VOCABULARY

Adviser	A person at least 18 years old who monitors safety, acts as a mentor and who may provide things like transportation, encouragement, and snacks. We allow one adviser per team. While your adviser should help with any tools for safety, they shouldn't give you design suggestions or do the project for you.
Brainstorming	Coming up with ideas — sometimes crazy ones — for a solution to a problem. It's possible to brainstorm on your own, but most find it works best as a team activity.
Chemical reaction	A process in which one or more substances are changed into others. Chemical reactions are not allowed in this year's challenge.
Criteria	The requirements for success.
Compressed air	Air held under pressure in a container: the force generated when the air is released is used to operate machines, tools, etc. For The Tech Challenge, we limit the amount of pressure allowed from compressed air to 5 psi (pounds per square inch).
Constraints	A control or limit to a design. For example, a constraint might be that your device has to fit through a standard doorway.
Construction	The building of things such as houses, factories, roads, and bridges.
Counterweight	Weights added to balance something and prevent tipping.
Design	The creation of a plan for the construction of your device. Sometimes used to refer to the device itself.
Device	The solution you and your team are designing, engineering and building for The Tech Challenge.
Dimension	A dimension is a measurement such as length, width, or height. If you talk about the dimensions of an object or place, you are referring to its size and proportions.
Engineer	A person who designs, constructs and tests devices, materials and systems while considering constraints caused by safety, practicality, rules and cost.

Engineering analysis	Looking at a problem using scientific analytic principles and processes so you can see the properties of what you are designing. To start, break down a problem into its basic parts to look at relationships between its pieces and things other than your device.
Failure	Sometimes you feel this when your device doesn't work, but a big part of engineering is finding failure points and fixing them. So running into a roadblock with your device is an opportunity to use your engineering brain to make your device even better.
Failure point	When a break in a system causes a device to work improperly or not work at all. One of the jobs of an engineer is to find failure points so they can fix them, and it's one of the reasons we test again and again.
Final design	The final plan for the construction of your device, agreed upon by the whole team. The team develops the final plan after brainstorming, prototyping and testing again and again. Sometimes this term is used instead of Final Device.
Final device	The device your team will bring to the showcase — the product of all your team's brainstorming, designing, prototyping, testing and re-testing.
Housing Module	Repeated sections called modules are combined to make a prefabricated building.
Human Power	Power available from or supplied by the physical effort of human beings.
Innovator	Someone who creates something new or makes changes to something that already exists in order to meet a specific need. For example, you and your team as you design, engineer and build a device that transfers housing modules from one place to another on a construction site.
Iteration	The different versions of the device you build as it changes due to the Engineering Design Process.
Living document	A document that is continually being updated. For example, your team journal.
Module	A pre-assembled, three-dimensional unit that forms part of a larger structure.
Momentum	A measurement of mass in motion. Any object in motion has momentum.
Nominal	Approximate; that is, there may be minor variances between the measurements stated in the rules and drawings and the actual test rig, for example.
"No Touch" controls	Controls that operate a device by indirect methods such as flexible strings or rigging, motor drives, hydraulic tubes, etc.
Perseverance	Not giving up in the face of failure. Your team may experience setbacks, but it doesn't mean you have to give up. Getting past those failures can be fun and rewarding.
Prototype	A first and usually functional form of a new type of design of a construction. As part of The Tech Challenge, teams will iterate and improve their prototypes until they find a final solution.
Pulley	A wheel on an axle or shaft enabling a taut cable or belt passing over the wheel to move and change direction, or transfer power between itself and a shaft.

Repeatability	The ability of your device to demonstrate the same results under the same conditions, i.e. to work every time you test it.
Rigging	The equipment used to safely lift, move, secure, and place heavy objects.
Rig Operator	A person who operates and maintains heavy machinery, ensuring safety and efficiency by setting up equipment, monitoring operations and performing routine maintenance.
Safety	Your No. 1 priority! Safety involves using tools correctly, wearing goggles when working on and testing your device, and more. While your team should appoint a safety monitor, everyone on the team is responsible for safety!
Solution	The design your team builds for The Tech Challenge.
Specifications	Detailed descriptions of design criteria for a piece of work.
Sway	To swing or move from side to side.
Target	The landing zone area where the module must be placed to be successful.
Team journal	A record of all the brainstorming, research, prototyping and other work that goes into developing your team's device.
Test rig	The thing your team will test its device on. The Tech Challenge designs an official test rig. We also provide examples of a simple version you can build so you can test at home or school.
Transfer of Energy	A device that activates or releases or causes something to happen. After device setup, human power may start movement by releasing/pushing/pulling a trigger but not by pushing, pulling or lifting the launch device itself. This is also an important safety factor.
Weight Distribution	The way in which the weight of an object is distributed across its structure or components.

Sources: Collins Dictionary, Wikipedia, Vocabulary.com, Merriam-Webster.com, and American Heritage dictionary