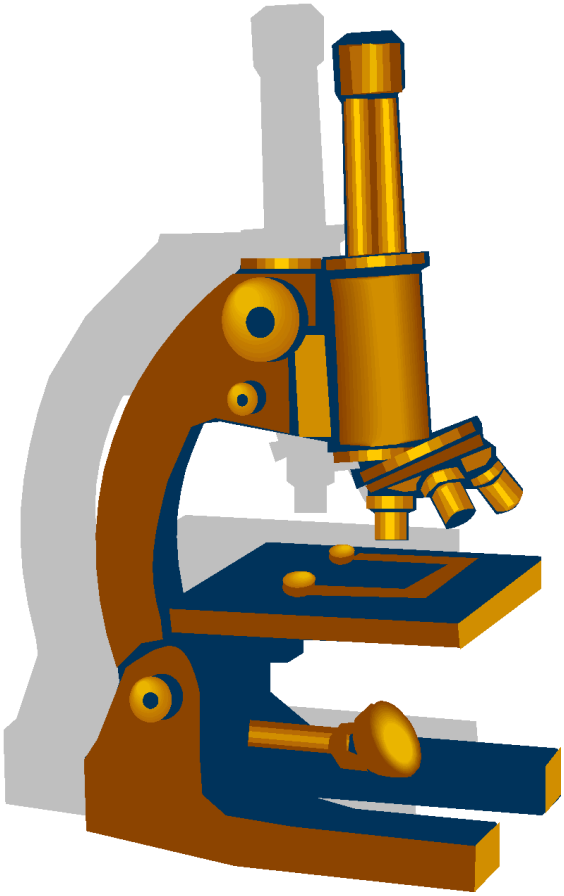
St Charles Catholic Primary School



Science Policy

Designated Teacher: Frederick Fowle
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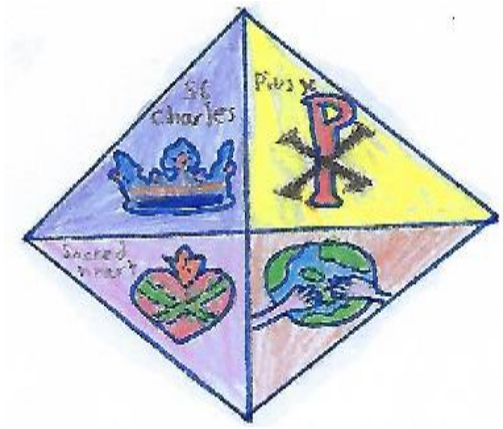
St Charles Science Policy

Contents **Page**

St Charles Catholic Primary school

Our Mission Statement

Love God, Love your Neighbour



(Design by Claudia 5A - 2020)

Through God's love, and with guidance from the Holy Spirit, we, the Community of St Charles, share our Catholic faith together. We seek to nurture in our children an understanding of the importance of Christian values and a deep love and lifelong commitment to God.

We value the unique strengths and gifts of the children entrusted to us and strive to provide an excellent education, so that through our teaching the children may realise their full potential.

In partnership with our families, Governors and Parish, and inspired by our faith, we support the children of St Charles. We encourage them to shine, to have pride in their achievements, to show concern for others and contribute to society as responsible citizens.

Our Aims

To appreciate that we are all uniquely created and loved by God.

To deepen each child's understanding of the Catholic faith.

To nurture in the children an understanding of Christian values and how these help shape our lives and the lives of others.

To understand the importance of forgiveness and reconciliation.

To work in partnership with parents and Parish to create a Christian atmosphere enriched through prayer.

To provide an excellent education so children learn and achieve their potential.

To respect and care for one another in a happy, welcoming and nurturing community.

To ensure children care and respect others, develop an understanding of the world and contribute to society as responsible citizens.

1. **What is Science? (Latin '*Scire'* to know)**

The study of science is the study of the known universe and all that is within it. By encouraging pupils to discover more about the universe and by equipping them with the appropriate tools to do so, we can instil within them an understanding, an appreciation and a sense of responsibility for their immediate and extended environments. As a Catholic school, we should also instil within them a sense of wonder and awe for God's creation.

