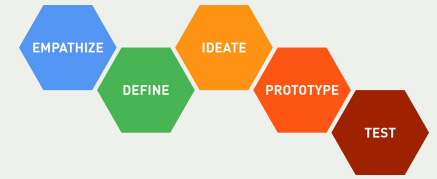


A Data
Informed
Engineering
Design Process
(*aka a Design
Sprint*)



Framing Today's Session:

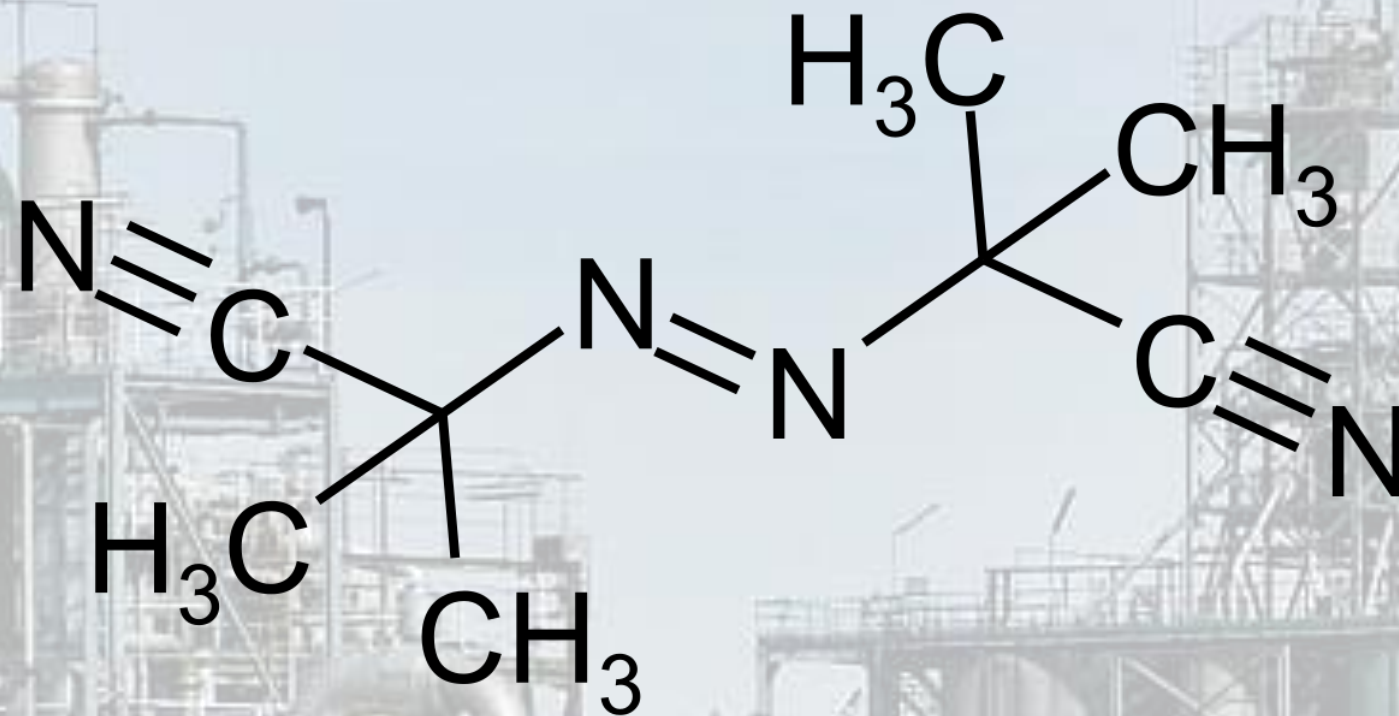


Open Way Learning will facilitate a Design Thinking “Sprint” using a framework developed by Stanford University's d.school to help the NC Board of Education craft an implementation plan for the Strategic Action Plan. The process will entail:

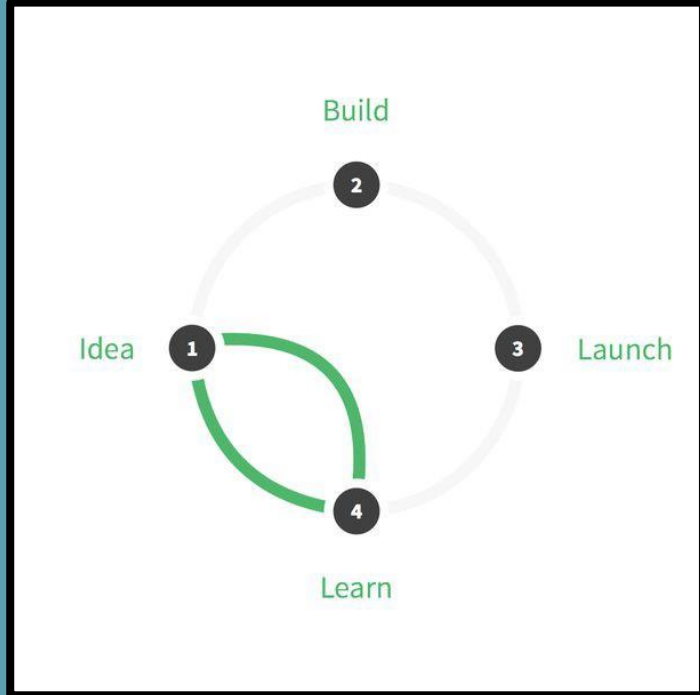
- *Exploring student data to ground the process in empathy (with our “primary users” being students in NC's public schools).*
- *Defining a problem statement that enables ideation of potential solutions to move the plan forward.*
- *Prioritization of solutions per user impact and feasibility/viability.*

The specific objectives of today's session are to:

1. *Introduce board members to a design tool used by many high performing organizations to create agile solutions for pressing problems;*
2. *Create a task plan and timeline that guides the board to pragmatic implementation of the action plan, and*
3. *Help onboard new members by working collaboratively per a structured protocol that advances a strategic goal.*



(azobisisobutyronitrile)



What is a Design Sprint?



