

Design Cycle (Grade 8)

Content Area:	Technology
Course(s):	Science 8, Generic Course, Technology Education K, Technology Education 2, Technology Education 3
Time Period:	Marking Period 1
Length:	42 days
Status:	Published

Established Goals/Standards

Design Cycle focuses on collaborative teams solving real world problems using the design cycle.

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 can I manipulate shapes in Tinkercad to design a backpack tag that represents me?
- What factors do I need to include to create a functional scribbling machine?
- What features should I include to create a functional outdoor classroom?

Enduring Understanding

- Design Thinking is a process that enables consideration of the best solution to a problem using an iterative process.
- Working collaboratively requires clear communication and a willingness to consider other students' ideas.

Content

- Best practices for working collaboratively in a group.
- Using Tinkercad to produce an stl file for 3D printing.
- Using different geometric designs to create a unique shape.
- Using the Design Process to solve a real-world problem.
- Create a functional scribbling machine.

Resources

- Design Thinking Process
- Tinkercad online 3D stl file generator