DPL Toolkit

Anne Ruskamp, Brian Zimmer, Christian Peters

Objectives

- Think creatively
- Collaborate with others
- Unlock new solutions



About Don't Panic Labs

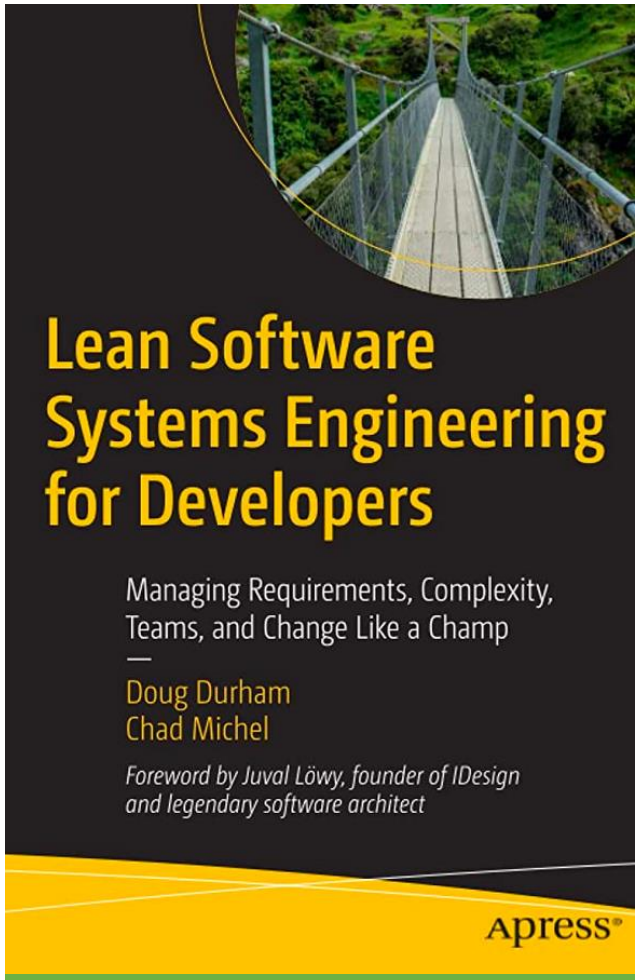
Our passion is to bring every innovator's vision to life in a way that they experience sustainable business agility.



Early-Stage Expertise



Educational Partner



Lean Software Engineering

Who are we?

- **A**nne Ruskamp, Principal Software Engineer
- **B**rian Zimmer, Chief Strategy Officer / Chief Product Officer
- **C**hristian Peters, Senior Software Engineer

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Who is in the room?
Personal Scavenger Hunt

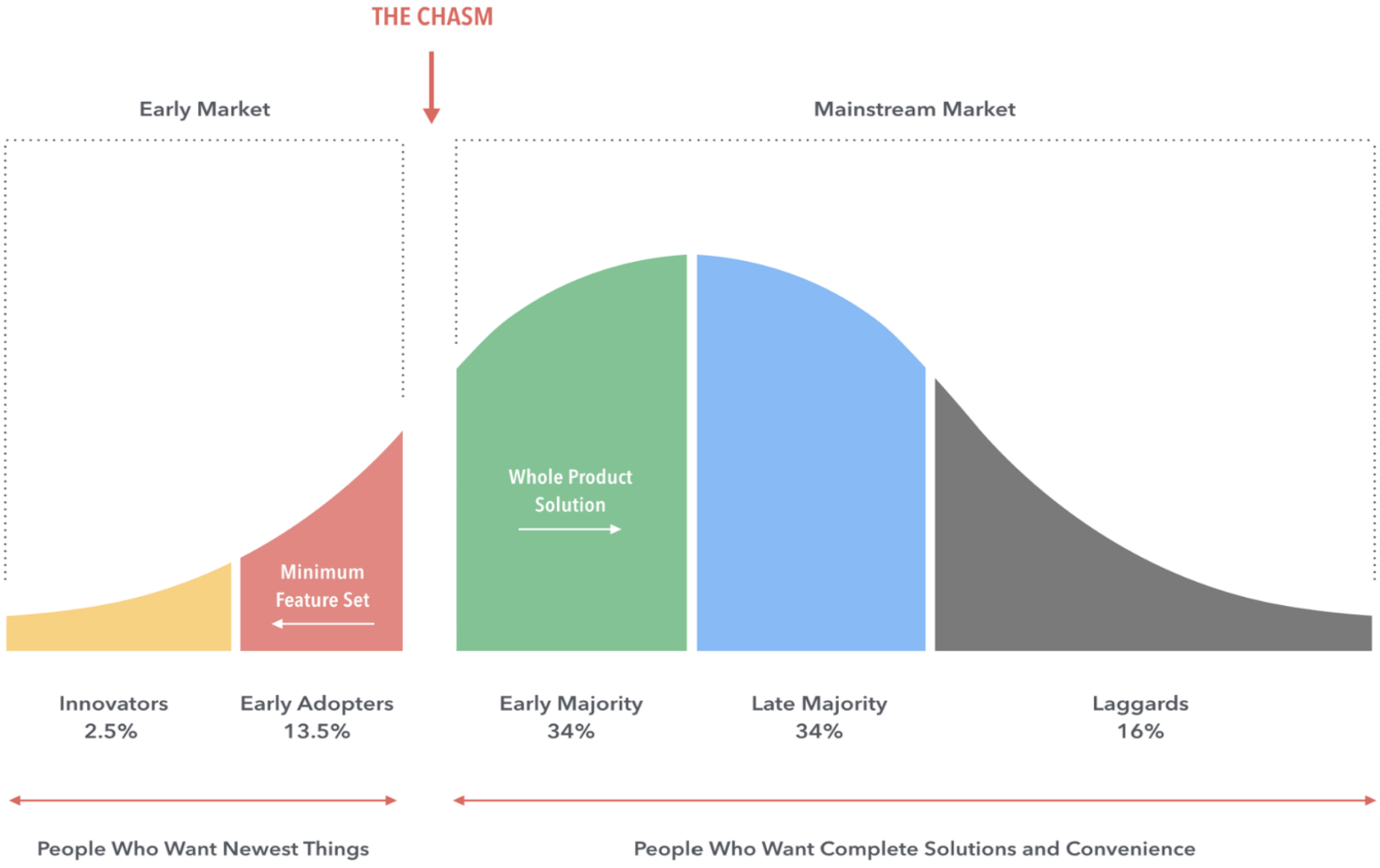
- **Goal** is warm up brains, make small connections, get moving, form a group and generate a problem statement for use in following activities.

Personal Scavenger Hunt

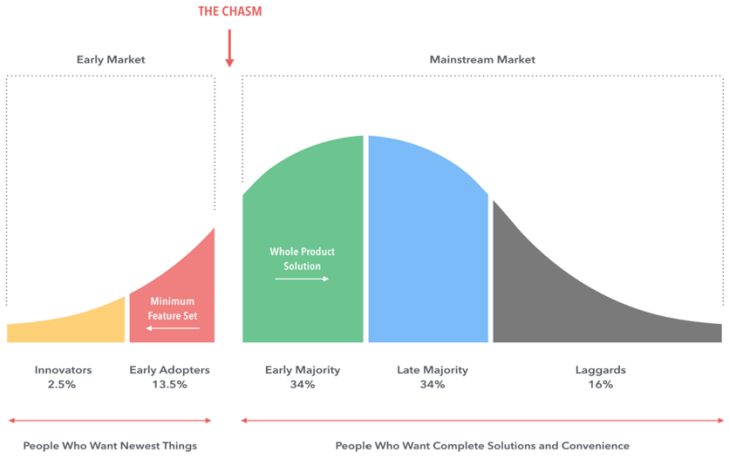
- Start with reflection
  - One work challenge that keeps you up at night?
  - One unexpected skill/talent you want to bring to your team?
  - Something you hope to learn today?
  - A recent work win you are proud of?
- Share with others
  - Pair up with someone you don't know well and share your answers – working through each question one at a time
  - Rotate 3 or 4 times to meet others
- Form groups
  - Find a small group of 3-5 people with the same work challenge as you, ask your new friends for help locating if needed
- Define a group problem statement
  - Generate a sentence that describes your group's challenge so that we can use real world examples throughout the workshop today

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Product Life Cycle

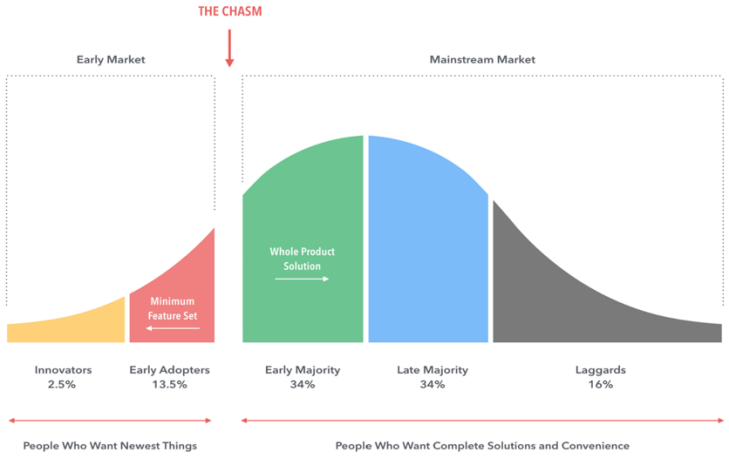

THE CHASM
Early Market
Mainstream Market
Whole Product Solution
Minimum Feature Set
Innovators 2.5%
Early Adopters 13.5%
Early Majority 34%
Late Majority 34%
Laggards 16%
People Who Want Newest Things
People Who Want Complete Solutions and Convenience

Personas



- **Innovators**
  - Will try technology for the sake of technology.
- **Early Adopters**
  - Needs to see the vision of the product.
  - Expects to collaborate with you on advancing the product.
  - Expects it to provide value, but tolerant of failures.
- **Early Majority**
  - Require a clear value proposition and ROI
  - Needs to be a quality product
  - Needs to fit well within existing systems
- **Late Majority**
  - Expects robust software that meets all their needs.
  - Not fault tolerant.
- **Laggards**
  - Will start using a product only because they are forced to

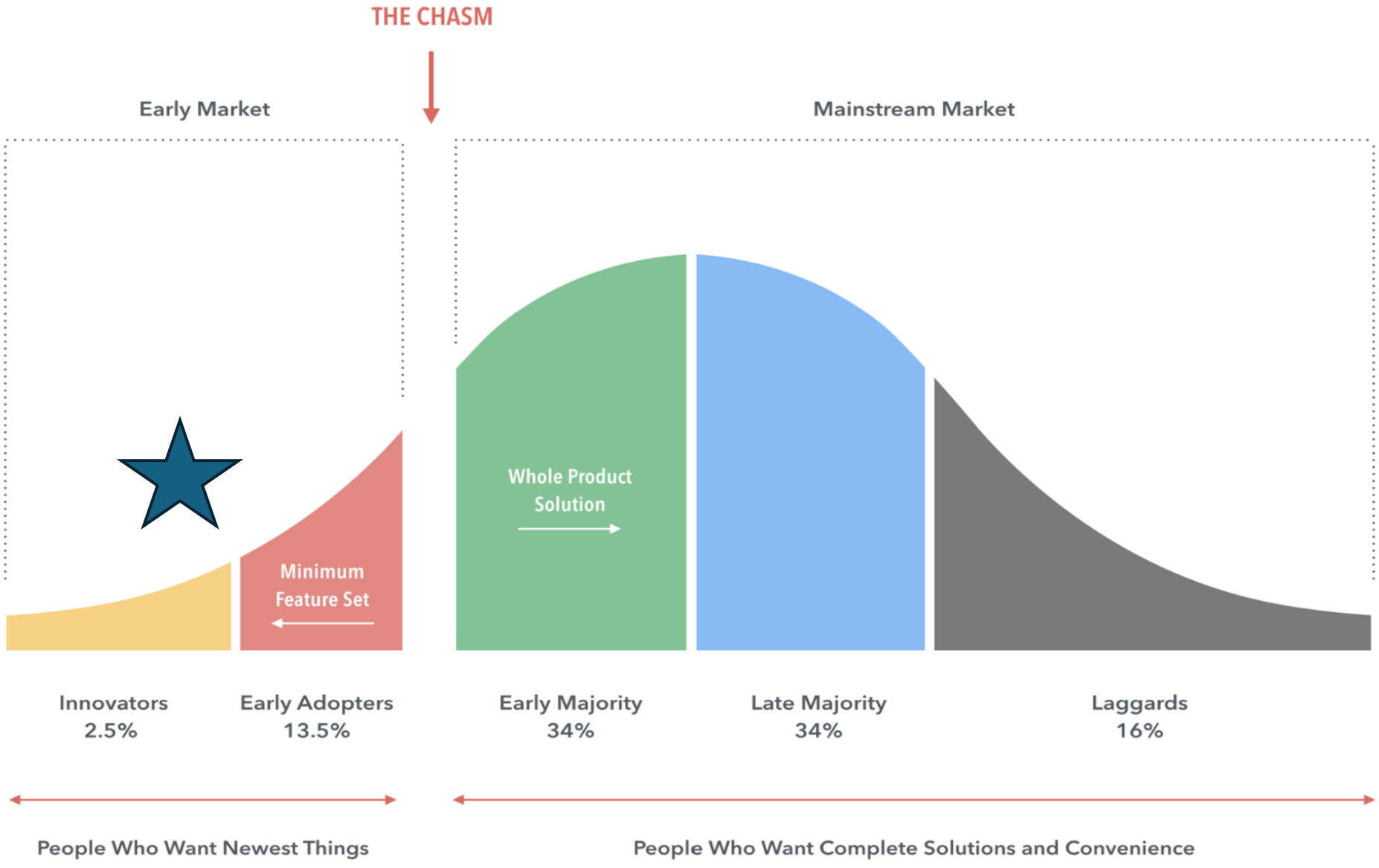
Challenges



- **Innovators**
  - Are they representative of your market?
  - Lots of unknowns about problem and solution fit.
  - Generating ideas for features and solutions.
- **Early Adopters**
  - Expect special treatment
  - Lots of unknowns about product and market fit.
  - Even more ideas for features and solutions.
- **Early Majority**
  - Balancing a wide variety of needs and expectations of quality.
  - Existing customer have one set of needs, New customers have another.
- **Late Majority & Laggards**
  - Re-inventing the product for new markets or future growth

FigJam Tutorial

Break Time!