IDEO

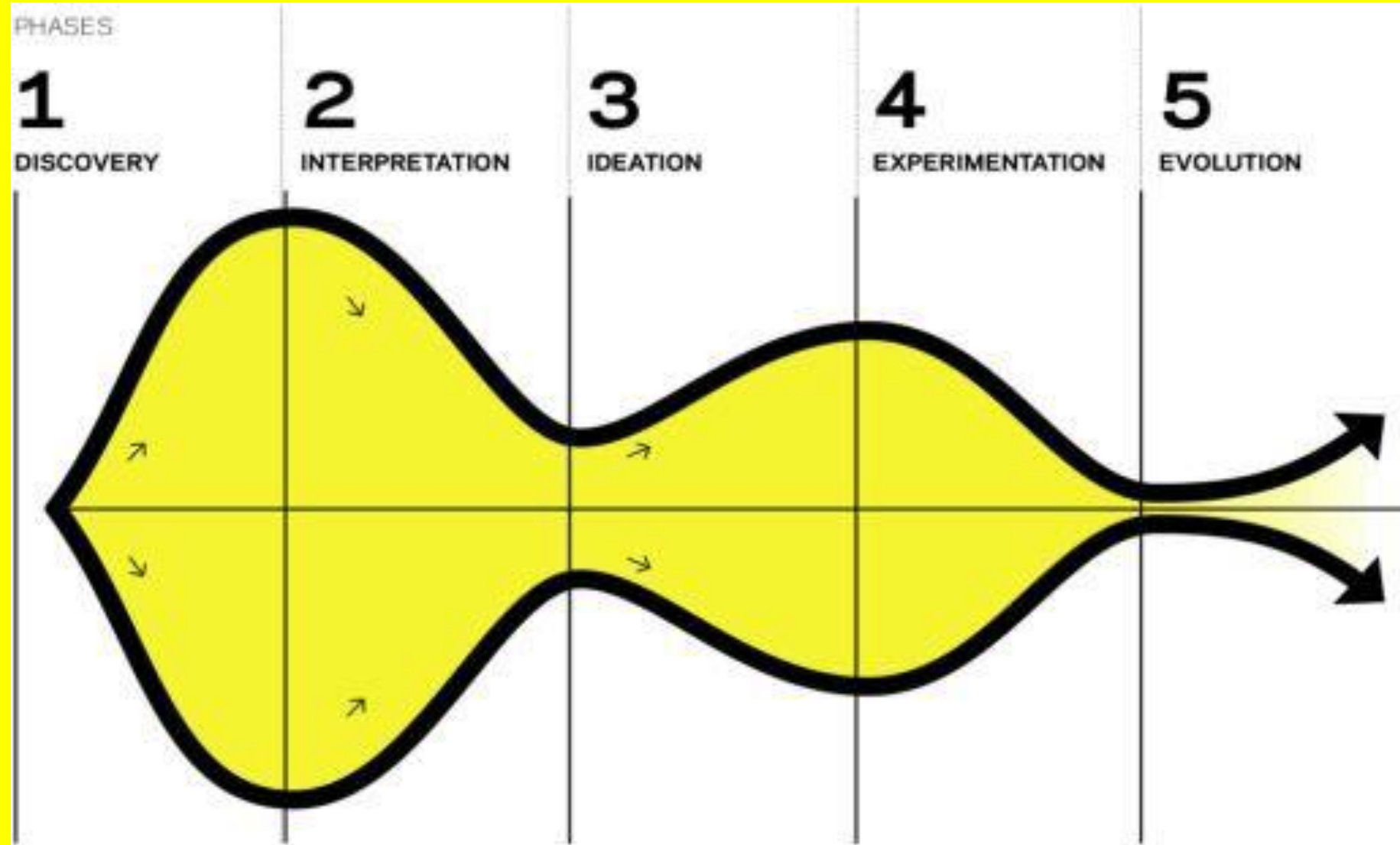


Image: "Design Thinking Phases" from IDEO's [Design Thinking for Educators](#)

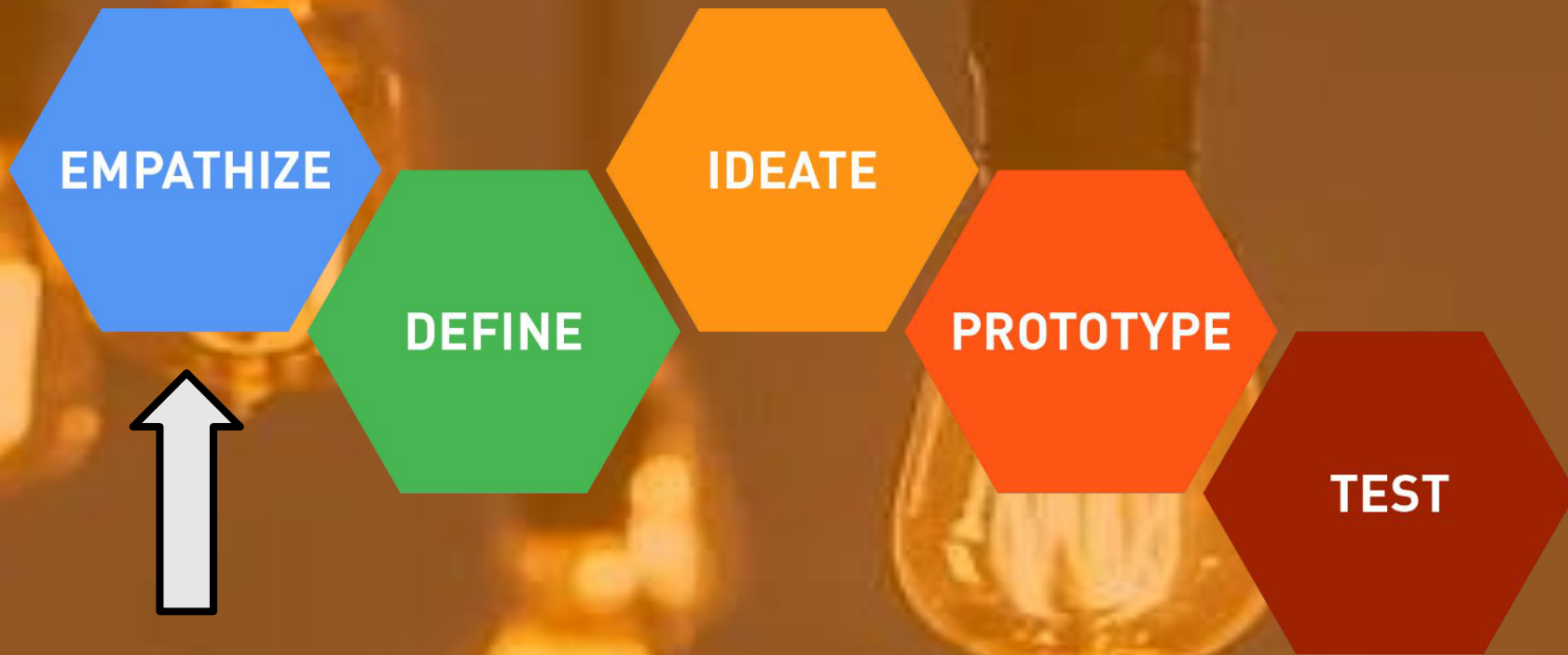
Design Thinking Norms...



LEADERSHIP+DESIGN

Keys to success...









Data Wise

*Grounding the
Work in
Empathy & Data*

| Oct | Nov | Dec | Jan | Feb | Mar | Apr | May |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 63,532 | 57,583 | 43,890 | 29,387 | 64,661 | 68,487 | 48,655 | 63,568 |
| 56,790 | 49,771 | 31,874 | 43,192 | 59,609 | 66,440 | 48,513 | 58,184 |
| 56,138 | 57,865 | 44,862 | 41,933 | 54,741 | 79,348 | 74 | 37 |

Step 1: Leading with Empathy

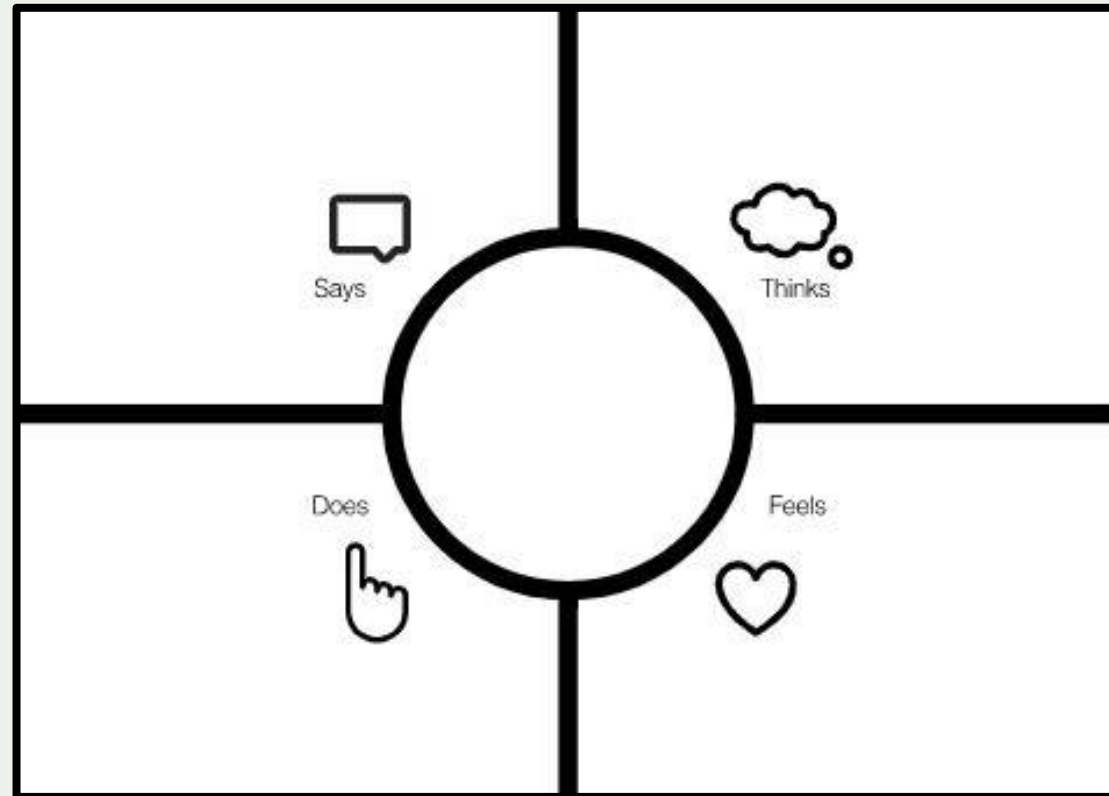


Image: Empathy Map from Mural

Step 1 (cont)

Analyze & Synthesize what our Empathy Map is telling us.

