

Summer Independent Learning

Subject/Group	BTEC Extended Diploma in Health and Social Care (Y12-Y13)
Topic	Anatomy and Physiology and Enquiries into Current Research
Timescale	15 hours
To be completed by	This work must be completed and handed in to your subject teacher on the first day of term.

Part 1: Background Information/Context - Anatomy and Physiology

In this unit, you will explore the structure and function of the human body and how its systems work together to maintain health. You will develop an understanding of cells and how the body is organised, before building knowledge of key systems including the skeletal, muscular, cardiovascular, respiratory, and digestive systems.

You will also learn about energy metabolism and homeostasis and examine how common disorders can affect normal body functioning. In addition, you will explore human reproduction, including conception, prenatal development, and the factors that can influence development before birth.

This unit provides essential knowledge for progression into a wide range of health and social care careers and higher education courses.

This unit will be externally assessed through a 90-minute exam in January 2027.

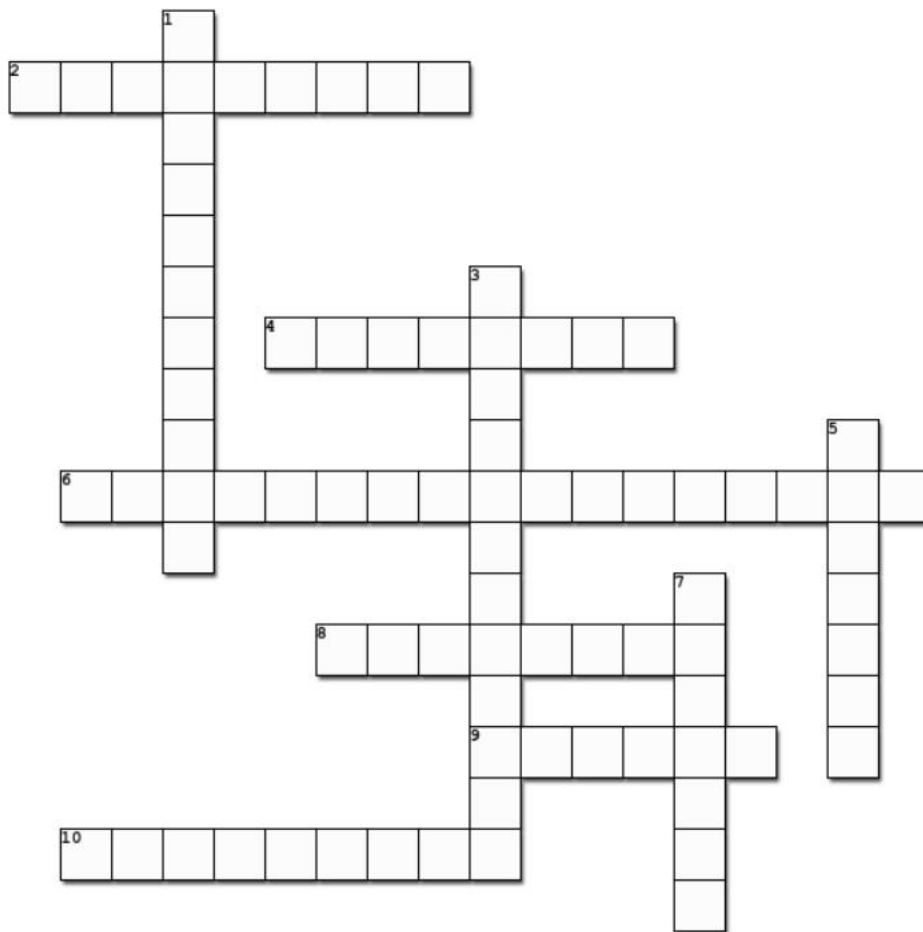
****If you have difficulty in accessing IT resources to produce this work, you may complete it by hand, making sure you write clearly and neatly.**

