

Purpose: In the English national curriculum for science, the purpose of asking scientific questions is to foster curiosity, critical thinking, and an investigative mindset among students. Asking questions is a fundamental aspect of the scientific process and plays a crucial role in developing scientific knowledge and understanding.

Assessment:

Teachers may observe students during class discussions, group activities, or practical exercises to assess their ability to ask questions, think critically, and solve problems. A student's participation in class discussions, asking relevant questions, and engaging in group activities can provide insights into students' inquiry and critical thinking skills.

Formal written exams often include questions that require critical thinking, problem-solving, and the application of knowledge. These questions may assess the ability to analyse information, draw conclusions, and solve problems.

In science subjects, practical assessments, including laboratory experiments, assess students' ability to ask scientific questions, design experiments, and analyse results.

Cross curriculum: Across subjects, the ability to ask questions, think critically, and engage in problem-solving is crucial for deepening understanding and fostering a lifelong love of learning.

Mathematics - Problem-Solving: Mathematics often involves posing and solving problems. Students are required to ask questions about mathematical relationships, formulate hypotheses, and devise strategies to solve problems.

English - Analytical Reading: In literature, students ask questions about characters, plot developments, and themes. They critically analyse texts, seeking to understand the author's intentions and the broader implications of the work.

History - Historical Inquiry: In history, students ask questions about the past, formulating hypotheses about historical events and using evidence to support or challenge historical interpretations.

Key Stage 1 (Ages 5-7):

- **Encouraging Curiosity:** Introduce students to basic scientific concepts through engaging and hands-on activities to spark their curiosity about the world.
- **Developing Inquiry Skills:** Encourage students to ask simple questions about observations and phenomena, fostering their ability to explore and investigate.

Key Stage 2 (Ages 7-11):

- **Fostering Critical Thinking:** Emphasize critical thinking as students start to delve into more complex scientific topics. Encourage them to question why things happen and consider alternative explanations.
- **Connecting Theory and Practice:** Introduce the idea of forming hypotheses and designing simple investigations based on questions. Connect theoretical knowledge to practical exploration.

Key Stage 3 (Ages 11-14):

- **Promoting Communication Skills:** Develop communication skills by requiring students to articulate their questions clearly and discuss them with peers. Emphasize the importance of effective communication in the scientific process.
- **Enhancing Problem-Solving Skills:** Encourage students to ask questions that involve problem-solving. Guide them in breaking down complex problems into manageable parts and devising strategies for investigation.

Key Stage 4 (Ages 14-16):

- **Connecting Science to Everyday Life:** Emphasize the real-world relevance of scientific questions. Encourage students to ask questions that relate to societal issues, fostering an understanding of how science impacts their daily lives.
- **Refining Inquiry Skills:** Further develop inquiry skills by challenging students to formulate more sophisticated questions and design experiments or investigations that require a deeper understanding of scientific principles.