increased their so much in their number of inhabitants and in their riches that they vie with Old England. Now in order to keep up the authority and trade of their mother country and to answer several other purposes, they are forbidden to establish new manufactures, which would turn to the disadvantage of the British commerce...They have not the liberty of trading with any parts that do not belong to the British dominion, except a few places; nor are foreigners allowed to trade with the English colonies of North America. These and some other restrictions occasion the inhabitants of the English colonies to grow less tender for their mother country. This coldness is kept up by the many foreigners such as Germans, French and Dutch, who live among the English and have no particular attachment to old England.*

**Source B: James Otis (who later became a major opponent of Britain) speaking in the town meeting of Boston in 1763.**

*We in America have certainly abundant reasons to rejoice. The heathen are not only driven out, but the Canadians, much more formidable enemies are conquered and become fellow subjects. The British dominions and power may now be said, literally to extend from sea to sea...And we may safely conclude from his majesty's wise administration hitherto that liberty and knowledge, civil and religious, will be co-extended, improved and preserved to the latest prosperity. No other constitution of civil government has yet appeared in the world so admirably adapted to these great purposes as that of Great Britain.*

**1) In what ways do the sources differ on the issue of relations between Britain and the colonies in the middle of the 18<sup>th</sup> Century?** Explain your answer with examples taken from the sources.

**2) How useful is Source A as evidence of relations between Britain and the colonies in the middle of the 18<sup>th</sup> Century?** Explain your answer

To answer this question you need to use some knowledge of the **CONTEXT** of the source. This means the validity, or otherwise, of what the source is saying at the time it was said, tested against what you might know about the topic from the background information. For example, you might say "Source A is useful to some extent because when it says (now add a short quote). This reflects what was going on at the time (now add some contextual knowledge). Important: you can use your knowledge of the context to explain how the source is both valid, or limited, or both, as evidence for the topic in question.

You also need to consider the **PROVENANCE** of the source. This means the motives and position of the author – e.g. is he in a position to know? Why might he writing this? How typical might his view be compared to that of other American colonists or visitors? What type of source is this, and how might this affect its value?

**3) How useful is Source B as evidence of relations between Britain and the colonies in the middle of the 18<sup>th</sup> Century?** Explain your answer

Use the details above to help you do this.

**4) Why might the two sources have differing views on the relations between Britain and the colonies in the middle of the 18<sup>th</sup> Century?** Explain your answer referring especially to the provenance of the sources.

**5) Overall, which source is more valuable as evidence of relations between Britain and the American colonies in the middle of the 18<sup>th</sup> Century?** Explain your answer.

# Information Technology BTEC National Extended Certificate

The main purpose of this qualification is to provide an introduction to the study of creating IT systems to manage and share information. Over the 2 years, we will look at: business use of social media to promote products and services; relational databases; data modelling (using spreadsheets); the role of information technology systems in our lives. The aim is to prepare you for progression to higher levels of study (not necessarily in IT), taking on an apprenticeship, or employment. Throughout the course you will be expected to use skills that are highly sought after and valued by employers, such as organisation, planning, problem-solving and independent study. Your assessment will be through external examination and internal assessment. To start you off and give you an insight into the course content you are required to complete the following tasks.

## **Preparing for written assessment**

**Task 1:** In your assessments, you will be asked to **describe, explain, justify, evaluate** (among other things). These are referred to as **Command Verbs** and it is **essential** that you have a clear understanding of the differences to maximise your grade potential.

3. **Research BTEC assessment verbs and give definitions of the 4 verbs listed above.**
4. **Do the same for another assessment verb (from the BTEC list) of your own choosing**

**Suggestion:** You can present your answers in table form.

5. **Think of an example that demonstrates correct use for each verb this could be on a topic of your choice or you could take an example from a book or article.**

**Suggestion:** Try your sentences out with someone you know before bringing them in to class. This will give you an indication of how good your understanding is and an opportunity to make any changes that you want to.

The following tasks have been prepared to give you a “taster” for the unit content that you will be studying.

## **Information Technology Systems – Unit 1 (mandatory externally assessed - exam)**

**Task 2:** Make a list of three **input** and three **output** devices. Can you also think of 3 digital devices that could be classed as both (input **and** output)? *Explain your choices. You can present your answers in table form.*

## **Using Social Media in Business – Unit 3 (mandatory internally assessed through assignments)**

**Task 3:** As part of your learning, you will be required to “Explore the impact of social media on the ways in which businesses promote their products and services”.

1. Make a list of as many social media websites as you can.
2. State who is most likely to use them and why.
3. If you were a business think about what your product/service would be. Which social network media would you use for promotion (choose 3)? Give a reason for your answer.

**Turn over this sheet for Task 4.**

**Creating systems to manage information**

**Task 4:** In this externally assessed unit (10 hour controlled assessment over 1 week period), you will learn how to create a relational database using Microsoft Access.

- 6. What is a database
- 7. Can you give an example of use?
- 8. Research the following Relational Database key terminology and complete the table below.

**Add one (or more) other(s) of your choice:**

| Technical term or acronym | Explanation or simplified term |
|---------------------------|--------------------------------|
| Entity                    |                                |
| Attribute                 |                                |
| ERD                       |                                |
|                           |                                |
|                           |                                |
|                           |                                |
|                           |                                |

**Sources of information**

**BBC Bitesize**

[http://www.bbc.co.uk/bitesize/ks3/english/writing/inform\\_explain\\_describe/revision/2/](http://www.bbc.co.uk/bitesize/ks3/english/writing/inform_explain_describe/revision/2/)

<http://www.bbc.co.uk/guides/z8yk87h>

**Tech Terms**

<https://techterms.com/definition/database>

**The Guardian (online UK edition)**

<https://www.theguardian.com/small-business-network/2013/aug/29/social-media-boost-business-tips>

The text book that supports the course is:

‘BTEC National Information Technology Student Book for the 2016 specification’ Pearson ISBN 978-1-292-14041-4

A class set will be available for you to use in the classroom and the College library have a number that you can take out on loan.

Online resources used for Units 1 and 2 are Pearson’s ActiveLearn and KnowitAllNinja

## Law A Level

Law is now a linear course (examined at the end of 2 years) and our exam board is OCR. We do not expect students to know anything about the course when they start but if you would like to get a head start you should at least use the essential reading and then maybe try one or two of the other suggestions.

### **Essential Reading:**

Immerse yourself in the news as much as possible. Sign up to free news sites and read a newspaper to look for articles related to law e.g. The Guardian or The Telegraph

### **Extended reading:**

The following books are available in the library when you arrive at college so please do not feel like you need to purchase a copy! Your local library may be able to order it for you.

Hutchinson, A. *Is Eating People Wrong? Great Legal Cases and How they Changed the World* (2011)

Kennedy, H. *Eve was Framed – Women & British Justice* (1993)

Wacks, R. *Philosophy of Law: A Very Short Introduction* (2006)

### **Thinking of reading Law at university:**

McBride, A. *Defending the Guilty* (2011)

Potts, T. *May it Please Your Lordship?* (2013)



### **Audio:**

Today programme Radio 4 (<http://news.bbc.co.uk/today/hi/default.stm>)

Law in Action ([http://news.bbc.co.uk/1/hi/programmes/law\\_in\\_action/default.stm](http://news.bbc.co.uk/1/hi/programmes/law_in_action/default.stm))

### **Legal fiction:**

Reading fiction might seem like cheating but you gain a surprising insight to the legal system.

Charles Dickens, *Bleak House*

Harper Lee, *To Kill a Mockingbird*

Louise Doughty, *Apple Tree Yard*

### **Film/TV:**

12 Angry Men

The Jury (ITV series available on DVD)

Real Crime 30 Year Secret (available on youtube)

### **Websites**

In law there is a huge selection of cases as examples for each topic. You could not possibly learn them all but you could browse the websites below to get an idea of the sorts of topics we cover.

<http://www.e-lawresources.co.uk/>

<https://www.youtube.com/user/TheLawBank>

## Mathematics A Level (FAST TRACK)

1. Pick from the box an example of each of the following, (you may use old notes, books or the internet)

- (a) an expression,                      (b) an equation                      (c) a constant  
(d) a variable,                          (e) a term,                              (f) a coefficient  
(g) an index                              (h) an identity

|              |                  |        |                               |
|--------------|------------------|--------|-------------------------------|
| $y = mx + c$ | $3x^2 + 2x = 10$ | $6x^2$ | $a^2 - b^2 \equiv (a-b)(a+b)$ |
|--------------|------------------|--------|-------------------------------|

2. Solve the equations:

(a)  $3(2x+5) - (x+8) = 6(3-x)$                       (b)  $\frac{1}{2}(5x+3) - \frac{1}{4}(7-2x) = 5$

3. Find the values of  $x$  and  $y$  that simultaneously satisfy:

(a)  $3x + 2y = 4$   
 $x - 2y = 36$                       (b)  $7x + y = 25$   
 $x^2 + y^2 = 25$

For the equations in part (a), explain how you could have found the solution graphically.

4. Factorise the following:

(a)  $5x^2y - 2x$                       (b)  $3y(x+2) + 6(x+2)^2$

5. Factorise fully the following:

(a)  $x^2 + 5x + 6$                       (b)  $x^2 - 5x + 6$                       (c)  $x^2 - 5x - 6$   
(d)  $x^2 + 5x - 6$                       (e)  $3x^2 - 7x - 6$                       (f)  $4x^2 - 9$   
(g)  $6x^2 - 15x + 6$

6. (a) Make  $h$  the subject of  $\frac{2}{Rt} = mgh + k^2h$ .

