Design Challenge Badges:
Glossary for Juniors

An **axle** is a bar or spindle on which things can rotate, such as a rod passing through the center of each paddle.

A **ballast** is a weight that is used to keep a boat upright.

Buoyancy is the force or pressure that pushes back on an object in the water. When an object is placed in water, it causes the water to push against it with the same force as the weight of the water it displaces. This is called Archimedes Principle.

Compound Machines are two or more simple machines working together.

A **crane** is a compound machine that use levers, pulleys, and wheels and axles to make moving and lifting heavy things easier.

The **Design Thinking Process** is the way engineers solve problems and build solutions. They define the problem, brainstorm & plan, build, test, and improve.

Engineers are people who solve problems. They use their imaginations to invent new things like self-driving cars. They also come up with new and better ways to build things such as bridges, buildings, and planes.

Force is the strength or energy that creates movement. Push and pull are examples of forces.

A **jet** is a rapid stream of air or water forced through a small opening

When potential energy is released, it becomes **kinetic energy**, which makes bodies and objects move.

Potential energy is the energy stored in your body and everything else in our world.

Propulsion is the act of driving or pushing forward

A **prototype** is a quick way to show your idea to others or to try it out. It can be as simple as a drawing or it can be made with everyday materials like cardboard, paper, string, rubber bands, etc.

Thrust is the force that pushes something forward

Simple Machines make work easier by using less force or by applying a push or pull in a different direction. There are six kinds of simple machines.