

DCI: Engineering Design

3.ETS1.A: Defining and Delimiting Engineering Problems

Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3-5ETS1-1)

DCI: Engineering Design

3.ETS1.B: Developing Possible Solutions

At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. (3-5ETS1-2)

DCI: Engineering Design

3.ETS1.C: Optimizing the Design Solution

Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. (3-5ETS1-3)

DCI: Engineering Design

3.ETS1.B: Developing Possible Solutions

Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. (3-5ETS1-2)

DCI: Engineering Design

3.ETS1.B: Developing Possible Solutions

Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. (3-5ETS1-3)