(b) Make  $h$  the subject of  $2\pi h = 6x^2 + 2xh$ .

(c) Make  $h$  the subject of  $yh = \frac{10\pi\varepsilon}{h}$ .

(d) Make  $h$  the subject of  $y = 1 + \sqrt{3h+1}$ .

7. In 10 years' time James will be four times older than he was 11 years ago.

(a) Write this information in the form of an equation involving James' present age,  $y$  years.

(b) How old is James now?

8. Write each of the following expressions as a single fraction in its simplest form:

(a)  $\frac{a}{b^2} \times \frac{a^2}{b}$                       (b)  $2uv^2 \div \frac{u}{v}$                       (c)  $\frac{1}{4x} + \frac{1}{6x}$

9. Simplify the following fractions:

(a)  $\frac{2(x-2)^3}{(x-2)(x+4)}$                       (b)  $\frac{3y-9}{y^2-9}$                       (c)  $\frac{6ab+30b^2}{3(2a+5b)}$

## Mathematics A Level

This piece of work should be completed before your first lesson; it will help prepare you for the Mathematics course. It is a worksheet that covers basic manipulation of algebra and comes from a GCSE to A Level progression book, which is a resource we use to support students struggling with the essential algebraic basis of the course.

Please bring all your completed work to the first lesson, questions numbered 5, 6 and 7 (a-t) have answers provided, question 7(u-x) will be marked by your teacher. [Don't worry, there is no 1-4]!

5 Make  $x$  the subject of the formula:

|                         |                           |                                      |                           |
|-------------------------|---------------------------|--------------------------------------|---------------------------|
| (a) $y^2 = ax$          | (b) $k = \frac{x}{m+n}$   | (c) $2 + p = \frac{7}{x}$            | (d) $y = p - qx$          |
| (e) $y = \sqrt{x-4}$    | (f) $r = \frac{px}{q}$    | (g) $h = \left(\frac{x}{d}\right)^2$ | (h) $a^2 = \sqrt{x} + 1$  |
| (i) $y = \frac{1}{x+2}$ | (j) $p = a + \frac{x}{b}$ | (k) $m = (3-x)^2$                    | (l) $k = 8 - \frac{x}{3}$ |

6 Make  $x$  the subject of the formula:

|                             |                                 |   |
|-----------------------------|---------------------------------|---|
| (a) $x - kx = k$            | (b) $xu - x = u^2$              | (c) $x + cx - c = d$                      |
| (d) $ax + b = x$            | (e) $x - p = rx$                | (f) $px - p = x$                          |
| (g) $ax + b = cx + d$       | (h) $hx - g = x + g$            | (i) $cx - d = dx + c$                     |
| (j) $ax - bx = c - dx$      | (k) $2x - px = qx + 3$          | (l) $u^2x - g = v^2x + a$                 |
| (m) $\frac{bx - a}{3} = 2x$ | (n) $\frac{ax + b}{cx + d} = 2$ | (o) $\frac{px + q}{3} = \frac{qx - p}{4}$ |

7 Change the subject of the formula to the term given in the box:

|                                      |               |  |               |
|--------------------------------------|---------------|--|---------------|
| (a) $C = 2\pi r$                     | $r$           | (b) $v = u + at$                                 | $u$           |
| (c) $a = b + \cos \theta$            | $\cos \theta$ | (d) $V = lbh$                                    | $l$           |
| (e) $V = \frac{d}{t}$                | $t$           | (f) $V = iR$                                     | $i$           |
| (g) $A = \pi r^2$                    | $r$ ( $> 0$ ) | (h) $P = 2(l + b)$                               | $b$           |
| (i) $A = \frac{1}{2}bh$              | $h$           | (j) $P = I^2R$                                   | $I$ ( $> 0$ ) |
| (k) $v = u + at$                     | $t$           | (l) $V = \pi r^2h$                               | $r$ ( $> 0$ ) |
| (m) $v^2 - u^2 = 2as$                | $u$ ( $> 0$ ) | (n) $S = 5x^2 + 6xh$                             | $h$           |
| (o) $s = \frac{k}{d^2}$              | $d$ ( $> 0$ ) | (p) $F = \frac{GMm}{r^2}$                        | $m$           |
| (q) $E = \frac{1}{2}mv^2$            | $v$ ( $> 0$ ) | (r) $\frac{a}{\sin 40^\circ} = \frac{b}{\sin B}$ | $\sin B$      |
| (s) $d = \frac{k-m}{t}$              | $m$           | (t) $A = \pi(R^2 - r^2)$                         | $R$ ( $> 0$ ) |
| (u) $D = 2\pi\rho + 3\rho + 6\alpha$ | $\rho$        | (v) $T = 2\pi\sqrt{\frac{l}{g}}$                 | $l$           |
| (w) $P = \frac{n^2 + a}{n + a}$      | $a$           | (x) $\frac{l}{r} = 1 + e \cos \theta$            | $e$           |

5. (a)  $x = \frac{y^2}{a}$   
 (b)  $x = k(m+n)$   
 (c)  $x = \frac{7}{2+p}$   
 (d)  $x = \frac{p-y}{q}$   
 (e)  $x = y^2 + 4$   
 (f)  $x = \frac{qr}{p}$   
 (g)  $x = \pm d\sqrt{h}$   
 (h)  $x = (a^2 - 1)^2$   
 (i)  $x = \frac{1}{y} - 2$   
 (j)  $x = b(p-a)$   
 (k)  $x = 3 \pm \sqrt{m}$   
 (l)  $x = 3(8-k)$

6. (a)  $x = \frac{k}{1-k}$   
 (b)  $x = \frac{u^2}{u-1}$   
 (c)  $x = \frac{c+d}{1+c}$   
 (d)  $x = \frac{b}{1-a}$   
 (e)  $x = \frac{p}{1-r}$   
 (f)  $x = \frac{p}{p-1}$   
 (g)  $x = \frac{d-b}{a-c}$   
 (h)  $x = \frac{2g}{h-1}$   
 (i)  $x = \frac{c+d}{c-d}$   
 (j)  $x = \frac{c}{a-b+d}$   
 (k)  $x = \frac{3}{2-p-q}$   
 (l)  $x = \frac{a+g}{u^2-v^2}$   
 (m)  $x = \frac{a}{b-6}$   
 (n)  $x = \frac{2d-b}{a-2c}$   
 (o)  $x = \frac{3p+4q}{3q-4p}$

7. (a)  $r = \frac{C}{2\pi}$   
 (b)  $u = v - at$   
 (c)  $\cos \theta = a - b$   
 (d)  $l = \frac{V}{bh}$   
 (e)  $t = \frac{d}{V}$   
 (f)  $i = \frac{V}{R}$   
 (g)  $r = \sqrt{\frac{A}{\pi}}$   
 (h)  $b = \frac{1}{2}P - l$   
 (i)  $h = \frac{2A}{b}$

- (j)  $I = \sqrt{\frac{P}{R}}$   
 (k)  $t = \frac{v-u}{a}$   
 (l)  $r = \sqrt{\frac{V}{\pi h}}$   
 (m)  $u = \sqrt{v^2 - 2as}$   
 (n)  $h = \frac{S - 5x^2}{6x}$   
 (o)  $d = \sqrt{\frac{k}{s}}$   
 (p)  $m = \frac{Fr^2}{GM}$   
 (q)  $v = \sqrt{\frac{2E}{m}}$   
 (r)  $\sin B = \frac{b \sin 40^\circ}{a}$   
 (s)  $m = k - dt$   
 (t)  $R = \sqrt{\frac{A}{\pi} + r^2}$

## Media Production Technical Certificate

It is important as media students that you understand how meaning is created in media products through use of codes and conventions of a product. **Codes and Conventions** of a media product allow an audience to **DECODE** the message that has been **ENCODED** by the media producers. It allows the audience to identify what a product is all about and establish if it will be of interest to them.

