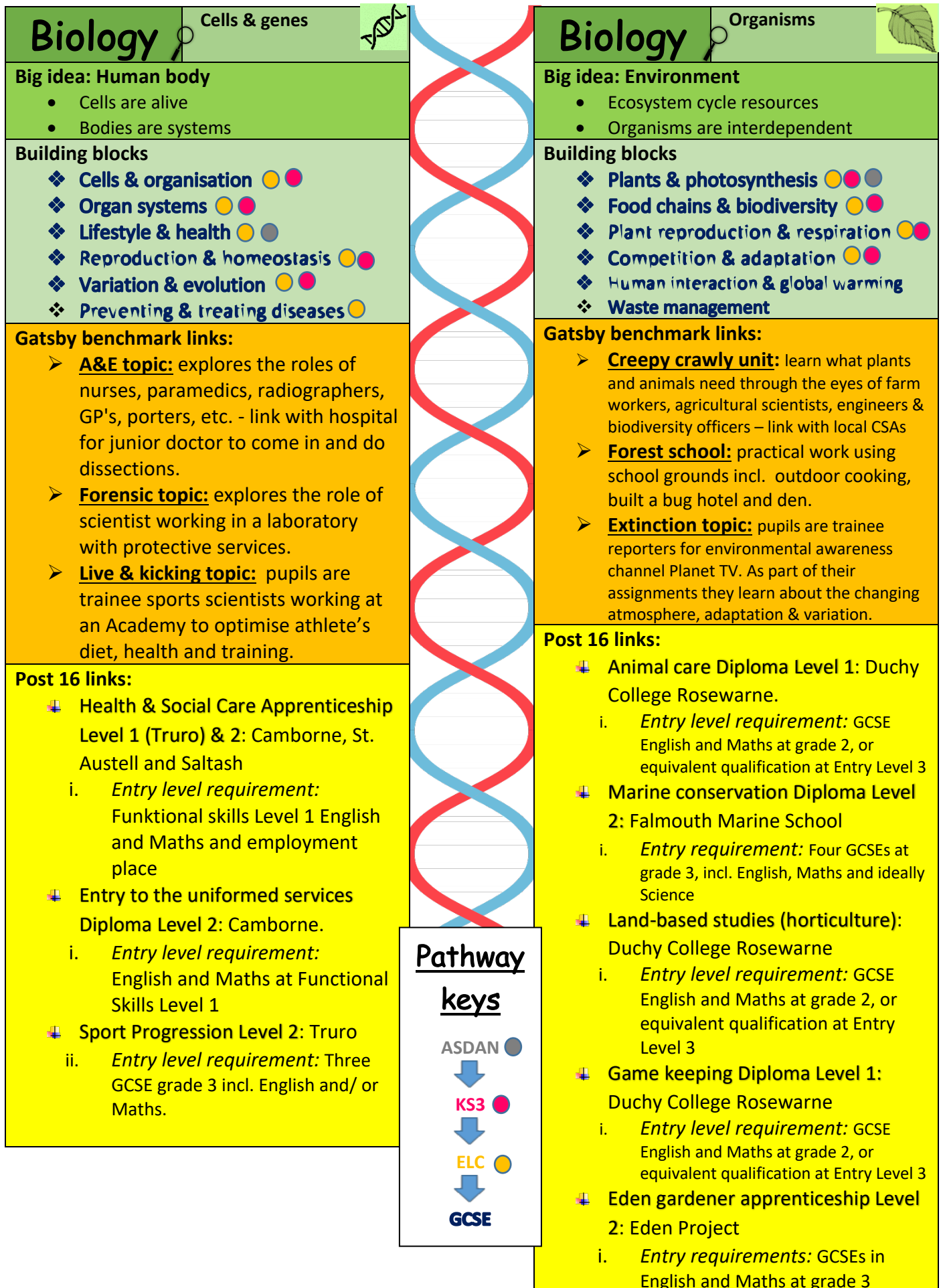


# Science Spiral Curriculum Pathway Map



# Chemistry

Matter



## Big idea: Elements, mixtures & compounds

- Structure defines properties
- Reactions means change

## Building blocks

- ❖ States of matter ●●
- ❖ Atomic structure & bonding
- ❖ The periodic table ●●
- ❖ Metals & non-metals ●●●
- ❖ Chemical change ●●
- ❖ Energy & rate of reaction ●●

## Gatsby benchmark links:

- **Pyrotechnic topic:** problem solve and recognise hazards to apply engineering solutions in industries – visits to airport, train station, farms and building sites including yearly STEM Big Bang Fair.
- **Cook topic:** explores the world of gastronomy making and serving food. Practical application of skills in the kitchen and laboratory incl. risk assessment.

