

# Science

## Intent:

To engage students in a learning journey of science discovery improving their **scientific skills** and **scientific knowledge** by working through the 10 key fundamental concepts in an **interactive, varied** and **inclusive** manner.

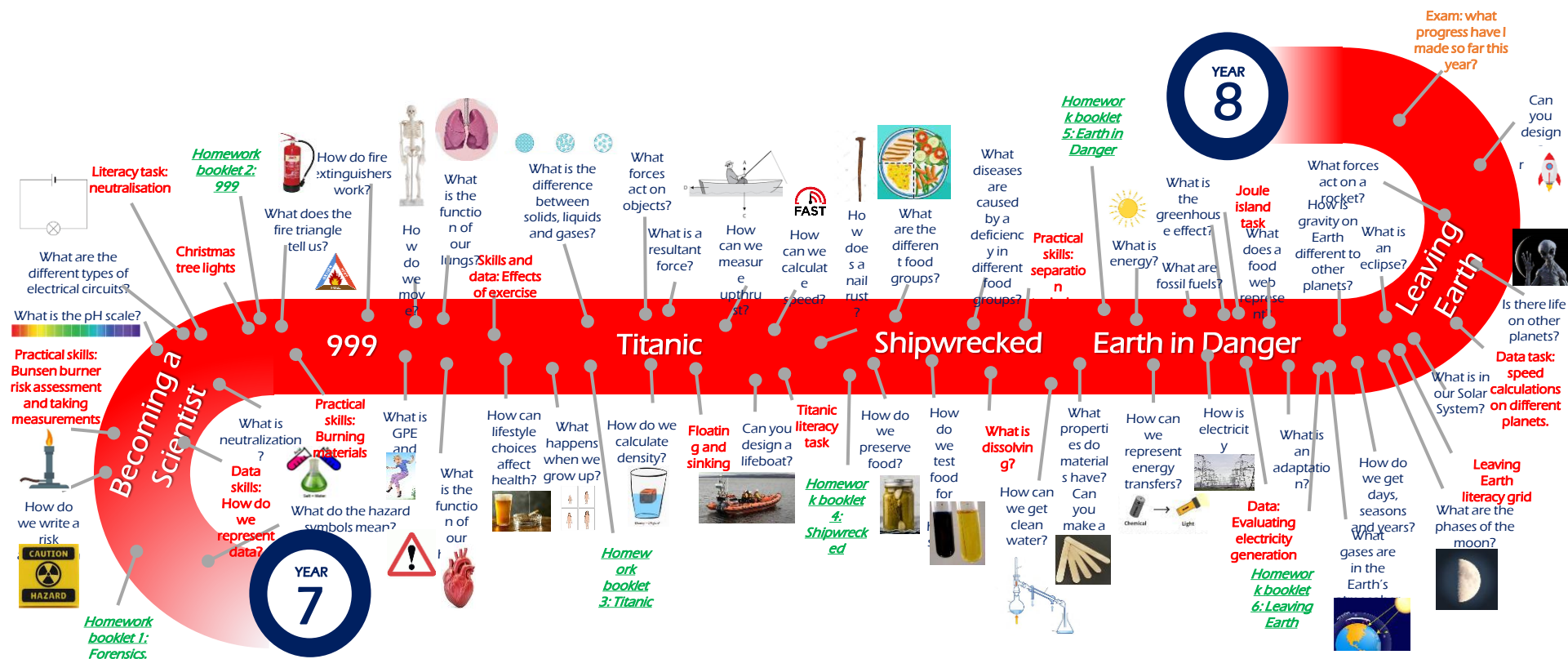
## Context:

There are 10 'big ideas' in Science that make up and explain everything in the world around us:

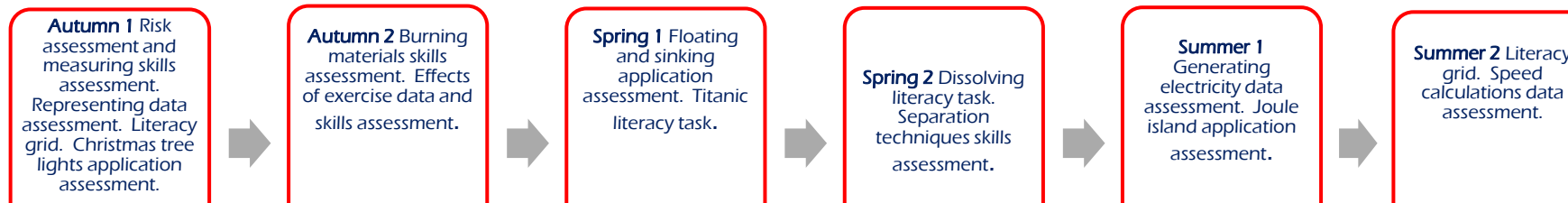
- Forces
- Electromagnets
- Energy
- Waves
- Matter
- Reactions
- Earth
- Organisms
- Ecosystems
- Genes



This foundation of knowledge, as well as the **practical skills learnt**, will equip you well to go on and study the broad range of topics on offer in future years. The skills you learn in each topic will prepare you for GCSE as well as to be curious, innovative, and independent scientists!



**Keeping a track of your progress:** Your teacher will be assessing your progress informally every lesson. In addition, you will have at two pieces of work 'deep marked' (with written feedback) every half term, and you will be given time in the lesson to respond to the feedback in order to make further progress. Record your assessments here:



**The Big Picture—Intent:**

This year is a combination of grounding pupils in the key concepts that underpin the three sciences and ensuring they have a firm grasp of these to then extend them into Year 8 along with developing their practical and investigative skills. Furthermore, students data handling, application and literacy skills will be developed and assessed throughout.

Content / Units	Skills	Knowledge	Prior—Y6	Next—Y8
6 topics taught over the year, themed topics covering all of the 10 Big ideas for Science.	Practical skills topics to build on scientific skills, links to numeracy and literacy. Literacy, Application, Recall, Data and Skills (LARDS) assessments focus on different skills in each topic.	<b>Unit 1: Not all scientists wear white coats</b> – introduces safety in the lab and covers practical skills whilst learning about electricity and acids and alkalis. <b>Unit 2: 999</b> – looks at the fire triangle, types of energy, body systems and healthy lifestyles). <b>Unit 3: Titanic</b> – pupils rediscover the particle model for solids, liquids and gases and then move onto forces and density. <b>Unit 4: Shipwrecked</b> – pupils learn about healthy diets and deficiency diseases, dissolving and separating mixtures and properties of different materials. <b>Unit 5: Earth in Danger</b> – students learn about renewable and nonrenewable energy sources, global warming and then adaptations in animals and food chains. <b>Unit 6: Leaving Earth</b> – the year ends with students learning about days, years and seasons and space whilst developing their calculations of speed.	KS2 topics that feed into year 7: Electricity Acids and alkalis Circulatory Healthy lifestyles Solids, liquids and gases Forces Materials Food chains Days, years and seasons Space	In year 8 students will continue with the thematic style topics done in year 7, continuing to cover content on from the 10 big ideas.