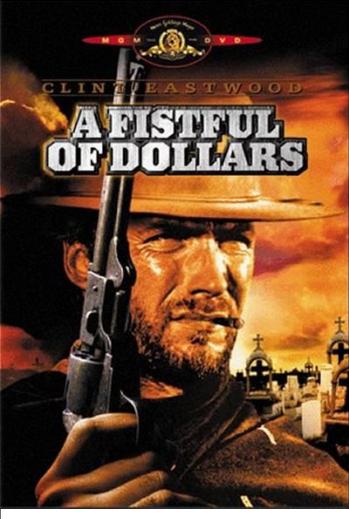
**KEY TERMS** – research these and write the definitions.

|                           |  |
|---------------------------|--|
| <b>ANCHORAGE</b>          |  |
| <b>CODES</b>              |  |
| <b>CONNOTATION</b>        |  |
| <b>CONVENTIONS</b>        |  |
| <b>DECODE</b>             |  |
| <b>DENOTATION</b>         |  |
| <b>DIEGETIC SOUND</b>     |  |
| <b>DIEGETIC WORLD</b>     |  |
| <b>ENCODE</b>             |  |
| <b>GENRE</b>              |  |
| <b>JUXTAPOSITION</b>      |  |
| <b>MASTHEAD</b>           |  |
| <b>MISE EN SCÈNE</b>      |  |
| <b>MODE OF ADDRESS</b>    |  |
| <b>NON DIEGETIC SOUND</b> |  |
| <b>REPRESENTATION</b>     |  |
| <b>VERISIMILITUDE</b>     |  |

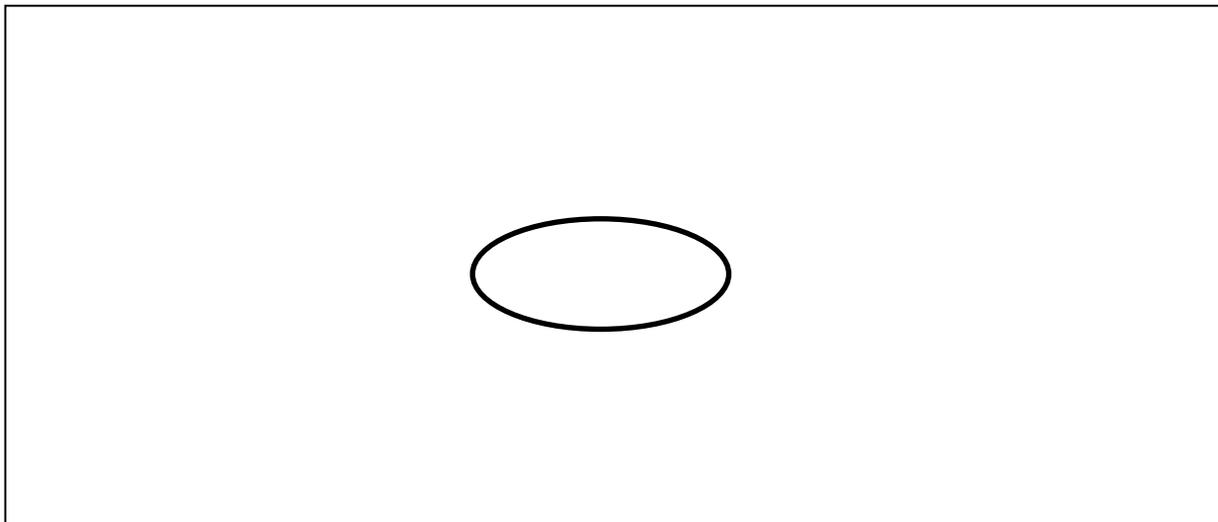
## Why are codes and conventions important?

As mentioned at the start of the unit, while you are going to be studying one specific media sector in terms of assessment requirement for this learning outcome, you will also need to ensure that you have an awareness of media within other sectors in order to appreciate the wider knowledge required throughout the unit.

As part of this, you will be investigating specific **CODES** and **CONVENTIONS** that are used by media producers when making different media products. You will not only need to be able to recognise these conventions, but you should also be able to explain why they are used and how preferred meanings are created because of the specific codes that have been chosen.

| Codes and conventions of a Western:   | Codes and conventions of an Action:   |
|---|---|
|  <ul style="list-style-type: none"><li>- Cowboys</li><li>- Guns</li><li>- Wild West</li><li>- Saloons</li><li>- Horses</li><li>- Shot outs</li><li>- Types of actors (Clint Eastwood, John Wayne)</li><li>- Costume – hats, ponchos</li></ul> |  <ul style="list-style-type: none"><li>- Weapons/Guns</li><li>- Explosions</li><li>- Chase scenes</li><li>- Types of actors (Denzel Washington, Tom Cruise, Jason Statham)</li><li>- Love interest</li><li>- Missions</li><li>- Hero v Villain</li></ul> |

Using a film genre of your choice identify the codes and conventions of that genre:



## MISE-EN-SCÈNE

**Mise-en-scène** choices help create the **VERISIMILITUDE** for the audience. They are extremely important as they are the elements that we notice first. **“Mise-en-scene”** translated literally means ‘everything in the frame/scene’.

Mise-en-scène elements include:

- LOCATION AND SET
- ICONOGRAPHY
- PROPS
- COSTUME AND MAKE-UP
- LIGHTING
- COLOUR DESIGN

**TASK:** Produce an analysis of this film poster below.



How to get started.... An example of film poster analysis.



# Media Studies A Level

## Media Studies Induction work



**Conventions** are what an audience expect to see in a particular media text. For example in a horror film you expect to see a murder, isolated settings etc. In an online magazine you expect it to follow the conventions of most recent post at the top, a masthead, headlines, images, etc.

1. Note down as many conventions of a magazine front cover as you can identify in the above cover.
2. How have women been represented by Cosmopolitan? What values, interests does it suggest women should have? How does it suggest they should look? Write a paragraph for this, considering the connotations of language, colour clothing gestures etc.
3. Who do you think is the target audience for this media text? Consider gender, sexuality, class, political interests etc. How do they target this audience through the front covers content?
4. Find your own example of a magazine aimed at a different audience and identify:
  - a) Who is the target audience?
  - b) How have they targeted that audience?

## Music A Level

In preparation for the A Level Music course, please do the following before our 1<sup>st</sup> lesson:

- Using YouTube, Spotify etc, listen to a string quartet (all movements) by Beethoven
- Make a note of the full title of the piece, including the opus number
- Find out a little background of the piece, including when it was written and why
  
- Listen to a recording of Ma Vlast by Bedrich Smetana

Feel free to either handwrite this work or do it on the computer.

I look forward to seeing you all soon – do bring the work along to our 1<sup>st</sup> lesson.

## Musical Theatre (Performing Arts) – BTEC Level 3 Extended Certificate

You are to learn the following monologue from the musical 'You're a good man, Charlie Brown' and perform it with full use of expression through vocal & physical skills.

*"A 'C'? A 'C'? I got a 'C' on my coathanger sculpture? How could anyone get a 'C' in coathanger sculpture? May I ask a question? Was I judged on my talent? If so, is it fair that I be judged on a part of my life over which I have no control? If I was judged on my effort, then I was judged unfairly, for I tried as hard as I could! Was I judged on what I had learned about this project? If so, were not you, my teacher, also being judged on your ability to transmit your knowledge to me? Are you willing to share my 'C'? Perhaps I was being judged on the quality of the coathanger itself out of which my creation was made... now is this not also unfair? Am I to be judged by the quality of coathangers that are used by the dry-cleaning establishment that returns our garments? Is that not the responsibility of my parents? Should they not share my 'C'? "*

You will perform this at the end of week one on the course.

# Philosophy & Ethics A Level

Read the following information carefully and then write a full essay-style answer to the set question at the end of this document. We are looking for a minimum of 500 words. You may wish to research the work of Sallie McFague further, to enhance your answer.

## Is God male?

The original languages of the Bible (Hebrew and Greek) consistently speak of God as 'Father'. They also refer to God by the masculine personal pronoun 'he'. Jesus, the Son of God, is a male, and the Holy Spirit of God is referred to as a 'he'. God is likened to a human father. He provides for his children, disciplines them and loves them. This does not mean however, that he *is* a male, any more than referring to 'Mother Earth' means that the earth *is* a female. God exists in a form that defies male and female categories. Jesus is spoken of as the 'Son of God' and the 'Son of Man'. During his life on earth, he was clearly a man. However, Christians believe that before he ever became Incarnate, (God made flesh) he was 'with God and was God' (John's gospel), and therefore was neither male nor female. The Bible consistently refers to the Holy Spirit in masculine terms, as a person with insight, knowledge and a will. This does not mean that the Holy Spirit is a male, however. As the name implies, he is a spirit.

## God as Father

In the New Testament, God's fatherhood conveys two distinct ideas:

- (1) God as Creator of the world (John 1:3 implies Jesus was creator as well).
- (2) The relationship between God and Jesus. Jesus called God 'Father' and taught his disciples to do the same. The term conveys an approachable and personal deity.

The title 'Father', therefore, suggests two different characteristics of God: his lordship over creation and his loving kindness. There are also several passages in the Bible portraying God in female terms. In Isaiah 66: 13, God is described as a comforting mother. In Matthew 23:37 (Luke 13:34), Jesus uses a motherly illustration of himself, and in Luke 15:8—10, he compares God to a woman searching for a lost coin. (Look these Bible references up...[www.biblestudytools.com](http://www.biblestudytools.com)). However, the Bible is clear that God is neither male nor female. Jesus himself said: '*God is spirit*' (John 4:24). He can identify with the needs of all people, male and female, because he created them in his own image: '*male and female he created them*' (Genesis 1:27). As Paul wrote in his Epistle to the Galatians (3:28): '*there is no longer male and female, for all of you are one in Christ Jesus*'. Although the Bible is clear that God values both men and women equally, some theologians have expressed concern about its consistent use of male language about God.

## Sallie McFague: God as Mother

Sallie McFague is an American theologian who writes from an **ecofeminist** perspective.

In her *Metaphorical Theology: Models of God in Religious Language* (1982) she maintains that all language about God is metaphorical. Names and titles ('father', 'king', etc.) are simply ways in which we think about God. They say very little about God's true nature. The metaphors used often turn into idols: we end up worshipping the metaphor instead of God. However, all metaphors miss the mark and many metaphors become outdated with time. McFague wants to provide new metaphors for understanding God in ways that are meaningful today. By using the metaphor of God as Mother, she is not saying that God is a Mother (or even female) but that the image of 'mother' highlights certain characteristics of God (such as love for the world). McFague develops a metaphor of the world as God's body. She goes on to develop three metaphors for God's relationship with the world. The metaphors correspond to three Christian doctrines, three ethical elements and three types of love:

**Mother:** corresponding to the traditional title, 'Father'; the doctrine of creation; the ethical element of justice; and *agape* love (selfless love), the type of love God has for the world.

