

Table 5.2: Hidden in Plain Sight Project Summary

	Better Butterflies	Photographer Camouflage
Initial Hook	Reading <i>The Very Hungry Caterpillar</i> (Carle, 1994) or <i>A Butterfly Is Patient</i> (Aston & Long, 2011)	Pictures or videos about Liu Bolin, a Chinese artist who is known as the Invisible Man (https://bit.ly/2J3dHfx). He camouflages himself in an amazing range of scenes and places.
Initial Engagement Activity	Butterfly-hunting activity	How does nature design camouflage? The Create-a-Critter activity challenges students to make small “critters” (maximum size is 2 x 3 inches) to hide in various parts of the school library or cafeteria. Encourage students to use different patterns and types of camouflage (concealing coloration, disruptive coloration, disguise based on shape or texture, mimicry, and so on). Project Learning Tree (2017) has some great examples, as do many other websites.
EDP Phase 1: Know Your Problem Define problem; identify constraints and criteria	Define the problem as <i>survival</i> . What colors and patterns hide the butterfly so it can survive? Constraints—materials on hand (same as nature) Criteria—matches with the environment	The problem is the need to conceal the photographer, often while he or she moves in the environment. Constraints—materials on hand Criteria—some sort of match with the environment, plus comfort and climate suitability
EDP Phase 2: Know Your Options Research what works; examples of different camouflage in nature and man-made Brainstorm possible solutions; focus on color and patterns	Students may also do some exploring outside in this stage.	It may be helpful for individual students to create small sample patterns as part of or subsequent to brainstorming. They should focus on the idea of quantity over quality before settling on a solution.

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	Better Butterflies	Photographer Camouflage
<p>EDP Phase 3: Develop a Solution</p> <p>Make a prototype; test; modify; communicate results</p>	<p>Have students test their butterfly by letting a few different students hunt for it while the designers record how long it takes for someone to find it. They can also obtain feedback on what gave their butterfly away.</p> <p>Either allow time for modifications or ask students what modifications (same as adaptations) would help.</p>	<p>Test T-shirt designs against the environment picture or on a green screen with the environment picture projected. You may even want to involve students in a do-it-yourself green-screen project or in the use of Photoshop to achieve the effect.</p> <p>The most effective testing is based on group feedback on what is easily noticed, for example.</p> <p>Allow modifications if there is time; if not, ask for a list of two or three possible modifications.</p> <p>Students present their findings as marketing pitches or posters for <i>National Geographic</i>. Have students highlight the best features of their design and include some accessories to complete the look. Students should also identify specific regions of the world that would suit their camouflage design.</p>

Aston, D. H., & Long, S. (2011). A butterfly is patient. San Francisco: Chronicle Books.

Bolin, L. (n.d.). Home. Accessed at <https://liubolinstudio.com> on August 16, 2019.

Carle, E. (1994). The very hungry caterpillar. New York: Phiomel.

Project Learning Tree. (2017). 32 examples of camouflage in nature. Accessed at <https://plt.org/educator-tips/camouflage-nature-examples> on October 25, 2018.