## Post 16 links:

- ✚ Painting and Decorating Diploma Level 1: Camborne.
  - i. *Entry level requirement:* GCSE English and Maths grade 2
- ✚ Basic Plumbing studies Level 1: Camborne, St. Austell, Saltash.
  - i. *Entry level requirement:* Two GCSEs grade 2 and Entry-Level standard in Maths and English
- ✚ Food Preparation & Service Certificate Level 2: Camborne, St. Austell, Saltash.
  - i. *Entry level requirement:* Functional skills as part of the programme of work
- ✚ Professional Cookery Diploma Level 1: Truro.
  - i. *Entry level requirement:* Three GCSE grade 2 incl. English and, or Maths

# Chemistry

Earth's resources



## Big idea: Chemistry in our world

- Earth systems interact
- Changing climate

## Building blocks

- ❖ Chemical tests ●●●
- ❖ Acids & alkalis ●●
- ❖ Atmosphere, pollution & climate ●●
- ❖ Carbon chemistry ●
- ❖ Human impact ●● & LCA
- ❖ Water for drinking ●

## Gatsby benchmark links:

- **Restless Earth topic:** looks into vast amount of jobs linked to Earth resources: making products, Space mining, Human impact & recycling – visits to local recycling centres, forests, tin mines & Eden project.
- **Forest school:** recycling and human impact on environment in action
- **Catastrophe topic:** pupils become trainee geologists, volcanologist, etc. to analyse natural disaster – online up-to-date links to current events around the world and jobs involved to provide engineering solutions.

## Post 16 links:

- ✚ Eden Events Apprenticeship Level 2: Eden Projects and ST. Austell.
  - i. *Entry level requirement:* Two GCSEs at grade 2 and literacy and numeracy skills to Level 1
- ✚ Land-based studies (Agriculture) or (Countryside & Conservation): Duchy College Rosewarne
  - i. *Entry level requirement:* GCSE English and Maths at grade 2, or equivalent qualification Entry Level 3
- ✚ Bricklaying Diploma Level 1: Truro, Camborne, St. Austell
  - i. *Entry level requirement:* GCSE English and Maths at grade 2
- ✚ Carpentry Diploma Level 1: Truro, Camborne, St. Austell
  - i. *Entry level requirement:* GCSE English and Maths grade 2
- ✚ Plastering Diploma Level 1: Truro
  - i. *Entry level requirement:* GCSE English and Maths grade 2

## Pathway keys

ASDAN ●



KS3 ●



ELC ●



GCSE

Physics Forces	
<b>Big idea: Magnetism, movement &amp; Space</b> <ul style="list-style-type: none"> <li>Forces predict motion</li> <li>Fields produce forces</li> </ul>	
<b>Building blocks</b> <ul style="list-style-type: none"> <li>❖ Magnetism &amp; electromagnets</li> <li>❖ Speed &amp; stopping distance</li> <li>❖ Work</li> <li>❖ Contact &amp; non-contact forces</li> <li>❖ Universe</li> <li>❖ Weight, mass &amp; gravity</li> </ul>	
<b>Gatsby benchmark links:</b> <ul style="list-style-type: none"> <li>➤ <b>Grand prix topic:</b> work opportunities in the world of car industries by using engineering solutions – visit to Cornwall Skills Show at Royal Cornwall Showground to see HGV and farm machinery including yearly STEM competition ‘bloodhound’ and ‘blue light day’.</li> </ul>	
<b>Post 16 links:</b> <ul style="list-style-type: none"> <li>✚ Transport Maintenance Diploma Level 1: Truro.               <ul style="list-style-type: none"> <li>i. <i>Entry level requirement:</i> GCSE English, Maths and Science grade 2</li> </ul> </li> <li>✚ Introduction to land-based technology Level 1: Bicton college.               <ul style="list-style-type: none"> <li>i. <i>Entry level requirement:</i> GCSE English and Maths at grade 2</li> </ul> </li> </ul>	

Physics Energy	
<b>Big idea: Electricity &amp; waves</b> <ul style="list-style-type: none"> <li>Electricity transfers energy</li> <li>Energy is conserved</li> </ul>	
<b>Building blocks</b> <ul style="list-style-type: none"> <li>❖ Current &amp; voltage</li> <li>❖ Sound &amp; light</li> <li>❖ Energy transfer</li> <li>❖ Home electricity</li> <li>❖ Radioactivity</li> <li>❖ Heating &amp; cooling</li> </ul>	
<b>Gatsby benchmark links:</b> <ul style="list-style-type: none"> <li>➤ <b>Electromancer topic:</b> pupils take on role of trainee electricians to master invisible forces of electricity, magnetism and electrostatics.</li> <li>➤ <b>Alien topic:</b> pupils take part in a trainee programme as a new employee at SETI (<a href="http://www.seti.org">www.seti.org</a>), a real organisation leading the search for extra-terrestrial intelligence.</li> </ul>	
<b>Post 16 links:</b> <ul style="list-style-type: none"> <li>✚ Electrical Installation Diploma Level 1: Camborne.               <ul style="list-style-type: none"> <li>i. <i>Entry level requirement:</i> GCSEs English and Maths at grade 3</li> </ul> </li> <li>✚ Introduction to information Technology Progression Level 1: Truro.               <ul style="list-style-type: none"> <li>i. <i>Entry level requirement:</i> no prior qualification required but programme incl. GCSE in English and Maths</li> </ul> </li> <li>✚ Information &amp; Creative Technology Progression Level 2: Callywith.               <ul style="list-style-type: none"> <li>i. <i>Entry level requirement:</i> Three GCSEs incl. English and/ or Maths at grade 3</li> </ul> </li> </ul>	