Look for common threads and contradictions...

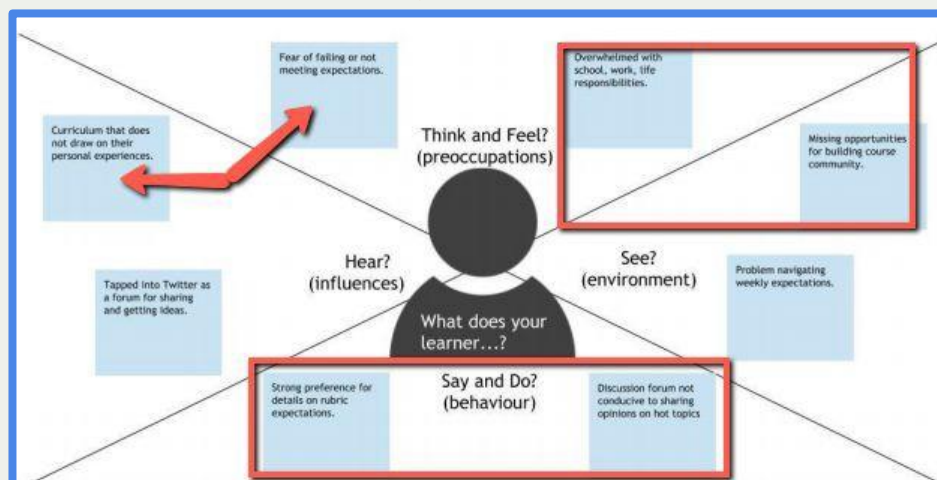
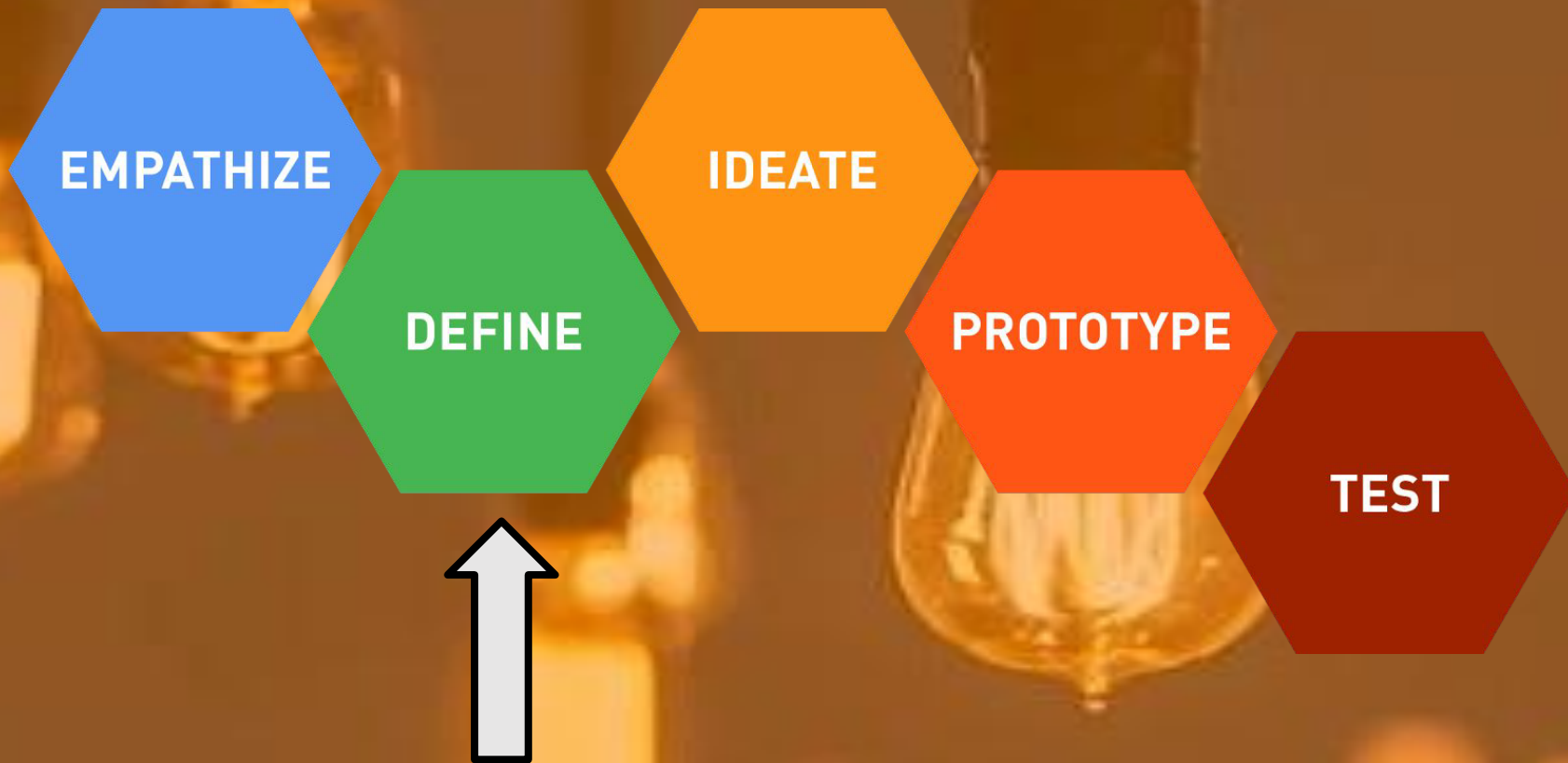


Image from Ontario Extend, Licensed under Creative Commons CC BY-NC-SA 4.0

Image: "Wall of Empathy" by CarbonNYC Shared under a cc By 4.0





Step 2: Defining Our “Problem”

Elements of a good Problem Definition...

01

Human Centered

Based on insights from the Empathy Map.

02

Bold

Broad enough for creative freedom (vs a narrow list of requirements).

03

Pragmatic

Make it manageable! Don't try to boil the ocean!

04

Point of View

Meaningful and actionable per user needs.

05

How Might We

Statements that spark creative ideation.

Mind the Gap!

