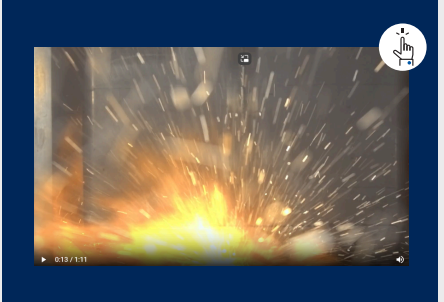

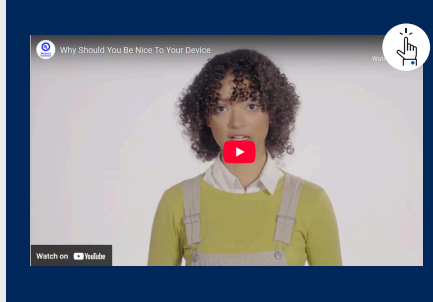
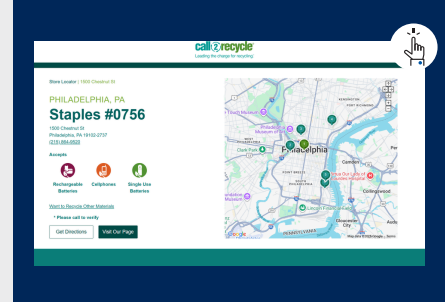


Battery Safety to Innovative Prototyping

After exploring how batteries and conductivity work, students will explore the importance of disposing of batteries and electronic devices properly. They will then investigate how to properly dispose of them in the future and apply this knowledge to their wearable technology class. Finally, they will create a prototype of a wearable technology and pitch it to fake investors while also stressing how to recycle their product or its batteries.

	Engage	Explore	Explain	Elaborate or Extend
Part of the Pathway				
NGSS				
Time	5 minutes	10 minutes	10 minutes	5 minutes
Overview	<i>Engage students by showing them what happens when something that contains a lithium-ion battery is crushed. Elicit their feedback on why this is dangerous, what could occur if it happens, and what could be done to prevent it. This exercise should hopefully get the students interested in the importance of battery safety.</i>	<i>Have students explore the dangers of improper battery disposal by doing the bologna test (a shortened version). Students will get more insight into what can happen when batteries are not disposed of properly. This will inspire them to connect battery safety to their real lives and have a more personal connection to the science behind it. Emphasize the importance of safety for their friends, family, pets, etc.</i>	<i>Students begin to understand that there are resources available to them to limit the negative impact of lithium-ion batteries. Have them talk about ways we might be able to combat the issue and look up local initiatives. Have students pick at least one way to recycle batteries and one local initiative to present during their prototype pitch.</i>	<i>Students explore local initiatives that allow them to drop off or ship their batteries and come up with a plan as a group to bring in any batteries and electronics from home they want to donate. Throughout the semester, students also learn block coding and sewing and have to create a prototype of a wearable technology that they pitch to fake investors. They must include how to recycle the prototype or its batteries as well as a local initiative where the investor/customers can do that.</i>
Supporting Resources	https://xplorlabs.org/resource/crush-test/	https://xplorlabs.org/wp-content/uploads/2023/01/bologna_test_Investigation1_StudentGuide-1.pdf	https://xplorlabs.org/resource/be-nice-to-your-device/	https://locations.call2recycle.org/pa/philadelphia/65410/