

CLASS PLAN

Engineering Solutions

The engineering design process will come alive as students become engineers. Interactive stations with unique challenges will focus on different branches of engineering, including civil, mechanical, and electrical. Students will work together to brainstorm, test, and iterate on their solutions.

Location: Discovery Place Science

Program Area: Early Childhood

Duration: 50 minutes

Group Maximum: 25 students

Audience: 1st-2nd grade

Major Concepts:

- The engineering design process and how it is used
- Different branches of engineering and the careers associated with them

North Carolina Essential Standards:

EEE.CR.2: Understand the relationship among career goals and interests, personal interests, aptitudes, and abilities

South Carolina Standards:

2-PS1-2: Analyze data obtained from tests to determine which materials have the best properties for an intended purpose

2-PS1-3: Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

Next Generation Science Standards:

K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool

K-2-ETS1-3: Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs

Class Objectives:

Students will:

- Explore what engineering is and how it impacts their daily lives
- Participate in engineering challenges using appropriate scientific procedures and equipment
- Get to know the engineering design process and how it is used
- Build resilience and growth mindset by working through challenges and failures to find solutions

Methods and Activities:

- A brief introduction will familiarize students with different types of engineering and the engineering design process.
- Students will rotate through multiple stations where they will work together to create solutions for various engineering challenges that highlight different branches of engineering.
- Students will discuss challenges and identify struggles, successes, and possible improvements.

Key Vocabulary:

Engineer, engineering design process, materials, position, collaboration, compare, contrast