Implementation	Marches Futures Links	Summative Assessment
<p>The units are structured thematically to ensure students can holistically experience science and make connections between the three disciplines rather than being taught each separately. The theme of each unit then has a narrative to help contextualize topics. Lessons are a combination of content-delivery with opportunities for learners to consolidate and then apply their knowledge to new situations as well as explore new topics through practical investigations. This is where pupil's LORIC skills will be really developed and reflected upon.</p> <p>At times in each unit, pupils are expected to research new information or apply their knowledge and work independently in this. Homework will either look to be research-based or a consolidation/extension of what has been done in class to develop key skills or enhance retention. Revision homework will be set once per unit and guidance will be provided on how to do this as well in-class revision which will be more structured and model good revision technique.</p> <p>WOW moments are interspersed throughout the course e.g. heart dissections, acids and alkalis, building their own rafts, shelters and rockets, learning about weird and wonderful adaptations of animals. Achievements will be celebrated at both a class level with teacher praise and also across the department.</p> <p>Year 7 Science is taught across 6 lessons per fortnight.</p>	<p>Science week is the second week in March and lessons during this week have a focus on STEM careers and further education links.</p> <p>SMSC is covered in each topic (see schemes) links made to relationships and sex during Unit 2 – 999.</p> <p>Links to careers are made at the start of each topic</p>	<p><b>All units include:</b></p> <ul style="list-style-type: none"> <li>LARDS assessments throughout the topics</li> <li>End of Unit Tests</li> </ul>

**Impact:**

We want to pupils to feel they are real scientists by the end of Year 7; competent and comfortable in their practical skills e.g. handling glassware, using lab equipment, making accurate observations as well as having a sound understanding of some of the key concepts across the sciences: forces, particle models, chemical reactions, body systems, animals within habitats and space. We need them to be able to take a piece of knowledge and not just see this as a fact but understand it and be able to apply it to unknown situations. As they head into Year 8 they will develop both their knowledge and skills in all of these areas build upon these key concepts to help prepare for the step up to GCSE in Year 9. We don't want them to see science as Biology, Chemistry and Physics but rather as a subject that explains the phenomena, they see in the world around them encouraging them to want to find out more.

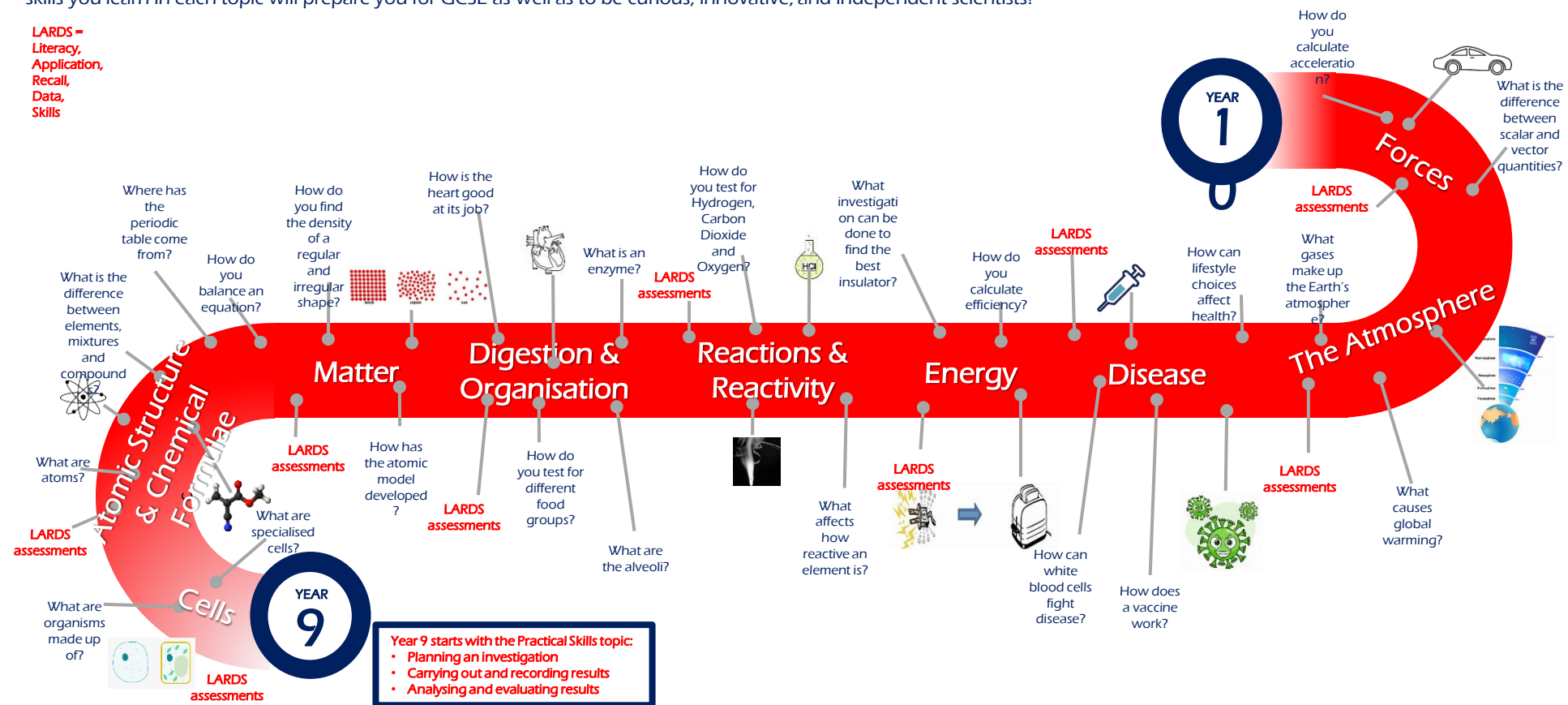
# What will you be learning in Year 9 Science?



The topics you will study in Year 9 build on your **knowledge** and **understanding** of the **KS3 content** to provide the foundations and principles for further study in science.