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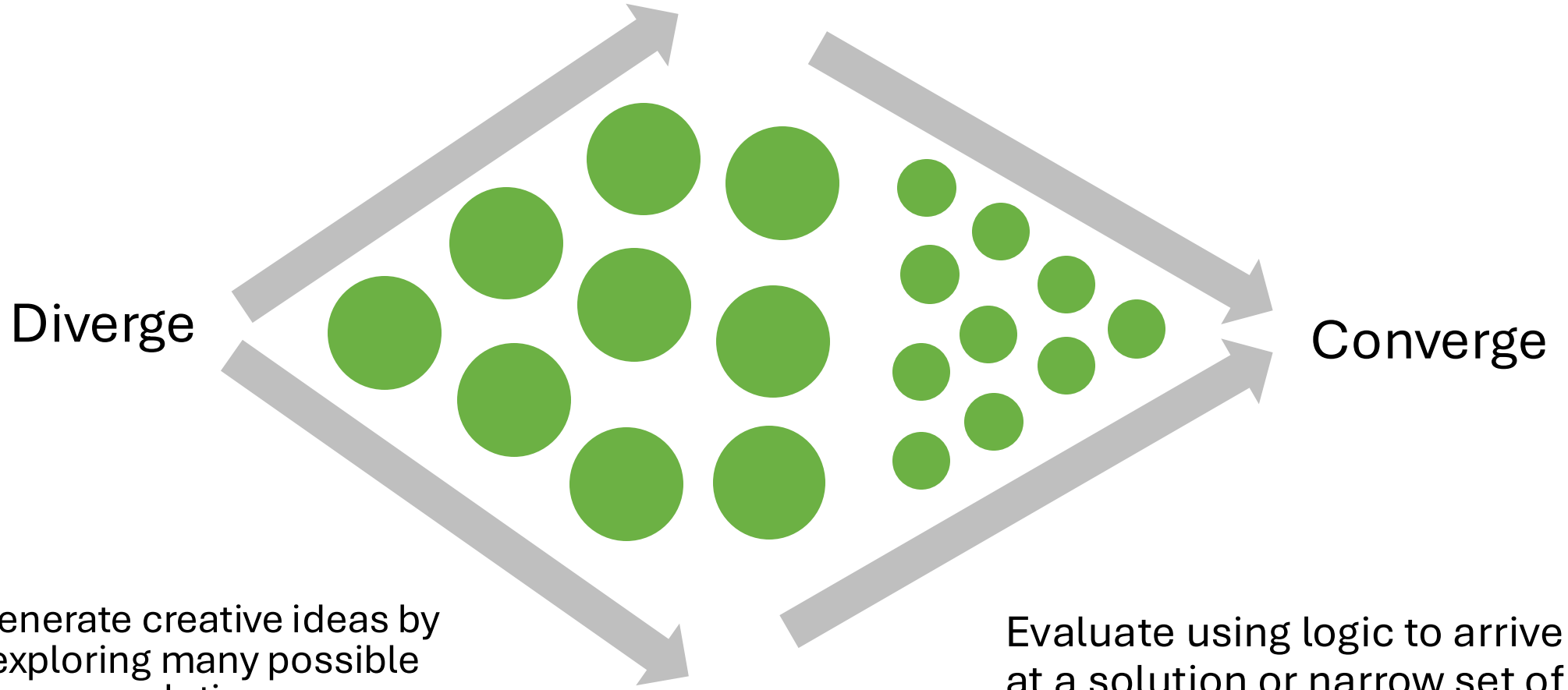
Mash Up

Today's Example: EliteForm

- Strength & Conditioning Performance Management Platform
- Leverages Computer Vision
- R&D Effort
- Developed with Huskers
- First Customer & Validation Kansas Men's Basketball
- Launched December 2011
- International Adoption



Divergent vs. Convergent Thinking



Mash Up

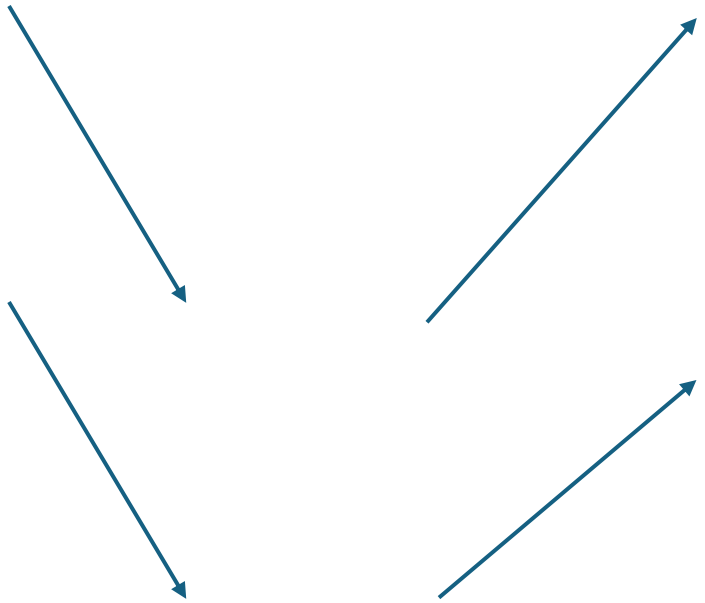
- Pick two broad categories of things.
  - *1st Category – Related to your idea/product or challenge*
  - *2nd Category - Something desirable/novel that's relatable to all involved*

- *List elements of both categories*

- *Combine together to see what ideas are generated*

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Mash Up Example



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Mash Up Activity

- FigJam Activity
  - Pick and product/service and a desirable category
  - 5 minutes for generating elements for your product/services
  - 5 minutes for generating elements for your chosen desirable category
  - 5 minutes for mashing together

- Some Potential Desirable Categories
  - Disney Trip
  - Hotel Stay
  - VIP Concert Backstage Experience
  - [Your Favorite Holiday]

Newspaper Articles

Newspaper Articles

- Writing is one of the best ways to both give critical thought and share concepts with others

- Think about a newspaper article regarding:
  - Feature Story on a Successful Company
  - Investigative Article on a Failed Company

Newspaper Article Example

- EliteForm's success grew from their ability to incorporate technology into a hostile environment, the weight room. Stregth coaches demanded a fast-paced environment and the seamless tracking provided by cameras kept them from skipping a beat. No other company was able to build algorithms that could track a bar with scientific precision using commodity 3D depth data.

- EliteForm's failure was rooted in the natural skepticism of strength coaches. Stuck in traditional ways of lifting weights, coaches had no idea how to make sense of velocity numbers in training. When they saw expensive technology attached to weight lifting racks, they knew it was yet another expensive gadget that was simply never going to work.

Newspaper Article Activity

Newspaper Articles

- Pick One To Complete
  - Write a feature article from a perspective of a successful company 5-10 years in the future.
  - Write an investigative article from the perspective of a failed company explaining what went wrong and why they missed the opportunity.
- Time: 10 minutes
- 0 Points for Spelling and Grammer
- *Alternative idea: App store review format*