**Lover:** corresponding to the traditional title 'Son'; the doctrine of salvation, the ethical element of healing; and *eros* (desire), the way in which God's love works in the world.

**Friend:** corresponding to the traditional title 'Spirit'; the doctrine of eschatology; the ethical element of companionship; and *philia* (companionship), the way in which humans should interact in the world.

According to McFague, masculine language conveying God's unilateral, sovereign rule has led to the abuse of the natural world and the domination of women by men. If God is called 'Mother', it follows, for McFague that the world is no longer ruled over by God, but is part of God's body or womb. Thus to harm nature is to harm God. This belief is known as **panentheism**. McFague argues that maternal images of God 'giving birth, nursing, comforting, and caring' highlight humanity's complete reliance on God. It is important, however, that God should be seen in female, not feminine terms, because 'the first refers to gender while the second refers to qualities conventionally associated with women. Thus, the feminine side of God is taken to comprise the tender, nurturing, passive, healing aspects of Divine activity, whereas those activities in which God creates, redeems, establishes peace, administers justice, and so on, are called masculine'

She also warns against sentimentalising maternal imagery. We cannot suppose that mothers are 'naturally' loving, comforting or self-sacrificing. These qualities are in fact social constructions: society wants women to think that they are biologically programmed to be these things. Rather, the metaphor of God as mother focuses 'on the most basic things that females (as mothers) do: ... give birth, feed and protect the young, want the young to flourish'.

While some theologians have welcomed McFague's concept of God as mother, others have rejected it as unbiblical. Jesus asserted that God was 'Father'. If he was wrong on this fundamental point, how can we trust him on anything? Moreover, in specific relation to Jesus, the terms 'father' and 'mother' are not interchangeable terms, because clearly Jesus' mother was Mary.

**Answer the following in an essay-style, (a continuous piece of prose with a clear conclusion).**

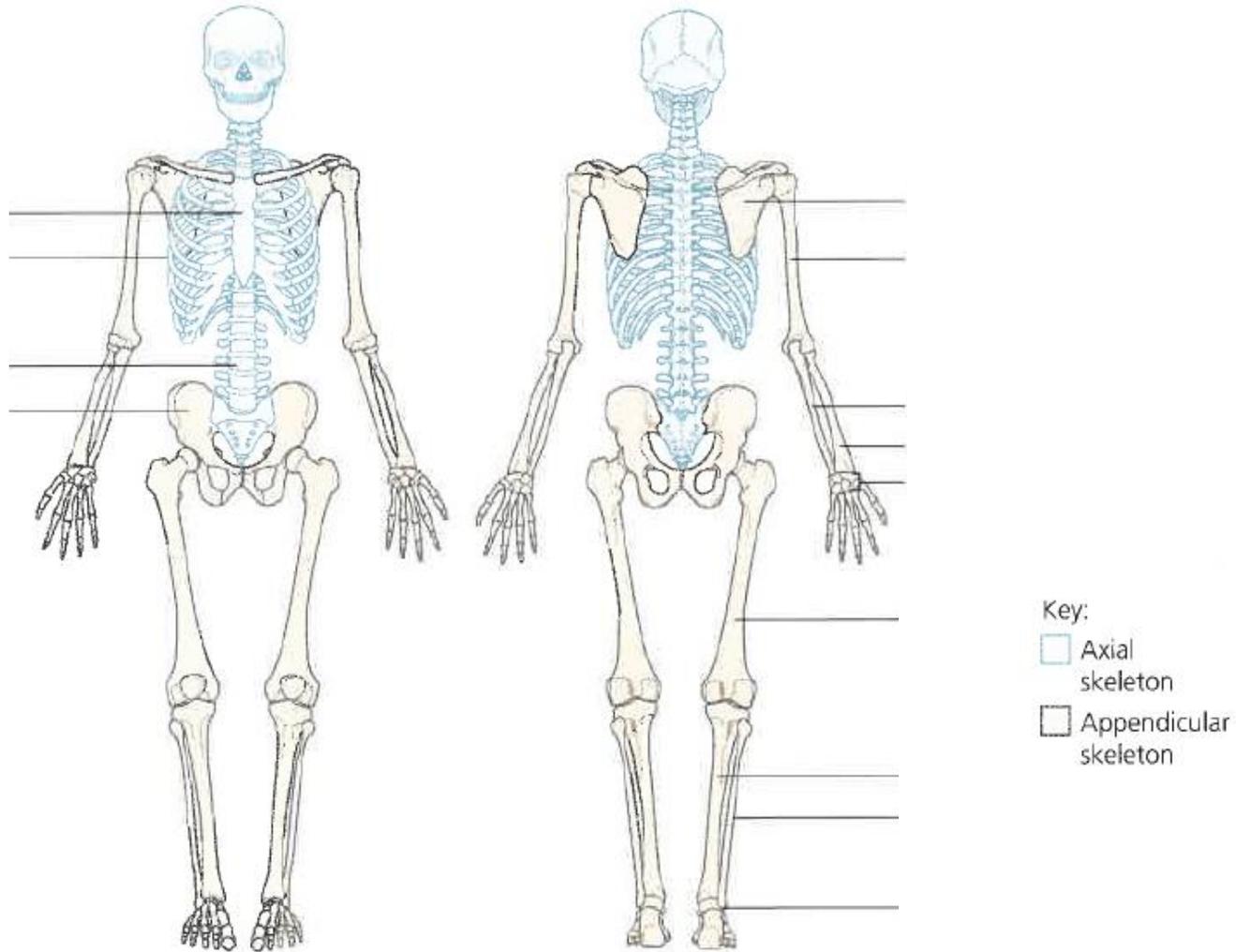
**A minimum of 500 words is expected.**

*'It is now, more valid, to refer to God as Mother.'*  
Evaluate this view.

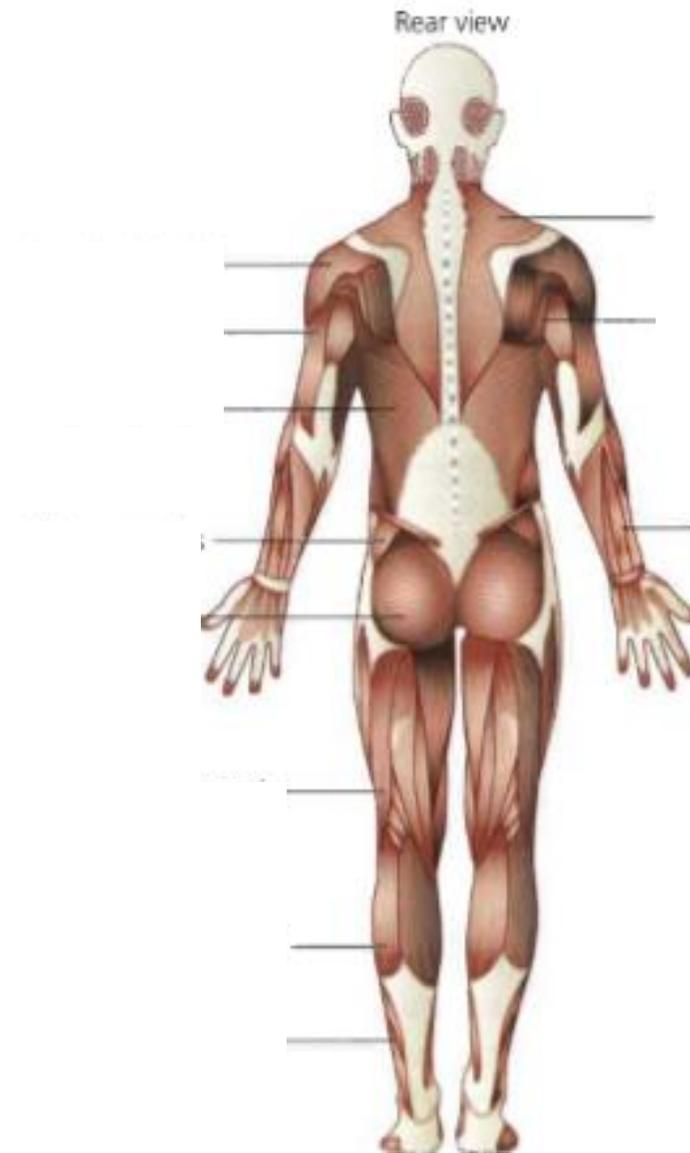
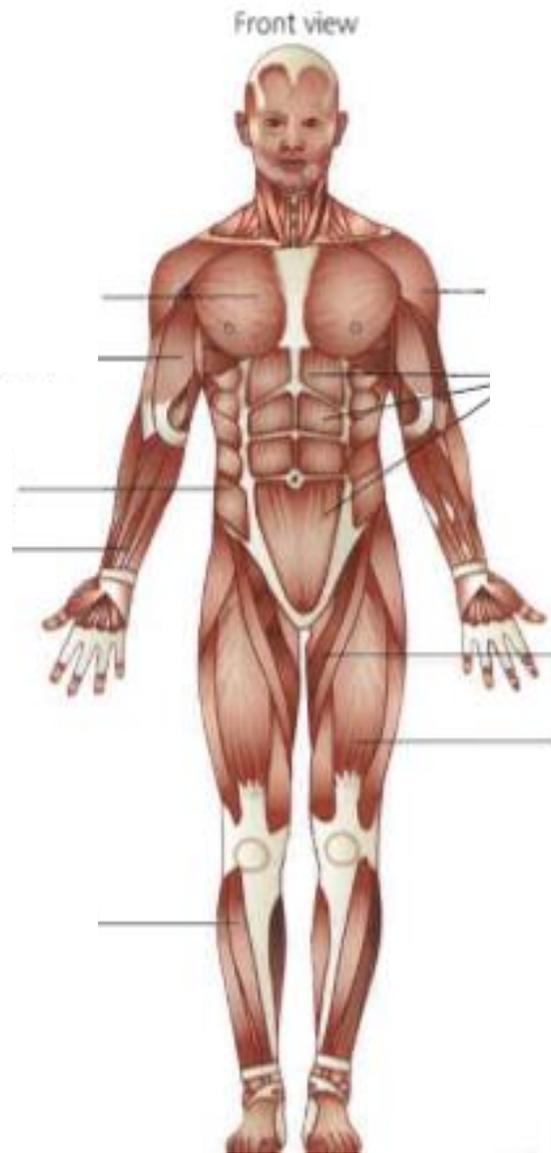
## Physical Education A Level

You will need to research and annotate the following diagrams and bring these to your first PE lesson – ensure you complete all 4 tasks.