This foundation of knowledge, as well as the **practical skills learnt**, will equip you well to go on and study the broad range of topics on offer in future years. The skills you learn in each topic will prepare you for GCSE as well as to be curious, innovative, and independent scientists!

**LARDS =**  
Literacy,  
Application,  
Recall,  
Data,  
Skills



**Keeping a track of your progress:** Your teacher will be assessing your progress informally every lesson. In addition, you will have at two pieces of work 'deep marked' (with written feedback) every half term, and you will be given time in the lesson to respond to the feedback in order to make further progress. Record your assessments here:

## Autumn 1

Practical Skills Assessment.  
**Cells and Atomic Structure and Chemical Formulae** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Autumn 2

**Matter and Digestion and Organisation** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Spring 1

**Reactions and Reactivity and Energy** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Spring 2

**Disease** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Summer 1

**End of year exam**  
**The Atmosphere** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Summer 2

**Forces** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

**The Big Picture—Intent:**

The nurture group in year 7 is a combination of grounding pupils in the key concepts that underpin the three sciences and ensuring they have a firm grasp of these to then extend them into Year 8 along with developing their practical and investigative skills. Furthermore, students data handling, application and literacy skills will be developed and assessed throughout. More practical work and scientific skills is done to give students a solid starting point for KS3 Science.

## Year 7 Science

### Nurture group

Content / Units	Skills	Knowledge	Prior—Y6	Next—Y8
<p>4 topics taught over the year, themed topics covering all of the 10 Big ideas for Science.</p> <p>The 4 topics are chosen to have the most broad curriculum, preparing students for the skills needed.</p>	<p>Practical skills topics to build on scientific skills, links to numeracy and literacy.</p> <p>Literacy, Application, Recall, Data and Skills (LARDS) assessments focus on different skills in each topic.</p>	<p><b>Unit 1: Not all scientists wear white coats</b> – introduces safety in the lab and covers practical skills whilst learning about electricity and acids and alkalis. <b>Unit 2: 999</b> – looks at the fire triangle, types of energy, body systems and healthy lifestyles). <b>Unit 3: Titanic</b> – pupils rediscover the particle model for solids, liquids and gases and then move onto forces and density. <b>Unit 4: Shipwrecked</b> – pupils learn about healthy diets and deficiency diseases, dissolving and separating mixtures and properties of different materials.</p>	<p>KS2 topics that feed into year 7:</p> <ul style="list-style-type: none"> <li>Electricity</li> <li>Acids and alkalis</li> <li>Circulatory</li> <li>Healthy lifestyles</li> <li>Solids, liquids and gases</li> <li>Forces</li> <li>Materials</li> <li>Food chains</li> <li>Days, years and seasons</li> <li>Space</li> </ul>	<p>In year 8 students will continue with the thematic style topics done in year 7, continuing to cover content on from the 10 big ideas.</p>

Implementation	Marches Futures Links	Summative Assessment
<p>The units are structured thematically to ensure students can holistically experience science and make connections between the three disciplines rather than being taught each separately. The theme of each unit then has a narrative to help contextualize topics. Lessons are a combination of content-delivery with opportunities for learners to consolidate and then apply their knowledge to new situations as well as explore new topics through practical investigations. This is where pupil's LORIC skills will be really developed and reflected upon.</p> <p>At times in each unit, pupils are expected to research new information or apply their knowledge and work independently in this. Homework will either look to be research-based or a consolidation/extension of what has been done in class to develop key skills or enhance retention. Revision homework will be set once per unit and guidance will be provided on how to do this as well in-class revision which will be more structured and model good revision technique.</p> <p>WOW moments are interspersed throughout the course e.g. heart dissections, acids and alkalis, building their own rafts, shelters and rockets, learning about weird and wonderful adaptations of animals. Achievements will be celebrated at both a class level with teacher praise and also across the department.</p> <p>Year 7 Science is taught across 6 lessons per fortnight.</p>	<p>Science week is the second week in March and lessons during this week have a focus on STEM careers and further education links.</p> <p>SMSC is covered in each topic (see schemes) links made to relationships and sex during Unit 2 – 999.</p> <p>Links to careers are made at the start of each topic</p>	<p><b>All units include:</b></p> <ul style="list-style-type: none"> <li>LARDS assessments throughout the topics</li> <li>End of Unit Tests</li> </ul>

**Impact:**

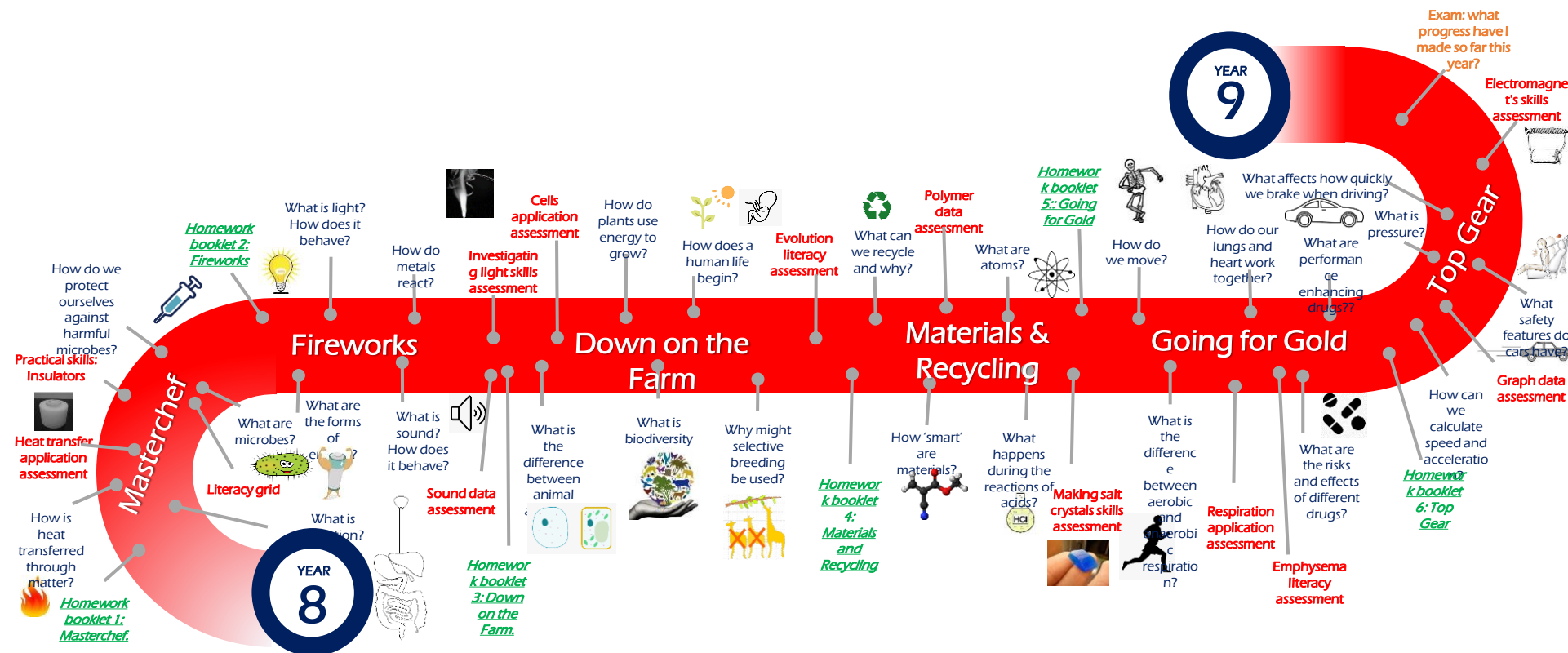
We want to pupils to feel they are real scientists by the end of Year 7; competent and comfortable in their practical skills e.g. handling glassware, using lab equipment, making accurate observations as well as having a sound understanding of some of the key concepts across the sciences: forces, particle models, chemical reactions, body systems, animals within habitats and space. We need them to be able to take a piece of knowledge and not just see this as a fact but understand it and be able to apply it to unknown situations. As they head into Year 8 they will develop both their knowledge and skills in all of these areas build upon these key concepts to help prepare for the step up to GCSE in Year 9. We don't want them to see science as Biology, Chemistry and Physics but rather as a subject that explains the phenomena, they see in the world around them encouraging them to want to find out more.

