2018 NATIONAL HIGH SCHOOL DESIGN COMPETITION

TEACHER RESOURCES

WHAT IS DESIGN?

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WHAT IS DESIGN?

What do you think of when you hear the word “design”?

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WHAT IS DESIGN?

Design is all around us.

Design has a user in mind.

Design is about creative problem solving.

A system or experience can be designed.

Big challenges can have simple design solutions.

DESIGN IS ALL AROUND US

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DESIGN IS CREATIVE PROBLEM SOLVING

What problems are being solved here?

DESIGN HAS A USER IN MIND

Who is the user for each chair?

Even though these are all chairs, how does the design change for the intended user?

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A SYSTEM OR EXPERIENCE CAN BE DESIGNED

International Safety Symbols

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BIG PROBLEM, SIMPLE DESIGN SOLUTION

Most prescription bottles look the same and that can be confusing in a household. By designing the option of colored coded rings, each family member can clearly identify their own medication.

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DESIGNERS MAKE ASSUMPTIONS

What assumptions has the designer made about the user of this bike?

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DESIGNERS MAKE ASSUMPTIONS

The designer of this bike has made assumptions about the user's **physical** attributes:

Head movement

Hands that can grip handles

Eye sight

Two arms and legs

Coordination to pedal and steer

Height to reach handles and pedals

Strength to push pedals

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DESIGNERS MAKE ASSUMPTIONS

The designer of this bike has made assumptions about the user's **cognitive** abilities:

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THE DESIGN PROCESS

The design process is a method used to solve problems. Problem solvers can pursue multiple ideas, make connections, empathize with the end-user, test ideas, and improve concepts.

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This process can be used for any type of design.

The OXO Good Grips Peeler, designed by Sam Farber and Smart Design, is an example of using the design process for a user-centered solution.

Learn more about the story behind the process for creating the OXO Good Grips Peeler in this video:

www.youtube.com/watch?v=IlUtBhH_MkI

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DEFINE | EMPATHIZE | BRAINSTORM | PROTOTYPE | TEST | LAUNCH!

Designers begin by **defining** the problem.

Sam Farber observed his wife Betsy's arthritis pain caused by trying to cook and prepare food with conventional utensils.

With further research, Farber realized that there was not a product on the market that alleviated this pain, and that many people would benefit from improved cooking utensils.

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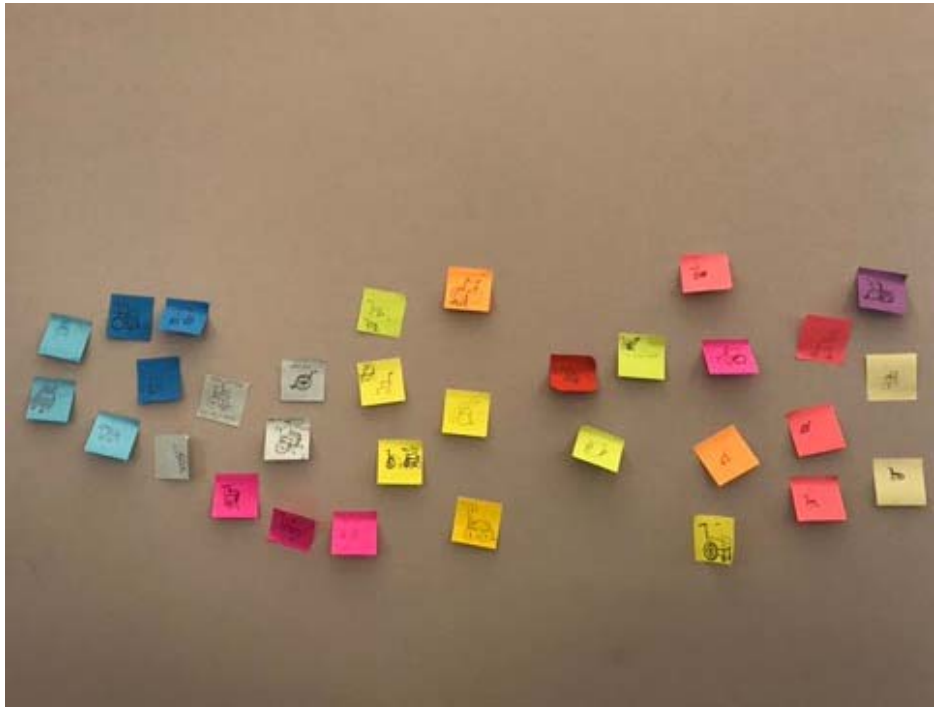
Empathy is an important part of user-centered design. As Farber defined his problem, he did more research to empathize with potential users.

As Farber researched and observed, he noted that a traditional peeler:

- Was a necessity in any kitchen.
- Had some safety issues.
- Was difficult to use for a broad range of people (including those with arthritis).

This research helped him further define the problem.

DEFINE | EMPATHIZE | BRAINSTORM | PROTOTYPE | TEST | LAUNCH!



Once a problem has been defined and the needs of the user identified, designers generate possible solutions using various **brainstorming** techniques.

The project partners generated many ideas that considered the material, shape, and friction of the handle.

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DEFINE | EMPATHIZE | BRAINSTORM | **PROTOTYPE** | TEST | LAUNCH!

Prototypes allow designers to bring ideas to life, share designs with others, and see what works.

Here are some of the prototypes that were created, tested, and improved.

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DEFINE | EMPATHIZE | BRAINSTORM | PROTOTYPE | **TEST** | LAUNCH!

Testers peeling potatoes with prototypes.

Designers test products with users and interview them about what works and what doesn't. Testing may lead to more prototyping.

Several different iterations of the OXO peeler were developed and tested with the public, including chefs, cooks, and New York arthritis groups.

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DEFINE | EMPATHIZE | BRAINSTORM | PROTOTYPE | TEST | LAUNCH!

The final stage is to **launch** the solution.

The OXO Good Grips Peeler that went to market solved the defined problems through:

- A material that had a slight surface friction, was soft enough to squeeze, firm enough to keep its overall shape, and capable of being cleaned in the dishwasher.
- An ergonomic shape.
- A shape and material that provides a safe grip even when wet.

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