2. **St Charles Philosophy of Science**

Science is essentially a way of thinking and working. The teacher of science must include development of basic skills, the fostering of positive attitudes and the development of scientific concepts. Children learn best through active development in their learning experiences. Through this involvement, they develop ideas, which help them to make sense of the world around them. By challenging the children's natural curiosity, we can help them to acquire strategies to develop more formal and complex concepts that they will require as adults in a scientific world. At St Charles, we strive to foster our pupils' natural curiosity about the world around them by providing them with the opportunities and skills needed to become innovative and critical thinkers who question and investigate the things they wonder about.

3. **Cultural Capital**

The subject curriculum aims to equip children with the knowledge, skills and values they need to succeed in all stages of their education and later life. For example; children will take part in a science week, visit museums and take part in workshops to experience new things and develop their cultural capital hands-on. They will also be exposed to local fieldwork including matters related to protecting their local environment.

4. **Learning Journey**

In Science the curriculum is planned and sequenced with knowledge and skills building on what has been taught before. Children embark on a learning journey which builds towards clear end points.
We aim to provide a rounded, inspiring and challenging curriculum for all pupils including those with SEND, the most disadvantaged and the most able, so that all can achieve highly and are ready for the next stage of their education.

5. **Discussion, debate and vocabulary**

Through the subject curriculum, children will learn and use the technical vocabulary they need to express ideas and knowledge clearly. In addition, children will have plenty of opportunities to discuss and debate questions relating to specific areas/topics.

6. **Memory**

The subject curriculum is designed to help children know more and remember more. Through regular retrieval tasks and opportunities to make links between learning, children will commit learning to long-term memory**.**

7. **Protected Characteristics**

The Equality Act 2010 aims to prevent discrimination. It is illegal to discriminate against people based on nine protected characteristics:

- Age
- Disability
- gender reassignment
- marriage and civil partnership
- pregnancy and maternity
- race
- religion or belief
- Sex
- sexual orientation

No form of discrimination is tolerated at St Charles Catholic Primary School, but it is particularly important that children are taught about these protected characteristic groups and the importance of showing respect to people within these groups. We also ensure that our curriculum is planned and delivered in order that children learn about these protected characteristics in an age-appropriate manner.

8. **Science in the National Curriculum.**

Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. Science stimulates and excites pupils' curiosity about phenomena and events in the world around them. It also satisfies their curiosity with knowledge. Because science links direct practical experience with ideas, it can engage learners at many levels. Scientific method is about developing and evaluating explanations through experimental evidence and modelling. This is an ignition to critical and creative thought. Through science, pupils understand how major scientific ideas contribute to technological change – impacting on industry, business and medicine and improving the quality of life. Pupils recognise the cultural significance of science and trace its world-wide development. They learn to question and discuss science-based issues that may affect their own lives, the direction of society and the future of the world.

9. **Aims**

At St Charles, we aim to:

- Stimulate and excite pupils' curiosity about changes and events in the world;
- Satisfy this curiosity with knowledge;
- Engage pupils as learners at many levels through linking ideas with practical experience;
- Help pupils to learn to question and discuss scientific issues that may affect their own lives;
- Provide pupils with the opportunities and skills needed to become innovative and critical thinkers who question and investigate the things they wonder about;
- Help pupils develop, model and evaluate explanations through scientific methods of collecting evidence using critical and creative thought;
- Show pupils how major scientific ideas contribute to technological change and how this impacts on improving the quality of our everyday lives;
- Help pupils recognise the cultural significance of science and trace its development.

10. **Curriculum Content**

Covering the statutory requirements of the National Curriculum, children will do the following:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

All pupils will have access to the National Curriculum. Planning will ensure the curriculum is appropriate to the pupil's stage of development.

11. **Strategy for Implementing Science**

Science is a core subject in the National Curriculum and at St Charles School, pupils undertake science activities every week at both key stage 1 and key stage 2. Science is allocated ten per cent of the taught time at both key stages. Science objectives are covered throughout topics in each class and a two year rolling program within a mixed year class assures full coverage for all pupils. The school places a high emphasis on the development of pupils' skills of working scientifically. In the majority of lessons these skills are taught alongside the knowledge and understanding in life processes and living things, materials and their properties and physical processes.

- In KS1 and KS2 science is taught independently of other subjects in the curriculum.

