Name_____

IDEATION METHODS

Directions: Read the information below.

Ideation is the process by which you come up with ideas. It sounds complex, but you really do this all the time. In the morning, you go through this process quickly as you determine what to eat for breakfast. First you may decide whether to eat breakfast at school or at home; then you must decide what to eat. You may narrow it down to cold cereal, hot cereal, or a pastry. Then you choose hot cereal and ultimately decide on oatmeal. In order to make this simple decision, you even took into account some constraints: What is available at home? Do I have time to sit down and cook bacon and eggs?

In the Engineering Design Process, you will go through ideation often. This is in the "Imagine" step. We have many methods of ideation. One of those is interviewing and observing others. If you wanted to know why people go to a store and don't buy anything, maybe you want to sit in the store and observe how they shop. Where do they go before they walk out? You can also interview them. What did they come in to look for? How much were they willing to spend? Gaining insights about why things happen may require you to observe what is happening. If you wake up in the morning and find your dog covered in mud, you may follow him at night to see if he walks out the dog door and rolls in the garden. These ideas can be applied to a range of simple or complex solutions.

A second method is drawing. Many engineers use drawings to help give them a better idea of what they want to build. A girl may try to design a dress but needs to sketch out what it will look like before going to buy fabric. Architects draw out the plans for the house they're building before anybody begins construction. Drawing provides a plan. In the Engineering Design Process this is purposeful drawing. They are not making sketches just for fun; they're doing it to get closer to a design solution that will work. Drawings usually also include labels or zoomed-in areas to see the inner workings of a plan.

Finally, working hands-on is always a good idea for generating ideas. This doesn't necessarily mean creating a complete model or prototype, but it could be testing out certain parts. For example, if you are creating a robot that can bring you things from around the house, you may spend time tinkering specifically with wheels to determine how to best help the robot move. Then you may work hands-on with materials for an arm. The purpose of this is to see what works and what doesn't. In this way, you inform your design ideas.

Directions: After reading the passage, answer the questions below.

Use the space below to write down all the ideas you generate from your ideation methods.

Interview & Observation
Drawing
Tinkering