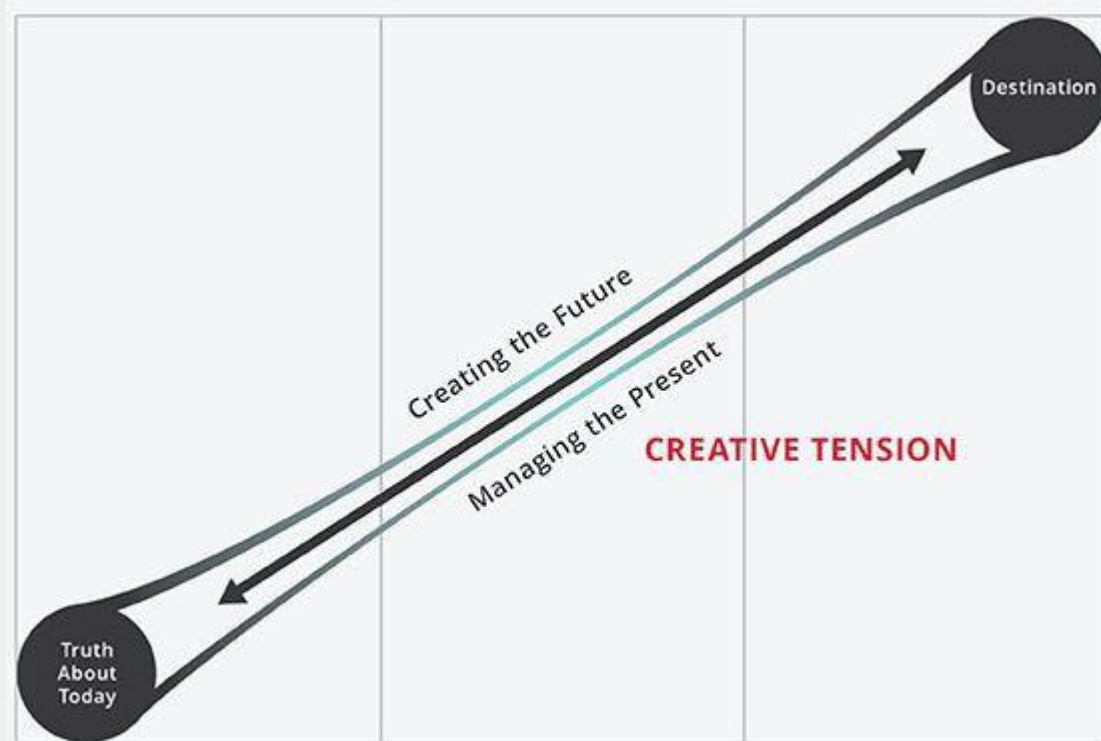
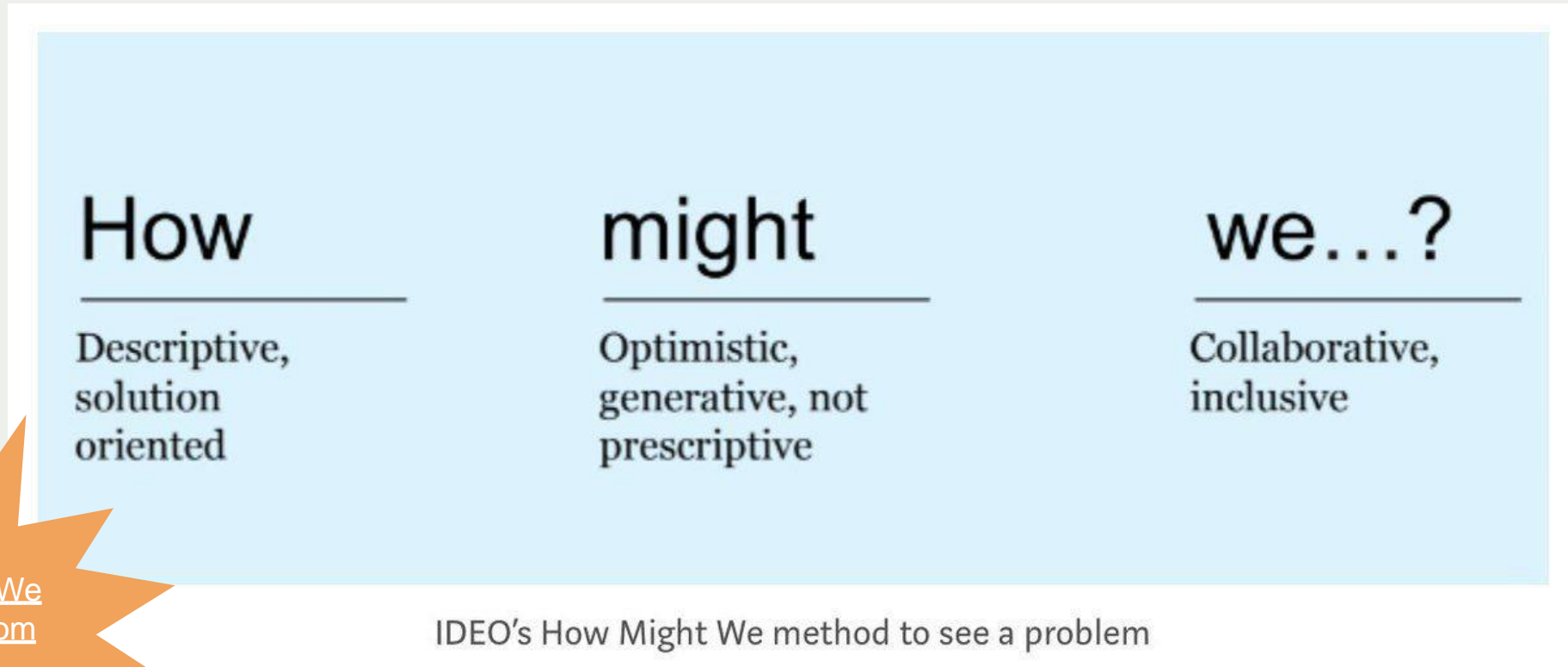


Image: Peter Senge's Creative Tension Model, MIT (vis Top Right Partners)

A Problem Definition will come from the *creative tension* between what our Empathy Map is telling us (Current State) and our Desired Future State.

A useful way to define the problem is to use a “How Might We Statement.”



As a template for our framework, please refer to the [SBE K-3 Education Framework](#) and the [Bold Ideas](#) document

How Might We...

...define a problem statement that enables the NCBOE to move forward with the Strategic Plan Action Framework?

healthy lifestyle.
and emotionally safe.
and engages in their broader community,
support from qualified, caring adults.
success in college or further and for employment and participation in a

community to every student in North Carolina, bearing in mind that "fair" is not
"Educational Equity" is the belief and practice of ensuring that every
necessary allocation of resources for the success of every student, and
opportunities for every student.

