Transferable skills subject interpretation: Pearson Edexcel International GCSE in Science (Double Award) (9-1)

Transferable skills will help students cope with the different demands of degree study and provide a solid skills base that enables them to adapt and thrive in different environments across educational stages; and ultimately into employment.

A good international education should enable students to start developing transferable skills as early as possible. Developing these transferable skills where they naturally occur as part of the International GCSE curriculum can help build learner confidence and embed the importance of this well-rounded development. This builds the foundations to ensure students are ready for A-level and higher education.

Our approach to enhancing transferable skills in our International GCSEs ensures that it is not only the academic and cognitive skills that are developed, but those broader elements that universities highlight as being essential for success. Skills such as self-directed study, independent research, self-awareness of own strengths and weaknesses and time-management are skills that students cannot learn from a textbook but have to be developed through the teaching and learning experience that can be provided through an international curriculum.

To support the design of our qualifications, the Pearson Research Team selected and evaluated seven global 21st-century skills frameworks. Following on from this process, we identified the National Research Council's (NRC) framework as the most evidence-based and robust skills framework.

In the tables below, we have taken the NRC framework skills and provided an explicit definition of how each skill can be interpreted for this subject. This will enable teachers and learners to understand examples of how they can develop each skill through this International GCSE.

Intrapersonal skills	
Intellectual Openness	
Adaptability	Ability to select and apply knowledge and understanding of scientific processes, which is not prompted or provided to scientific problems.
Personal and social responsibility	Appreciate ethical issues in science.
Continuous learning	Planning and reflecting on own learning-setting goals and meeting them regularly.
Intellectual interest and curiosity	Identifying a problem under own initiative, planning a solution and carrying this out.
Work ethic/conscientiousness	
Initiative	Using scientific knowledge, independently (without guided learning), to further own understanding.

Interpersonal skills	
Teamwork and collaboration	
Communication	Able to communicate a scientific process or technique (verbally or written) to peers and teachers and answer questions from others.
Collaboration	Carrying out a peer review to provide supportive feedback to another.
Teamwork	Working with other students in a science based problem-solving exercise.
Co-operation	Sharing own resources and own learning techniques with other students.
Interpersonal skills	Using verbal and non-verbal communication skills in a dialogue about science.
Leadership	

Cognitive skills	
Cognitive Processes and Strategies	
Critical thinking	Using many different pieces of information from the three sciences and synthesise this information to make judgements.
Problem solving	Apply the principles and concepts of three sciences, including those related to the applications of physics, chemistry and biology in different contexts.
Analysis	Analyse and interpret data and experimental methods, drawing conclusions, which are consistent with evidence from experimental activities.
Reasoning	Evaluate information related to physics, chemistry and biology, making judgements on the basis of this information.
Interpretation	Select, organise and present relevant information clearly and logically using appropriate vocabulary, definitions and conventions.
Decision Making	Evaluate data and experimental methods, drawing conclusions, which are consistent with evidence from secondary sources and experimental activities. Suggest possible improvements and further investigations.

Self-direction	Planning and carrying out science based problem solving under own direction.
Responsibility	Taking responsibility for any errors or omissions in own work and creating a plan to improve.
Perseverance	Actively seeking new ways to continue and improve own learning despite setbacks.
Productivity	Develop a fluency in technical language so sophisticated answers of depth are produced in extended answers to scientific questions.
Self regulation (metacognition, forethought, reflection)	Developing and refining a strategy over time for applications of science, to different contexts reflecting on the success or otherwise of the strategy.
Ethics	Producing output with a specific moral purpose for which one is accountable.
Integrity	Taking ownership for own work and willingly responds to questions and challenges.
Positive Core Self Evaluation	
Self monitoring/self evaluation/self reinforcement	Planning and reviewing own work as a matter of habit.

Leadership	Leading others in a group activity to effectively solve a scientific problem.
Responsibility	Taking responsibility for the outcomes of a team exercise even if one is not solely responsible for the output.
Assertive communication	Chairing a debate, allowing representations and directing the conversation to a conclusion.
Self presentation	Presenting a scientific problem or idea to an audience to seek solutions.

Adaptive learning	Learn about unifying patterns and themes in the three sciences and use them in new and changing situations.
Executive function	Use experimental and investigative skills based on correct and safe laboratory techniques. Evaluate the effectiveness of an investigation in terms of accuracy, validity and reliability.
Creativity	
Creativity	Apply existing knowledge of scientific processes to situations set in an unfamiliar context.
Innovation	Using a novel strategy to apply existing knowledge of scientific concepts in unaccustomed situations.