

Design Cycle (Grade 7)

Content Area: **Technology**
Course(s): **Science 8, Generic Course, Technology Education K, Technology Education 2, Technology Education 3**
Time Period: **Marking Period 2**
Length: **42 days**
Status: **Published**

Established Goals/Standards

TECH.8.1.8	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.8.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.8.B.1	Synthesize and publish information about a local or global issue or event (ex. telecollaborative project, blog, school web).
TECH.8.1.8.B.CS1	Apply existing knowledge to generate new ideas, products, or processes.
TECH.8.1.8.B.CS2	Create original works as a means of personal or group expression.
TECH.8.1.8.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
TECH.8.1.8.C.CS1	Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media.
TECH.8.1.8.C.CS2	Communicate information and ideas to multiple audiences using a variety of media and formats.
TECH.8.1.8.C.CS4	Contribute to project teams to produce original works or solve problems.

Essential Questions

- How does a gear's size affect its speed and torque?
- What is the best design for a motor-driven car with gears?

Enduring Understanding

- People use current technology to design objects to improve their lives.

Content

- Designing in a collaborative group.
- Automata design and operation
- Gears and gear ratios

- Spirograph designs using various sized toothed circles
- Designing and building a motor-driven car

Resources

TinkerCAD online software