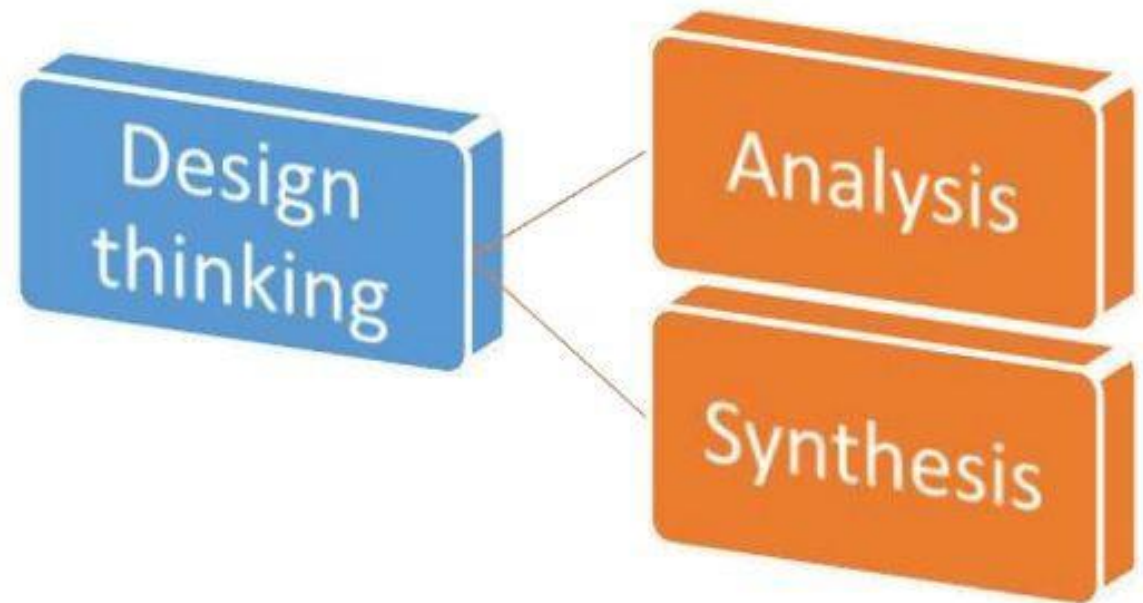
Action Items

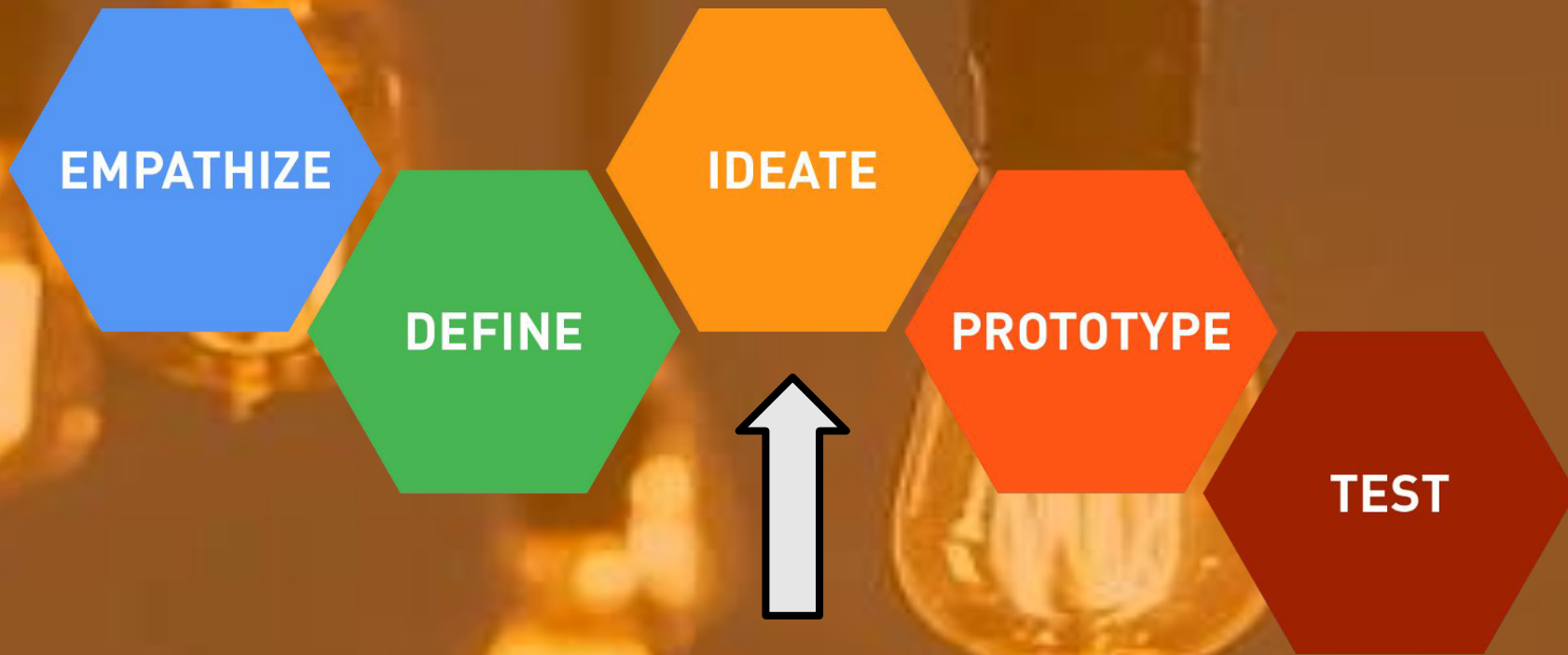
Color represents alignment to Literacy Task Force recommendations

Color represents alignment to Drive Task Force recommendations

Color represents alignment to Learning Plan Priority Items

Synthesized Problem Statement





Step 3: Ideation (Brainstorming)

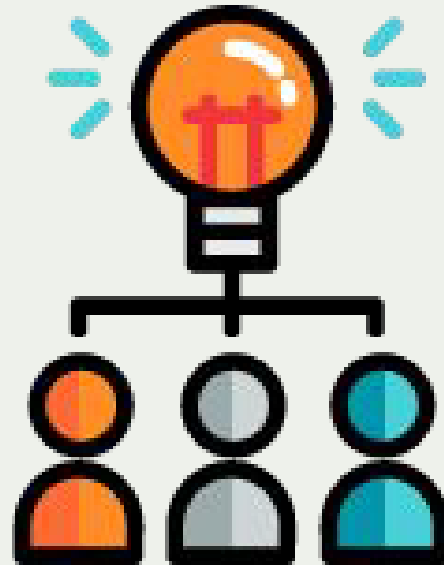


Image: "Brainstorming" by SVG
Repo, Public Domain, CC0

Ideation Equation

$$MU = \frac{S^D}{F}$$



- **MU** = Meaningful & Unique idea
- **S** = Stimulus (knowing what obstacles must be overcome to solve the problem)
- **D** = Diversity of perspectives
- **F** = Fear of failure