Foundation Stage

- Pupils in **EYFS** develop their knowledge, understanding and skills through play activities and direct teaching from which the pupils undertake planned tasks (Understanding of the World, Communication and Language, Personal, Social and Emotional Development)

At Key Stage 1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done using first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. 'Working scientifically' must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Pupils should read and spell scientific vocabulary correctly.

At lower Key Stage 2

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' must always be taught through and clearly related to substantive science content in the programme of study. Pupils should read and spell scientific vocabulary correctly.

At upper KS2

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. 'Working and thinking scientifically' must always be taught through and clearly related to substantive science content in the programme of study. Pupils should read, spell and pronounce scientific vocabulary correctly.

12. **Teaching and Learning**

All lessons have clear learning objectives which are shared with the pupils at the beginning of, and throughout the lesson. A variety of strategies, including questioning, discussion, concept mapping and marking are used to assess progress. Teachers assess children's knowledge and skills on a regular basis that informs next steps in learning. Activities inspire the pupils to experiment and investigate the world around them and to help them raise their own questions such as "Why...?", "How...?" and "What happens if...?". Activities develop the skills of enquiry, observation, locating sources of information, selecting appropriate equipment and using it safely, measuring and checking results, making comparisons and communicating results and findings. Lessons make effective links with other curriculum areas and subjects, especially English, Maths and Computing. Activities are challenging, motivating and extend pupils' learning. Pupils have frequent opportunities to develop their skills in, and take responsibility for, planning investigative work, selecting relevant resources, making decisions about sources of information, carrying out activities safely and deciding on the best form of communicating their findings.

13. **Processes and Imaginative Skills**

Investigations require learners to:

- Devise questions or statements based on existing knowledge and understand which they can test.
- Put together a sequence of investigative skills in an overall method to solve a problem.
- Evaluate their findings in the light of their original problem.
- Define and develop the way they tackle problems.

Investigations will include:

Planning	Designing	Evaluating evidence
Predicting	Carrying out	Drawing inferences
Hypothesising	Interpreting results	Communicating results.

14. **Planning**

Staff planning is based on the national curriculum and plans are written on the School's Foundation Planning Sheet. In KS1 and KS2, teachers should follow the scheme of work provided by PZAZ (Primary Science Advisory Service). This scheme provides structured lesson plans, progression matrices, and assessment tools that ensure consistency and challenge across all year groups. Teachers adapt PZAZ resources to meet the needs of their pupils while maintaining fidelity to the progression and enquiry-based learning model it promotes. Weekly planning is uploaded electronically where it is scrutinised by the Science Coordinator and the Senior Leadership Team.

When planning teachers take in to account the following;

- KS2 teachers teach science for a minimum of 2 hours each week.
- KS1 teach science for 1 ½ hours each week.
- Cross-curricular links are made where appropriate in KS2 and in KS1.

- Working scientifically should be embedded in science lessons and opportunities should be given for children to evidence this in their work.(See appendices for progression of these skills in KS1 and KS2)
- Pupils have opportunities to plan, carry out and evaluate their own investigations.
- Opportunities for assessment and progression.

15. **Adaptation in Science**

The study of science will be planned to give pupils a suitable range of adapted activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN the task will be adapted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

Adaptation by task

• By grouping the children according to ability and setting tasks accordingly.
• By giving a variety of tasks related to a curriculum theme: providing more concrete experience and discussion for children who require more time to understand, while giving extension activities for depth of learning, for those who succeed quickly

Adaptation by Outcome

• By setting a task which is virtually the same for the class, but providing greater support for the less able and giving more responsibility and challenge to the more able.
• By using mixed ability groups and asking children to plan and carry out practical work cooperatively, then for each child to record the work on their own, this provides opportunities for the teacher to assess what each child has learned. Different approaches will be needed for different classes, ages and activities.

16. **Assessment and Recording**

Assessment will be carried out to:

- Monitor pupil progress and ensure continuity;
- Diagnose and assist individual pupils needs;
- Provide a framework for future planning;
- Ensure the breadth and depth of the National Curriculum is covered;
- Give an accurate report to all interested parties;
- Recognise achievement.

Gathering and recording evidence may take the following forms;

- Teacher observations, pupil's comments and appraisal of pupils, eg, ability to work in groups/alone, etc.
- Pupils exercise books, project folders, etc.
- End of unit assessments where appropriate.

