

WHAT IS DESIGN THINKING & HOW DOES IT HELP KIDS

We've all done it. Have you ever sat down to consider what takes priority for a day's work? Rarely do we consider the steps that lead us to beginning and finishing a task or project.

Design Thinking is the name, or methodology, given to the steps we use everyday to plan and solve problems. While adults use these problem solving skills professionally, most kids and youth are still in the formative stages of this skill development.

The process of Design Thinking was brought to the mainstream by IDEO and Stanford's d.school (founded by David Kelley). It helps people think creatively to solve problems and be more imaginative for designing almost anything! We know kids are imaginative, but this process helps funnel that imagination to create a more fluid and concise product or outcome. This helps them be more efficient and the quality of their work (or thinking) improves.

The best part is this method has life long effects. The younger the child, the better! This Design Thinking method is their "thinking-toolkit". Kids can use it to solve almost any problem and is a fundamental piece of the learn by making or maker-centric pedagogy which is the foundation of Brilliant Labs teachings.

MATH INSPIRED WHIMSY

DESIGN THINKING PROCESS GUIDING QUESTIONS

CALL TO MAKE

Have you ever wondered how the internet looks up information? How can we just type the words and get many websites related to that word? Do you ever think about the process behind this internet search and the equation which allows us to get information from all over the world within seconds. $X \text{ number results} = y \text{ input words}$.

EMPATHIZE

Mathematical equations are used in traffic control, aircraft, space program and medicine and so on. Who else uses equations? How do you, your friends and family use equations daily? How would life be different without equations? How does a visual artist see equations compared to a mathematician? Have you ever tried to figure out how many balloons to buy for a party but the number of guests kept on changing? If you knew that you wanted 2 balloons for every kid and 1 balloon for every adult, and an extra 3 just in case. Wouldn't it be easy if you used this equation to solve your problem? $2x + 1y + 3 = \underline{\hspace{1cm}}$. Where x = the number of kids and y = the number of adults. Would your friends find this a genius way of solving your problem?

DEFINE

You will need skills and knowledge to handle the social and environmental changes that will occur in the near future. You will have to gain an understanding of the dependence between humans and the environment where you live. What do you know about equations and their impact on our daily lives? How do you solve equations?

IDEATE

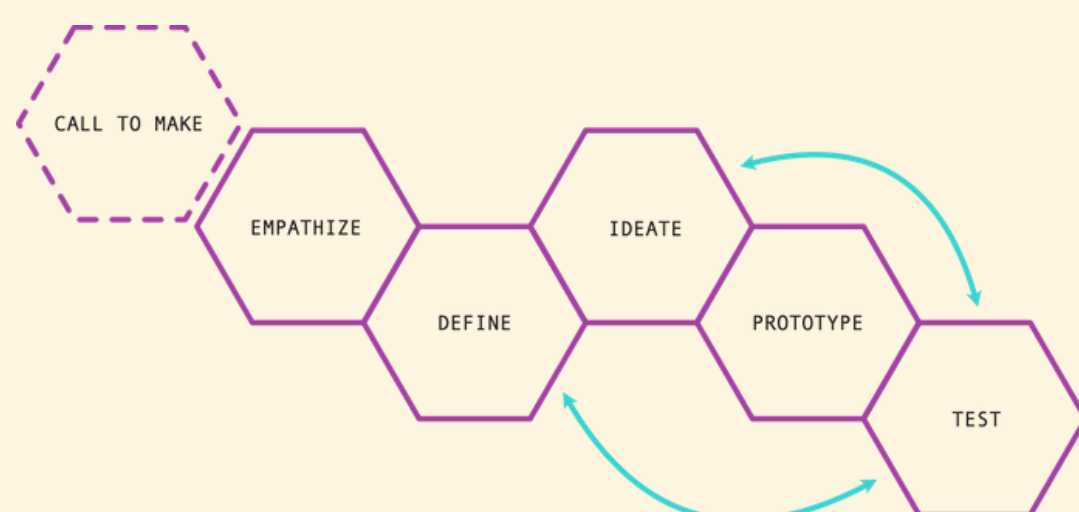
What are the different ways you can solve an algebra equation? Where will you find inspiration for your quilling art project? What will you do with your paper strips? Will you roll them tight, make them loose, bend them, squish them, fold them or curl them? What other mathematical concepts could you use in your art project? Where will you glue your strips? Or will you make a 3D stand-alone art pieces

PROTOTYPE

Solve a few equations before starting your project. Does it give you enough room for creativity? Plan your design. How can you use the different ways of making coils and using paper strips to create what you envisioned? How can you position your hands correctly to avoid uneven coils? What tools could you find around the house that can help you make specific shapes?

TEST

How does your project demonstrate personal expression? How can you modify this concept to be more or less complex? For example: graphing slopes, cubic functions...



"Deep empathy for people makes our observations powerful sources of inspiration."
—David Kelley

