# Simple Machines

## Objective
Each student will individually create a slideshow presentation about Simple Machines. The students will be able to understand how to achieve some advantages using simple machines. As a class, they will then use FluidSurveys to compile all the slideshows data together.

## Learning Environment
The class will use a computer with internet access in the computer lab or at home.

## Types of Students
College Level

## Standards
ISTE/NETS Standards
Facilitate and Inspire Student Learning and Creativity

## Materials
Computers in computer lab with internet access, FluidSurveys.

## Procedures
1. The students will learn how to use FluidSurveys with the help of their teacher.
2. Then, each student will be assigned to research simple machines and then create a presentation about them.

   **A Machine** is any device by which the magnitude, direction, or method of application of a force is changed so as to achieve some advantage. Examples of simple machines are the lever, inclined plane, pulley, crank and axle, and jackscrew.

   **The principle of work** that applies to a continuously operating machine is as follows:
   
   \[
   \text{Work input} = \text{useful work output} + \text{work to overcome friction}
   \]

   In machines that operate for only a short time, some of the input work may be used to store energy within the machine. An internal spring might be stretched, or a movable pulley might be raised, for example.

   **The efficiency** of a machine is
   
   \[
   \text{Efficiency} = \frac{\text{work output}}{\text{work input}} = \frac{\text{power output}}{\text{power input}}
   \]

3. After each student has created their own slideshow, all of the presentations’ data will be combined using FluidSurveys.
4. When the final project is complete, the students will present their project.

## Application
The students will create a presentation, with the compiled data about Newton’s Laws using FluidSurveys.

## Evaluation
The students will present their whole project. Each student will present his or her section of the project.

The students will be evaluated based on the following:

- Using Fluid Surveys skills – 20 points
- Creativeness – 10 points
- Individual participation – 20 points

50 points