# What will you be learning in Year 8 Science?

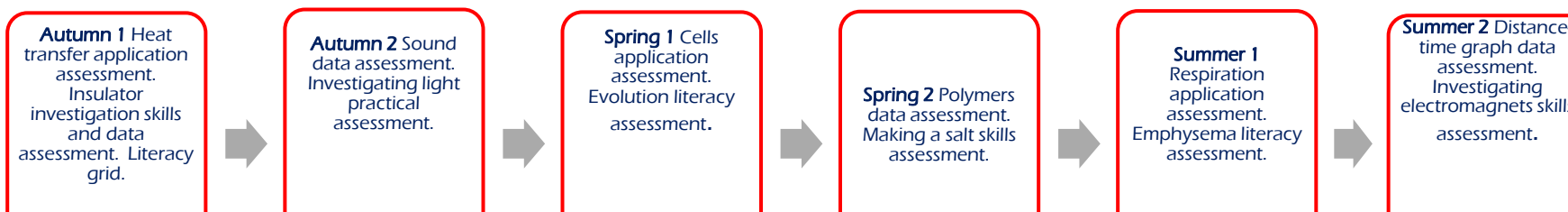


The topics you will study in Year 8 build on your **knowledge** and **understanding** of the **Year 7 content** to provide the foundations and principles for further study in science.

This foundation of knowledge, as well as the **practical skills learnt**, will equip you well to go on and study the broad range of topics on offer in future years. The skills you learn in each topic will prepare you for GCSE as well as to be curious, innovative, and independent scientists!



**Keeping a track of your progress:** Your teacher will be assessing your progress informally every lesson. In addition, you will have at two pieces of work 'deep marked' (with written feedback) every half term, and you will be given time in the lesson to respond to the feedback in order to make further progress. Record your assessments here:



**The Big Picture—Intent:**

This year will be a continued combination of grounding pupils in the key concepts that underpin the three sciences and extending them based on their Y7 work, continuing to developing their practical and investigative skills, also their data handling, application and literacy skills will be developed and assessed throughout.

Content / Units	Skills	Knowledge	Prior—Y7	Next—Y9
6 topics taught over the year, themed topics covering all of the 10 Big ideas for Science.	Practical skills topics to build on scientific skills, links to numeracy and literacy. Literacy, Application, Recall, Data and Skills (LARDS) assessments focus on different skills in each topic.	Unit 1 - Masterchef – Digestion, microbes and conduction of heat. Unit 2 - Fireworks - Making, seeing & hearing fireworks. Unit 3 - Down on the Farm - cells, inheritance, genetics and evolution. Unit 4 - Materials and Recycling - Material properties and reactions. Unit 5 - Going for Gold - Joints, respiration and the effect of drugs. Unit 6 - Top Gear - Forces and motion.	Year 7 topics all cover the similar thematic style topics as year 8 and prepare students for deeper thinking and understanding of the 10 big ideas of Science.	In year 8 students will use their knowledge of the 10 big ideas and begin to apply them to the GCSE specification. Practical skills is developed further in year 9 with the focus on LARDS continuing.

Implementation	Marches Futures Links	Summative Assessment
<p>The units are structured thematically as in Y7 to ensure students can holistically experience science and make connections between the three disciplines rather than being taught separately. The theme of each unit then has a narrative to help contextualize topics. Lessons are a combination of content-delivery with opportunities for learners to consolidate and then apply their knowledge to new situations as well as explore new topics through practical investigations. This is where pupil's LORIC skills will be really developed and reflected upon.</p> <p>At times in each unit, pupils are expected to research new information or apply their knowledge and work independently in this. Homework will either look to be research-based or a consolidation/extension of what has been done in class to develop key skills or enhance retention. Revision homework will be set once per unit and guidance will be provided on how to do this as well in-class revision which will be more structured and model good revision technique.</p> <p>WOW moments are interspersed throughout the course e.g. model digestive systems, making sparklers, growing micro biotic cultures, remote controlled car racing. There are many opportunities to develop numeracy skills across most of the units and these are assessed and developed through data assessments and feedback. Graphs in particular remain a focus along with the development of skills with equations. For each unit students are provided with a key word list and their literacy skills are assessed throughout the year along with a lot of practice of answering application-style questions to ensure we are preparing them for command words at GCSE.</p> <p>Year 8 Science is taught across 6 lessons per fortnight.</p>	<p>Science week is the second week in March and lessons during this week have a focus on STEM careers and further education links.</p> <p>SMSC is covered in each topic (see schemes) links made to relationships and sex during Unit 3 – Down on the Farm.</p> <p>Links to careers are made at the start of each topic</p>	<p><b>All units include:</b></p> <ul style="list-style-type: none"> <li>LARDS assessments throughout the topics</li> <li>End of Unit Tests</li> </ul>

**Impact:**

We want to pupils to feel they continue to be real scientists by the end of Year 8; competent and comfortable in their practical skills e.g. handling glassware, using lab equipment, making accurate observations as well as having a sound understanding of some of the key concepts across the sciences: body systems and microbes; particle models; chemical reactions; sound and light travel; genetics and evolution; material properties; respiration; forces. We need them to be able to take a piece of knowledge and not just see this as a fact but understand it and be able to apply it to unknown situations. As they head into Year 9 they will prepare for the step up to GCSE in Year 9. We don't want them to see science as Biology, Chemistry and Physics but rather as a subject that explains the phenomena they see in the world around them encouraging them to want to find out more.