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Lightning Decision Jam

Lighting Decision Jam

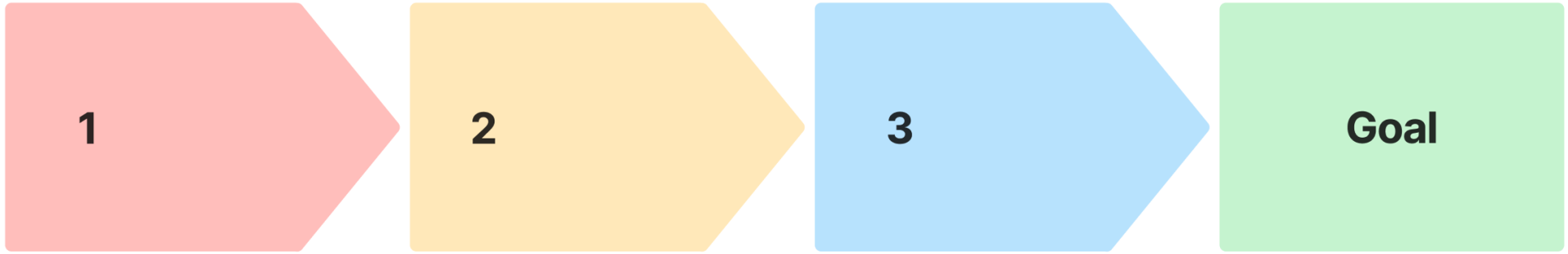
Concept

Quantity
over
Quality

Together
Alone

Lighting Decision Jam

Steps



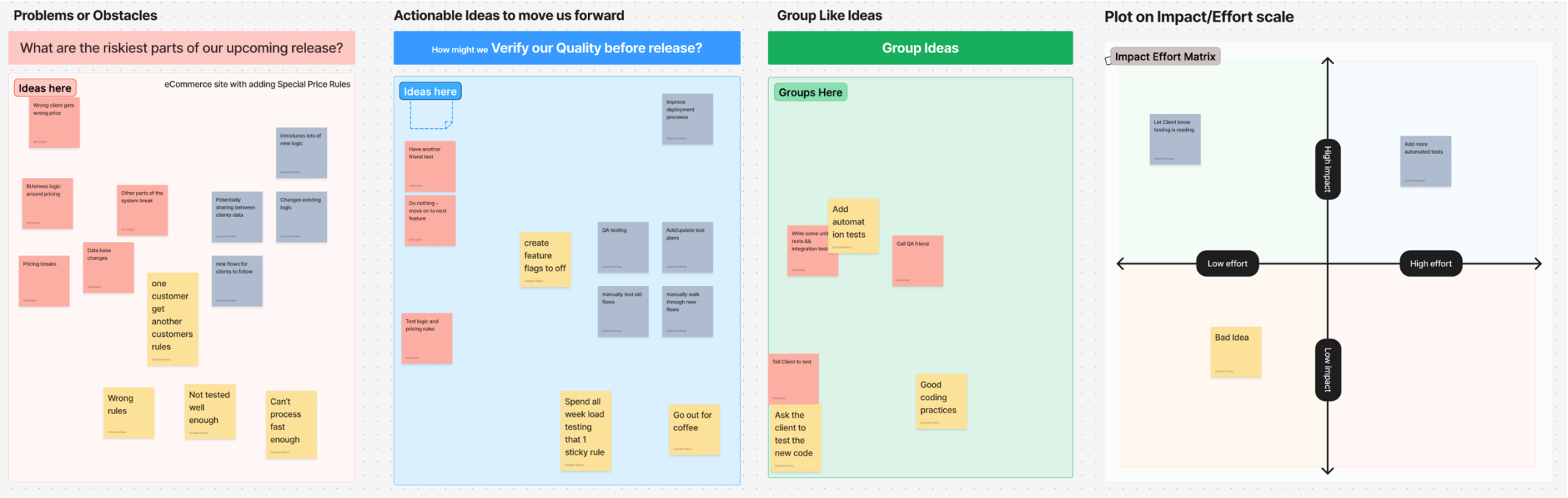
Problems or Obstacles

Actionable Ideas to move us forward

Group like ideas

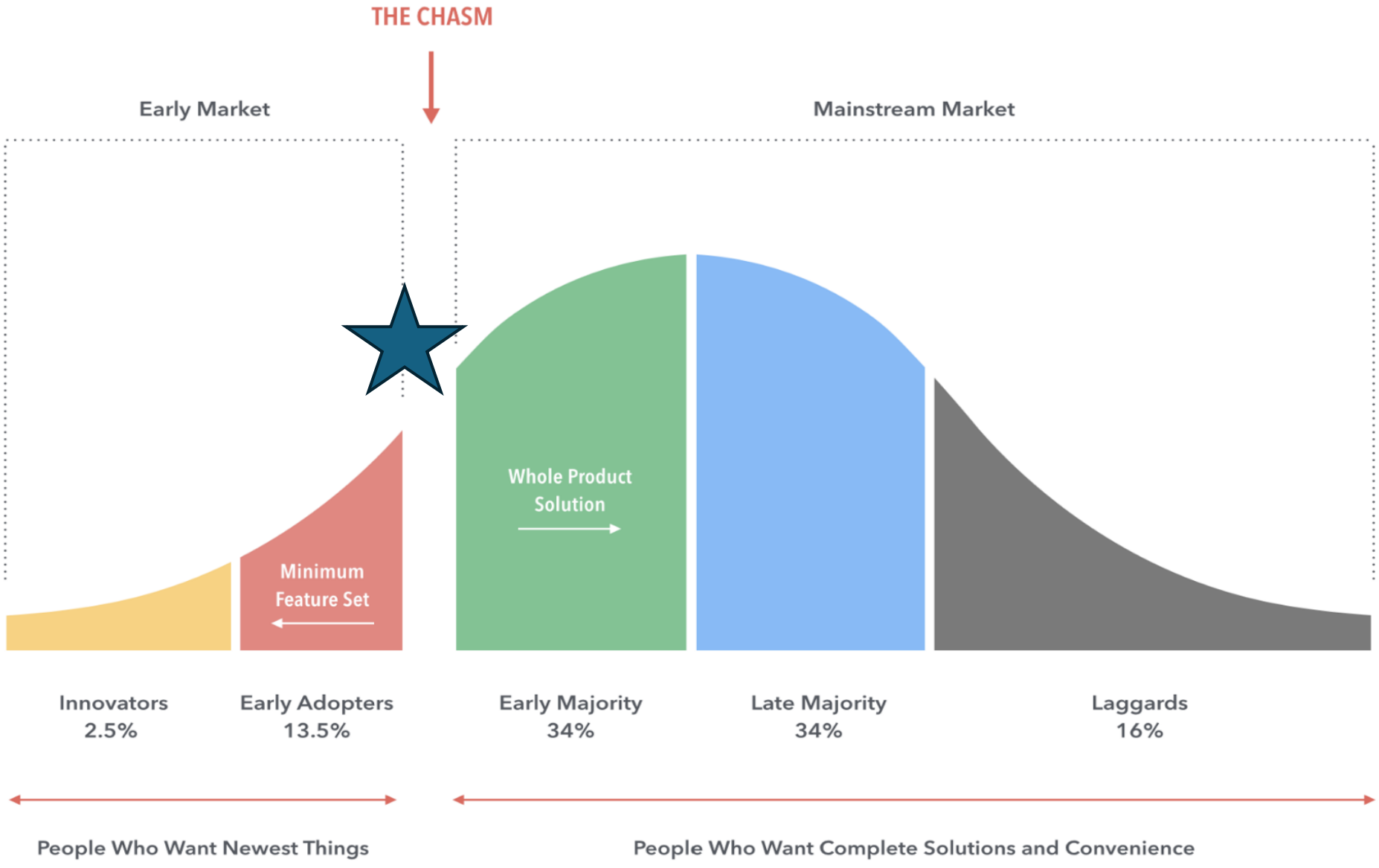
Plot on Impact/ Effort scale

Lighting Decision Jam

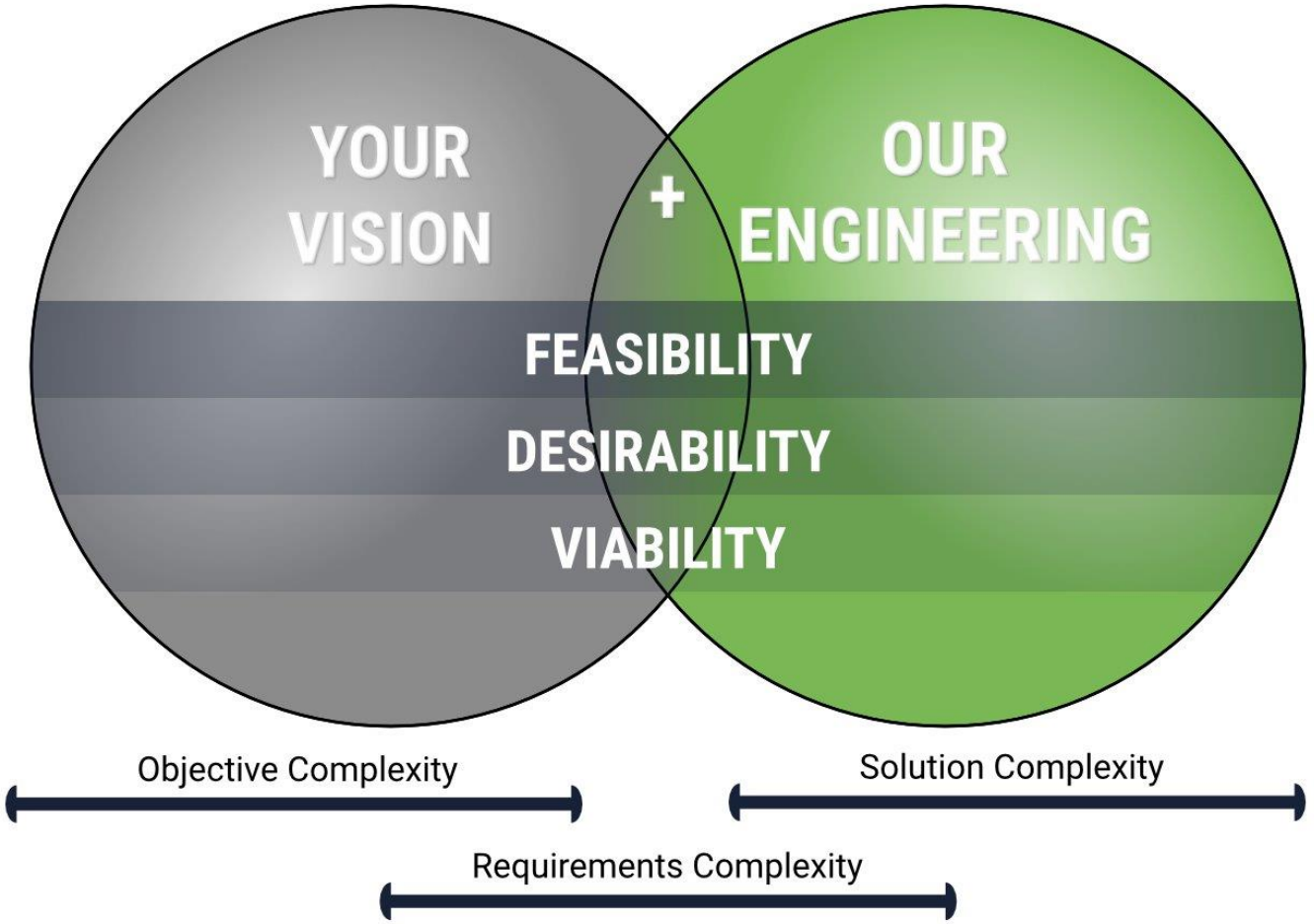


Lunch Time!

Key Questions


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Sustainable Innovations



DON'T PANIC LABS

Identifying Key Questions

- Learnings by answering may materially change:
  - Our understanding of the customer problem
  - Our vision of the proposed solution
  - Figure out if it's possible to accomplish something
  - Determine the degree of difficulty

- Phrase them as: How might we…?
  - Questions are very non-threatening
  - Invite ideation on solution and process to test a hypothesis
  - Invite participation and alignment

DON'T PAN!C LABS™

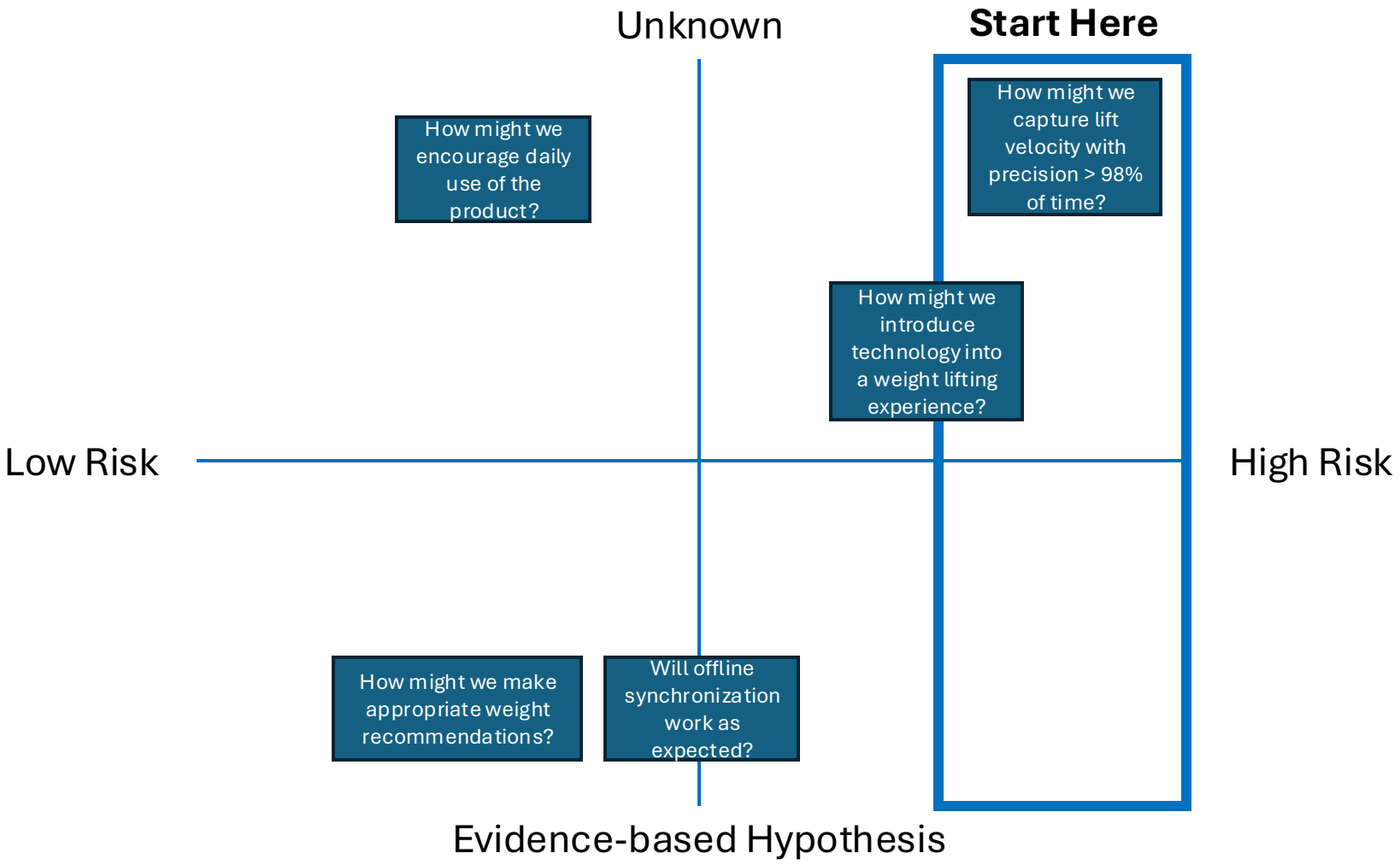
Key Questions Activity

- FigJam Activity
  - Pick a company or product you know enough to give critical thought to
  - Identify Areas of Risk & Uncertainty within the 3 domains

- **Feasibility** = Can we build it? Is it legal/ethical? Is it practical?
- **Desirability** = Do customer want it? Does it actually create value?
- **Viability** = Is there a balance between fundraising, costs, and revenue?

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Prioritization of Key Questions



DON'T PANIC LABS

Key Questions Prioritization

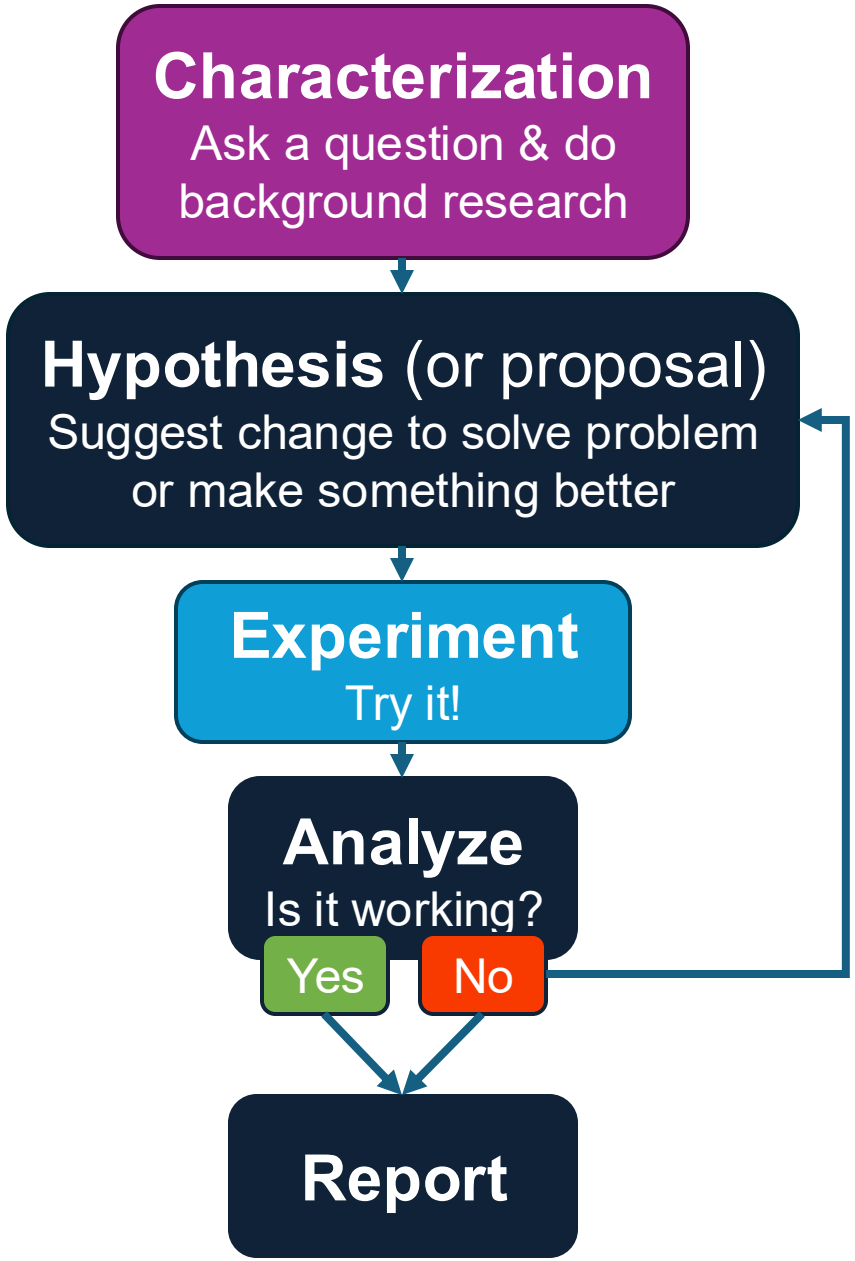
- FigJam Activity
  - Copy Your Questions into the Grid to Identify Your Key Questions

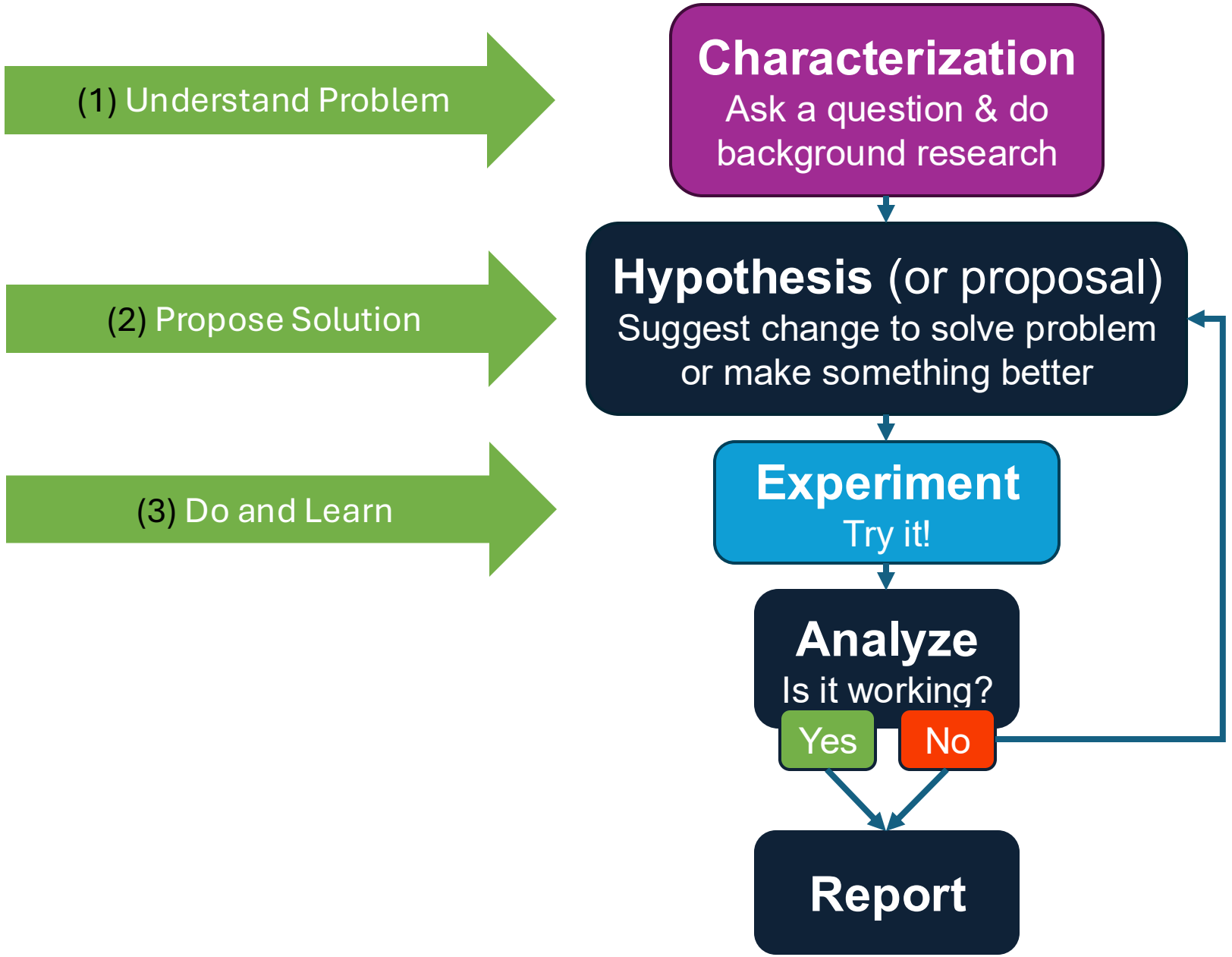
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Experimentation

