

Purpose: The purpose of planning an investigation in science is to develop students' skills in scientific inquiry, critical thinking, and problem-solving. Planning and carrying out an investigation allows students to learn the 3 disciplines of science (biology, chemistry and physics) in a hands-on manner. It helps then develop planning skills, reinforces the importance of accuracy and precision. It also allows students the opportunity develop their thinking based on evidence.

Assessment: Assessment methods can include written assignments, practical assessments, and examinations. Practical skills, critical thinking, and the ability to apply scientific knowledge in a real-world context are essential components of the assessment process.

At Maplefields a student's ability to plan an investigation is teacher assessed up to KS3. This will include observations of students in class discussion, through marking work and when conducting a practical.

In Year 10 Students will be assessed on their practical skills as they plan investigations and write up coursework which will be submitted as part of their entry level qualification.

At GCSE level students at Maplefields work towards a Physics GCSE. It's crucial for students to demonstrate a thorough understanding of the scientific method, experimental design, and a logical approach to planning and conducting experiments.

Cross curriculum: While planning investigations is most commonly associated with science subjects, the concept of inquiry-based learning, critical thinking, and problem-solving through investigation is increasingly being recognized as valuable in various subjects

History and social sciences - In these subjects, students may engage in historical investigations or research projects. They learn to analyse historical events, evaluate primary and secondary sources, and draw conclusions based on evidence.

Geography - Geography often involves investigation into spatial patterns, environmental issues, and societal trends. Students may plan and conduct geographical inquiries to understand the relationships between human activities and the environment.

DT - In technology and design-related subjects, students may plan and conduct investigations when designing solutions to real-world problems. This may involve prototyping, testing, and refining designs.

PE - In physical education, students might investigate the impact of exercise on health, analyse sports performance data, or explore the biomechanics of movement.

Key Stage 1 (Ages 5-7):

- **Purpose:** Introduce basic scientific concepts through hands-on activities and simple investigations.
- **Objectives:** Develop curiosity, observation skills, and an awareness of the natural world. Encourage students to ask questions and explore answers through guided investigations.

Key Stage 2 (Ages 7-11):

- **Purpose:** Build on foundational skills, fostering a deeper understanding of scientific principles.
- **Objectives:** Expand investigative skills, including forming hypotheses, designing experiments, and interpreting results. Emphasize the importance of fair testing and systematic observation.

Key Stage 3 (Ages 11-14):

- **Purpose:** Further develop scientific inquiry skills and critical thinking.
- **Objectives:** Introduce more complex scientific concepts and experimental techniques. Encourage independent thinking and the ability to analyze and evaluate data. Promote collaboration in group investigations.

Key Stage 4 (Ages 14-16):

- **Purpose:** Prepare students for more advanced study and practical application of scientific knowledge.
- **Objectives:** Develop advanced investigative skills, including planning and conducting extended experiments. Emphasize the application of scientific principles to real-world problems. Prepare students for assessments and examinations