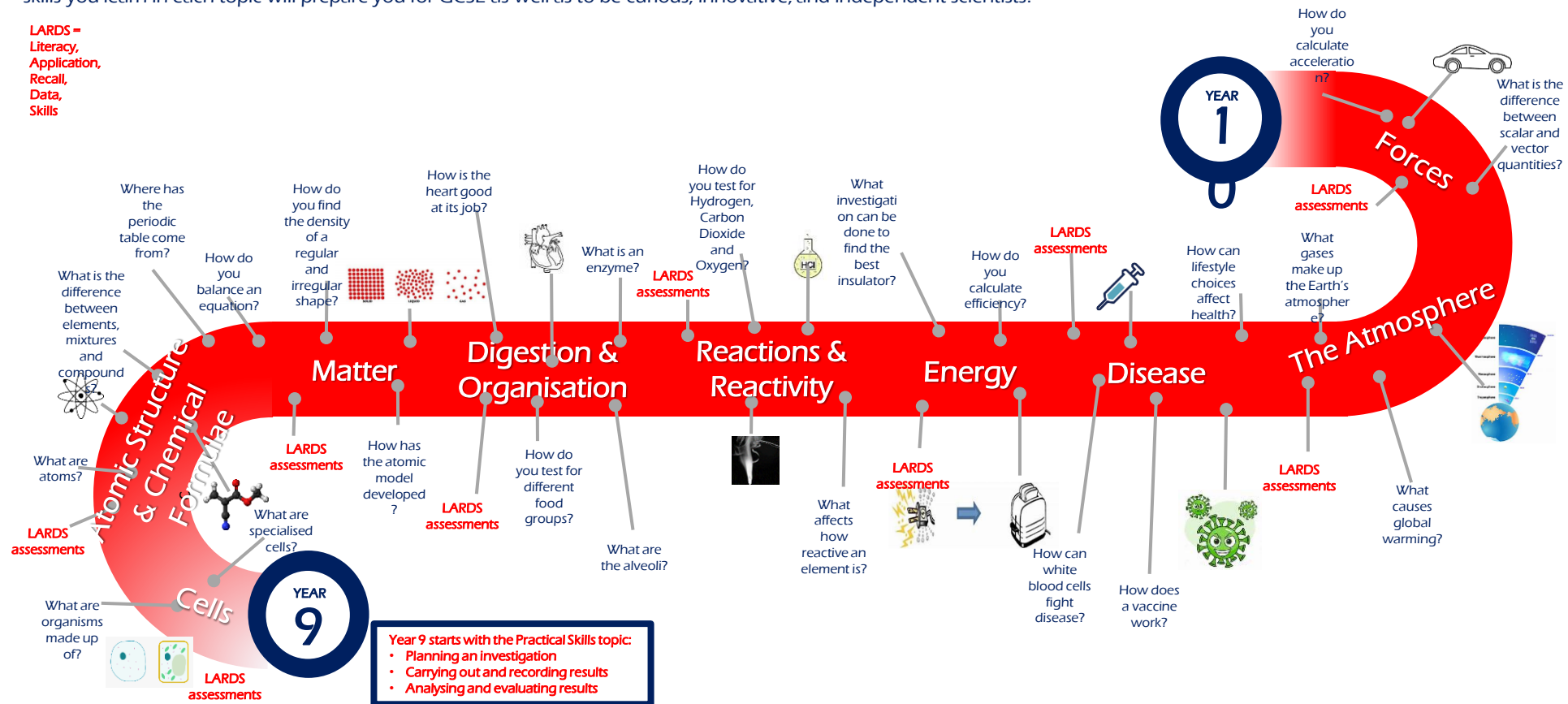
# What will you be learning in Year 9 Science?



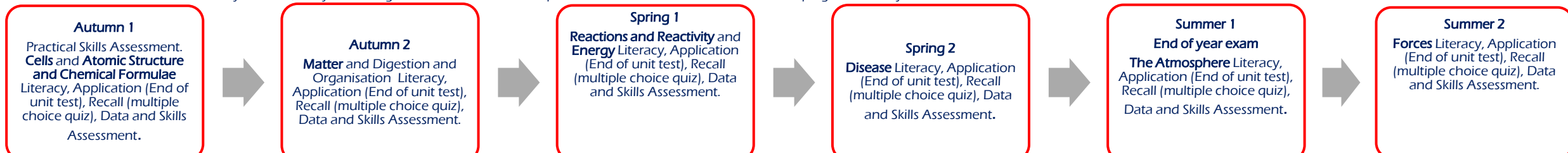
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This foundation of knowledge, as well as the **practical skills learnt**, will equip you well to go on and study the broad range of topics on offer in future years. The skills you learn in each topic will prepare you for GCSE as well as to be curious, innovative, and independent scientists!

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## Year 8 Science Nurture Group

### The Big Picture—Intent:

This year will be a continued combination of grounding pupils in the key concepts that underpin the three sciences and extending them based on their Y7 work, continuing to developing their practical and investigative skills, also their data handling, application and literacy skills will be developed and assessed throughout. More time spent to develop LARDS skills. Each topic is taught in a real life context so that students can see the links and to best understand the Science behind the world around us.

Content / Units	Skills	Knowledge	Prior—Y7	Next—Y9
6 topics taught over the year, themed topics covering all of the 10 Big ideas for Science. The 4 topics are chosen to have the most broad curriculum, preparing students for the skills needed.	Practical skills topics to build on scientific skills, links to numeracy and literacy. Literacy, Application, Recall, Data and Skills (LARDS) assessments focus on different skills in each topic.	Unit 1 - Masterchef – Digestion, microbes and conduction of heat. Unit 2 - Fireworks - Making, seeing & hearing fireworks. Unit 3 - Down on the Farm - cells, inheritance, genetics and evolution. Unit 4 - Materials and Recycling - Material properties and reactions.	Year 7 topics all cover the similar thematic style topics as year 8 and prepare students for deeper thinking and understanding of the 10 big ideas of Science.	In year 8 students will use their knowledge of the 10 big ideas and begin to apply them to the GCSE specification. Practical skills is developed further in year 9 with the focus on LARDS continuing.