Scientific Method

- Characterizations / Observation
  - observations, definitions, and measurements of the subject of inquiry
- Hypotheses / Predictions
  - theoretical, hypothetical explanations of observations and measurements of the subject
  - inductive and deductive reasoning from the hypothesis or theory
- Experiments
  - tests of all of the above
- Analyze and Report
  - learn and communicate


Characterization
Ask a question & do background research
Hypothesis (or proposal)
Suggest change to solve problem or make something better
Experiment
Try it!
Analyze
Is it working?
Yes
No
Report


(1) Understand Problem
(2) Propose Solution
(3) Do and Learn
Characterization
Ask a question & do background research
Hypothesis (or proposal)
Suggest change to solve problem or make something better
Experiment
Try it!
Analyze
Is it working?
Yes
No
Report

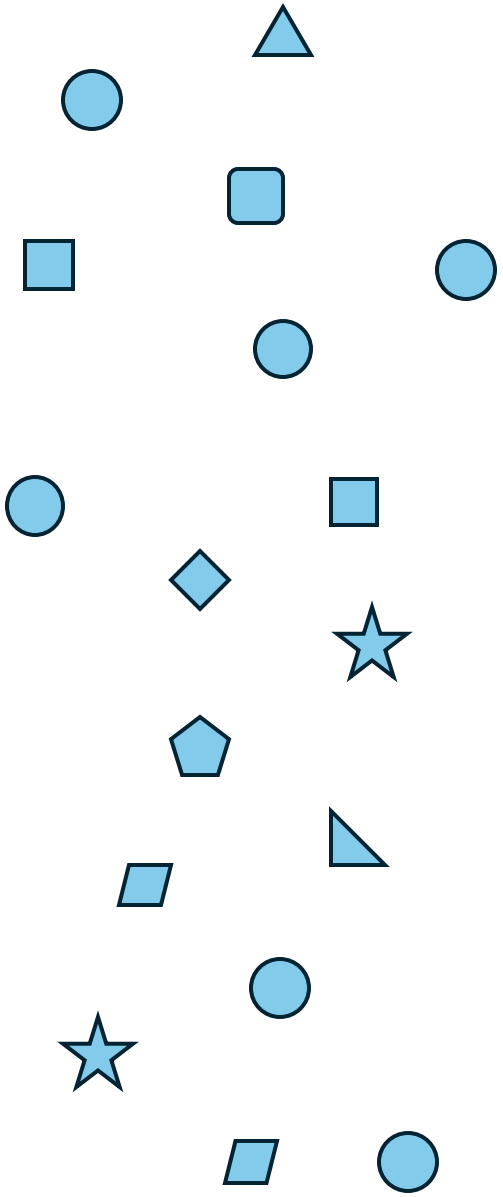
Scientific Method

- Characterizations / Observation = **Understand the problem**
  - Identify pain points or symptoms
  - Fall in love with the problem you're trying to solve

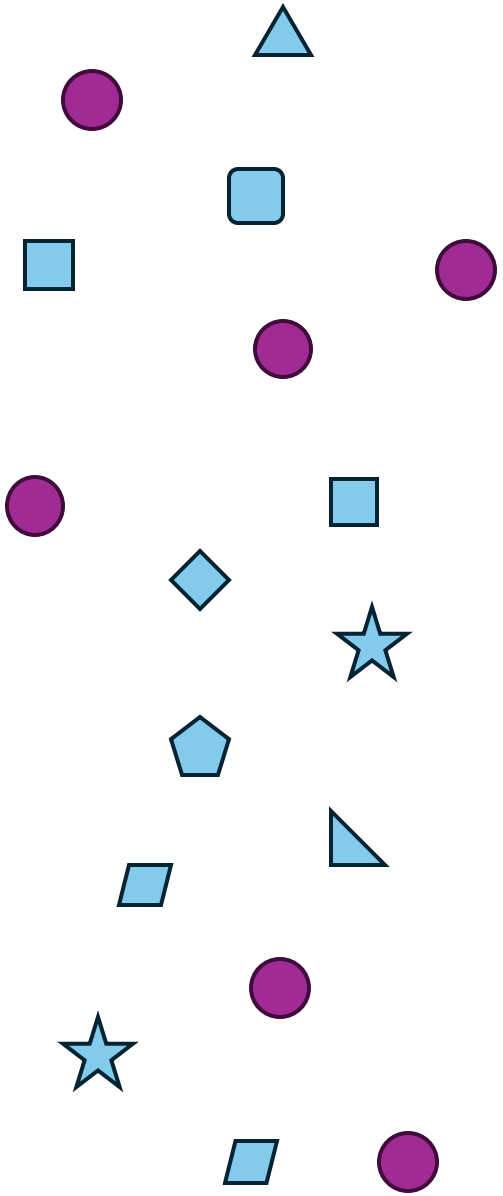
"Whether chemists, physicists, or political scientists, the most successful problem solvers spend mental energy figuring out what type of problem they are facing before matching a strategy to it, rather than jumping in with memorized procedures."

David Epstein
Range: Why Generalist Triumph in a Specialized World

Understand the problem



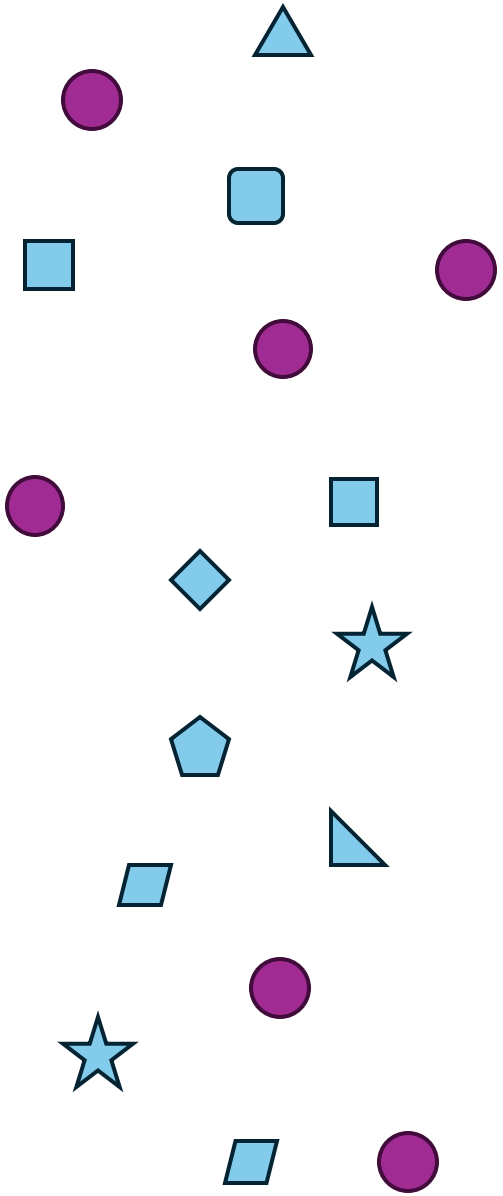
Understand the problem



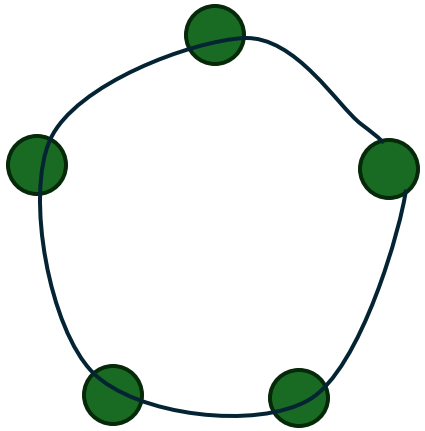
Scientific Method

- Characterizations / Observation = **Understand the problem**
- Hypothesize = **Propose a solution**
  - Make a statement that would explain an observed challenge
  - Make a statement about a possible solution
    - Or pose using a “how might we” question

Understand the problem



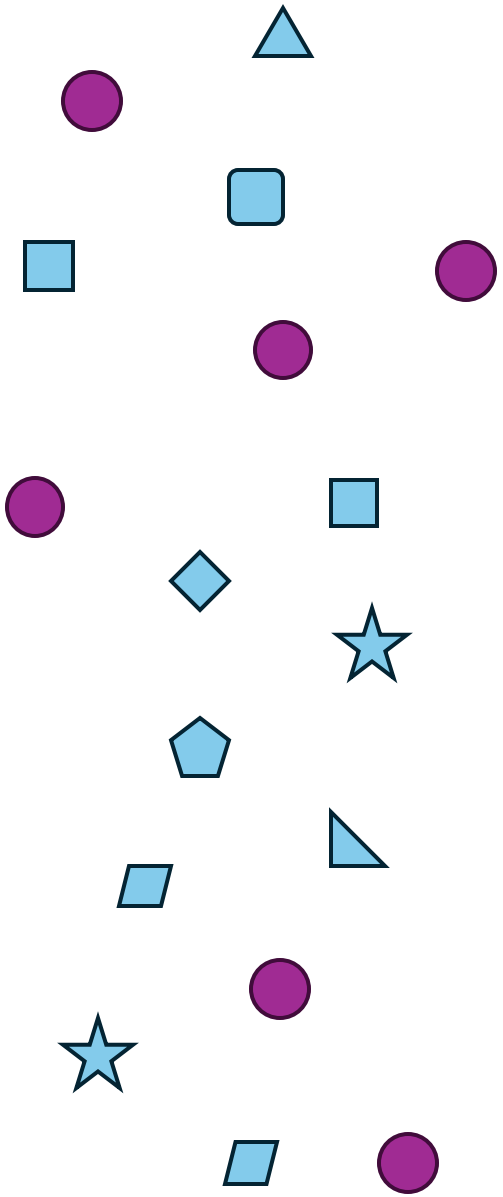
Propose solution



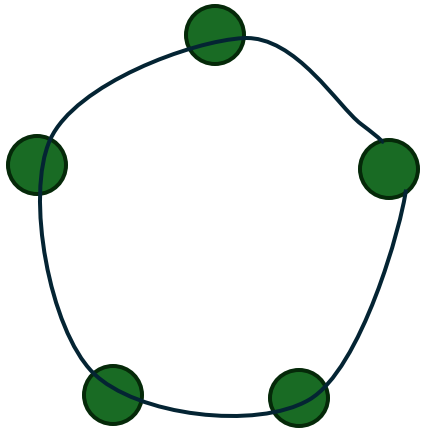
Scientific Method

- Characterizations / Observation = **Understand the problem**
- Hypothesize = **Propose a solution**
- Experiment = **Do it**
  - Put constraints on testing your prediction and report results
  - Know who and when you will check in on progress

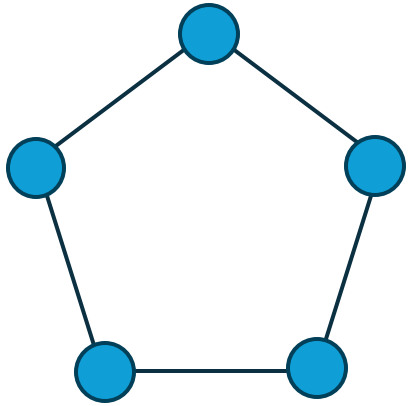
Understand the problem



Propose solution



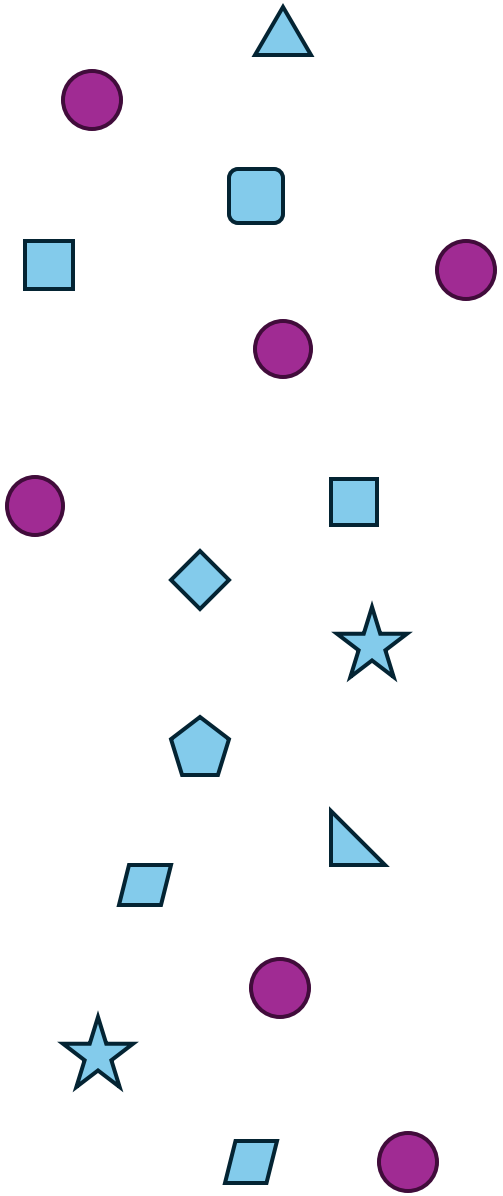
Do it



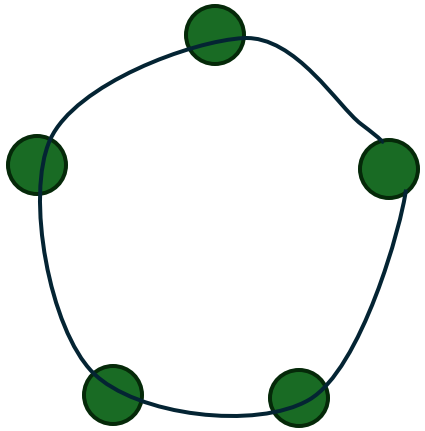
Scientific Method

- Characterizations / Observation = **Understand the problem**
- Hypothesize = **Propose a solution**
- Experiment = **Do it**
- Analyze and Report = **Learn and repeat**
  - Check-in and report results