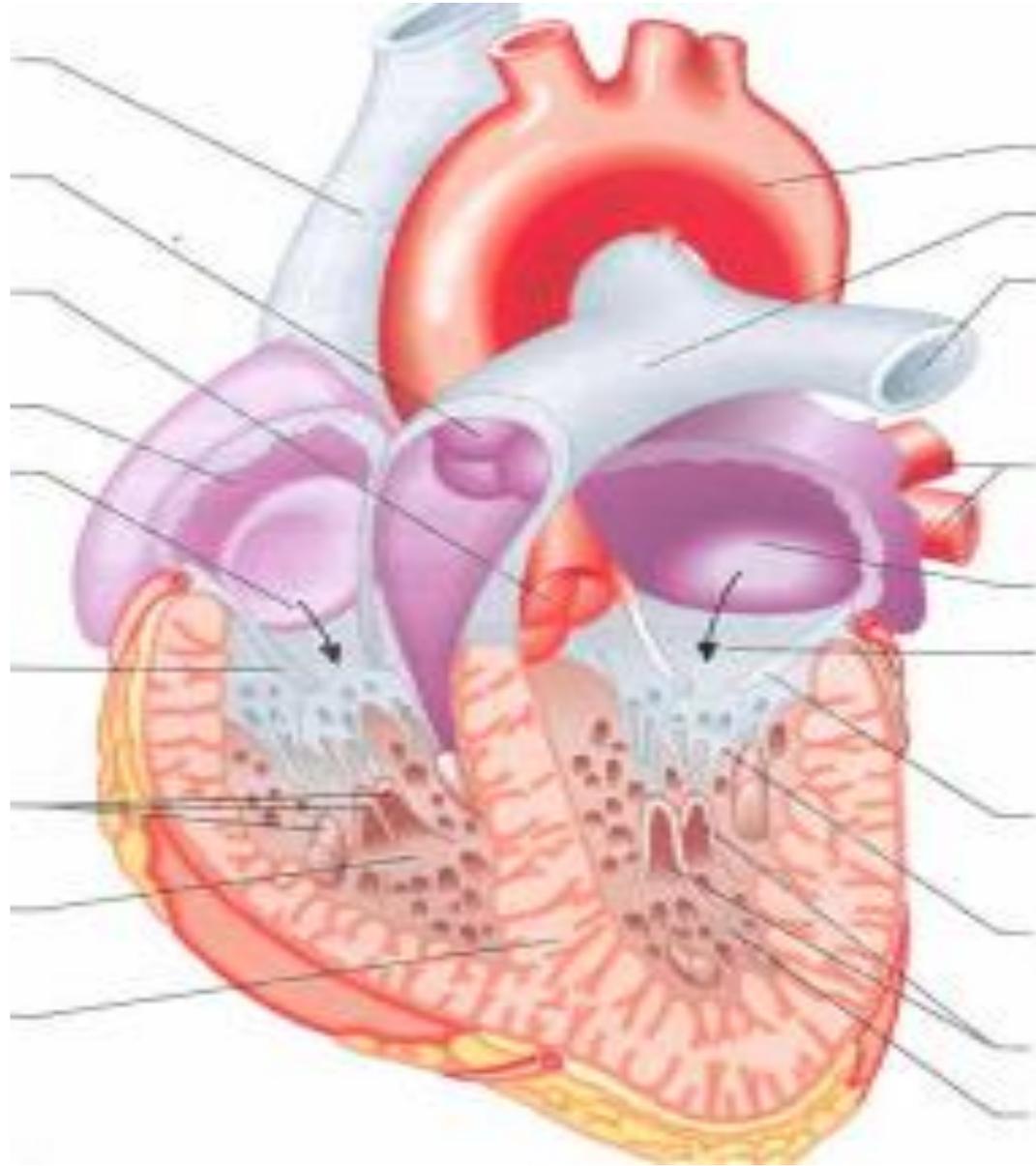
Task 1 – Anatomy of the Skeletal System.



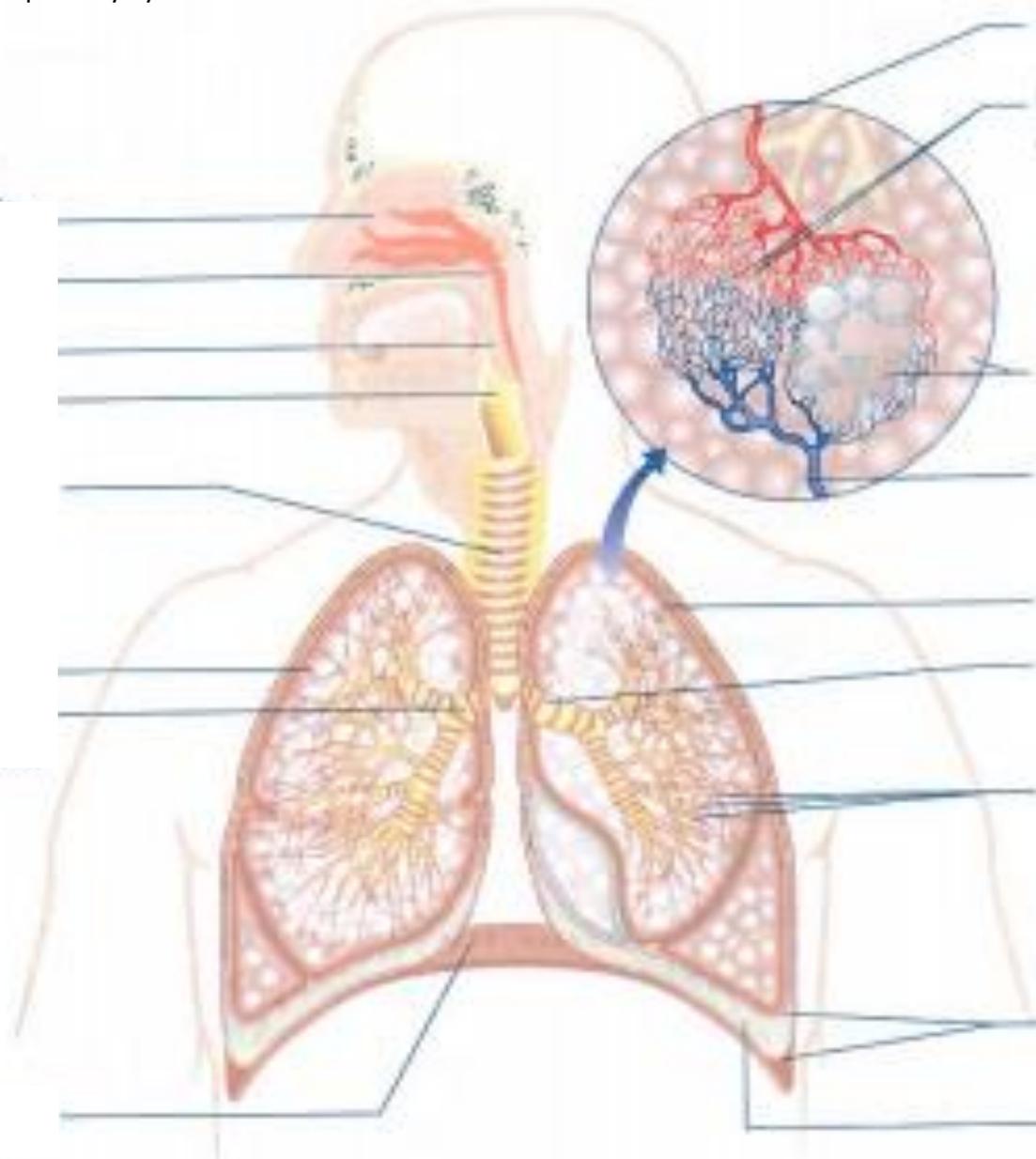
Task 2 – Anatomy of the Muscular System



Task 3 – Anatomy of the Heart



Task 4 – Anatomy of the Respiratory System



## Physics A Level

Thank you for choosing to enrol onto the Physics A level course. There are three activities for you to complete before your first lesson next week.