Use reliable and valid sources for your research – *DO NOT use AI and DO NOT copy information directly from a website – this is plagiarism.*

Task 1: Body Systems Crossword

Anatomy and Physiology

Complete the crossword puzzle below



Created using the Crossword Maker on TheTeachersCorner.net

Across

2. This system is responsible for breaking down food for energy: ____ system.
4. The primary function of the ____ system is to support and protect the body.
6. The system that circulates blood throughout the body is the ____.
8. The ____ system is essential for movement and is composed of muscles.
9. The body's defense against infections is managed by the ____ system.
10. The ____ system regulates hormones and controls various body functions.

Down

1. Gas exchange in the body occurs in the ____ system.
3. The ____ system plays a crucial role in producing and transporting gametes.
5. The ____ system controls and coordinates body activities through nerve impulses.
7. The ____ system is responsible for the removal of waste products from the body.

Task 2: Explaining body systems in practice

Scenario: You are working in a health or social care setting. A service user has asked you to explain how different body systems work and why they are important. You are therefore required to create a communication resource such as a presentation or a detailed leaflet or poster (per body system) that explains the structure and function of these body systems for a non-specialist audience.

You **must** include the following body systems: lymphatic system, endocrine and renal systems, immune system, and the respiratory system.

You **could also** include the following body systems: nervous system, musculoskeletal system, digestive system, cardiovascular system

For each body system, you need to include:

1. Structure and Function

- Identify the main organs/components of the system
- Explain its key functions
- Describe how the system works (processes explained clearly)

2. Application to Health and Care

- Explain why this system is important for maintaining health
- Link the system to a real-life health condition (e.g., asthma, diabetes, heart disease)
- Describe how the condition affects the system

3. Interdependence

- Explain how your chosen system works with at least one other body system

4. Health Promotion

- Provide practical advice on how individuals can maintain a healthy system

Task 3: Homeostasis

Homeostasis keeps the body's internal conditions constant, so cells can function normally and avoid damage.

Negative feedback is a control process that keeps a mechanism in the body, like temperature, within a set range. When a change in the condition is detected, it triggers a response that reverses the change and restores the condition to its normal level.

Produce **THREE** separate negative feedback loops on the following:

- Thermoregulation
- Osmoregulation
- Blood glucose regulation

Task 4: Data Analysis in Anatomy and Physiology

The Anatomy and Physiology exam will include at least one data analysis question.

Complete the questions below:

- a. Heart and circulatory diseases cause a quarter of all deaths in the UK; that's more than 160,000 deaths each year – an average of 460 deaths each day or one every three minutes in the UK.

There are around 7.6 million people living with a heart or circulatory disease in the UK: 4 million men and 3.6 million women.

(Source: British Heart Foundation – Facts and Figures)

What percentage of people in the UK living with heart disease are women?

Show your working.

(2 marks)

- b. Chronic Obstructive Pulmonary Disease (COPD) and Asthma in England.

Chronic Obstructive Pulmonary Disease (COPD) is the fifth biggest killer disease in the UK, killing approximately 25,000 people a year in England. Premature mortality from COPD in England was almost twice as high as the European (EU-15) average in 2008 and premature mortality for asthma was over 1.5 times higher.

Although deaths from asthma have remained at between 1000 and 1200 deaths a year since 2000, it is estimated that 90% of deaths are associated with preventable factors.

Almost 40% of these deaths are in the under 75 age group. Asthma is also responsible for large numbers of hospital admissions, the majority of which are emergency admissions.