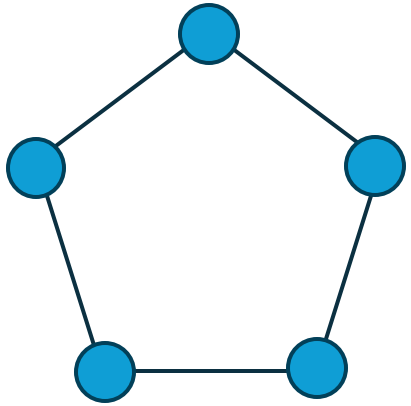
Understand the problem



Propose solution



Do it

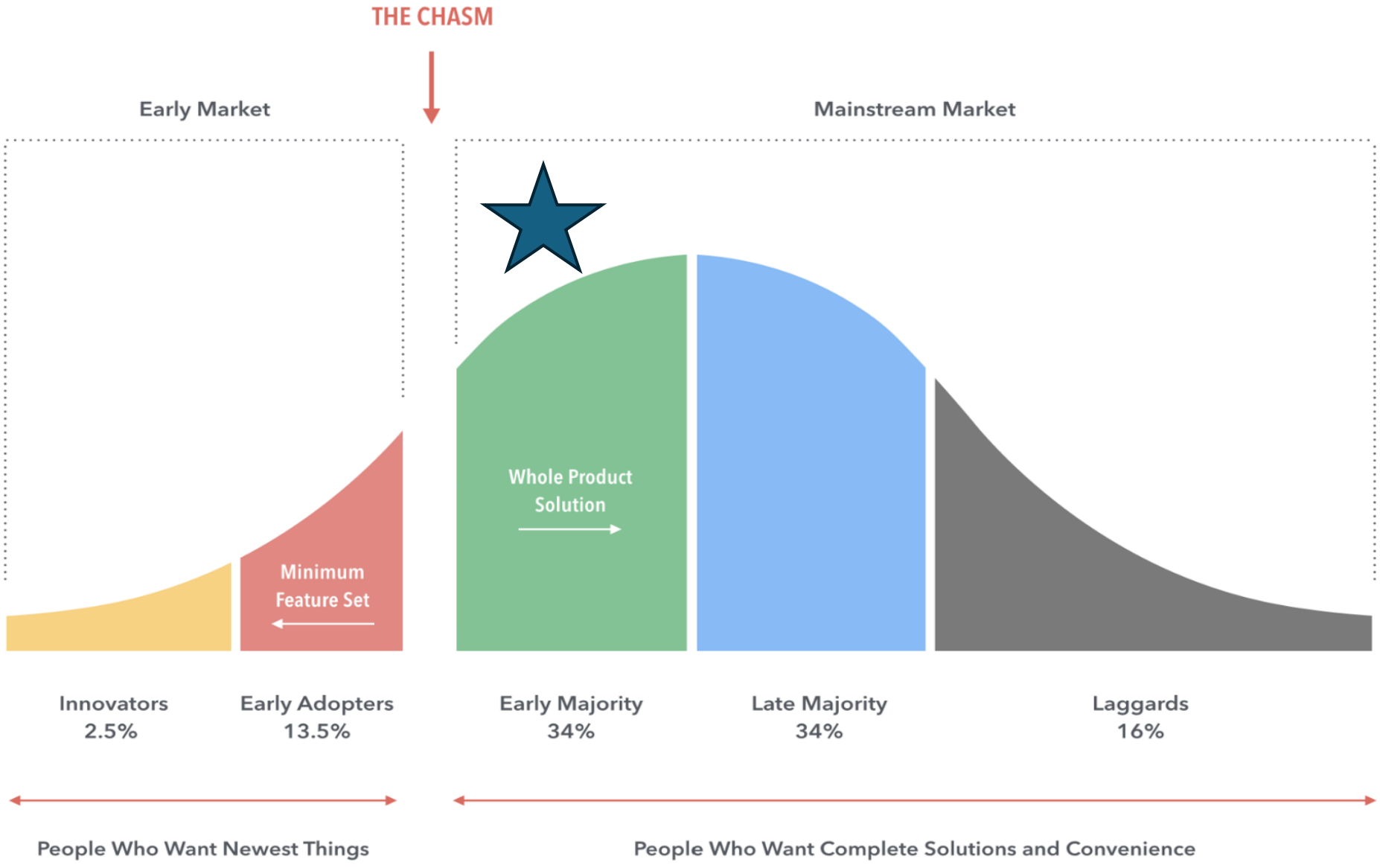


Learn and repeat



Developing Testable Hypotheses

- Question
  - How might we detect the bar so that we might track it?
- Hypothesis
  - We can isolate and track the hands of an athlete on the bar through a CV algorithm.
- Experiment to Run
  - Evidence if True
    - We are able to detect the hands on > 90% of frames
  - Evidence if False
    - We experience groups of frames without hands being detected


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Break Time!

RICE Scoring

Prioritization of Work Items

- RICE Scoring
  - A method of prioritizing work items by optimizing on the mix of value and effort.
- What are the variables?
  - Reach = How many customers/users are impacted
  - Impact = Amount of business value created
  - Confident = Your confidence in Reach, Impact, and Effort
  - Effort = Amount of effort needed to deliver work item
- Calculation
  - RICE Score = (Reach * Impact * Confidence) / Effort

RICE Scoring Example

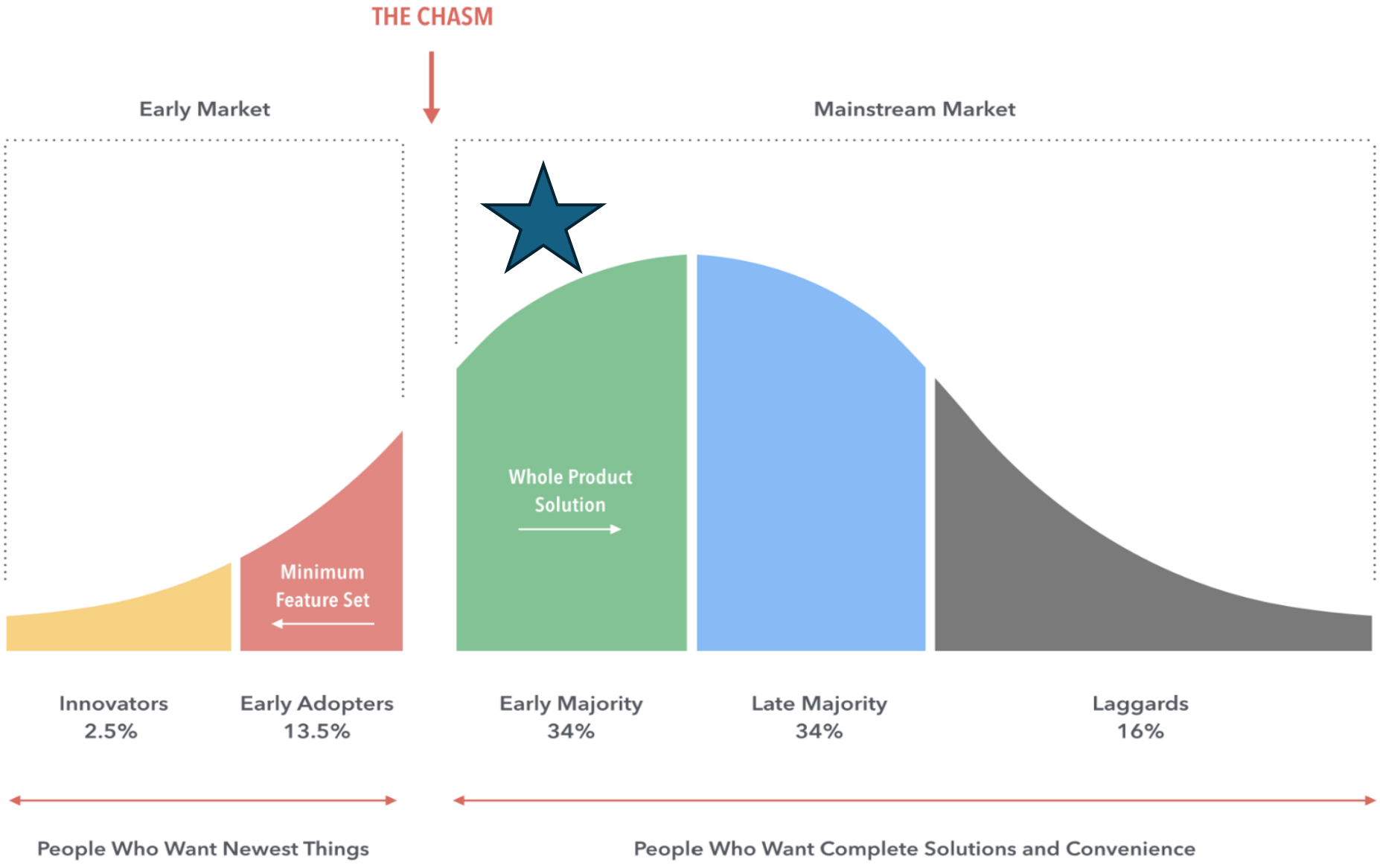
Persona	Story	Reach	Impact (.25, .5, 1, 2)	Confidence	Effort	RICE
Athlete	Automatic Lifting Form Detection		2		50	
Coach	Form Drawing Tools		2		5	
Athlete	Facial Recognition Sign-In		2		10	
Coach	Tablet Notifications During Training		2		20	
Athlete	Improved Usability		0.5		5	
Coach	Improved Usability		0.5		5	

Persona	Story	Reach	Impact (.25, .5, 1, 2)	Confidence	Effort	RICE
Athlete	Improved Usability	1000	0.5	90%	5	90
Athlete	Facial Recognition Sign-In	1000	2	50%	20	50
Athlete	Automatic Lifting Form Detection	1000	2	90%	50	36
Coach	Form Drawing Tools	200	2	25%	5	20
Coach	Tablet Notifications During Training	200	2	100%	20	20
Coach	Improved Usability	200	0.5	90%	5	18

Persona	Story	Reach	Impact (.25, .5, 1, 2)	Confidence	Effort	RICE
Athlete	Improved Usability	1000	0.5	90%	5	90
Coach	Form Drawing Tools	200	2	90%	5	72
Athlete	Facial Recognition Sign-In	1000	2	50%	20	50
Athlete	Automatic Lifting Form Detection	1000	2	90%	50	36
Coach	Tablet Notifications During Training	200	2	100%	20	20
Coach	Improved Usability	200	0.5	90%	5	18

RICE Scoring Activity

- Let’s get hands on trying out RICE scoring (10min)
- Use Link on FigJam board
  - Click File | Make Copy – You will need to be signed in with your Gmail account
- Pick either
  - Sample EliteForm Backlog
  - A Backlog For Your Product
- See what happens as you change information
  - Sort with Impact
  - Sort with Effort
  - Fill in other values to create RICE score
  - Sort by RICE score
  - Adjust variables to see how sort changes
- We’ll walk around to answer questions on what you observe


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Fix-it

What’s a problem you’ve encountered recently?