### First Activity

The first activity is a simple maths assessment to identify which, if any, areas you will need to concentrate on improving in the first week. The maths assessment is GCSE standard and focuses on:

- rearranging equations
- simple trigonometry
- calculations

since these are the basics that must be mastered in order to solve A Level Physics problems.

1. Complete the attached maths question sheet. It is important that you show all your working out.

### Second Activity

The first topic we are starting with is Materials, the first part of which is density.

We would like you to follow the links below and watch the two on-line videos.

1. 1<sup>st</sup> Video – concerns the difference between mass and weight.  
After watching this video write down what is meant by the words “mass” and “weight”.  
Link: <https://www.youtube.com/watch?v= Z0X0yE8Ioc>
2. 2<sup>nd</sup> Video – concerns buoyancy.  
After watching this video, and carrying out any other research, write down an explanation of why objects float in water.  
Link: [https://www.youtube.com/watch?v=C\\_covjclcZ4](https://www.youtube.com/watch?v=C_covjclcZ4)
3. Write down a prediction, with an explanation, for what will happen in the following situations:
  - a. A beaker is filled up to the brim with a mixture of water and ice cubes. What will happen to the water level in the beaker when the ice melts?
  - b. What difference, if any, would it make to whether the water level changes or not if the water in the beaker was salty?

### Third activity

Come prepared for the lesson – this means you will need a pen, pencil, 30cm ruler, scientific calculator and an A4 ring binder with A4 paper in it.

# Physics A Level – Maths for Physics Pre-Assessment

Name: \_\_\_\_\_

Mark /24

Percentage \_\_\_\_%

## Calculations

Using your calculator, perform the following calculations, writing your answer in **standard index form** to **3 significant figures**:

1)  $(6.21 \times 10^{12}) \times (3.52 \times 10^{19}) =$  .....

2)  $(4.31 \times 10^{14}) \times (6.63 \times 10^{34}) =$  .....

3)  $(2.79 \times 10^{51}) / (3.95 \times 10^{12}) =$  .....

4)  $(7.25 \times 10^6)^2 / (8.18 \times 10^{41}) =$  .....

5)  $(5.51 \times 10^{11}) / (8.37 \times 10^{12} + 1.86 \times 10^{11}) =$  .....

6)  $(2.75 \times 10^6)^3 / (6.65 \times 10^{-6}) =$  .....

(6)

7) Calculate the percentage increase in a value that changes from 22.1 to 25.6.  
Give your answer to 2 significant figures

Percentage increase = .....

## Formula rearrangement

8) Rearrange the equation  $c = f\lambda$  to make  $\lambda$  the subject:

a  $\lambda = cf$

b  $\lambda = \frac{f}{c}$

c  $\lambda = \frac{c}{f}$

d  $\lambda = \frac{1}{cf}$

e don't know

9) Rearrange the equation  $P = \frac{F}{A}$  to make  $A$  the subject:

a  $A = \frac{P}{F}$

b  $A = \frac{F}{P}$

c  $A = FP$

d Don't know

10) Rearrange the equation  $w = \frac{\lambda D}{s}$  to make  $D$  the subject:

a  $D = \frac{\lambda w}{s}$

b  $D = \frac{w}{\lambda s}$

c  $D = \frac{ws}{\lambda}$

d  $D = \frac{s}{\lambda w}$

e Don't know

11) Rearrange the equation  $v = u + at$  to make  $a$  the subject:

a  $a = v - u + t$

b  $a = \frac{v - u}{t}$

c  $a = \frac{v}{t} - u$

d  $a = \frac{v}{u + t}$

e Don't know

12) Rearrange the equation  $E = \frac{1}{2}mv^2$  to make  $m$  the subject:

a  $m = \frac{E}{2v^2}$

b  $m = \frac{2E}{v^2}$

c  $m = \sqrt{\frac{E}{2v}}$

d  $m = \sqrt{\frac{2E}{v}}$

e don't know

13) Rearrange the equation  $P = I^2R$  to make  $I$  the subject:

a  $I = \frac{P}{R}$

b  $I = \sqrt{\frac{P}{R}}$

c  $I = \sqrt{P - R}$

d  $I = \frac{\sqrt{P}}{R}$

e don't know

13) Rearrange the equation  $\varepsilon = IR + Ir$  to make  $r$  the subject:

a  $r = \varepsilon - R$

b  $r = \frac{\varepsilon}{I^2R}$

c  $r = \frac{\varepsilon}{I} - R$

d  $r = \frac{\varepsilon - R}{I}$

e don't know

14) Rearrange the equation  $p = \frac{1}{3} Nmc^2$  to make  $c$  the subject:

a  $c = \sqrt{\frac{p}{3Nm}}$

b  $c = \frac{3p}{Nm}$

c  $c = \frac{\sqrt{\frac{p}{3}}}{Nm}$

d  $c = \sqrt{\frac{3p}{Nm}}$

e don't know

15) Rearrange the equation  $s = ut + \frac{1}{2} at^2$  to make  $a$  the subject:

a  $a = \frac{2(s - ut)}{t^2}$

b  $a = \frac{2s - 2u}{t}$

c  $a = \frac{2s - ut}{t^2}$

d  $a = \frac{s}{2t^2} - ut$

e don't know

(9)

### Handling Units

Calculate the answers to the following questions and express your answer in the REQUIRED units.

16) Calculate the area of a rectangle with sides of 11.2 mm and 13.2 cm.

Give your answer in  $m^2$ .

A = .....  $m^2$

17) Calculate the area of a circle with a diameter of 15 mm.

Give your answer in  $\text{m}^2$ .

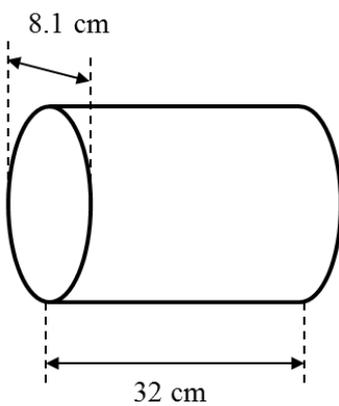
(Area of a circle, A, is given by  $A = \pi r^2$ )

A = .....  $\text{m}^2$

18) Calculate the volume of the cylinder shown in the diagram.

Give your answer in  $\text{m}^3$ .

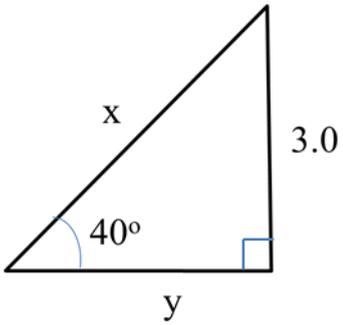
(The volume of a cylinder, V, is given by  $V = \pi r^2 h$ )



V = .....  $\text{m}^3$

## Simple trigonometry

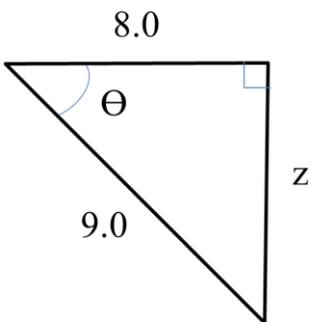
Calculate  $x$  and  $y$  in the triangle below.



19.  $x = \dots\dots\dots$

20.  $y = \dots\dots\dots$

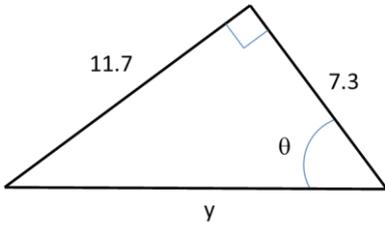
Calculate  $z$  and  $\theta$  in the triangle below.



21.  $z = \dots\dots\dots$

22.  $\theta = \dots\dots\dots$

Calculate  $y$  and  $\theta$  in the triangle below.



23.  $y = \dots\dots\dots$

24.  $\theta = \dots\dots\dots$

(6)

**END OF QUESTIONS**

# Politics A Level

Politics is now a linear course (examined at the end of 2 years) and our exam board is Edexcel. We do not expect students to know anything about the course when they start but if you would like to get a head start you should at least use the essential reading and then try one or two of the other suggestions.

## Essential Reading:

Immerse yourself in the news as much as possible. Sign up to free news sites e.g. [www.bbc.co.uk/news](http://www.bbc.co.uk/news) and read a newspaper to look for articles related to law e.g. The Guardian or The Telegraph

## Extended reading:

King, A. *Who Govern's Britain?*

## Fiction

Tressell, R. *The Ragged Trousered Philanthropist*

Orwell, G. *1984*



## Audio:

Today programme Radio 4 (<http://news.bbc.co.uk/today/hi/default.stm>)

<http://www.bbc.co.uk/newsbeat/topics/politics>

## Film/TV:

Question Time <http://www.bbc.co.uk/programmes/b006t1q9>

This Week <http://www.bbc.co.uk/programmes/b006mvhd>

Last Week Tonight (with John Oliver) US Politics – Comedy Channel/youtube

## Websites

<http://www.parliament.uk/>

<https://www.gov.uk/government/organisations/prime-ministers-office-10-downing-street>

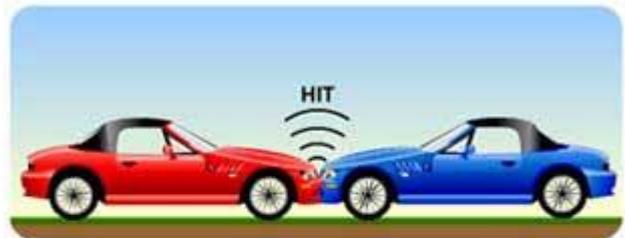
# Psychology A Level

Please complete the following tasks in preparation for your first Psychology lesson on Tuesday 3<sup>rd</sup> September. Your teacher will collect in this work.