(Source: Crown copyright 2011)

(i) Compare the mortality statistics for COPD and asthma in the article above. (2 marks)

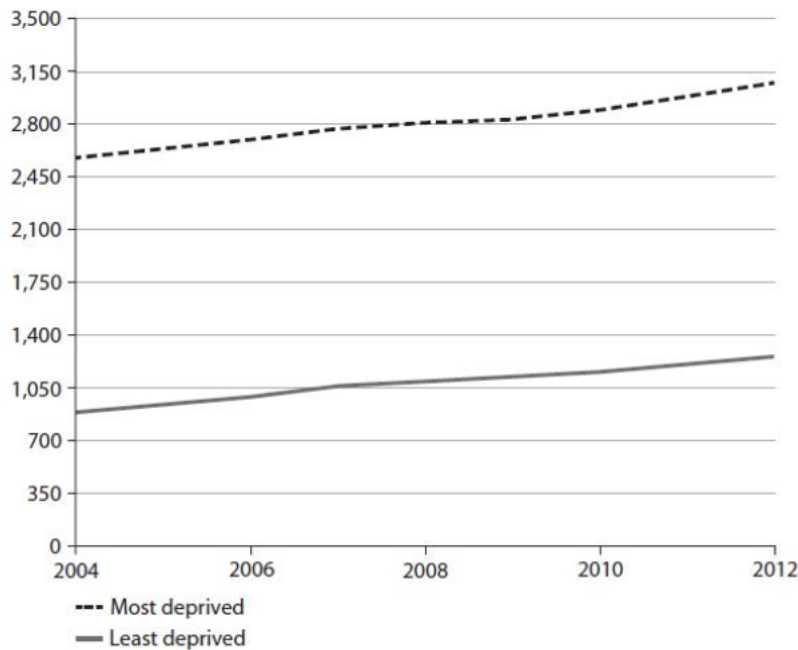
(ii) Explain differences in incidences of COPD and asthma. (4 marks)

- c. The data for this question results from a three-year epidemiological research project – 'The respiratory health of the nation' – funded by the British Lung Foundation.

The research project team used The Health Improvement Network (THIN) database records for 2004-13 to estimate prevalence and incidence data. These 12.6 million patient records from 591 GP surgeries represent a sample of approximately 5% of the population. The team then scaled up the results to estimate prevalence in the whole population.

The research project team obtained mortality data from the Office for National Statistics for England and Wales, the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency.

Number of people per 100,000 ever diagnosed with Chronic Obstructive Pulmonary Disorder (COPD), by standard of living, 2004 -12



(Source: British Lung Foundation)

Compare the change in COPD rates between the most and least deprived groups in society.
(4 marks)

Part 2: Background Information/Context - Enquiries into Current Research

In this unit, you will explore how research is used to improve health and social care practice. You will learn about different research methods, how data is collected, and the ethical issues that must be considered when carrying out research.

You will investigate a contemporary issue within the sector, review existing research, and develop your own enquiry skills by carrying out secondary research. You will also consider how research findings can improve services and outcomes for individuals and make recommendations for future research.

This unit helps you develop important analytical and research skills that support progression into higher education and careers in health and social care.

This unit will be externally assessed through a 3-hour exam in January 2027.

Use reliable and valid sources for your research – *DO NOT use AI and DO NOT copy information directly from a website – this is plagiarism.*

Instructions:

- Complete all FOUR tasks in full.

- You need to hand write your answers for all four tasks, ***unless you are entitled to use computer/laptop as part of your access arrangements.*** You must write on A4 lined paper.

Task 1: Purpose of Research

The purpose of research is to find out information or gain knowledge. Research is a systematic or orderly procedure that explores issues to establish facts or reach new conclusions.

- Provide an example for each purpose from health and social care research in the UK. You must include website details; title of research, and a summary of what the research is about.

	Identify the purpose	Example from H&SC research in the UK, include website details, title of research and a summary of what it is about.
1	Improving outcomes for people using health and social care services	
2	Informing policy and practice in health and social care	
3	Extending knowledge and understanding of health and social care	
4	Identifying gaps in provision in health and social care	

Task 2: Advantages and Disadvantages of Research Methods

- Answer the following questions:

Explain one benefit of having qualitative data from research.	
Which research methods are easy to use? Give reasons.	
What does it mean when a research method is cost effective?	
What is the disadvantage of only having quantitative data ?	
What is the advantage of having a small sample size?	
Give two advantages for using non-participant observations.	
Give two disadvantages of using checklists as a research method.	
Give one advantage of using surveys to conduct online research.	
Give one disadvantage of using structured interviews.	