Our experiences in problem solving

Formulate a hypothesis

Isolate

e**X**plore

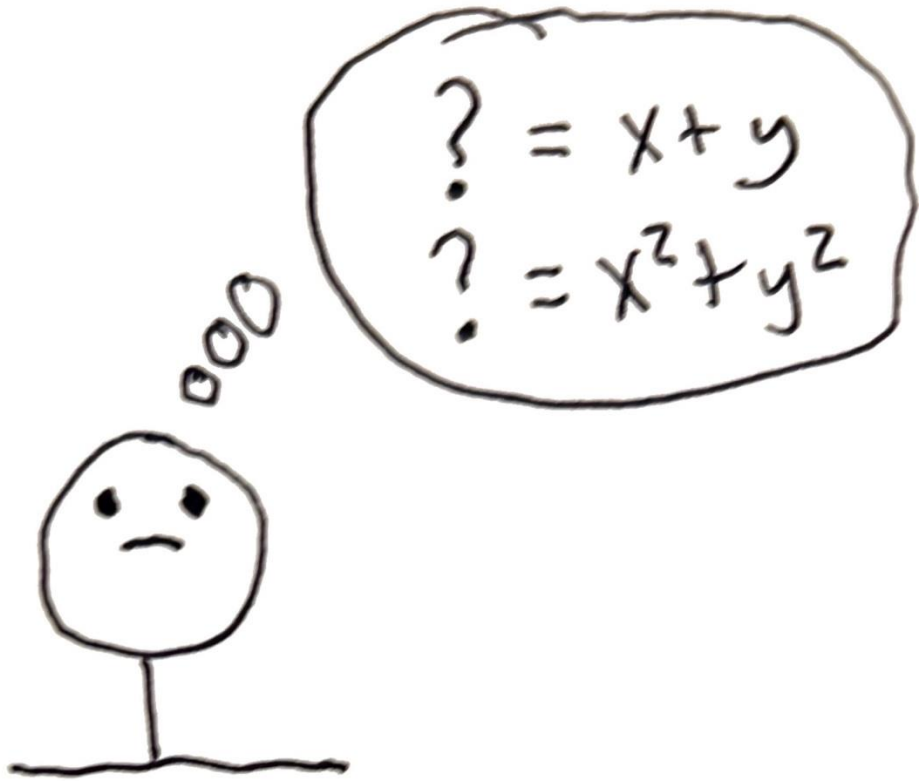
Iterate

Track

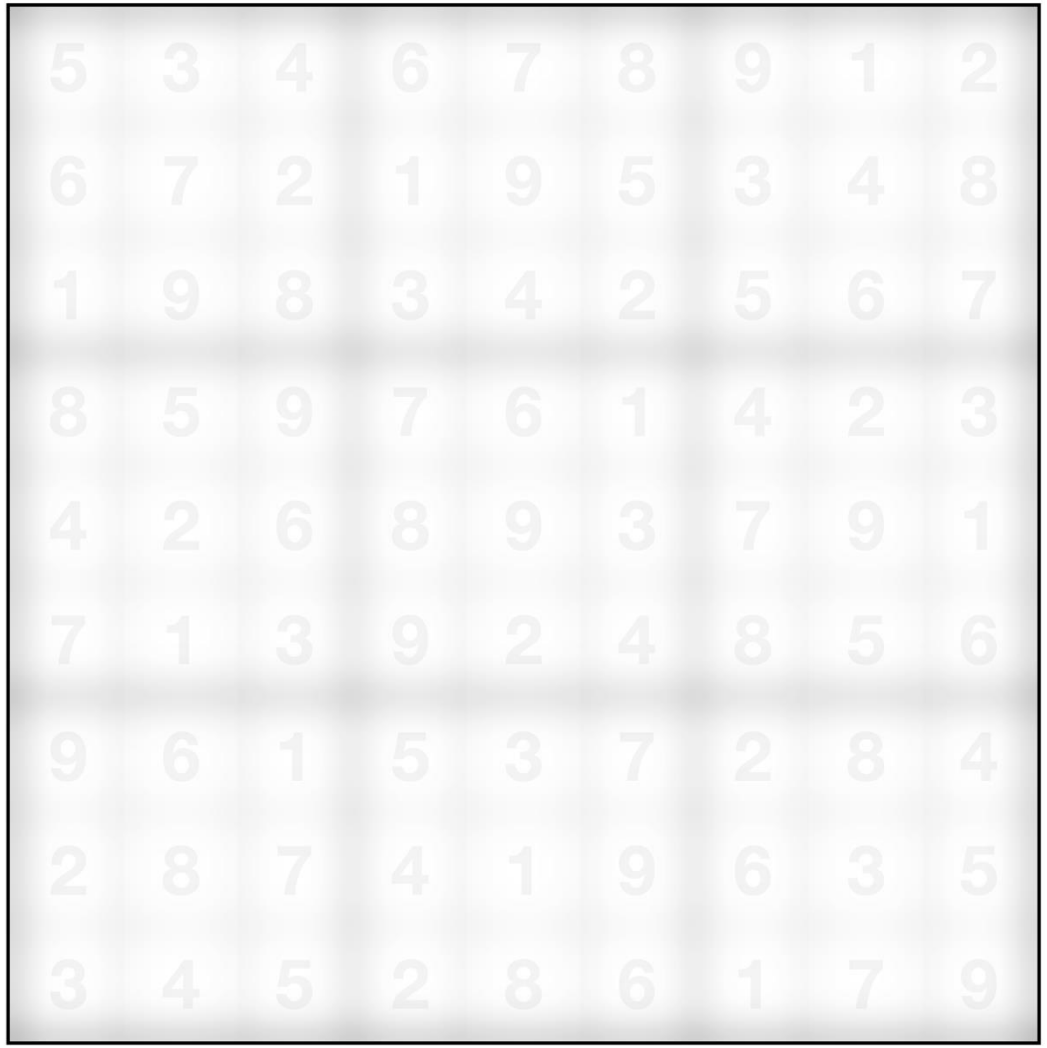
Sudoku as an Example

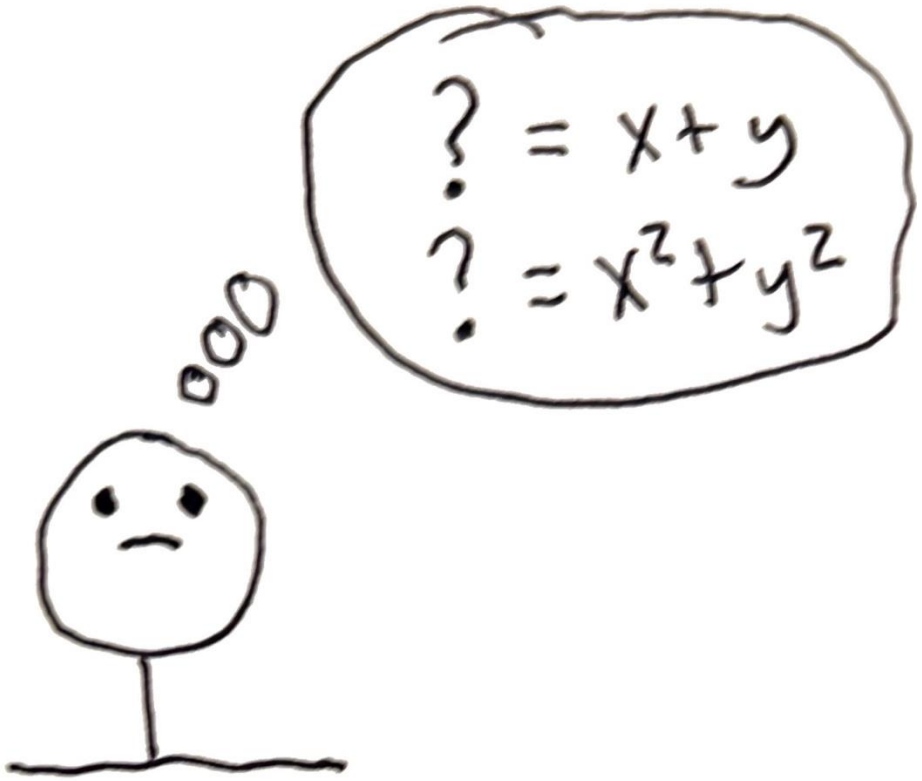
5	3	4	6	7	8	9	1	2
6	7	2	1	9	5	3	4	8
1	9	8	3	4	2	5	6	7
8	5	9	7	6	1	4	2	3
4	2	6	8	9	3	7	9	1
7	1	3	9	2	4	8	5	6
9	6	1	5	3	7	2	8	4
2	8	7	4	1	9	6	3	5
3	4	5	2	8	6	1	7	9

Formulate a Hypothesis

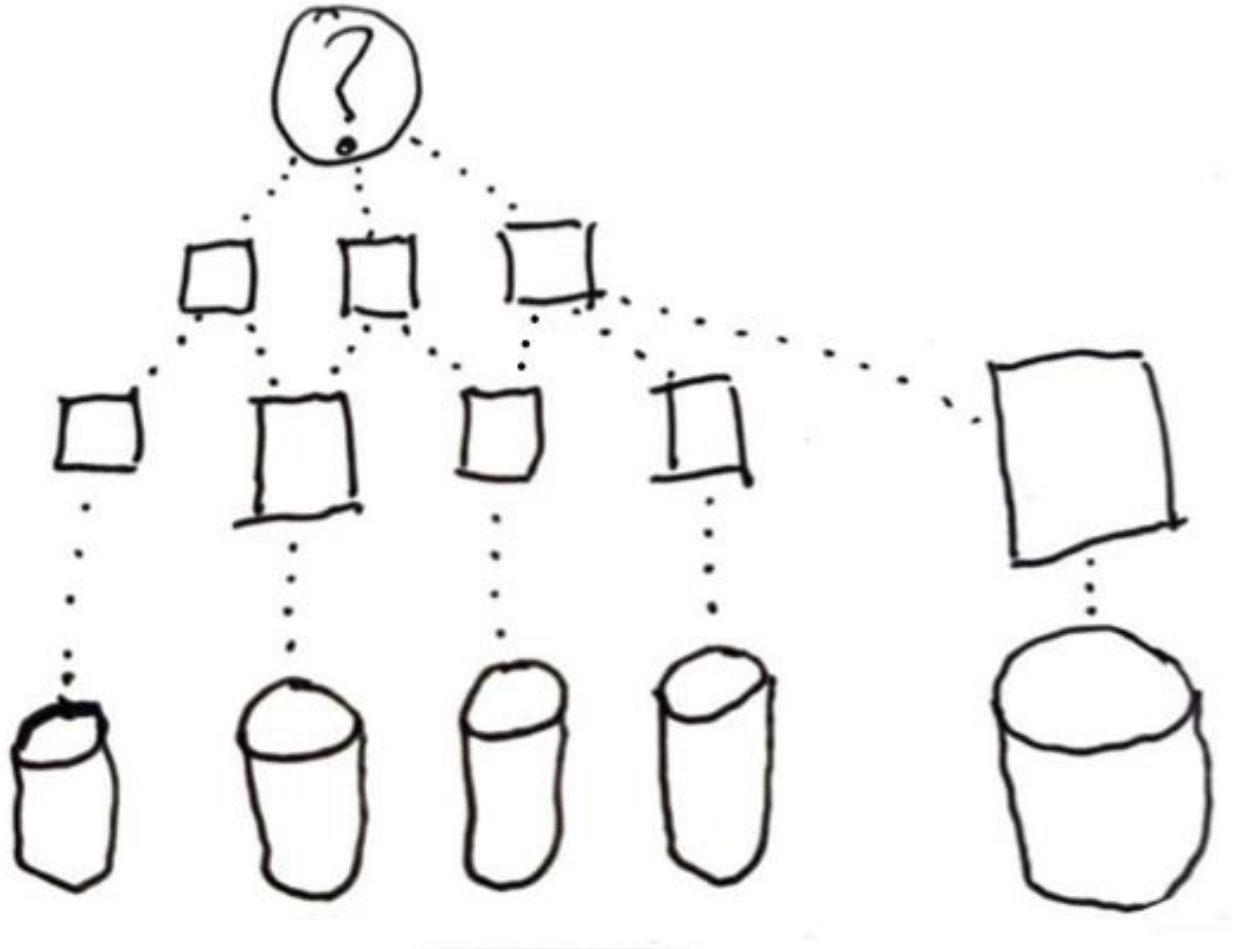


Formulate a Hypothesis – where to start?

