

Crash Helmet Design

A Safety Product PBL for AEC Physics

In this authentic project, students will design, prototype and test a crash helmet with a purpose of protecting a population of people from traumatic head (brain) injury. Students will employ the design thinking process, start-to-finish, and use an egg to simulate a human head.



Individual Work Product: Empathy Infographic

Task: Research traumatic head (brain) injuries, their causes, and their impacts on people's lives.

Work Product: Create a visually impactful, single-page infographic depicting a summary of your TBI findings.

Scoring: The infographic should consist of:

- Appropriate title (5 pts), limited text correct spelling (5 pts)
- Landscape or portrait orientation in an aesthetically logical and appealing layout (10 pts),
- Images/drawings of at least three causes of TBI (30 pts) and affected age groups (5 pts)
- Images/drawings, descriptions, and data/charts/graphs highlighting the medical (10 pts), personal (10 pts), and economic (10 pts) effects of TBI

For general informational purposes, you should also provide some of the background information included in the *Empathize* video. For example, it's a good idea to provide a general definition of TBI (5 pts), and the overall statistics about TBI causes (5 pts), (falls cause 40%, automobile accidents cause 14%, etc. – although you will likely find that different sources provide very different data).

Be sure to cite your sources – the infographic must include at least one citation. You don't have to cite every source, but you must include citations for major data claims (this can simply be the name of the institution and the date, for instance "CDC 2015 Annual Report," or you can use APA/MLA format for research articles.) (5 pts)

Create your infographic in Google Slides, Photoshop, Illustrator, etc. If you are artistic, you may hand draw the infographic. You may alternatively use an infographic generator which allows you to fill in information and add pictures and graphs into a template. You should *not* copy/repurpose an existing TBI infographic and call it your own.

Output your finished infographic in JPEG, PNG, or PDF format and upload it to Edsby.