

Lights Out!

CTF Challenge Idea

Challenge	Lights Out!		
Essential Question	Can you create a tool that uses the sun as an energy source in order to meet your basic needs in a time of crisis?	Estimated Time	15–20 hrs.

All CTF learning outcomes should be addressed in each CTF challenge.

Challenge Description	Students will design, construct and present a tool that uses the sun as an energy source and that would help them survive in the event of a power outage that lasts for an extended period of time. In the future, this tool might be usable in other sectors, such as by camping suppliers.
Scenario	<p>Total blackout! Because of a bizarre electromagnetic pulse (EMP), your home is cut off from electricity. What would you do if every single piece of technology—computers, phones, appliances and even lights—had mysteriously blacked out? It wasn't too long ago that people carried out all important tasks during the daylight and simply went to sleep at night. But that is not the case anymore.</p> <p>Could you survive? Could you build a tool to meet your basic needs that uses the sun as the source of energy?</p>
Occupational Areas	<p>BUSINESS</p> <p><input type="checkbox"/> Computing Science <input type="checkbox"/> Financial Management <input type="checkbox"/> Management & Marketing</p> <p><input type="checkbox"/> Enterprise & Innovation <input type="checkbox"/> Information Processing <input type="checkbox"/> Networking</p> <p>COMMUNICATION</p> <p><input type="checkbox"/> Communication Technology <input checked="" type="checkbox"/> Design Studies <input type="checkbox"/> Fashion Studies</p> <p>HUMAN SERVICES</p> <p><input type="checkbox"/> Community Care Services <input type="checkbox"/> Foods <input type="checkbox"/> Legal Studies</p> <p><input type="checkbox"/> Cosmetology <input type="checkbox"/> Health Care Services <input type="checkbox"/> Recreation Leadership</p> <p><input type="checkbox"/> Esthetics <input type="checkbox"/> Human & Social Services <input type="checkbox"/> Tourism</p> <p>RESOURCES</p> <p><input type="checkbox"/> Agriculture <input type="checkbox"/> Forestry <input type="checkbox"/> Wildlife</p> <p><input type="checkbox"/> Environmental Stewardship <input type="checkbox"/> Primary Resources</p> <p>TECHNOLOGY</p> <p><input checked="" type="checkbox"/> Construction <input type="checkbox"/> Fabrication <input type="checkbox"/> Mechanics</p> <p><input type="checkbox"/> Electro-Technologies <input type="checkbox"/> Logistics</p>
Skills Related to Occupational Areas	<p>Design Studies</p> <ul style="list-style-type: none"> • Planning and designing a project <p>Construction</p> <ul style="list-style-type: none"> • Basic construction procedures • How to safely use basic hand tools and other equipment found in woodworking labs
Safety and/or Environmental Concerns	<p>Review safety procedures for cutting tools, wire snips and glue guns, as well as the need to wear safety glasses.</p> <p style="color: red;">Remember to follow your school's and/or district's safety requirements at all times.</p>
Grade	<input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input checked="" type="checkbox"/> 8 <input type="checkbox"/> 9

Interdisciplinary Learning Opportunities

SUBJECTS

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|---|--|--|
| <input type="checkbox"/> ELA | <input checked="" type="checkbox"/> Health and Life Skills | <input type="checkbox"/> Religious Education |
| <input type="checkbox"/> Fine Arts | <input type="checkbox"/> Mathematics | <input checked="" type="checkbox"/> Sciences |
| <input type="checkbox"/> French Language Arts | <input type="checkbox"/> Outdoor Education | <input type="checkbox"/> Social Studies |
| <input type="checkbox"/> French Second Language | <input type="checkbox"/> Physical Education | |

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