Teachers' assessment mostly takes place at the end of each unit of work which notes any attainment and progress which is significantly lower or higher than expected. Teachers analyse pupils' progress in the units of work they have completed at the end of each school year to complete the annual report to parents. This report takes the form of a summary of the teachers' observations and continued assessment of the pupils at work thus giving parents a view of what their child/ren know, understand and can do. An average

level for Science is then generated by the teacher at the end of the year. Assessment of working scientifically relies on observation and/or the collection of written evidence of investigative skills.

12. Monitoring

The Science Coordinator will monitor lessons, books and assessments in line with the School's curriculum monitoring program and determined by the Senior Leadership Team.

13. Inclusion

Planning at all levels ensures that the interests of boys and girls are considered, as well as catering for the range of abilities within the class. The pupils work individually, in pairs, as part of a small group and as a whole class each term. They use a variety of means for communicating and recording their work. All pupils, including those with special educational needs, undertake the full range of activities. Children that excel in Science are given extension work to challenge their thinking and understanding even further. Teacher assessment determines the depth to which individuals and groups do during each unit of work.

14. Equal Opportunities

Strategies are adopted to ensure that all children have the opportunity to become scientific regardless of gender, race, class, physical or intellectual ability. We ensure that expectations do not limit pupils' achievements and the assessments do not involve any cultural, social, and linguistic or gender bias. Such as:

- Work produced by girls and boys is equally valued.
- Care is taken to make sure that girls do not take on passive role in-group situations
- Staff present good role models and are able to use the relevant equipment.
- Children are encouraged to talk about their scientific investigations.
- We recognise the different levels of experience and language of children arriving at school and to provide them with appropriate experiences and means of expression.
- Access is provided to all activities and we recognise that some may have to be adapted. Physically less able children are encouraged to participate and integrate in scientific activities in the classroom.
- Support is provided to ensure access for those children experiencing difficulties and to extend and stimulate them who need to develop further.

15. Learning Resources

Learning resources are kept in the Science Resource cupboard in the main corridor. Relevant equipment is taken to the class and returned by staff. Teacher's need to sign out and sign back in the resources. The Science Coordinator is responsible for the maintenance of this area and the replenishment of resources and equipment; however, staff should inform the Coordinator of any damages, faulty equipment, etc. The children are taught not to be careless with equipment, to respect animals and plants and to use consumables efficiently. Class teachers are responsible for equipment whilst stored in their classrooms.

The school allocates a budget for science equipment. All staff discuss their needs with the Science Co-coordinator and ensure planned units of work are adequately resourced at the beginning of each term. A governor is allocated to take a specific interest in Science and will discuss developments with the Science Co-coordinator and the Head of School before reporting back to the Governing Board.

National Science Week.
This takes place annually and is designed to raise the profile of science. During this time a number of science based activities are organised for all pupils in the School. These range from workshops, theatre productions and planetarium visits to a science based competition.

16. Health and Safety

Safe practice must be promoted at all times. Teachers must also take into account the school's Health and Safety policy. Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies. Safety issues will have been identified in medium-term planning and risk assessments must be completed when activities are identified that are unusual and beyond the scope of normal safety practice.

17. Science Across The Curriculum

The teaching of English, Maths and Computing is promoted strongly in science as part of our school's drive to raise standards in English and Mathematics. Science is used to extend and enable the pupils to practice the skills of language, literacy and numeracy.

English

In particular, at Key Stage 1, the pupils are encouraged to use their speaking and listening skills to describe what they see and explain what they are going to do next. At Key Stage 2 the pupils are encouraged to develop their skills of writing to record their planning, what they observe and what they found out. In relation to science, they should be applying their literacy skills at levels similar to those that they are using in their English work.

Maths

At both key stages the pupils are expected to use their knowledge and understanding of measurement and data handling at appropriate levels. In science, they should be applying their numeracy skills at levels similar to those that they are using in their mathematics lessons.

Computing

The pupils' computing skills are applied. At both key stages this should involve the pupils using ICT to: locate and research information (internet); record findings (using text, data and tables); log changes to the environment over time (sensing equipment); gain confidence in using calculators, data loggers, digital video cameras, digital cameras, and recorders, as well as the computer.