Image: "Ideation Equation," from the Ohio Manufacturing Extension Partnership

Rules of Thumb for Effective Ideation



Rules of Brainstorming



Defer Judgment



One Conversation at a Time



Encourage Wild Ideas



Be Visual



Build on the Ideas of Others



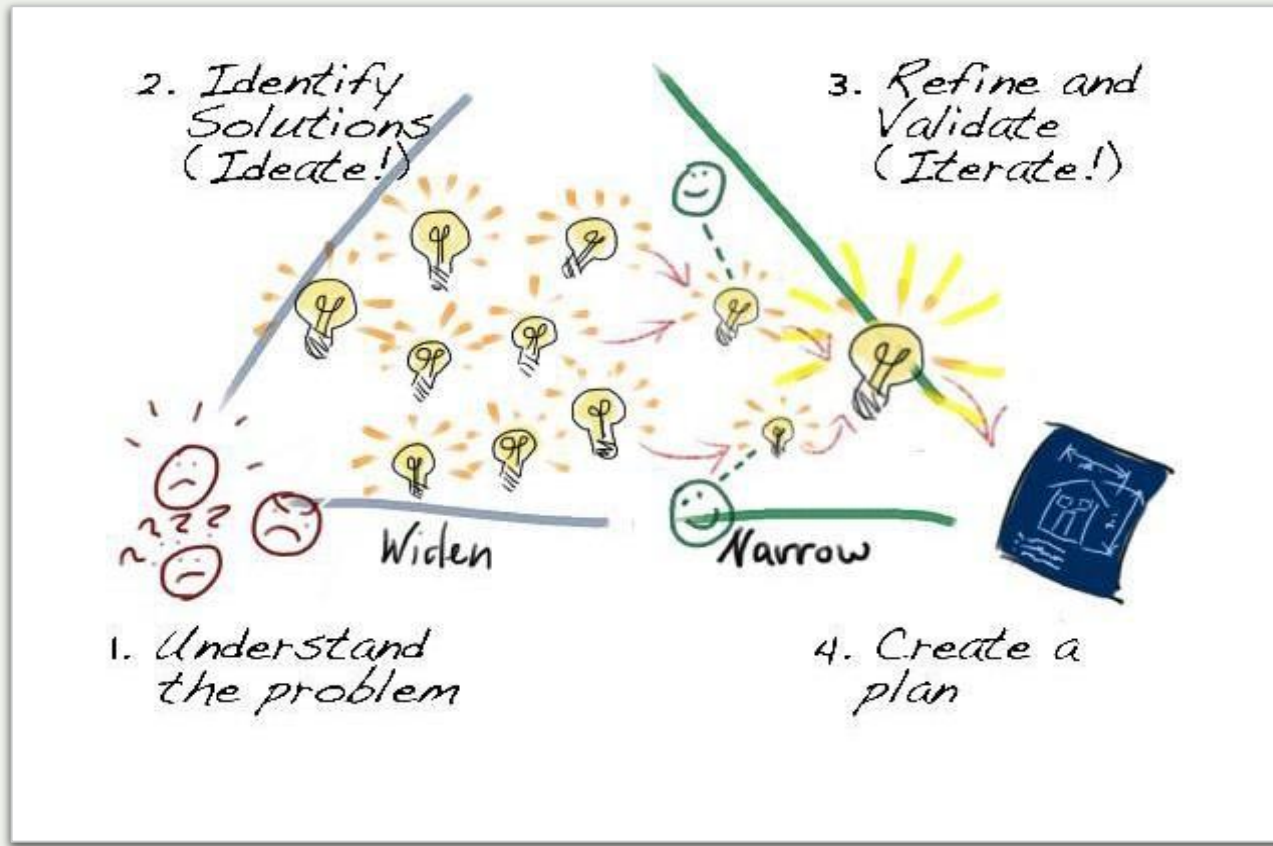
Go for Quantity



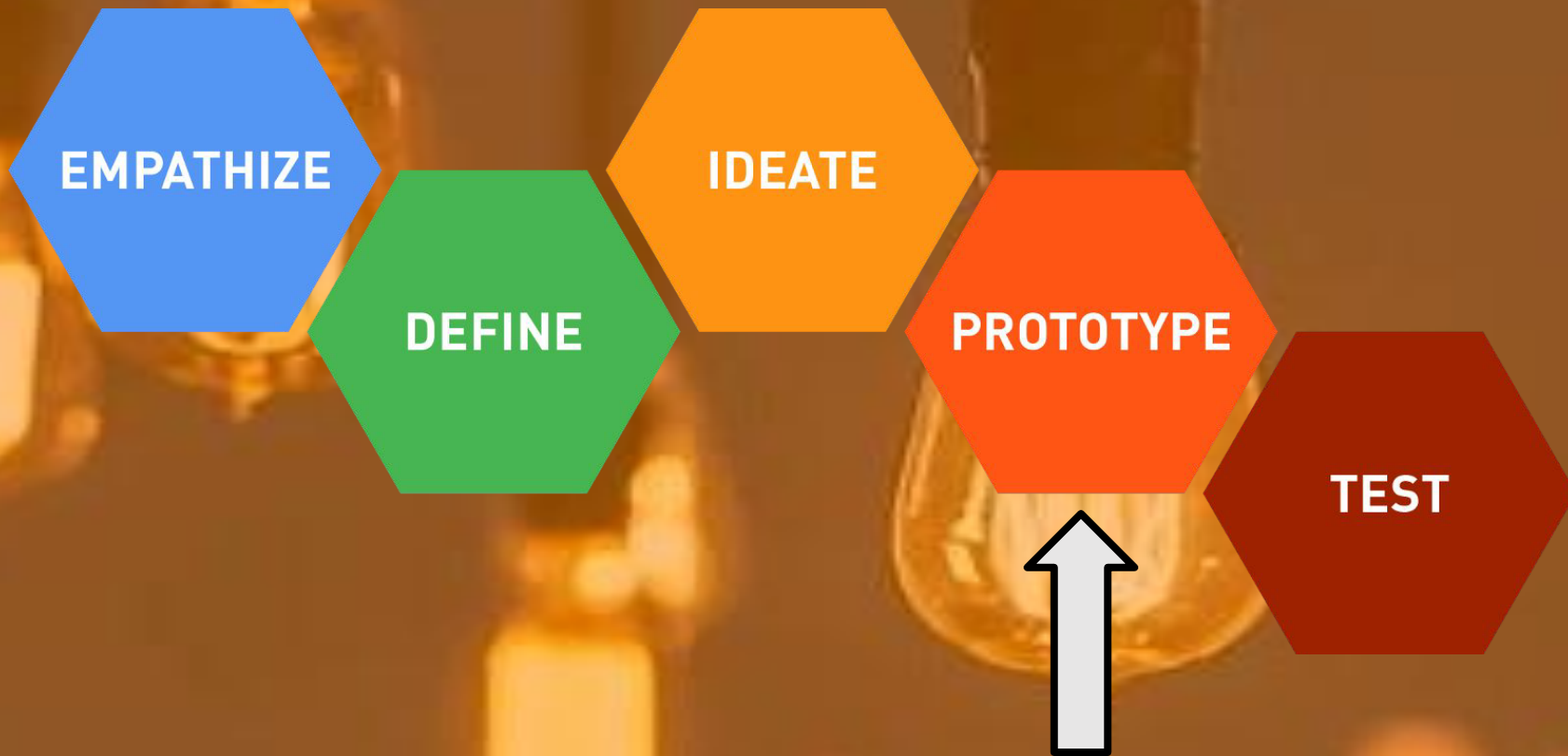
Stay Focused on the Topic

© IDEO 2020

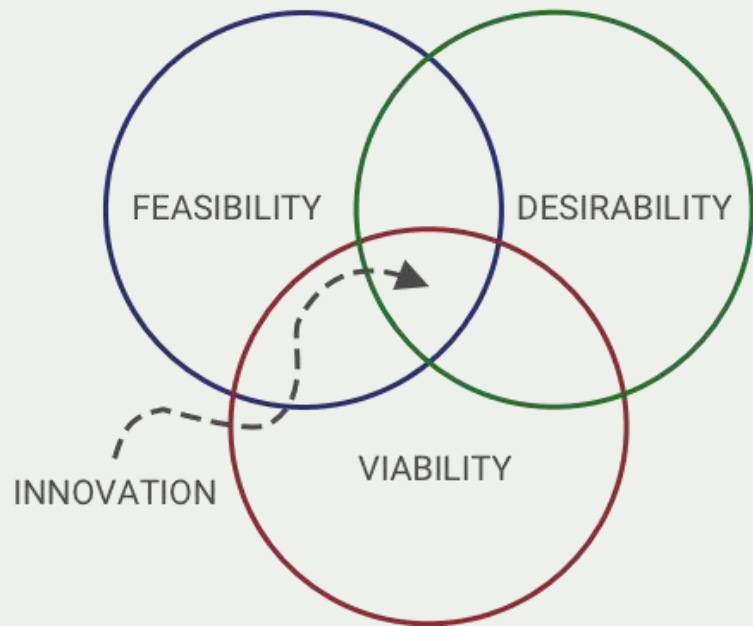
Step 3 (Cont)



Analysis,
synthesis, and
grouping of
solutions into
Big Ideas.



Step 4: Prototype



For an innovative idea to work, it has to be pragmatic - i.e. rooted in...

- **Feasibility** - *can it be done?*
- **Viability** - *can it be sustained*
- **Desirability** - *does it meet user needs?*