Access the following website: <https://www.simplypsychology.org/loftus-palmer.html>

Read the information on Loftus and Palmer's study and answer the following questions:

1. What was the aim of this study?
2. What Procedure was used in this study?



3. What were the findings from this study?
4. What were the conclusions from this study?



5. Summarise Experiment 2.
6. Outline 2 criticisms of these studies.

If you have problems accessing this website, do a search on Loftus and Palmer (Eye Witness Testimony) as the information is widely available on the internet.

## Psychology BTEC (Applied Psychology)

Complete the following questions before your first lesson – make sure you bring your work in with you so that your teacher can take it in and check your responses.

1. What is Psychology? Research an approved definition and notes what you find below.

2. Complete the table below. Use the following website to help you:

<https://www.simplypsychology.org/a-level-approaches.html#cog>

| Psychological approach  | What are the main assumptions of this approach? |
|-------------------------|---|
| The cognitive approach  |   |
| The social approach     |   |
| The learning approach   |   |
| The biological approach |   |

# Sociology A Level

**Sociology** is the study of human social life. There are many different aspects of Sociology to address, so you must be curious and attentive to looking at the world in a different way!



Look at this photograph the other way; not everything is as it seems!

There is usually another way of looking at things – and that is what we do as sociologists. We take normal, taken-for-granted life and turn it upside down, looking for meanings and very often we end up seeing things very differently.

## Social Change

The social world is changing. Some argue it is growing; others say it is shrinking. The important point to grasp is: society does not remain static over time; it constantly changes – Through decades, centuries; and across countries, societies.

### Task 1

Think of 3 different ways society has changed over the last 100yrs.

.....

.....

.....

.....

Name three ways in which British society is different to another (America, Italy, Afghanistan etc)

Why has society changed? Why are societies different

## Norms

**Norms** are social rules that define correct and acceptable behaviour in a society or social group to which people are expected to conform. They are essential to human society. They guide and direct our behaviour and allow us both to understand and predict the behaviour of others.

Norms exist in all areas of social life. In Britain, being late for work or an appointment; jumping queues in supermarkets; never saying hello to friends are likely to be seen as rude or annoying because they are not following the norms of accepted behaviour.

Norms are usually enforced informally—by the disapproval of other people, embarrassment, or a ‘telling off’ from parents.

### **Task**

Think of some examples of how you behave differently for each of the environments below.

School:

Home:

Friend's house:

## Values

**Values** are less specific than norms. They are general guides for behaviour. Values are ideas and beliefs about what is ‘right’ and ‘wrong’ and about standards which are worth maintaining and achieving in any society. In Britain, values include beliefs about respect for human life, privacy and private property, about the importance of marriage and the importance of money and success.

**Task** What do you hold strong views on?



**B Answer the following questions in English**

- 1 What does Iñaki's father do? \_\_\_\_\_
- 2 What kind of district does Iñaki live in? \_\_\_\_\_
- 3 When did the school open? \_\_\_\_\_
- 4 What do a lot of people dislike about the school? \_\_\_\_\_
- 5 What does Iñaki's mother say when her children do badly at school? \_\_\_\_\_  
\_\_\_\_\_
- 6 What does Iñaki quarrel about with his brother and sister? \_\_\_\_\_
- 7 What did the family do when their father lost his job? \_\_\_\_\_
- 8 What effect did the experience have on the family? \_\_\_\_\_

**C. Write the correct form of the following verbs in the present tense in Spanish**

**Examples:**

*bailar (tú)*                      *bailas*

*cerrar (ellos)*                      *cierran*

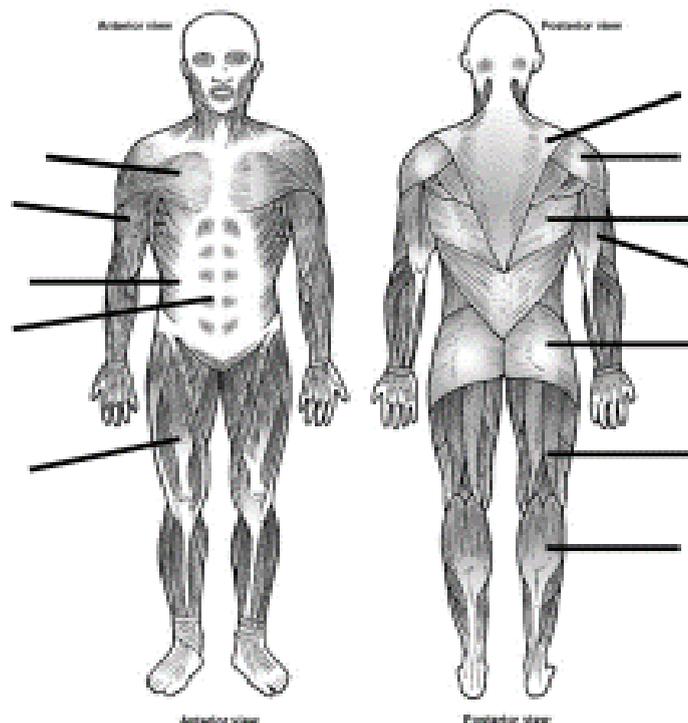
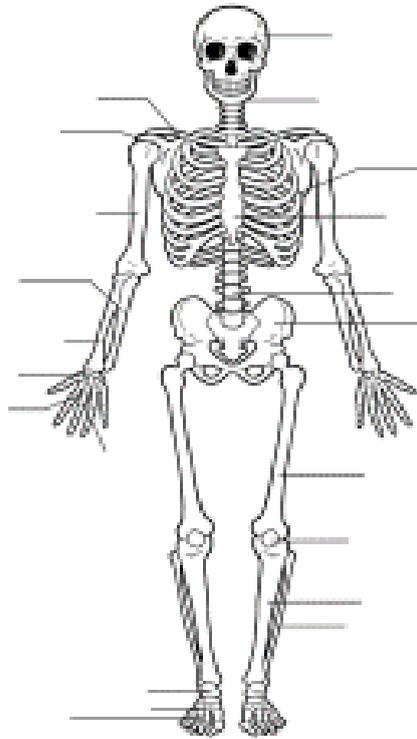
1. hablar (ellos) \_\_\_\_\_
2. comer (ella) \_\_\_\_\_
3. vivir (yo) \_\_\_\_\_
4. abrir (él) \_\_\_\_\_
5. cantar (nosotros) \_\_\_\_\_
6. vender (vosotras) \_\_\_\_\_
7. volver (tú) \_\_\_\_\_
8. dar (yo) \_\_\_\_\_
9. pedir (usted) \_\_\_\_\_
10. dormir (él) \_\_\_\_\_
11. hacer (yo) \_\_\_\_\_
12. ser (tú) \_\_\_\_\_
13. querer (ustedes) \_\_\_\_\_
14. conducir (yo) \_\_\_\_\_
15. empezar (ella) \_\_\_\_\_
16. seguir (ellos) \_\_\_\_\_
17. decir (yo) \_\_\_\_\_
18. lavarse (tú) \_\_\_\_\_
19. elegir (yo) \_\_\_\_\_
20. contribuir (él) \_\_\_\_\_

# Sport BTEC Extended Certificate

From September until January you will be studying Anatomy and Physiology in preparation for an external exam. In order to prepare you for lessons, please take time to complete the following tasks.

Task 1 – Label the skeleton and learn the names of the identified bones.

Task 2 – Label the muscle man and learn the names of the identified muscles.



Task 3 – Adam is a long distance runner, he is about to complete a 10K race. What initial responses would you expect to see in Adam in relation to the following body systems when he begins to exercise?

a) Cardiovascular System

Why?

b) Respiratory System

Why?

Task 4 – Define the following terms and provide an example:

a) Isometric Contractions:

