

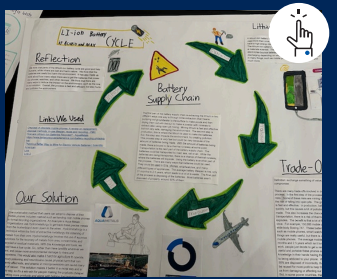

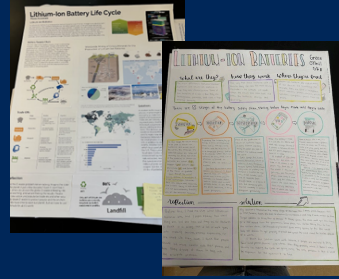


Reimagining Safety by Examining the LiB Supply Chain

Alex Sackett & Kate Kobany, 8th Grade Science, Edina MN

Using the Extraction to E-Waste pathway, students start to understand all the resources that go into the technology they use daily – their cell phones! They reflect on how this technology is made, and the impact its production has on our Earth systems along the battery supply chain. Students worked collaboratively to understand the lithium-ion battery supply chain. Then are challenged to reimagine and improve one component of the lithium-ion battery chain to be more sustainable and or safer. Understanding these impacts on Earth Systems and imagining solutions equates to safer communities. In the future we hope to partner with local community members on how our community recycles or works with lithium-ion batteries.

	Engage & Explore	Explore & Explain	Evaluate & Explain	Elaborate	Evaluate
Visual of Experiences					
Standards	MN State Science Standards <ul style="list-style-type: none"> • 9E.2.2.1.3 Develop or use an algorithmic representation, based on investigations of causes and effects in complex Earth systems, to illustrate the relationships within some part of the Earth system and how human activity might affect those relationships. • 9E.3.2.2.1 Evaluate or refine a technological solution to reduce the human impacts on a natural system and base the evaluations or refinements on evidence and analysis of pertinent data. 				
Time	Day 1 - 82 minute block	Day 2 - 82 minute block	Day 3 - 82 minute block	Day 4 - 82 minute block	Day 5 - 82 minute block
Anticipated Outcomes	Students gather background information about what Lithium-ion batteries are, where they are found, and their benefits from “01 Batteries and Safe Cities” on the Xplorlabs pathway. Students jigsaw reading the articles from the OnTheMark Magazine’s Lithium-ion battery issue. As a class they read and discussed “Lithium-ion Issues.”	Students navigate the “02 Explore the Issues” portion of the pathway and recorded what they noticed and wondered about the battery supply chain while assuming different roles. They recorded their thinking on posters.	Students evaluate trade-offs in the battery supply chain by revisiting their posters and summarizing their findings. Students work in teams to brainstorm solutions along the battery supply chain then gather potential solutions from “03 Explore Issues.” They select an appealing solution to further explore. Revisiting the posters along the way creates a great throughline!	Students work in teams to summarize their understanding of the Pathway by creating a poster that outlines their understanding of Li+ batteries, the battery supply chain, the trade-offs associated with the process, and one solution that could reduce the role of humans on the Earth regarding this process. Students conduct further research on solutions and their role in that process.	Students will turn in their final poster project. Students participate in a gallery walk to give each other feedback using post-it notes Teachers use a rubric to evaluate student work
Supporting Documents	On The Mark 01 Batteries and Safe Cities	02 Explore the Issues	03 Explore the Solutions		Project Rubric
Extraction to E-Waste Student Guide					