Prioritize Project Ideas

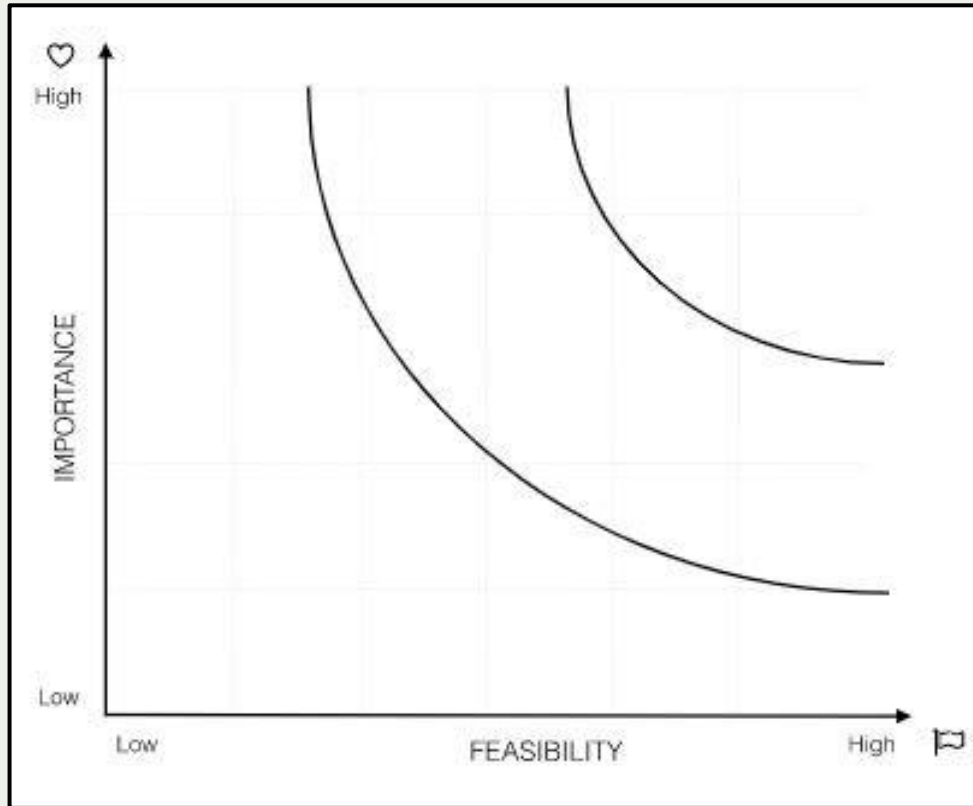
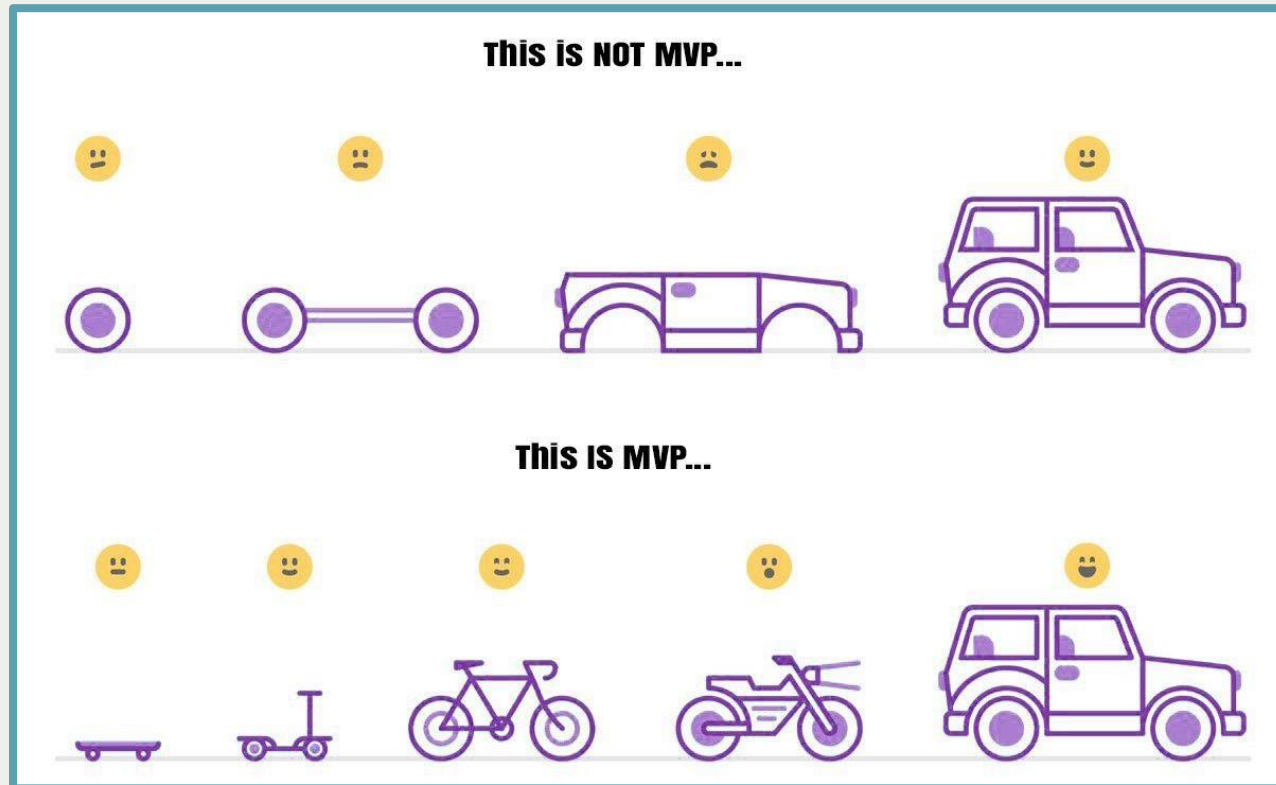


Image: Prioritization Map from Mural

- Force Rank each of your ideas based ONLY on importance to your user.
- Force Rank each idea ONLY based on feasibility.
- Outcome = no-brainers, big bets, & time wasters.

Go Slow to Go Fast



*Refine the
Prototype(s)
to a Minimum
Viable Product
(MVP)*

Image: "Running hypothesis driven experiments using the MVP — image by x-staticmediagroup"

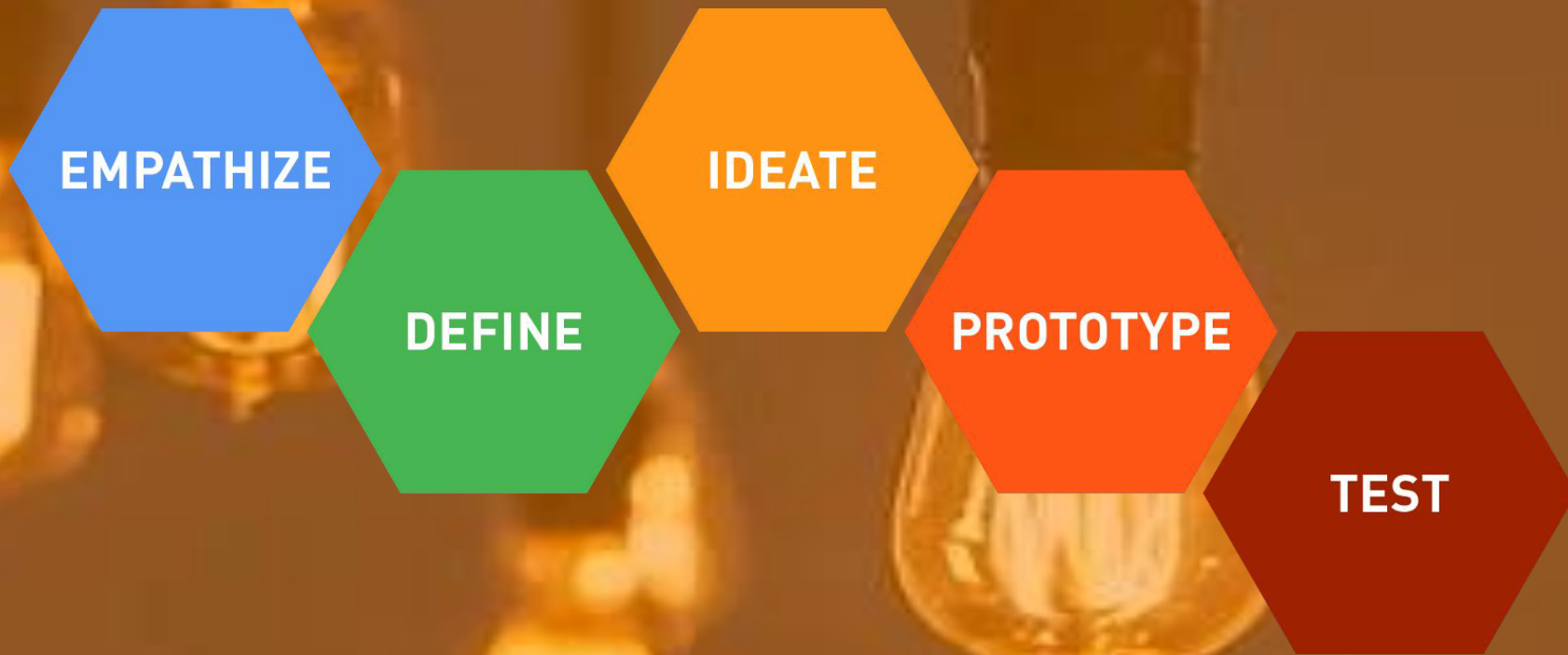


Image: "The Design Process," from the [Stanford d.school](https://www.stanford.edu/)

