|  |  |
| --- | --- |
| A picture containing clipart  Description automatically generated**YEAR 13 Medical Science**  **‘An ambitious curriculum that meets the needs of all’**  **Medium Term Planning - Topic: Unit 4** | |
| **Curriculum Intent** | **In addition to working further on objectives from Year 12, pupils will be taught, following National Curriculum guidelines, the following this term:**  This unit develops knowledge and understanding about the science of medicines, and  how they work through their interactions with body systems. It also introduces cancer,  its relationship to genetics, and the range of therapeutic treatments available.  The unit will enable learners to provide information to a range of audiences on how  medicines work, to bring about effective treatment of diseases and disorders.  Medicines are the most common therapeutic intervention in healthcare. How are  medicines used to treat diseases? How do medicines work? What are the possible side  effects? Do medicines have the same effect on all patients? Can medicines lose their  effectiveness?  What needs to be considered when medicines are prescribed? What is cancer and how is  it treated? What role do genes and mutation play in cancer? These are some of the  questions that this unit is intended to answer.  The pharmaceutical industry is the UK's top research sector. One-quarter of the world's  top medicines were developed in the UK. The pharmaceutical industry spends around  £8.8 billion on UK research and development, and employs around 26,000 people. A  further 250,000 people work in related industries. The past twenty years has seen an  unprecedented increase in both the number and in the range of activity of drugs used in  the treatment of human disease. For medicines and treatments to be most effective,  those responsible for prescribing and administering them, as well as patients  themselves, need advice and information. This unit focuses on providing information and  advice on medicines and treatment.  In this unit you will consider the basic science of pharmacology, i.e. the study of  medicine action combined with an added focus on the application to the real world - i.e.  what medicines are used in the treatment of what disorders and diseases. You will also  learn about cancer, what it is and the combination of therapeutic interventions that may  be used; which include medicines but may also include new and developing therapies as more is understood about the disease. |
| **Skills/National Curriculum Links** |
| **Cross Curricular Links** | **SMSC/PSHE:** The specification provides a framework and includes specific content through which individual courses may address spiritual, moral, ethical, social and cultural issues. It aims to show how science can be used to assist in understanding the underlying  causes of disease. Learners should consider how conditions are treated, and  balance the need for new treatments with cost to society.  Examples of issues which can be addressed through the specification are listed  below.  • How lifestyle may affect health (unit 1)  • How ethical issues affect research (unit 3)  • How factors are considered when prescribing medicines (unit 4)  **Literacy:** key words and terms linked to topics, command words when answering exam questions.  **Numeracy:** ability to read graphs, tables, plot data, values etc  **Skills Builder:** leadership, teamwork, listening to others, collaborating |
| **Becoming future ready** | The applications and implications of science are dealt with in meaningful medical  contexts, and encourage the development of a responsible attitude to citizenship. An  understanding that individuals have a collective responsibility is fostered in relation to  various ethical issues included in the specifications such as treatment regimens, side  effects of medicines, cost of medicines to society. The consequences of lifestyle on  health are also examined throughout the qualification in a number of different  contexts.  **Health and Safety Consideration**  Under UK law, health and safety is the responsibility of the employer. There are a  number of regulations (notably Management of Health and Safety at Work  Regulations 1999 and COSHH Regulations 2002 (as amended)) that require the  completion of a risk assessment before commencing a procedure or activity that uses  microorganisms or chemicals.  There are opportunities for learners to develop their own risk assessments when  carrying out laboratory work in almost all units. Throughout the qualification there are  also many opportunities to underscore the requirement to work in compliance with  risk assessments in order to safe guard the health and safety of workers and  members of the public.  **The European Dimension**  Medical issues can be rarely confined to a particular place since human actions in one  country can also impact another. Challenges faced by medicine also need to be dealt  with at national, European and global levels. This specification should make learners  aware that medical scientists need to cooperate with scientists from other countries.  The context led nature of the units will give centres the opportunity of examining  medical issues at a European level. Examples where a European dimension can be  underscored include international protocols and European legislation relating to  adverse drug reactions and licencing of medicinal products for human use. |
| **Adaptation** | Throughout this topic, quality first teaching will provide differentiation:  **By product:** written information on learning mats, some through practical setting.  **By resource:** textbooks, videos, learning mats, handouts to read through, graphs, tables and charts.  **By Intervention**: by providing different levels of supervision and support  **By Progressive Questioning:** exploring pupils’ understanding through interactive dialogue.  **By Grouping:** according to prior attainment, gender, social preference, preferred learning style.  **By Task:**Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range.  **By Offering Optional Activities:** In class or as homework, to extend learning.  This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work. |
| **QFT/SEND Provision** |
| **Implementation**  **Curriculum Delivery** | **AC1.1** explain factors to be considered when prescribing medicines  **AC1.2** suggest strategies to improve adherence of patients taking prescriptions  **AC1.3** compare options for administering medicines  **AC2.1** explain the molecular basis of the action of medicines  **AC2.2** explain how medicines affect body systems  **AC2.3** explain how medicines affect causative agents of infectious diseases  **AC2.4** explain why medicines may lose their effectiveness  **AC2.5** compare the effects of the interaction of medicines  **AC2.6 E**xplain how factors affect the distribution of medicines in the body  **AC2.7** explain how adverse reactions to medicines can occur  **AC2.8** explain fate of medicines in the body  **AC3.1** describe what is meant by the term cancer  **AC3.2** explain the genetic basis of cancer  **AC3.3** describe possible treatment options for cancer  **AC3.4** assess the potential impact of new treatments for cancer  **AC4.1** communicate information to an audience  **AC4.2** justify approach to communicate information  **AC4.3** work as part of a team |
| **Learning Outcomes (Knowledge)** |
| **Current learning to be developed in the future within:** | Unit 6 |
| **Assessment** | Refer to assessment maps for formative and summative assessment opportunities. |
| **Impact** | Attainment and Progress – Refer to assessment results / data review documentation. |