

From Problem to Progress: Investigating sustainable solutions to local problems with global significance

This is a Next Generation Science Standards- and inquiry-based research project to introduce learners to **Cambridge AS Level Global Perspectives (9239)**, specifically Component 3 (Team Project). Learners will explore the **United Nations' Sustainable Development Goals (SDGs)** to connect their knowledge of **Xplorlabs Pathways** to one or more of the 17 goals, and reflect on how they are able to advocate for local action or educational enrichment. Showcased in the learners' deliverables will be evidence-based argumentation, highlighting and evaluation of different viewpoints, and an understanding that local issues have global significance.

Overarching goals are to facilitate the learners' skill building to investigate real-world sustainability challenges in their team's cross-disciplinary project. Learners will critically examine how scientific knowledge as well as decision-making opportunities and constraints influence potential solutions to local issues. As the teams explore issues such as fire risks, e-waste, fire forensics, material extraction, thermal runaway, and battery safety, they will have the opportunity to collaborate, conduct primary and secondary research, and communicate a cogent argument to address their authentic questions.

Aligned with an introduction to 21st century skills, learners will:

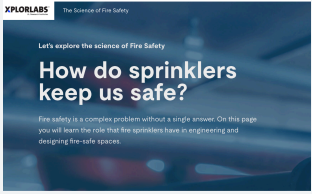




1. Frame an inquiry question related to sustainability and local issues (e.g., lithium-ion battery disposal, thermal runaway dangers, fire risks in urban communities).
2. Use the 5E model (Engage, Explore, Explain, Elaborate, Evaluate) to structure their investigation [after a modelled example is given by the educator].
3. Conduct independent and team-based research using a guided packet [providing suitable overlap with Cambridge A Level Global Perspectives research projects].
4. Create a product or campaign (video, infographic, presentation, prototype, etc.) connected to an SDG.
5. Take on differentiated roles (researcher, communicator, organizer, etc.), with rubrics and checklists to guide their work.
















All Xplorlabs Pathways will be used, either by individual teams, or as part of station work, so that the essence of exploring and creating an authentic overarching question can be investigated by the learners.

Action-Oriented Pedagogies are a way to bridge this learning with real-life. So the focus will be on the learners choosing some local issue of relevance. This is hard to do, when you have a team, so this learning experience will demand collaboration, cooperation, delegation of jobs, researching, communication, and so much more. As the facilitator, knowing the learners' deliverables for this project as well as for their Component 3 Team Project (an examination piece for Cambridge AS Global Perspectives), I will keep them on track with questions and reflection.

This project is aimed at a junior high school class of 16 students taking Cambridge AS Global Perspectives as one of their core classes.

For a more detailed description of each phase of learning, please see this [unit plan document](#).

Instructional Phases	Explore	Explain	Elaborate	Evaluate	Extend
Visual Storyline					
Standards	Next Generation Science Standards (NGSS)				
	HS-ESS3-1-4 & 5 HS-ETS1-1 & 2	HS-ESS2-2 HS-ESS3-1-2 & 4 HS-ETS1-2 & 3	HS-ETS1-2-4 HS-ESS3-2 & 4-5	HS-ESS3-4 & 5 HS-ETS1-1 & 3	HS-ESS3-4 HS-ETS1-1
	Cambridge Global Perspectives (9239) Mark Scheme Alignment				
<ul style="list-style-type: none"> Identification of a clear global issue with local relevance Initial team planning and allocation of roles Evidence of understanding that the issue has global significance Use of appropriate research methods Selection of relevant sources Beginning to consider different perspectives (lenses) Explanation of the issue using evidence Identification of different viewpoints or perspectives Early evaluation of evidence and sources 	<ul style="list-style-type: none"> Clear explanation of why the issue matters Evidence of analysis rather than description Reflection on strengths and limitations of evidence Development of a coherent team outcome 	<ul style="list-style-type: none"> Development of a coherent team outcome Logical organisation of ideas Clear links between evidence, perspectives, and conclusions Clear, structured oral communication Use of appropriate terminology and evidence Reflection on effectiveness of arguments Sustained, coherent argument presented as a team Clear demonstration of collaborative working Reflective evaluation of team process and outcomes 	<ul style="list-style-type: none"> Sustained, coherent argument presented as a team Clear demonstration of collaborative working Reflective evaluation of the team process and outcomes Insightful reflection on learning and process Understanding of future implications and potential impact Consideration of how perspectives connect beyond the classroom 	<ul style="list-style-type: none"> Insightful reflection on learning and process Understanding of future implications and potential impact Consideration of how perspectives connect beyond the classroom 	

Timing	Weeks 1 - 3	Weeks 3 - 4	Weeks 5 - 7	Weeks 7 - 8	Week 8
<i>Overview</i>	Introduce Global Perspectives skill building; sustainable issues and safety science; Xplorlabs Pathways; research skills, individual roles and team work	Explain findings through various means such as mini-presentations with peer feedback. Use teacher-led content as samples for guidance	Final presentations to the class; answering the question; suggesting actionable deliverable	Using different formats to present to the class including panel discussions; comparing project to Cambridge examination expectations; considering reaching a wider audience	Evaluation of the project, reflection on what went well and what could be improved; interest in a mentorship for further work
<i>Supporting Documents</i>	Xplorlabs Fire Safety Investigation UN Sustainable Development Goals Cambridge AS Global Perspectives (9239)  Eddis Close Readin...  Martin 2019.pdf  Explore Pathways a...  Global_Perspective...	 So What Activity.pptx And in-class work to support this phase (such as using vertical desks for communication)	 Fire_Safety_Sustain...  Comparing Global P...  GlobalTeamProjMar...  Before your present...  ReflectiveDocExam...  Panel Presentations...  Student Checklist P...	 Copy of Panel Pres...  Copy of Student Ch...  Copy of Fire_Safety... Questionnaire	Questionnaire