

# St Cuthbert Mayne School Curriculum Map



**Department: Science**

**Year 13**

| Autumn Term 1 & 2           |                                                                          |                                                                                |                                                               |                                                                           |
|-----------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------|
| Topic/Unit                  | Biology - Energy transfers in and between organisms                      | Biology - Organisms respond to changes in their environment                    | BTEC Applied Science                                          | BTEC Applied Science                                                      |
| Knowledge (Content covered) | • Photosynthesis • Respiration • Energy and Ecosystems • Nutrient cycles | • Stimuli and response • Nervous coordination • Skeletal muscles • Homeostasis | Colorimetry<br>Titration<br>Cooling Curves<br>Chromatography  | Anatomy and Physiology skeletal, muscular, lymphatic and vascular systems |
| Skills                      | Building on concepts from year 12 Developing the ability to link a       | Building on concepts from year 12 Developing the ability to link a number of   | Report writing<br>Practical science<br>Following instructions | Application of GCSE concepts and development of higher                    |

|                                                                                                |                                                        |                                                        |                              |                          |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------|--------------------------|
|                                                                                                | number of biological concepts                          | biological concepts                                    | Graph Drawing                | level thinking           |
| <b>Assessment</b>                                                                              | End of unit exam based assessment Practical assessment | End of unit exam based assessment Practical assessment | Coursework                   | Coursework               |
| <b>Gatsby 4 (Linking curriculum learning to careers)</b><br><a href="#">GATSBY BENCHMARK 4</a> | Ecologist                                              | Veterinarian Surgeon                                   | Quality Assurance Technician | Nursing<br>Physiotherapy |

| Spring Term 1 & 2                  |                                                                    |                                                         |                                      |                                               |
|------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------|-----------------------------------------------|
| Topic/Unit                         | A-level Biology                                                    | A-level Biology                                         | BTEC Applied Science                 | BTEC Applied Science                          |
| <b>Knowledge (Content covered)</b> | Nerve impulses<br>Structure and function of muscles<br>Homeostasis | Gene Mutations<br>Epigenetics Cloning<br>Fingerprinting | Waves<br>Cells<br>Physical chemistry | Enzymes<br>Molecules<br>Plants<br>Electricity |

|                                                                                                |                                                                                                              |                                                                       |                                                                                   |                                                                                |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
|                                                                                                |                                                                                                              |                                                                       |                                                                                   | Energy in fuels                                                                |
| <b>Skills</b>                                                                                  | Investigation microscopy techniques<br>Application of GCSE concepts and development of higher level thinking | Application of GCSE concepts and development of higher level thinking | Building from the fundamentals of GCSE<br>Developing higher level analysis skills | Report writing<br>Practical science<br>Following instructions<br>Graph Drawing |
| <b>Assessment</b>                                                                              | End of unit exam based assessment<br>Practical assessment                                                    | End of unit exam based assessment<br>Practical assessment             | End of unit assessment                                                            | Coursework                                                                     |
| <b>Gatsby 4 (Linking curriculum learning to careers)</b><br><a href="#">GATSBY BENCHMARK 4</a> | Medical doctor                                                                                               | Forensic scientist,<br>cancer researcher                              | Research scientist<br>Analytical Chemist                                          | Investigative Scientist                                                        |

| Summer Term 1 & 2                  |                 |                                      |                                                                  |
|------------------------------------|-----------------|--------------------------------------|------------------------------------------------------------------|
| Topic/Unit                         | A-level Biology | BTEC Applied Science                 | BTEC Applied Science                                             |
| <b>Knowledge (Content covered)</b> | Revision        | Waves<br>Cells<br>Physical chemistry | Enzymes<br>Molecules<br>Plants<br>Electricity<br>Energy in fuels |
| <b>Skills</b>                      |                 | Building from the fundamentals of    | Report writing                                                   |

|                                                                                                |                     |                                                 |                                                              |
|------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------|--------------------------------------------------------------|
|                                                                                                |                     | GCSE<br>Developing higher level analysis skills | Practical science<br>Following instructions<br>Graph Drawing |
| <b>Assessment</b>                                                                              | Alevel examinations | End of unit assessment                          | Coursework                                                   |
| <b>Gatsby 4 (Linking curriculum learning to careers)</b><br><a href="#">GATSBY BENCHMARK 4</a> |                     | Research scientist<br>Analytical Chemist        | Investigative Scientist                                      |