Thinking Skills

The teaching of science provides numerous opportunities for the development of higher order thinking skills. Scientific enquiry demands a range of different types of thinking and processes that can be developed through thoughtful questioning. Questions for thinking may be included in science plans and can be further developed by the teacher.

Personal, Social and Health Education

Health education is taught as part of the units on ourselves, health and growing, teeth and eating, moving and growing, keeping healthy and life cycles.

Sex Education
The topics of puberty and human reproduction are taught to Year 6 pupils during a relationships conference(See the PHSE Policy for more details).

18. Leadership and management

The role of the Science Coordinator is to:

- Take the lead in policy development and review, including the continuing successful implementation of the science curriculum.
- Support colleagues in the development of plans from schemes of work.
- Keep up-to-date on local and national initiatives and disseminate information.
- Take responsibility for the purchase and organisation of scientific resources.
- Encourage the professional development of staff.

19. Science and the School Improvement Plan

When the St Charles' School Improvement Plan contains science targets determined by the Science Coordinator and the Senior Leadership Team, the school staff endeavour to meet these targets with respect to the science curriculum by:

- Delivering a scheme of work which matches the curriculum map specific to their year group and provide children with a broad range of opportunities which develop their scientific knowledge, skills and understanding.
- Providing adapted tasks outlined in half-termly and weekly plans.
- Promoting collaborative learning which is an integral part of Experimental and Investigative science. Formative and summative assessments to ensure continuity and progression.
- By attending in-service training to develop their skills as science teachers.

20. Staff Development and Training

The needs of individual members of staff (teaching and non-teaching) are identified as a result of the school's performance management program which may include an area of scientific development. Staff training is offered to staff as and when available and appropriate from the LA and from staff insets delivered by the Coordinator and, on occasion, visiting trainers. Staff attending training are expected to share the useful points with other staff during feedback sessions in staff meetings.

Appendix 1
Working Scientifically KS1

Types of enquiry

1. Classifying
2. Researching
3. Comparative/fair testing
4. Pattern seeking
5. Observing over time

KS1 Termly Working Scientifically Progress Matrix

Year Group	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten
1	Asking simple questions.	Asking simple questions.	Suggest different ways of answering a question.	Suggest different ways of answering a question	Making observations using simple language.	Making observations using keyword vocabulary.	Making observations using keyword vocabulary.	Answering questions using simple language.	Answering questions using keyword vocabulary.	Noticing patterns and relationships
2	Asking simple questions.	Suggest different ways of answering a question	Suggest different ways of answering a question.	Making observations using keyword vocabulary.	Making observations using keyword vocabulary.	Answering questions using simple language.	Answering questions using keyword vocabulary.	Noticing patterns and relationships	Noticing patterns and relationships.	Explaining some of the things observed using keyword vocabulary.

Once a term is completed, pupils will begin the cycle of milestones again in the next term, thus completing 3 cycles throughout the school year.

Appendix 2
Working Scientifically KS2

Types of enquiry

1. Classifying
2. Researching
3. Comparative/fair testing
4. Pattern seeking
5. Observing over time

Planning Investigations - KS2 Working Scientifically Progress Matrix- Term 1

Year Group	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten
3	Can define the 3 Types of Variable.	Can name at least 3 Independent Variables.	Can name at least 3 Independent, 1 Dependent Variable and 1 Control Variable.	Can name 3 each of Independent, Dependent and Control Variables.	Can construct questions from chosen variables.	Can identify variables in questions.	Can make a prediction.	Can justify a prediction.	Can list the equipment needed to carry out an investigation	Can write a method for an investigation.
4	Can define the 3 Types of Variable.	Can name 3 Independent Variables and 3 Dependent Variables.	Can name 3 each of Independent, Dependent and Control Variables.	Can construct questions from chosen variables.	Can identify variables from questions.	Can make a prediction.	Can justify a prediction.	Can list the equipment needed to carry out an investigation.	Can write a method for an investigation.	Can identify risks and mitigation procedures associated with an investigation.
5	Can define the 3 Types of Variable.	Can name 3 Independent, 3 Dependent and 3 Control Variables.	Can construct questions from chosen variables.	Can identify variables from questions.	Can make a prediction.	Can justify a prediction.	Can list the equipment needed to carry out an investigation.	Can write a method for an investigation.	Can identify risks and mitigation procedures associated with an investigation.	Can produce a full plan for an investigation.
6	Can define the 3 Types of Variable.	Can name 5+ of the 3 types of Variable.	Can construct questions from chosen variables.	Can identify variables from questions.	Can justify a prediction.	Can list equipment needed to carry out an investigation.	Can write a method for an investigation.	Can identify risks and mitigation procedures associated with an investigation.	Can produce a full plan for an investigation.	Can produce a full plan for an investigation.