b) Concentric Contractions

c) Eccentric Contractions

Task 5 – Identify five functions of the Cardiovascular System

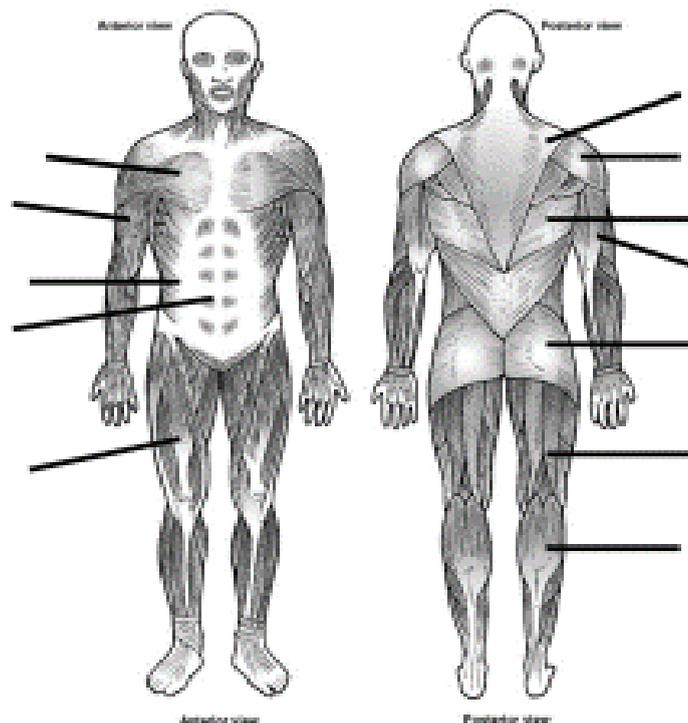
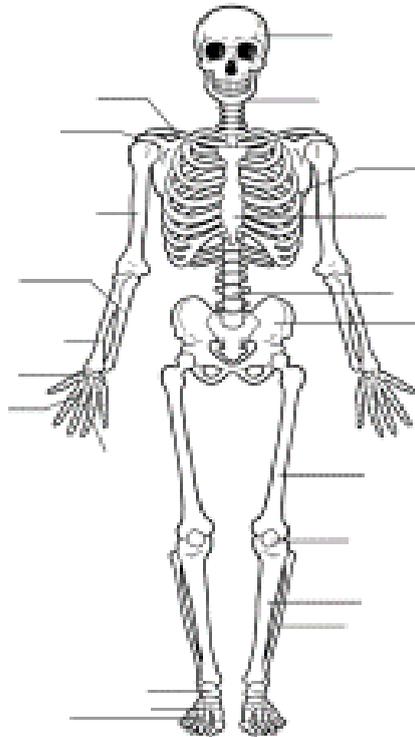
From January to May you will complete an internal assessment on Practical Sports Performance. Use this space below to discuss your experience/achievements in one team and one individual sport.

# Sport and Exercise Science BTEC Extended Diploma

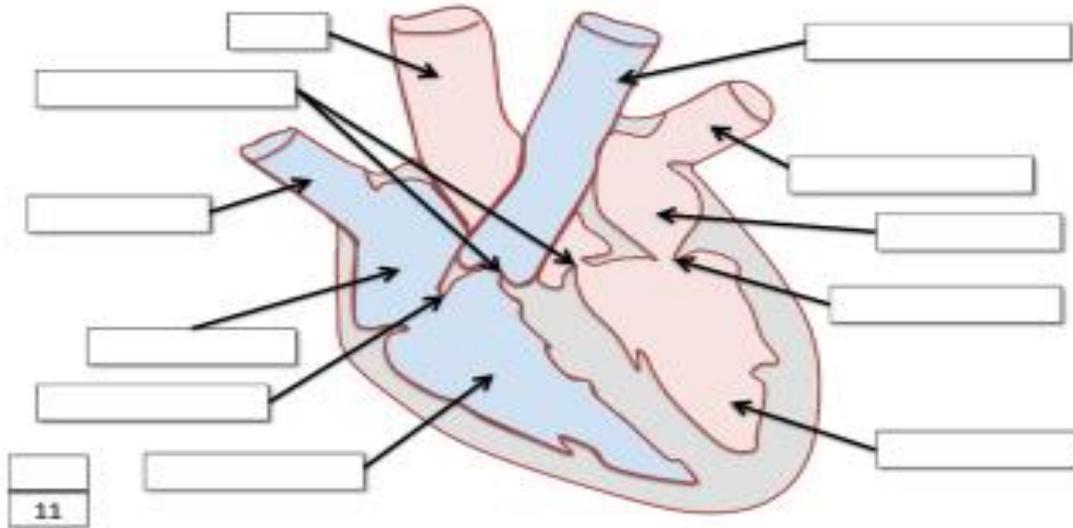
From September until January you will be studying Anatomy and Physiology in preparation for an external exam. In order to prepare you for lessons, please take time to complete the following tasks.

Task 1 – Label the skeleton and learn the names of the identified bones.

Task 2 – Label the muscle man and learn the names of the identified muscles.



Task 3 – Label the heart:

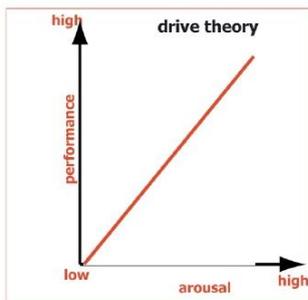


Task 4 – Define the following terms and provide examples:

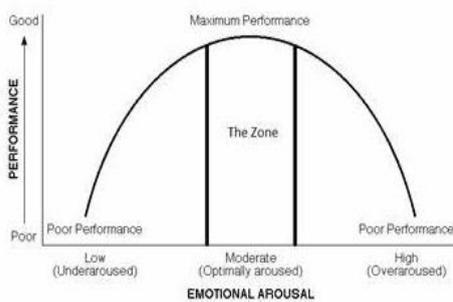
- a) Extrinsic motivation
- b) Intrinsic motivation

Task 5 – Describe the following theories of arousal.

- a) Drive theory



- b) Inverted-U hypothesis



## Statistics A Level

It will be beneficial to read through these examples and try the associated questions in advance of the start of your course. You will be required to hand this in during your first statistics lesson for marking.

### Frequency Tables

1. This frequency table shows data concerning some horses in paddocks. Answer the questions below in the spaces provided, using the spare column in the table to make clear your method of calculating the mean.

| No. of horses in paddocks | No. of paddocks with this number of horses |  |
|---------------------------|--|--|
| 0                         | 2  |  |
| 1                         | 4  |  |
| 2                         | 9  |  |
| 3                         | 7  |  |
| 4                         | 6  |  |
| 5                         | 1  |  |
| 6                         | 1  |  |
|                           |  |  |

- How many empty paddocks were there?
- How many paddocks were there altogether?
- How many horses were there altogether?
- What was the mean number of horses per paddock?
- What was the modal number of horses per paddock?

2. Elen and Jordanna are conducting an experiment on parasitic bacteria. This frequency table shows the number of bacteria in a petri dish at the end of the experiment:

| Number of bacteria (hundreds) | Midpoint | No. of petri dishes with this number of bacteria |  |
|-------------------------------|----------|--|--|
| 1 – 5                         |          | 0  |  |
| 6 – 10                        |          | 1  |  |
| 11 – 15                       |          | 2  |  |
| 16 – 20                       |          | 8  |  |
| 21 – 25                       |          | 10   |  |
| 26 – 30                       |          | 12   |  |
| 31 – 35                       |          | 4  |  |
| 36 – 40                       |          | 3  |  |
|                               |          |  |  |

- Calculate an estimate of the mean number of bacteria, using the spare columns in the table to make the method clear.
- Why is this only an estimate of the mean number of bacteria in a petri dish?

## Probability

3) Ali asked 200 students which sport they like best. They could choose swimming or tennis or athletics. The two-way table shows some information about their answers.

|        | Swimming | Tennis | Athletics | Total |
|--------|----------|--------|-----------|-------|
| Female |          |        | 19        |       |
| Male   | 36       | 42     |           |       |
| Total  | 79       |        | 54        | 200   |

Complete the two-way table.

One of the students is chosen at random.

Find the probability that:

- (i) the student likes tennis
- (ii) the student is male and likes athletics

4. In a packet of cornflower seeds, 80% are a blue-flowering variety and 20% are white flowering. 90% of the blue-flowering variety germinates and 70% of the white-flowering variety germinates.

- a) Show this on a probability tree.
- b) What proportion of the seeds overall germinate?

5. A student is chosen at random from a class of 8 girls and 11 boys.

Two of the girls and 4 of the boys cycle to college.

Let G: chosen student is a girl

Let C: chosen student cycles to college

Draw this information on a Venn diagram.

## Algebra

6. A formula is given by  $P = \frac{1}{3}(A + 2B + 3C)$ . Given that  $A = 1.2$ ,  $B = 3.2$  and  $C = 5.4$ , calculate  $P$  to 3 significant figures.

7. Solve for  $x$ :  $45.1 = 56.4 - 1.85x$

# Travel & Tourism – BTEC Certificate & Subsidiary Diploma

Research and write in *your own words* the meaning of the following key travel and tourism terms and state a UK example.

| <b>Key Term</b>                   | <b>Definition</b> | <b>Example (UK)</b> |
|-----------------------------------|-------------------|---------------------|
| <b>Inbound tourism</b>            |                   |                     |
| <b>Domestic tourism</b>           |                   |                     |
| <b>Outbound tourism</b>           |                   |                     |
| <b>Serviced Accommodation</b>     |                   |                     |
| <b>Non Serviced Accommodation</b> |                   |                     |
| <b>Tourists Attraction</b>        |                   |                     |
| <b>Tour Operator</b>              |                   |                     |
| <b>Travel Agent</b>               |                   |                     |
| <b>Tourist Information Centre</b> |                   |                     |
| <b>Customer Service</b>           |                   |                     |

|  |  |  |
|--|--|--|
| <b>Package holiday</b>   |  |  |
| <b>ATOL</b><br><i>Air Travel<br/>Organiser's<br/>Licence</i>                           |  |  |
| <b>ABTA</b><br><i>Association of<br/>British Travel<br/>Agents</i>                     |  |  |
| <b>Visit Britain<br/>Tourist Board</b>   |  |  |
| <b>Hotel</b>   |  |  |
| <b>Cruise</b>  |  |  |
| <b>Low-cost airline</b>  |  |  |
| <b>Scheduled<br/>airline</b>   |  |  |
| <b>Chartered<br/>airline</b>   |  |  |
| <b>CAA</b><br><i>Civil Aviation<br/>Authority</i>                                      |  |  |
| <b>VFR</b><br><i>Visiting Friends<br/>and Relatives as<br/>a reason for<br/>travel</i> |  |  |