Implementation	Marches Futures Links	Summative Assessment
<p>The units are structured thematically as in Y7 to ensure students can holistically experience science and make connections between the three disciplines rather than being taught separately. The theme of each unit then has a narrative to help contextualize topics. Lessons are a combination of content-delivery with opportunities for learners to consolidate and then apply their knowledge to new situations as well as explore new topics through practical investigations. This is where pupil's LORIC skills will be really developed and reflected upon.</p> <p>At times in each unit, pupils are expected to research new information or apply their knowledge and work independently in this. Homework will either look to be research-based or a consolidation/extension of what has been done in class to develop key skills or enhance retention. Revision homework will be set once per unit and guidance will be provided on how to do this as well in-class revision which will be more structured and model good revision technique.</p> <p>WOW moments are interspersed throughout the course e.g. model digestive systems, making sparklers, growing micro biotic cultures, remote controlled car racing. There are many opportunities to develop numeracy skills across most of the units and these are assessed and developed through data assessments and feedback. Graphs in particular remain a focus along with the development of skills with equations. For each unit students are provided with a key word list and their literacy skills are assessed throughout the year along with a lot of practice of answering application-style questions to ensure we are preparing them for command words at GCSE.</p> <p>Year 8 Science is taught across 6 lessons per fortnight.</p>	<p>Science week is the second week in March and lessons during this week have a focus on STEM careers and further education links.</p> <p>SMSC is covered in each topic (see schemes) links made to relationships and sex during Unit 3 – Down on the Farm.</p> <p>Links to careers are made at the start of each topic</p>	<p><b>All units include:</b></p> <ul style="list-style-type: none"> <li>LARDS assessments throughout the topics</li> <li>End of Unit Tests</li> </ul>

### Impact:

We want to pupils to feel they continue to be real scientists by the end of Year 8; competent and comfortable in their practical skills e.g. handling glassware, using lab equipment, making accurate observations as well as having a sound understanding of some of the key concepts across the sciences: body systems and microbes; particle models; chemical reactions; sound and light travel; genetics and evolution; material properties; respiration; forces. We need them to be able to take a piece of knowledge and not just see this as a fact but understand it and be able to apply it to unknown situations. As they head into Year 9 they will prepare for the step up to GCSE in Year 9. We don't want them to see science as Biology, Chemistry and Physics but rather as a subject that explains the phenomena they see in the world around them encouraging them to want to find out more.

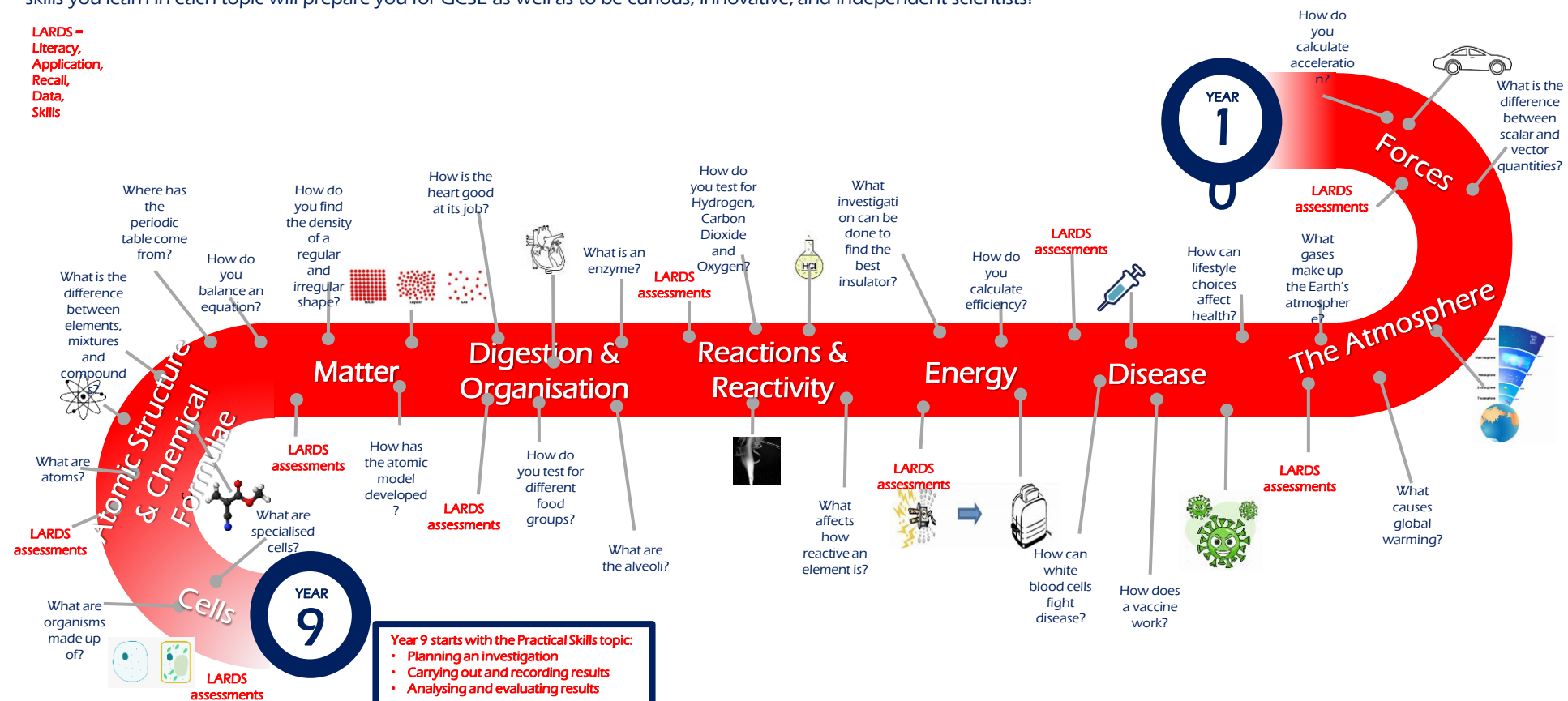
# What will you be learning in Year 9 Science?



The topics you will study in Year 9 build on your **knowledge** and **understanding** of the **KS3 content** to provide the foundations and principles for further study in science.

This foundation of knowledge, as well as the **practical skills learnt**, will equip you well to go on and study the broad range of topics on offer in future years. The skills you learn in each topic will prepare you for GCSE as well as to be curious, innovative, and independent scientists!