Gathering Data and Analysis - KS2 Working Scientifically Progress Matrix-Term 2

Year Group	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten
3	Can list the types of data that can be gathered in investigations.	Can decide the type of data being gathered in investigations.	Can complete provided results tables.	Can complete provided results tables.	Can complete provided results tables.	Draw and complete own results tables.	Draw and complete own results tables.	With help, draw a graph with an appropriate scale on the axes.	With help, draw a graph with an appropriate scale on the axes.	Identifying trends in the data gathered from investigations.
4	Can list the types of data that can be gathered in investigations.	Can complete provided results tables.	Can complete provided results tables.	Draw and complete own results tables.	Draw and complete own results tables	Draw and complete own results tables	With help, draw a graph with an appropriate scale on the axes.	With help, draw a graph with an appropriate scale on the axes.	Identifying trends in the data gathered from investigations.	Writing Conclusions.
5	Can list the types of data that can be gathered in investigations.	Complete provided results tables.	Complete provided results tables.	Draw and complete own results tables	Draw and complete own results tables	With help, draw a graph with an appropriate scale on the axes.	Draw own graphs from data gathered in investigations.	Identifying trends in the data gathered from investigations.	Writing Conclusions.	Writing Conclusions.
6	Can list the types of data that can be gathered in investigations.	Complete provided results tables.	Draw and complete own results tables.	Choose the most appropriate graph for the data gathered.	With help, draw a graph with an appropriate scale on the axes.	Draw own graphs from data gathered in investigations.	Identifying trends in the data gathered from investigations.	Writing Conclusions.	Writing Conclusions.	Produce a full data report.

Critical Evaluation of Investigations - KS2 Working Scientifically Progress Matrix-Term 3

Year Group	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten
3	State the trend in the results.	State whether the trend matched the prediction.	Explain how the trend matched, or didn't match, the prediction.	Explain how the trend matched, or didn't match, the prediction.	List the criteria needed to decide whether results gathered are valid or not.	Explain whether results gathered were valid or not.	Spot anomalies in the results gathered.	Explain the reason for any anomalies in the data.	Suggest how the method could be improved to obtain valid data.	Suggest new questions that are related to the original investigation.
4	State the trend in the results.	Explain how the trend matched, or didn't match, the prediction.	Explain how the trend matched, or didn't match, the prediction.	List the criteria needed to decide whether results gathered are valid.	Explain whether results gathered were valid or not.	Spot anomalies in the results gathered.	Explain the reason for any anomalies in the data.	Suggest how the method could be improved to obtain valid data.	Suggest new questions that are related to the original investigation.	Design an investigation that could produce similar results.
5	Explain how the trend matched, or didn't match, the prediction.	Explain how the trend matched, or didn't match, the prediction.	Describe the criteria needed to decide whether results gathered are valid or not.	Explain whether results gathered were valid.	Spot anomalies in the results gathered.	Explain the reason for any anomalies in the data.	Suggest how the method could be improved to obtain valid data.	Suggest new questions that are related to the original investigation.	Design an investigation that could produce similar results.	Produce a full scientific report, including planning, data and evaluation.
6	Explain how the trend matched or didn't match the prediction.	Explain the criteria needed to decide whether results gathered are valid or not.	Explain whether results gathered were valid or not.	Spot anomalies in the results gathered.	Explain the reason for any anomalies in the data.	Suggest how the method could be improved to obtain valid data.	Suggest new questions that are related to the original investigation.	Design an investigation that could produce similar results.	Produce a full scientific report, including planning, data and evaluation.	Produce a full scientific report, including planning, data and evaluation.