

## Exploring Robotics with GrovePi Invention Vocabulary Words

### Invention Lesson Vocabulary Words

- An **Invention** is a useful creation that didn't exist before. Invention is also a process of turning ideas into devices or systems.
- **Engineering** is a process for developing solutions to problems.
- The **Engineering Design Process** is a specific set of steps that engineers use to organize their ideas and refine potential solutions to engineering challenges.
- An Engineering Design Notebook
- **Brainstorming** is a group creativity activity that helps generate a large number of potential solutions to a problem or challenge. It is a technique that involves the spontaneous contribution of ideas from all members of the group.
- A **Requirement** is a need or a necessity; it's what a particular product or service should do.
- A **Constraint** is a restriction on the degree of freedom you have in providing a solution to a need or problem. Constraints often fall into the categories of time, materials, tools, talents or skills, and resources such as money.
- A **target population** is an identified group of people (clients or subjects) intended to be served by a particular program or product.
- **Design Challenge Questions** are the problems that we must solve to design our product so that it meets the requirements and fits within the constraints.
- A **Mind Map** is a diagram used to visually organize information. It is a visual representation of hierarchical information that includes a central idea surrounded by connected branches of associated topics.
- An **iteration** is another version of the final product or solution, or prototype. Engineers often iterate many times before determining the final solution to a problem.
- A **matrix** is a table with lists and numeric rankings used in the analysis of a problem.
- A **Prototype** is a working model of a product that is used for testing before it is manufactured.
- A **Model** is a three-dimensional representation of a person or thing or of a proposed structure, typically on a smaller scale than the original. It is used to demonstrate or explain how a product or structure will look and function.
- A **Sketch** is a rough or unfinished drawing created to represent an idea, product, or building, to convey the idea to others. It is not usually accurate in scale or measurement.

Exploring Robotics with GrovePi  
Invention Vocabulary Words

- **3D CAD Drawings** are three dimensional computer aided design drawings or technical illustrations created to represent a component, product or building, often to work out problems with materials and construction.
- An **engineering drawing** fully defines all geometric features of a design in enough detail, measurement, and clarity that another person could build that component or product.
- **Manufacturing** is the use of machines, tools and labor to make things for use or sale.
- A **continuous improvement process** (abbreviated as CIP or CI), is an ongoing effort to improve products, services, or processes. These efforts can seek "incremental" improvement over time or "breakthrough" improvement all at once.

(source: merriam-webster.com/dictionary and Google)