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**Keeping a track of your progress:** Your teacher will be assessing your progress informally every lesson. In addition, you will have at two pieces of work 'deep marked' (with written feedback) every half term, and you will be given time in the lesson to respond to the feedback in order to make further progress. Record your assessments here:

## Autumn 1

Practical Skills Assessment.  
**Cells and Atomic Structure and Chemical Formulae** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Autumn 2

**Matter** and Digestion and Organisation Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Spring 1

**Reactions and Reactivity and Energy** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Spring 2

**Disease** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Summer 1

**End of year exam**  
**The Atmosphere** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

## Summer 2

**Forces** Literacy, Application (End of unit test), Recall (multiple choice quiz), Data and Skills Assessment.

### The Big Picture—Intent:

Students begin to follow the GCSE specification in Science. Years 7 and 8 mastery schemes allow for the KS3 national curriculum to be fully taught allowing time in year 9 to develop this knowledge and skills with a bridge into GCSE content and have the time and opportunities to develop skills and move from 'recall' of knowledge to the higher-level thinking and 'application' of knowledge. Content from the GCSE specification has been selected based on the topics which underpin all scientific knowledge, with the idea of a mastery year/scheme where new content will be introduced and built on in year 10 and 11. Practical skills are built upon from KS3 and the course continues to engender a love of learning in science and develop thinking skills.

Content / Units	Skills	Knowledge	Prior—Y8	Next—Y10
Study begins with a practical skills topic then moves onto an introduction of GCSE content in each specialism. 3 topics to be taught from each specialism, introducing the GCSE content	Practical skills topics to build on scientific skills, links to numeracy and literacy. Literacy, Application, Recall, Data and Skills (LARDS) assessments focus on different skills in each topic.	<p><b>Physics:</b> Unit 1 – Matter Unit 2 – Energy Unit 3 – Forces</p> <p><b>Chemistry:</b> Unit 1 – Atoms and the periodic table Unit 2 – Formula and equations (rates, reactivity series, exo and endothermic) Unit 3 – Reactions</p> <p><b>Biology:</b> Unit 1 – Cells Unit 2 – Digestion and organisation Unit 3 – Disease</p>	Year 7 and 8 content is taught in themes, with different 'topics' covering a variety of the 10 big ideas for Science. In year 9 each of these 'big ideas' will be built upon and knowledge/application deepened.	In year 10 students will continue with the GCSE trilogy content – building on the content introduced in year 9: B2, B3, B5 C2, C3, C4, C9, C10 P2, P3, P4
Implementation			Marches Futures Links	Summative Assessment
<ul style="list-style-type: none"> <li>The units taught in Y9 are designed to introduce content that is covered in both GCSE papers of each of the three science specialisms.</li> <li>In all of these modules LORIC opportunities present themselves naturally in practical lessons and also in lessons where past exam questions are being tackled (communication, organisation and resilience in 6mark LOR questions).</li> <li>Home learning is focused on flipped learning researching topics and completing past examination questions. Some home learning will be specified interleaving homework to ensure the long-term recall and long-term embedding of knowledge.</li> <li>Time is spent in lessons focusing on the LARDS (building on the ability in these areas as done in KS3) using more GCSE exam style questions in lessons and assessments, including low stakes assessments with feedback and intervention as required.</li> <li>Some topics include Required Practicals to be covered, where certain skills are required, these will also be covered in addition to practical skills topic taught at the start of year 9.</li> <li>Science is taught across 5 hours per week with specialist Science teachers – specialism content taught by 2 or 3 teachers per group.</li> </ul>			<p>Science week is the second week in March and lessons during this week have a focus on STEM careers and further education links.</p> <p>SMSC is covered in each topic (see schemes) links made to relationships and sex during B3 when looking at infectious diseases and STIs.</p> <p>Links to careers are made at the start of each topic and required practicals link to further education and careers.</p>	<p><b>All units include:</b></p> <ul style="list-style-type: none"> <li>LARDS assessments throughout the topics</li> <li>End of Unit Tests</li> </ul> <p><b>Some units include:</b></p> <ul style="list-style-type: none"> <li>Required practical tasks set by the exam board</li> </ul>

### Impact:

By the end of the Year students will be confident with the fundamental principles, knowledge and application of this knowledge in all three subject areas. They will be able to understand what they need to do in response to certain exam style questions and LOR questions. Practical skills will have developed from KS3 and they will be confident in suggesting improvements and describing methods. All these skills will be further developed in Y10 and Y11 in preparation for their GCSE examinations.

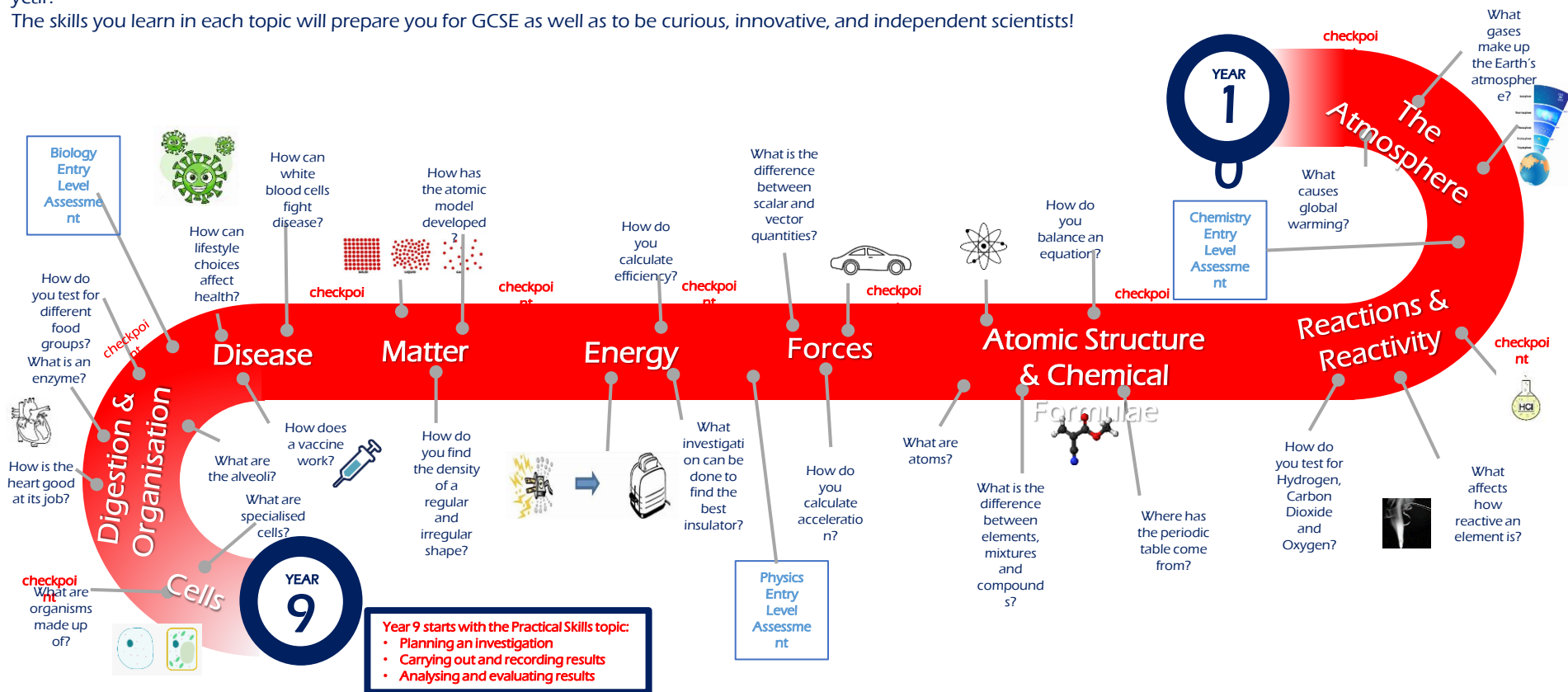
# What will you be learning in Year 9 Science nurture Entry Level Certificate?

The topics you will study in Year 9 build on your **knowledge** and **understanding** of the **KS3 content** to provide the foundations and principles for further study in science.

This foundation of knowledge, as well as the **practical skills learnt**, will equip you well to go on and study the broad range of topics on offer in future years.

You will also complete the **Entry Level Certificate (Single Award)**. This will include three practical pieces of coursework and three assessments spread across the year.

The skills you learn in each topic will prepare you for GCSE as well as to be curious, innovative, and independent scientists!



**Keeping a track of your progress:** Your teacher will be assessing your progress informally every lesson. In addition, you will have at two pieces of work 'deep marked' (with written feedback) every half term, and you will be given time in the lesson to respond to the feedback in order to make further progress. Record your assessments here:

## Autumn 1

Practical Skills Assessment. Cells checkpoint. Digestion and organisation checkpoint.

## Autumn 2

Biology Entry Level Certificate Practical. Disease checkpoint. Entry Level Certificate Biology Test.

## Spring 1

Matter checkpoint. Energy checkpoint. Entry level certificate practical. Forces checkpoint,

## Spring 2

Entry level Certificate Physics Test. Atomic Structure and chemical formulae checkpoint. Reactions and reactivity checkpoint.

## Summer 1

End of year exam  
Entry level certificate Practical. The atmosphere checkpoint

## Summer 2

Entry level certificate Chemistry test.

**The Big Picture—Intent:**

Students begin to follow the GCSE specification in Science. Years 7 and 8 mastery schemes allow for the KS3 national curriculum to be fully taught allowing time in year 9 to develop this knowledge and skills with a bridge into GCSE content and have the time and opportunities to develop skills and move from 'recall' of knowledge to the higher-level thinking and 'application' of knowledge. Content from the GCSE specification has been selected based on the topics which underpin all scientific knowledge. These topics are taught alongside the Entry Level Certificate – completing a series of practicals and assessments to enable the students to achieve a qualification in Science by the end of year 10.

Content / Units	Skills	Knowledge	Prior—Y8	Next—Y10
Study begins with a practical skills topic then moves onto an introduction of GCSE content in each specialism. 3 topics to be taught from each specialism, introducing the GCSE content. In addition students will complete the ELC single award assessment and practical's.	Practical skills topics to build on scientific skills, links to numeracy and literacy. Checkpoints and practical assessments focus on different skills in each topic. Entry level certificate assessments will include 3 pieces of coursework and 3 assessments spread across the year.	<b>Biology:</b> Unit 1 – Cells Unit 2 – Digestion and organisation Unit 3 – Disease <b>Physics:</b> Unit 1 – Matter Unit 2 – Energy Unit 3 – Forces <b>Chemistry:</b> Unit 1 – Atoms and the periodic table Unit 2 – Formula and equations Unit 3 – Reactions (rates, reactivity series, exo and endothermic)	Year 7 and 8 content is taught in themes, with different 'topics' covering a variety of the 10 big ideas for Science. In year 9 each of these 'big ideas' will be built upon and knowledge/application deepened.	In year 10 students will continue with the GCSE trilogy content – building on the content introduced in year 9: B2, B3, B5 C2, C3, C4, C9, C10 P2, P3, P4

Implementation	Marches Futures Links	Summative Assessment
<ul style="list-style-type: none"> <li>The units taught in Y9 are designed to introduce content that is covered in both GCSE papers of each of the three science specialisms.</li> <li>In all of these modules LORIC opportunities present themselves naturally in practical lessons and also in lessons where past exam questions are being tackled (communication, organisation and resilience in 6mark LOR questions).</li> <li>Each science discipline will include an Entry level certificate assessments, which will include a piece of coursework based around a practical investigation. At the end of each discipline students will sit an internal ELC exam for that discipline.</li> <li>The checkpoint assessments will be used at the end of each unit to monitor progress.</li> <li>Time is spent in lessons focusing on the LARDS (building on the ability in these areas as done in KS3) using more GCSE exam style questions in lessons and assessments, including low stakes assessments with feedback and intervention as required.</li> <li>Some topics include Required Practical's to be covered, where certain skills are required, these will also be covered in addition to practical skills topic taught at the start of year 9.</li> <li>Science is taught across 5 hours per week with specialist Science teachers – specialism content taught by 2 or 3 teachers per group.</li> </ul>	<p>Science week is the second week in March and lessons during this week have a focus on STEM careers and further education links.</p> <p>SMSC is covered in each topic (see schemes) links made to relationships and sex during B3 when looking at infectious diseases and STIs.</p> <p>Links to careers are made at the start of each topic and required practicals link to further education and careers.</p>	<p><b>All units include:</b></p> <ul style="list-style-type: none"> <li>Checkpoint assessment</li> <li>ELC practical assessment</li> </ul> <p><b>Some units include:</b></p> <ul style="list-style-type: none"> <li>Required practical tasks set by the exam board</li> </ul>
<b>Impact:</b>		

By the end of the Year students will be confident with the fundamental principles, knowledge and application of this knowledge in all three subject areas. Students will be halfway through the entry level certificate with 3 assessments complete. This will prepare them for GCSE content of year 10 and increase confidence in Science.