Task 3: Activity 1 Exam Question

You are now expected answer the Activity 1 exam question, referring to the research article on the next page, titled: "Access to school mental health service improving, but challenges remain".

Activity 1 Exam Question How have the different methods references in the article been used to research the issue? In your answer, you should consider: • Suitability of the research methods
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- | |
|--|
| <ul style="list-style-type: none">• Reliability and validity of the research methods |
|--|

- In order for you to be able to answer this question, you need to carry out research to gather evidence to include in your response.
- Follow ALL of the steps below, completing each step fully before you move to the next step.
- Once you have completed step 4, only then will you be able to answer the above exam question in detail.
- You **must produce detailed notes for step 4.**

Writing your answer:

- Your answer to this exam question **MUST BE HANDWRITTEN**. You cannot type any of this answer unless you have exam access arrangements in place to use a computer.
- You will answer this question on A4 lined paper.
- The reason for this is simple: you will be hand writing your answers in the exam, which lasts for 3 hours.

Step 1 – READ, READ, READ the research article

- Become familiar with the research article.

Step 2 – Reading for Activity 1 Preparation ONLY

- Read it. Read it again. Read it again and again until you understand it and are able to identify key parts of it.
- Identify **ALL** the words you don't understand and **FIND** out their meaning. Get a dictionary and use it.
- Highlight any parts of the article that refer to **PRIMARY RESEARCH INCLUDING RESEARCH METHODS, SAMPLING AND RELIABILITY/VALIDITY**. All of these areas will need to be investigated in more detail for this exam question. Use a highlighter pen. Have different colours available.
- Make notes alongside the article or on separate sheet of paper/create a spider diagram on A3 paper.

Step 3 – Getting to know more about each research method identified from the article

- Find the original article using GOOGLE. You can do this by typing the title of the research article into the search bar.
- Using your annotated article, investigate EACH research method as full as possible. This means finding the original research that was completed, reading it and understanding how the method was used.
- Download it if you can and save it or bookmark it so you can find it easier next time

TIP! Use the hyperlinks that are provided on the last page of each article. Also, if the article states it is an easy-to-read version – find the original version

Step 4 – Answer the following questions (in note form)

- How many research methods have been used in this article? (don't forget to include sampling in here).
- What are the research methods?
- How have they been used?
- What are the reasons for using these research methods in this article?
- What are the advantages and disadvantages of each research method in the article.
 - Why?
 - What are the reasons?

Once all of these steps have been completed you are now ready to write your answer and answer the exam question.

Turn over for the article.

Access to school mental health services improving, but challenges remain

Published: 09 February 2023

The 'Trailblazer' programme, which aims to support children and young people's mental health, has had a positive impact. That's according to a newly-published study funded by the NIHR.

Trailblazer funds the creation of mental health support teams (MHSTs) for schools and colleges. A national programme, it aims to improve early intervention and access to support. It also promotes good mental health and wellbeing for all children and young people. It is jointly led by the Department of Health and Social Care, the Department for Education and NHS England.

The first MHSTs began delivering services in England in January 2020. They work in schools and colleges, helping staff promote emotional wellbeing for pupils. Their work helps them to build resilience and learn coping techniques and strategies.

They also support young people with mild to moderate mental health problems. This may be through tailored one-to-one and group activities. By April 2023 the aim is to have created around 400 teams. They will support approximately 3 million 5–18 year olds.

The new study covered Trailblazer's first three years. Researchers examined the set up and delivery of MHSTs in the first 25 areas set-up across England. Their analysis, [published in the NIHR Journals Library](#), includes:

- survey data from close to 300 schools and colleges
- interviews with 132 people involved in implementing MHSTs
- focus groups with children and young people.