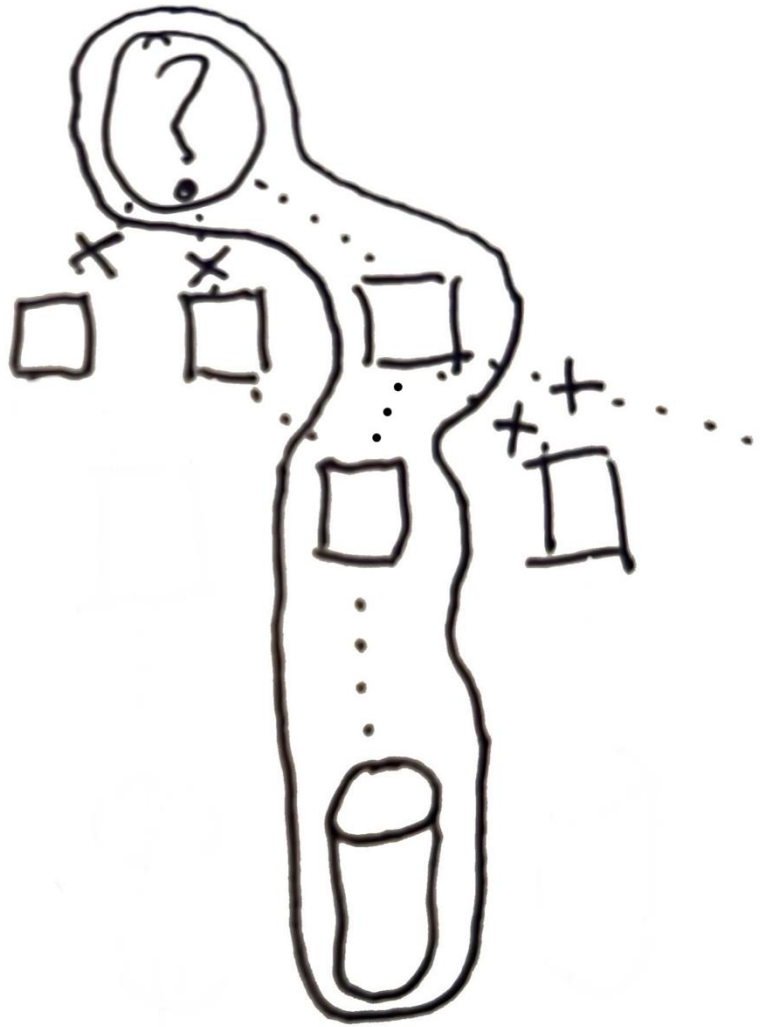




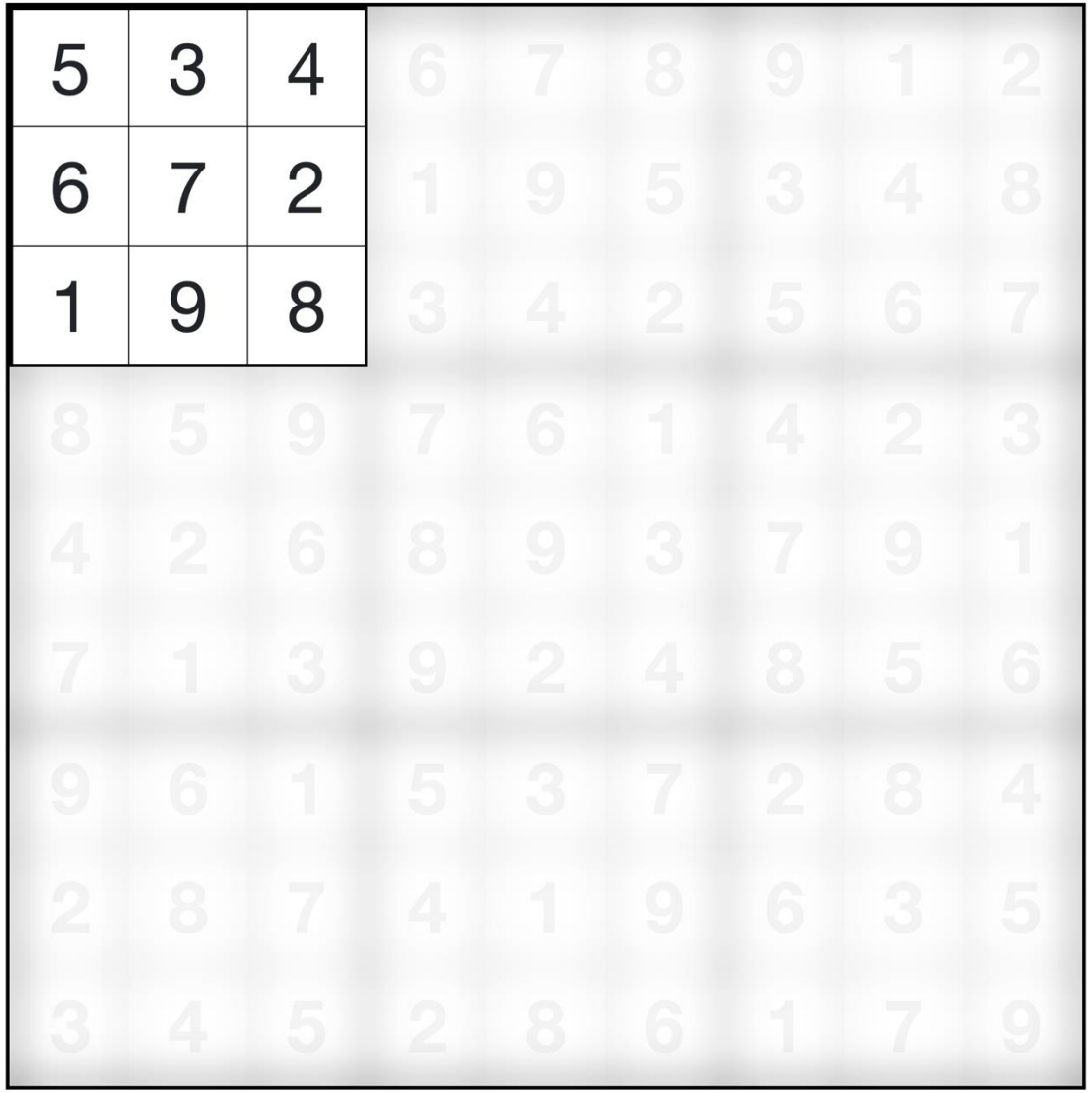
Isolate



Isolate

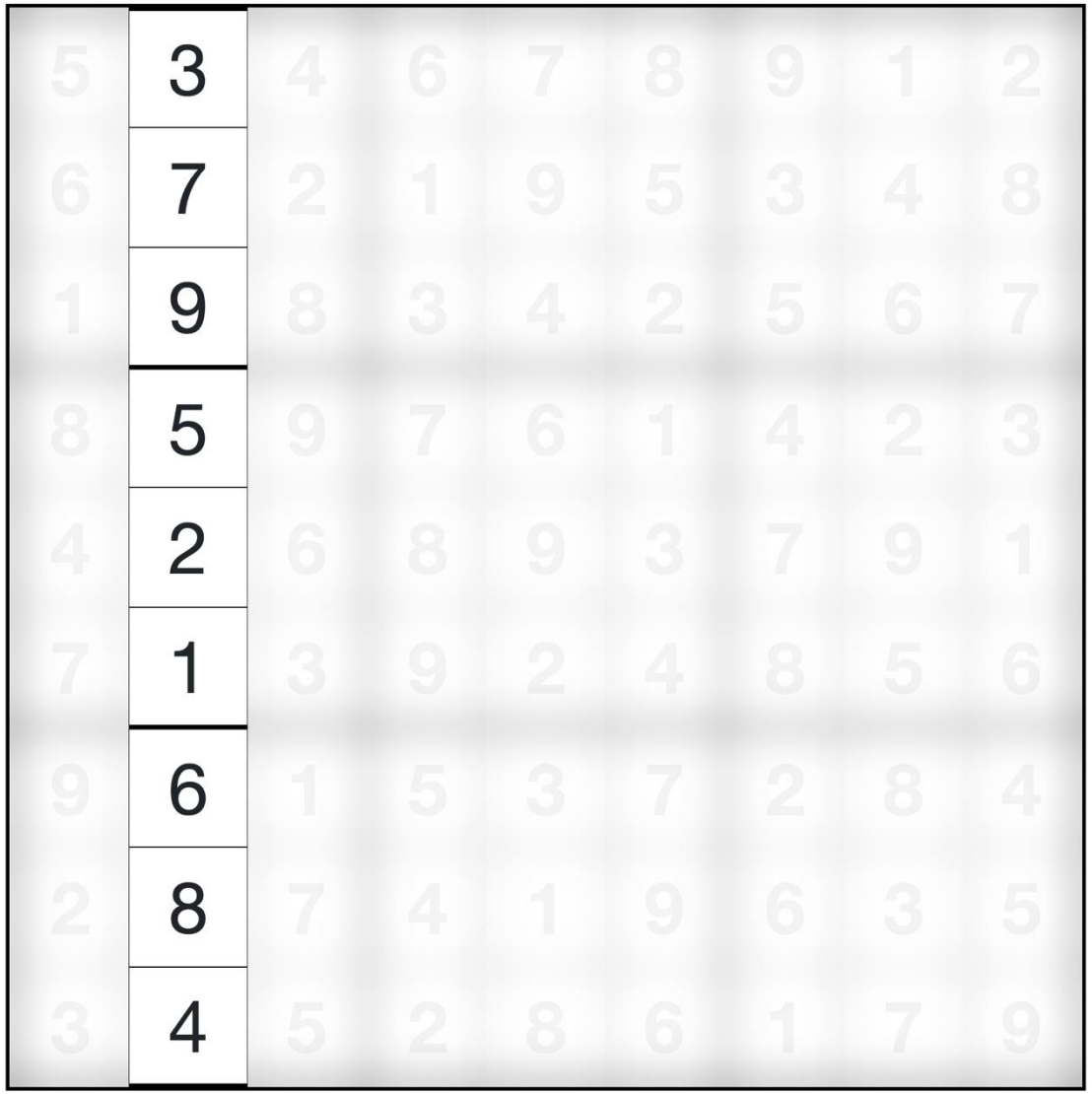


Isolate Corner



Corner

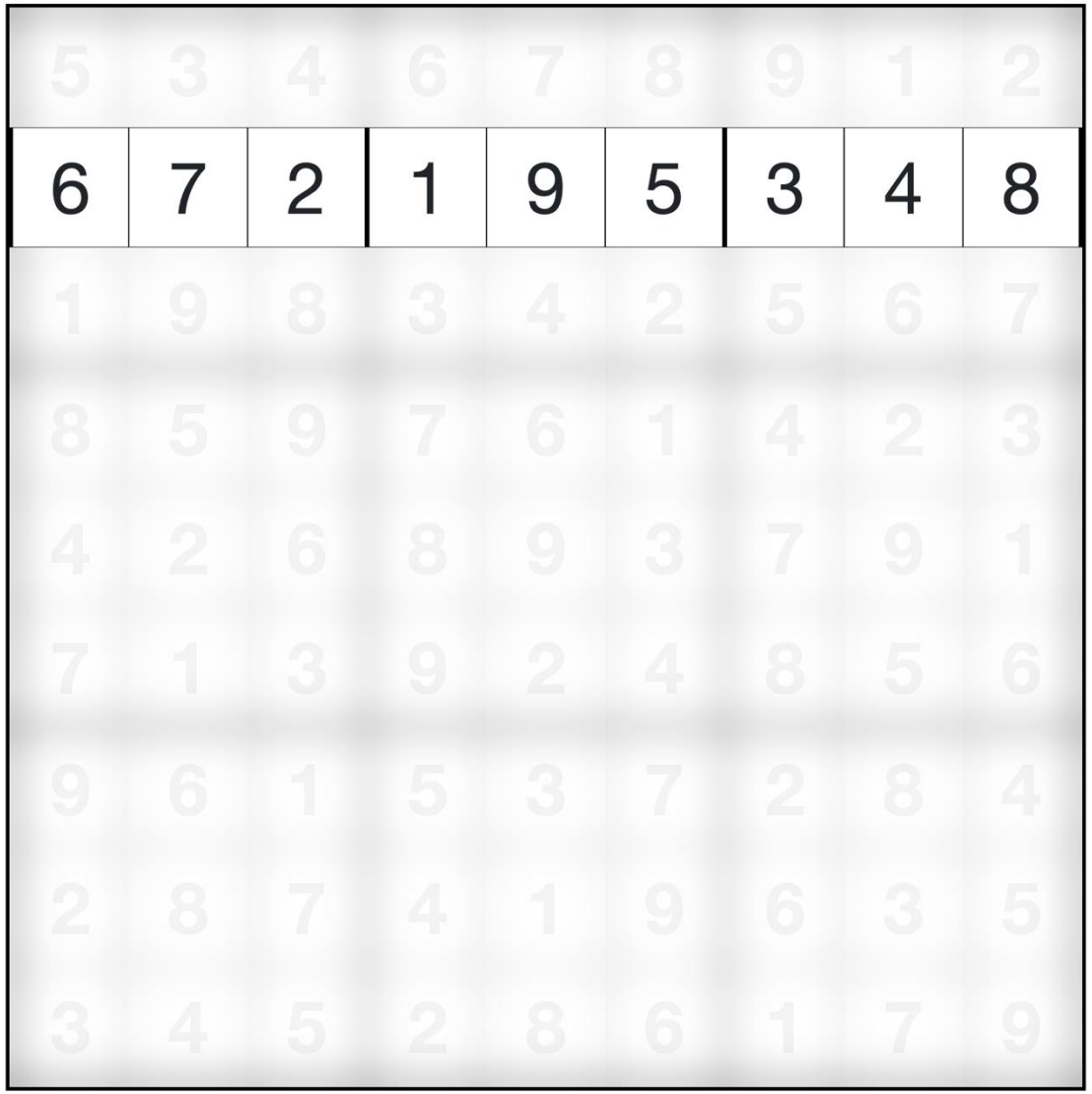
Isolate Column



Corner

Column 2

Isolate Row



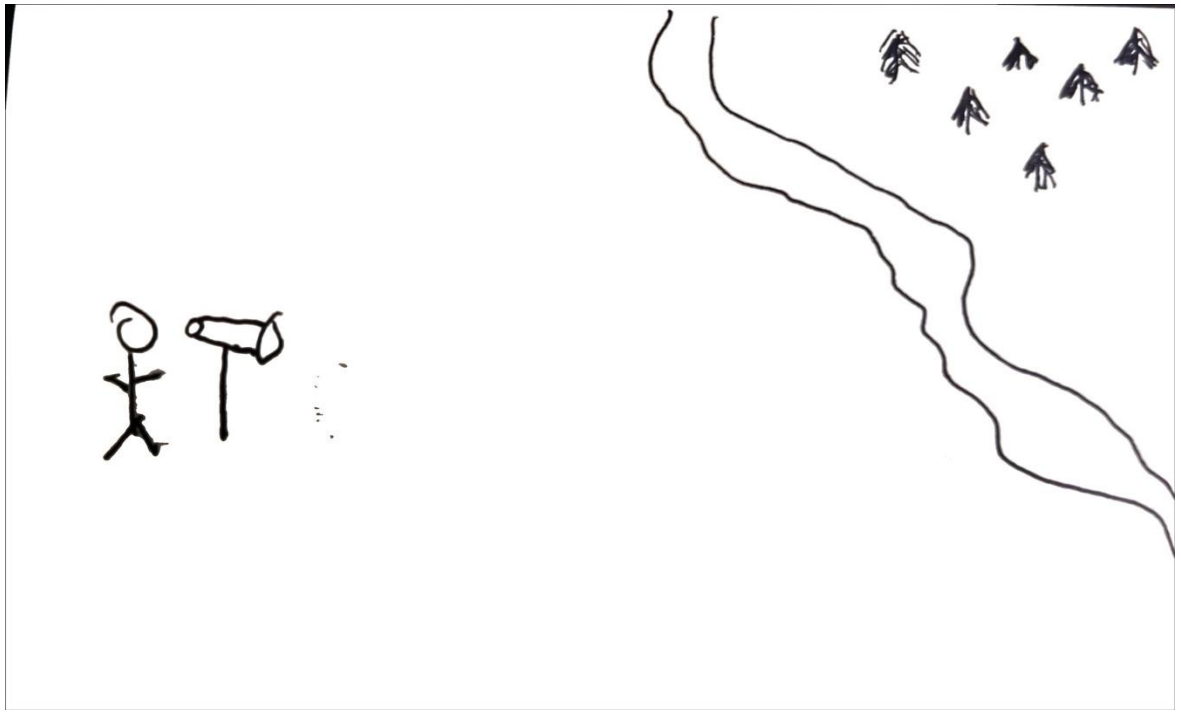
Corner

Column 2

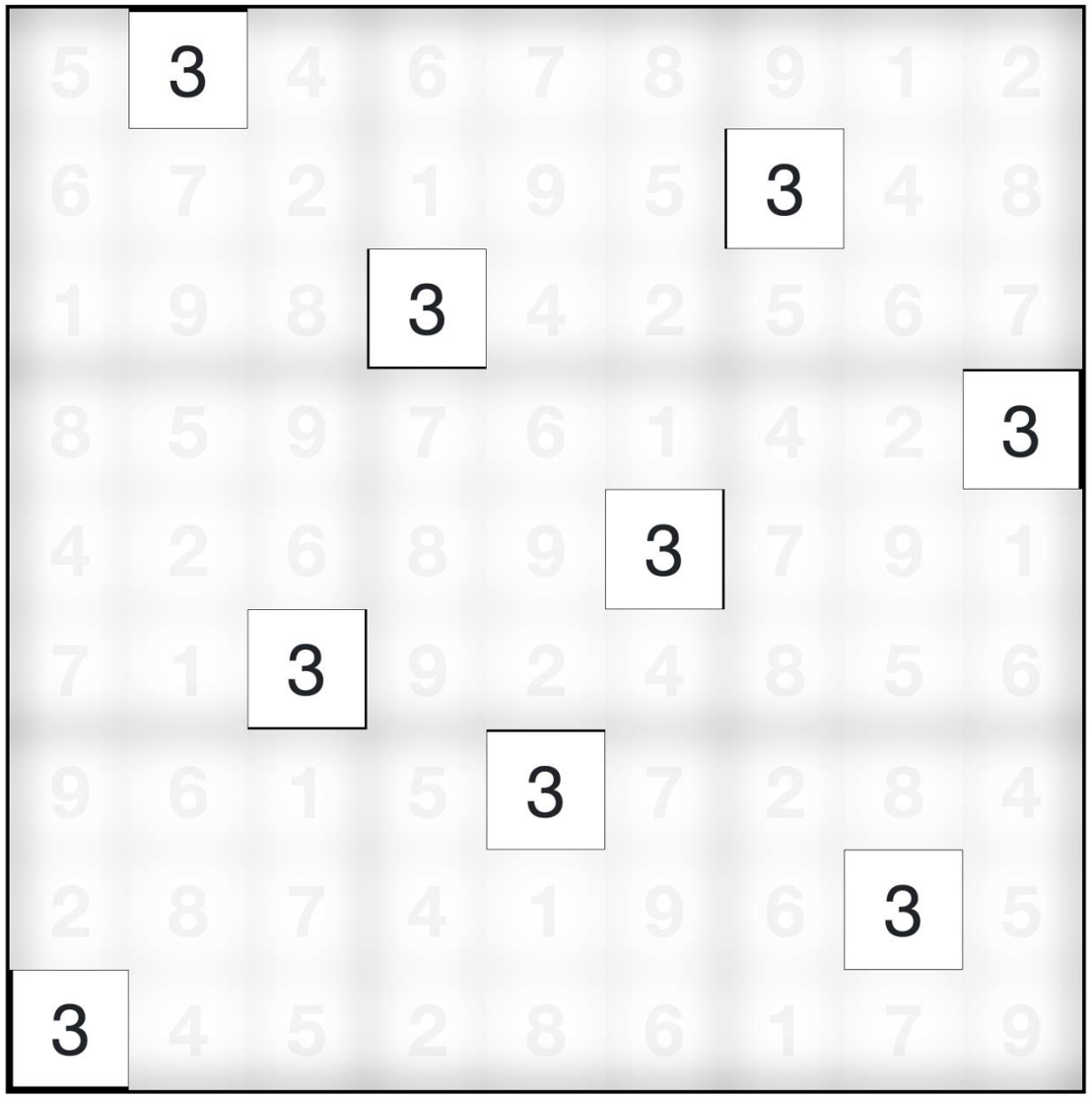
Row 2

eXplore





eXplore other options – find all 3s