Step 5 - Fail Forward

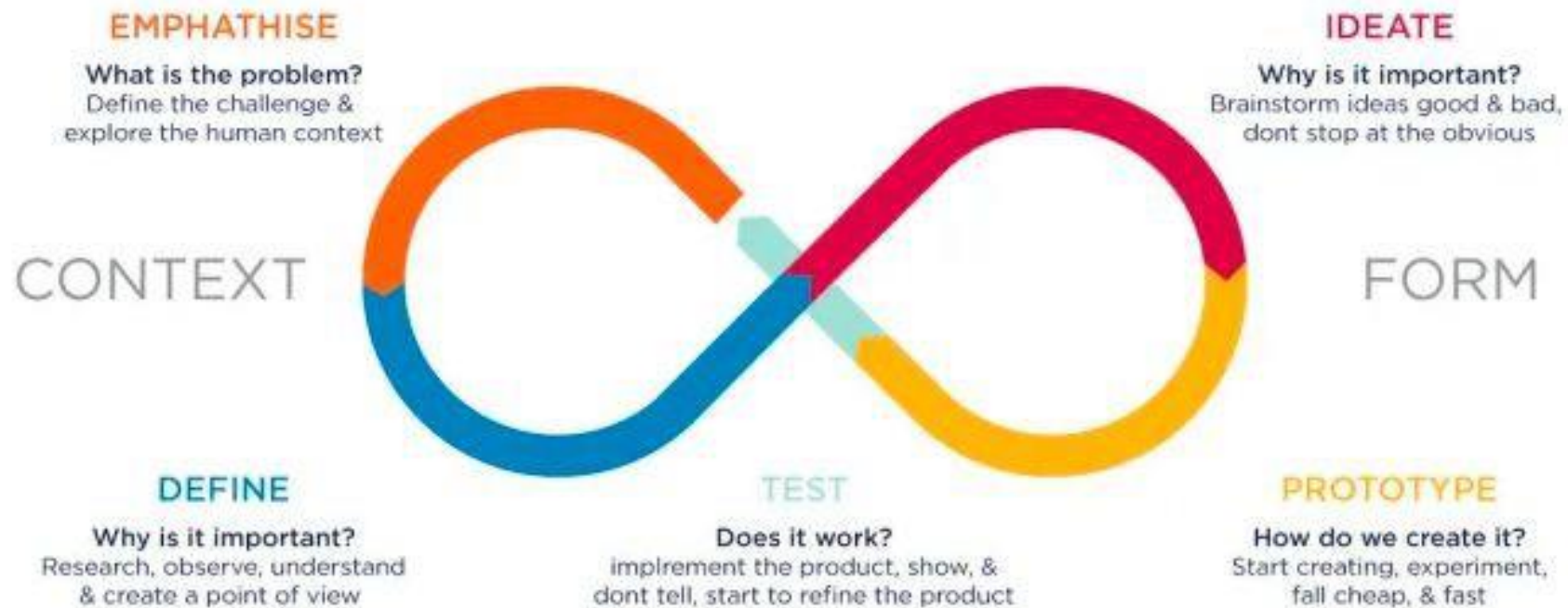


Image: "Design Process" from UXBeginner.com

Testing & Iteration Steps...



Make it Public

Test the MVP Prototype with your users and other stakeholders.



SWOT Analysis

Identify strengths, weaknesses (internal), opportunities & threats (external)



5 Whys

Why analysis to determine the root/systemic cause of a problem.



Chunking

Establish key phases, milestones, and metrics that anticipate setbacks and trend toward success.



Systems Map

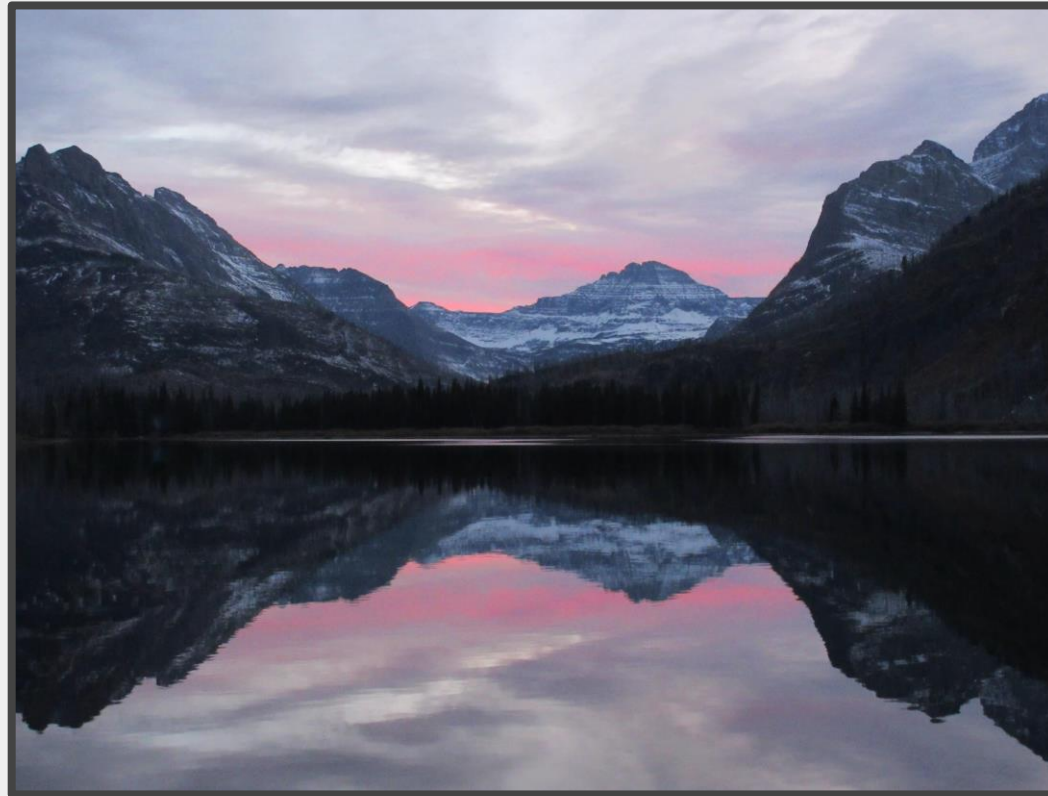
Identify connections & pinch points between people, groups, and systems.



80/20 Rule

Target support from your key influencers (coalition of the willing).

Reflections & Next Steps...



Thank You!



[Adam Haigler](#) has worked in a variety of settings as an educator and business leader. He co-founded several businesses and organizations, building their programs and marketing from the ground up, including [Launch Marketing](#), his latest venture. Adam is also a seasoned educator and leader of diverse people across a variety of alternative settings, with a teaching and mentoring experience that spans ten countries in over 13 years. Adam tries to make his passion his work, leading to unique professional settings that include a public school teacher, outdoor school instructor, environmental educator, overseas leader, and a community educator. He co-authored the book, “[Open Up, Education!](#)” and co-founded [Open Way Learning](#), where he is able to use his experience in education and leadership to help people and organizations develop unique programs and bring bold visions to reality.



[Ben Owens](#) worked as an engineer for a multinational corporation for 20 years before becoming a STEM teacher at [Tri-County Early College](#). In his 11 year teaching career, he helped transform the school into one that has gained international recognition for its unique approach to learner-centered innovation, especially for students historically furthest from opportunity. Ben was the 2017 Bridging the Gap Distinguished Teacher in STEM Education; the 2016 [SMT Center](#) Outstanding 9-16 Educator; a [Hope Street Group](#) National Teaching Fellow; and served on the Gates Foundation Teacher Advisory Council. He is on the National Faculty for [PBLWorks](#), an Open Organization Ambassador with Red Hat, and a routine “Community TA” for the MIT Teaching Systems Lab. As the co-founder of [Open Way Learning](#), he works with schools and organizations around the country use the Design Process to build cultures where learner-centered innovation thrives, especially for students traditionally furthest from opportunity.