It showed staff felt more confident talking to young people about mental health. Advice and support was much easier and quicker to access. It also led to stronger relationships between staff from different settings. This helped to speed up referrals and the ease of arranging multi-agency meetings.

Children and young people expressed how important they felt having someone to talk to about mental health was. They highlighted how they felt their concerns were listened to and staff would be able to help them. They mentioned how learning techniques helped them cope with stressful situations. They also highlighted how this helped them manage difficult experiences and feelings.

Concerns for some individuals and conditions

The study also highlighted challenges in Trailblazer's first three years. These included supporting children with more specialist needs and staff retention.

Concerns were raised about the suitability of cognitive behaviour therapy approaches for some individuals and conditions. Cultural and language barriers were among the challenges highlighted with this type of treatment. Schools and colleges welcomed investment in 'in-house' mental health support. Some felt frustrated MHSTs focused only on 'mild to moderate' mental health issues.

Another challenge was achieving a balance in the different types of service offered. Researchers found practitioners often spent most time supporting children with mental health problems. This was as opposed to working with colleagues to promote good emotional health.

Commenting on the analysis of Trailblazer's first three years, lead researcher Dr Jo Ellins, from the University of Birmingham, said: "Overall, children and young people who had contact with an MHST reported an overwhelmingly positive experience. Mental health services in schools and colleges are facing increased pressure, particularly following the pandemic, and the programme has significant potential. But teams may find it difficult to sustain activities focusing on promoting wellbeing, given the increasing demand for mental health support."

Professor Nicholas Mays from the London School of Hygiene & Tropical Medicine, a co-author of the report, added that: "Our findings suggest that the gap between the support that MHSTs are providing and the criteria for accessing specialist help may be widening as a result of the Covid-19 pandemic. Schools and colleges in particular were concerned about the lack of available support for children and young people whose mental health needs fell between these services."

Mental Health Minister Maria Caulfield said: "It's encouraging to see that Mental Health Support Teams are having a positive impact in schools, giving staff more confidence, improving access to advice and support, and strengthening relationships between schools and mental health services. This research shows there is room for improvement which I hope will be taken onboard as the number of Mental Health Support Teams will increase to almost 400 by April 2023. These will cover three million children and young people – part of an extra £2.3 billion a year investment into mental health services."

The analysis of the Trailblazer programme was funded by the NIHR's Health and Social Care Delivery Research Programme. The study was undertaken by the Birmingham, Research and Development (RAND) and Cambridge Evaluation (BRACE) Centre. Also involved were the Policy Innovation Research Unit (PIRU). Other partners included:

London School of Hygiene & Tropical Medicine

RAND Europe

The Primary Care Unit, University of Cambridge.

Hyperlinks related to the article:

<https://www.birmingham.ac.uk/documents/college-social-sciences/social-policy/brace/trailblazer.pdf>

<https://www.journalslibrary.nihr.ac.uk/hsdr/XQWU4117>

Learning Resources

Pearson and Tutor2u have produced several learning resources which will be useful for you. They have textbooks and revision guides designed to help you complete the course and achieve success in the exams and coursework. The resources include:

BTEC National Level 3 Health and Social Care Student Book 1

Publisher: Pearson

Author: Marilyn Billingham, Pamela Davenport, Hilary Talman, Nicola Matthews, Beryl Stretch, Elizabeth Haworth

ISBN: 9781292126012

BTEC National Level 3 Health and Social Care Student Book 2

Publisher: Pearson

Author: Carolyn Aldworth, Nicola Matthews, Sue Hocking, Pete Lawrence, Marjorie Snaith, Mary Whitehouse, Elizabeth Haworth

ISBN: 9781292126029

BTEC National Level 3 Health and Social Care Unit 3 Knowledge Book

Publisher: Tutor2u

SKU: 14-4130-30346-01