**VOCABULARY**

**Input** - is a constant predefined in the Arduino language; pins configured as input are useful for reading a sensor.

**Output** is a constant predefined in the Arduino language; pins configured as output can provide a substantial amount of current to circuits; they can provide current or absorb current curly braces {} -

**PinMode** - Configures the specified pin to behave either as an INPUT or an OUTPUT.

**Serial** - is used for communication between the Arduino board and the computer.

**Switch case** - A control structure that compares the value of a variable to the values specified in case statements.

**Switch statement** - Switch allows the programmer to choose between several discrete options.

**Variable** - A container value that can be changed.
EXAMPLES

Tri-color LED:

Battery Holder:

Switch:

Button:

LED:

Lily Tiny:

Light Sensor:

Temp Sensor:

Lilypad Simple Board:

ENGINEERING DESIGN PROCESS KEY

Ask | What is the problem? What have others done?

Brainstorm | What are some solutions? Draw your ideas

Compare | What are the pros and cons of each idea?

Choose | Which idea do you think is best?

Create | Build my design. What works well? What needs to be improved?

Communicate | How will you share your solution with others?
Engineering Design Process (EDP) Overview

The engineering design process is a series of steps that engineers follow to come up with a solution to a problem. Many times the solution involves designing a product that meets certain criteria and/or accomplishes a certain task. This process is different from the steps of the scientific method. While scientists study how nature works, engineers create new things, such as products, websites, environments, and experiences. Because engineers and scientists have different objectives, they follow different processes in their work. Scientists perform experiments using the scientific method; whereas, engineers follow the creativity-based engineering design process.

It’s important to note that the EDP is flexible. There are as many variations of the model as there are engineers. With WearTec, students work through all six steps, but in real life, engineers often work on just one or two steps, then pass their work to another team.

Note that the EDP is non-linear. At any point, you may return to a previous step to redesign or improve your idea. The EDP is reliant on the iterative process. For example, after you improve your design once, you may want to begin all over again to refine your technology. You can use the EDP again and again!

In the WearTec curriculum you will notice symbols to represent a step. These symbols are intended to help you identify the steps of the EDP and bring about the thinking associated with that step. The symbols can be used for short-hand inclusion in the engineering journal.
STUDENT INSTRUCTIONS

Engineers spend time writing and drawing daily in order to document their ideas and their work. This Engineering Design Notebook will provide you with a similar experience.

Write in this notebook daily to keep a record of your progress and next steps on WearTec projects. You, as the WearTec engineer in charge of your project, will make decisions regarding the writing and drawing that goes into this notebook.

This page describes how engineers complete each page of their engineering notebooks using both words and images.

**Along the top:**
- Write today’s date
- Write your name on each page used
- Indicate the WearTec Book number (1, 2, 3, or 4)
- Indicate the WearTec Project name
- Indicate the number of this page, out of the total number of pages used this day.
  
  For example, page one of three used this day would look like this: 1/3
Draw a simple circuit below.
Draw a circuit after completing the final project.
**Circle each step of the Engineering Design Process that is used.**

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**What did I do and/or learn today? (Use vocabulary & images from the inside cover)**
My plan for next time: