



Design Thinking (From Idea to Products)

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Introduction of Myself

-11th grader at Poolesville High School

-16 years old

-Hobbies include: cello, lacrosse, coding



Three topics that I've considered

- Mapping technology

 - such as ARC GIS, can be used to detect migration patterns for birds

- Virtual Reality

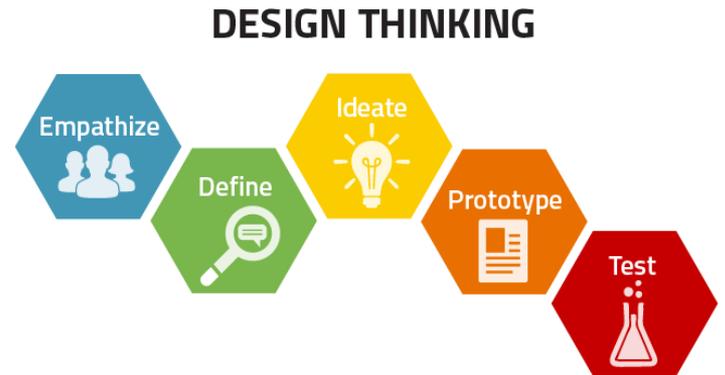
 - used to treat people with extreme phobias

- Design thinking

 - used when creating a new product or starting up a new company

Design Thinking

- Design thinking originated around the 1950's during the development of creative thinking.
- Design thinking is a process to find innovative ways to solve a problem.
- Process includes empathizing, defining, ideating, prototyping, and testing.
- Many tools were developed to help with design thinking such as Problem Tree Analysis.
- Makes decisions on what future customers really want.



Stages of Design Thinking

Stage 1:Empathize

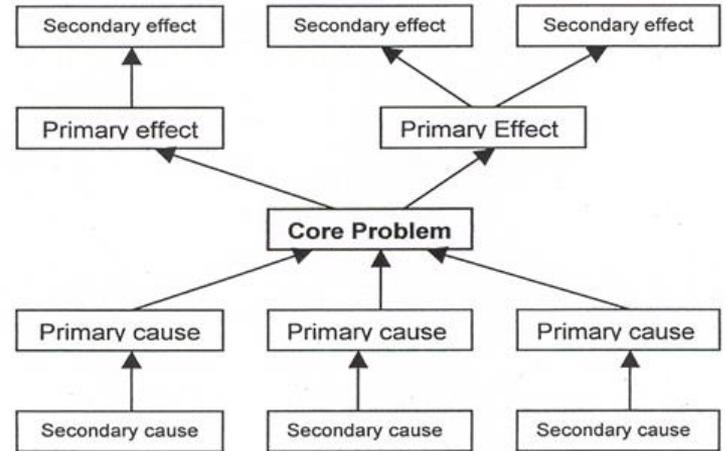
-Used to gain an empathic understanding of the problem you are trying to solve.

Stage 2:Define

-Pull together information you have created and gathered during the Empathize stage.

Stage 3:Ideate

-Generate ideas on how to solve.



Stages of Design Thinking

Stage 4: Prototype

-Experimental phase, where you produce a number of inexpensive, scaled down versions of the product or specific features found within the product.

Stage 5: Test

-Learn more about the users, create new ideas, reveal insights that redefine the problem



Examples of Design Thinking

-Braun/Oral B Smart Brush

- The designers of Braun were faced with the challenge of making a smarter toothbrush.
- Clients said to make the electric toothbrush rechargeable and add replacement brushes
- Designed it to be both rechargeable and have replacement brushes
- The designers at Braun were able to empathize for the consumers and see some of the struggles they might have. This led to a product in which customers are willing to buy.



Examples of Design Thinking (Continued)

-Elon Musk/Tesla

-Tesla is not the only electric car, but it is one of the most popular

-They even have a severe production shortfall of 100 kWh battery packs

-The producers of Tesla saw that many electric cars do not have many mileage per charge

-With the use of design thinking, they were able to see why electric cars were not selling and adjust their product to that problem.





Examples of Design Thinking (Continued)

-I am currently taking a course about design thinking at Johns Hopkins University Applied Physics Laboratory.

-As one of our projects, we had to figure out a way to increase the amount of students applying for classes on Fridays.

-After interviewing numerous parents, teachers, and students we figured out that instead of marketing Friday classes to high school students who are usually busy Friday, we would market towards middle school students.

-This will potentially increase the amount of total enrollment by a third.

Halcyon Incubator Event

-Halcyon Incubator event

-Halcyon is a startup incubator where entrepreneurs are able to use many of Halcyon's resources after applying to be an intensive or a fellow.

-Implied that they used design thinking when solving problems such as making detecting malaria easier. To solve this problem, he designed a fully automated digital microscopy platform.

-Allowed Halcyon entrepreneurs to use design thinking methods when creating their products.



Ragingwire Data Center

-Ragingwire Data Center

-Most likely used in the marketing aspect of their center.

-Used to attract customers and base their center around their needs

-RagingWire VA3 is different from other data centers because it is designed to be more friendly to both the workers and it's clients.

-Most data centers do not have a colorful and a people friendly space.





Link to my Personal Interests

-One personal interest that I have is computer science.

- Developers usually develop software with problem in mind.

- Design thinking helps look at all aspects of the problem and create solutions to remedy those problems.

-Another personal interest that I have is problem solving.

- Design thinking helps with this interest because the whole concept is based on solving problems.