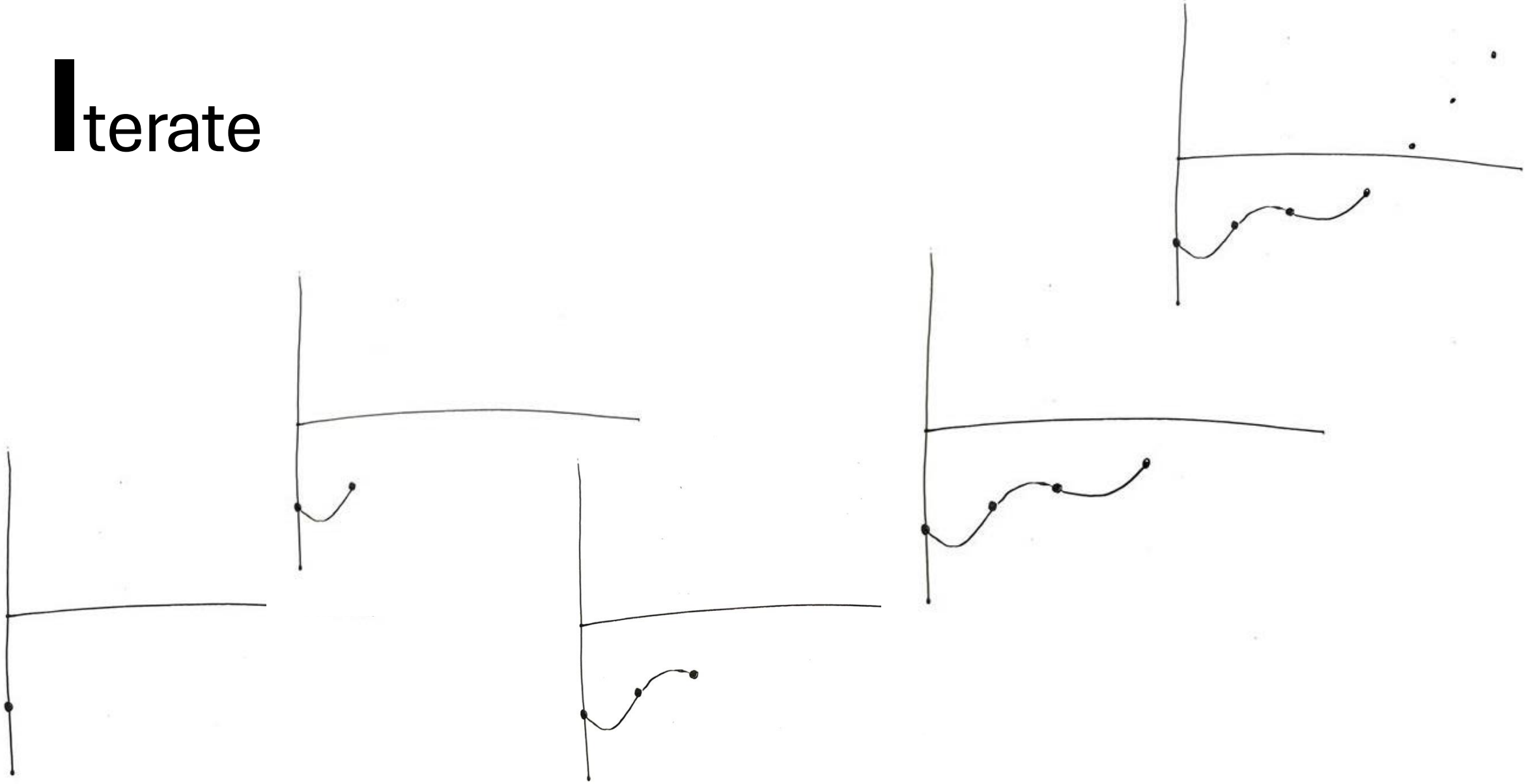
Corner

Column 2

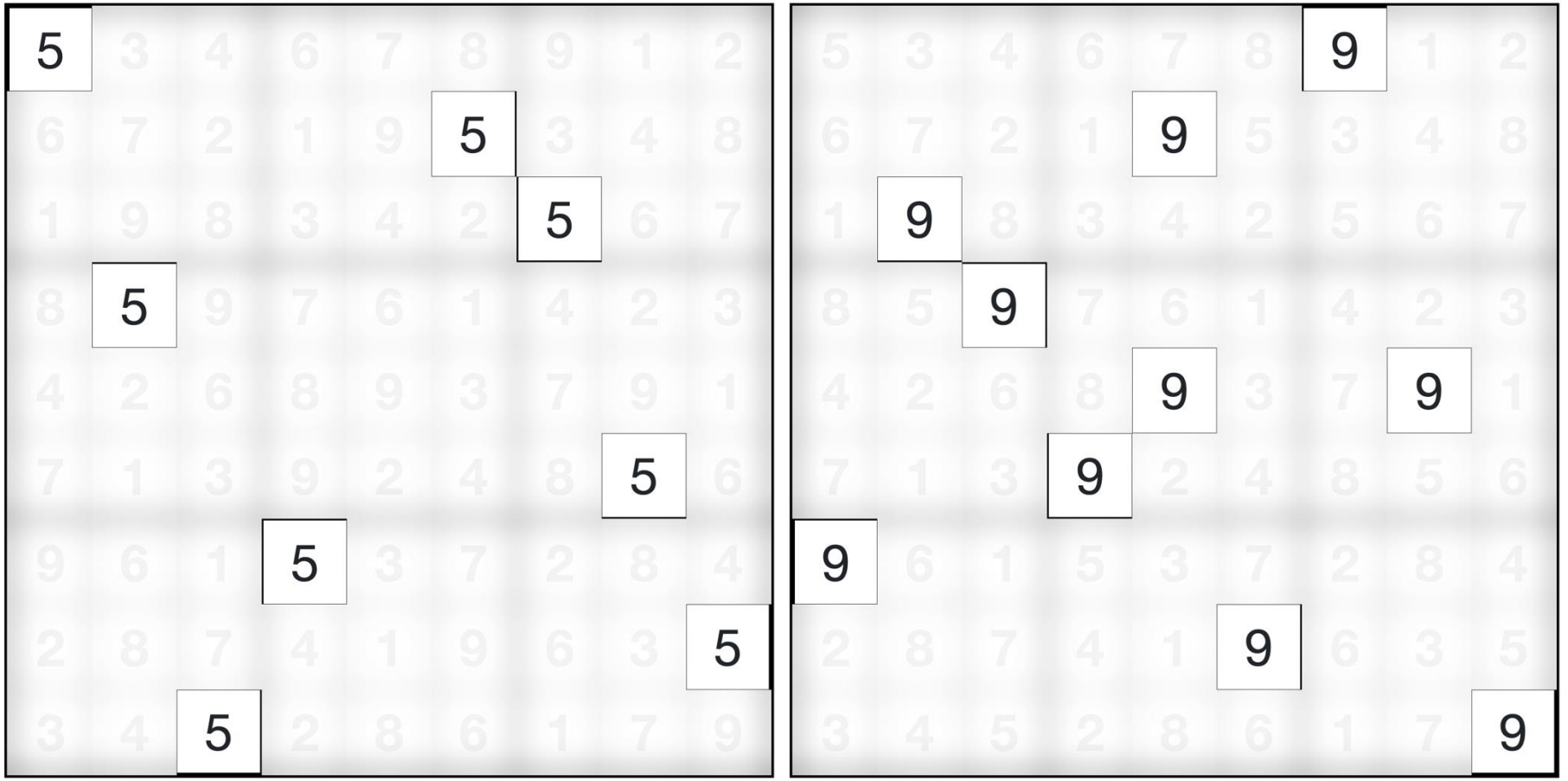
Row 2

Number 3

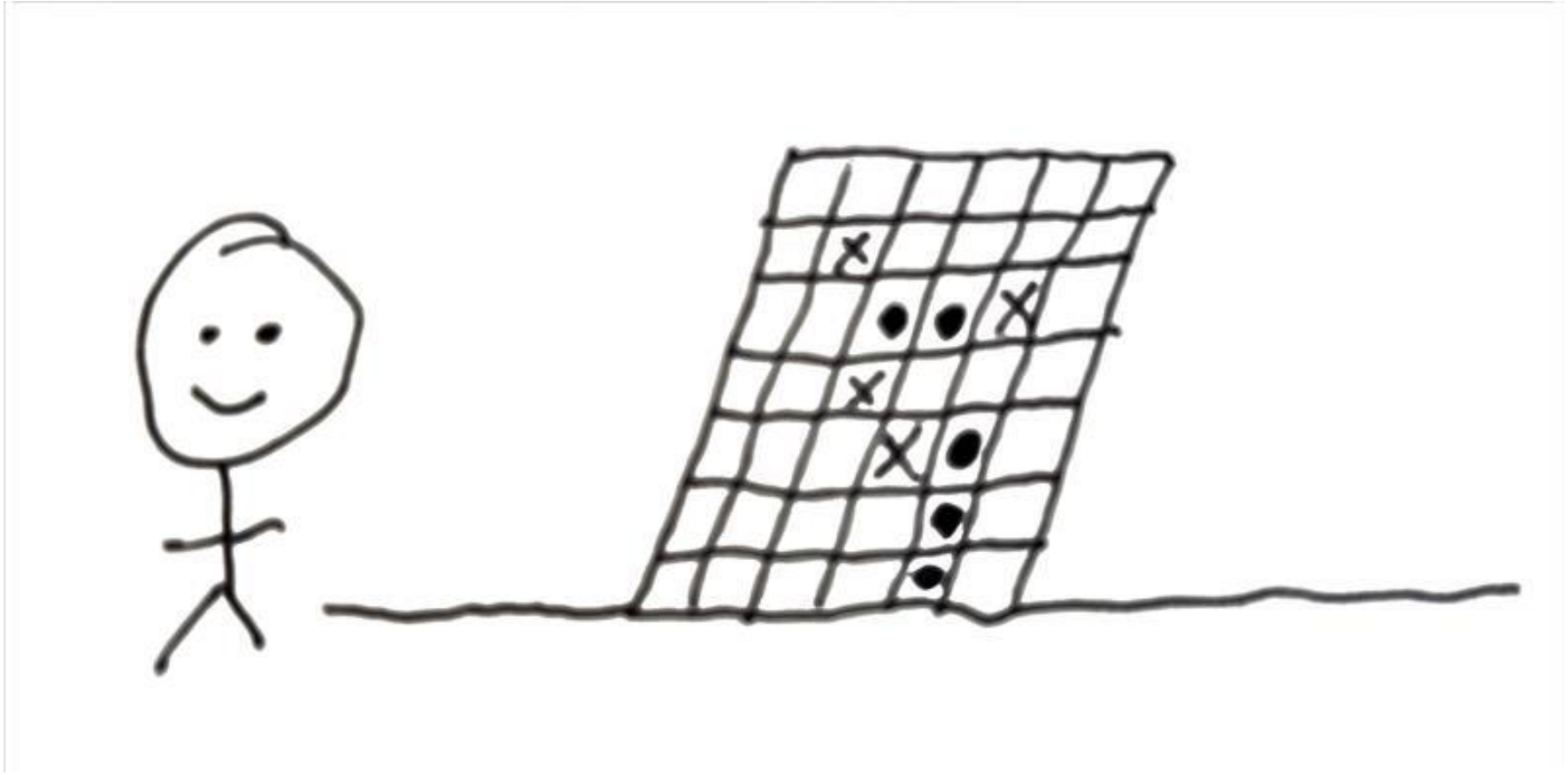
Iterate



Iterate – try other numbers



Track

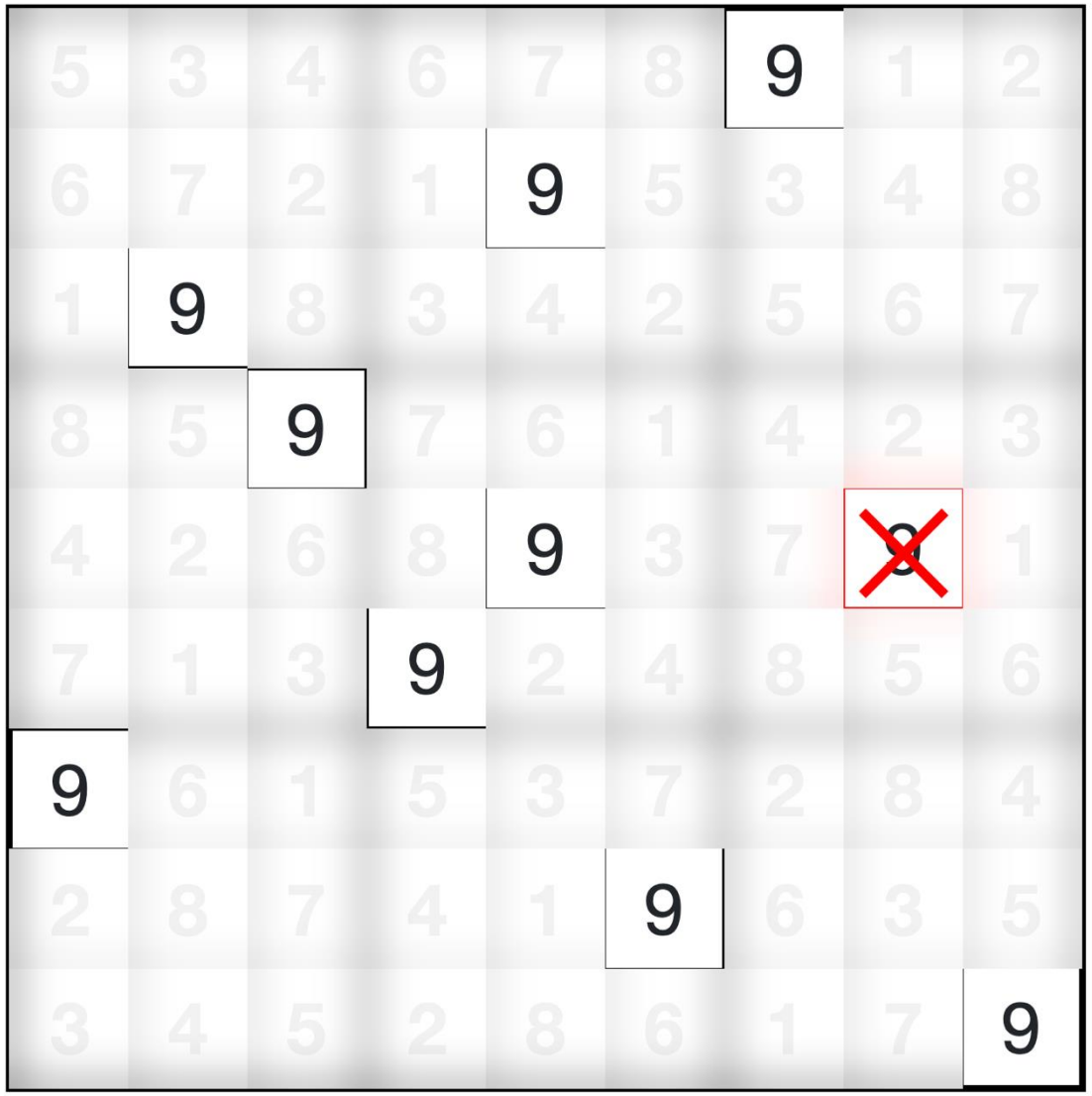


“remember kids, the only difference between screwing around and science is writing it down”

Adam Savage, MythBusters

Attributed to Alex Jason

Track along the way



Corner

Column 2

Row 2

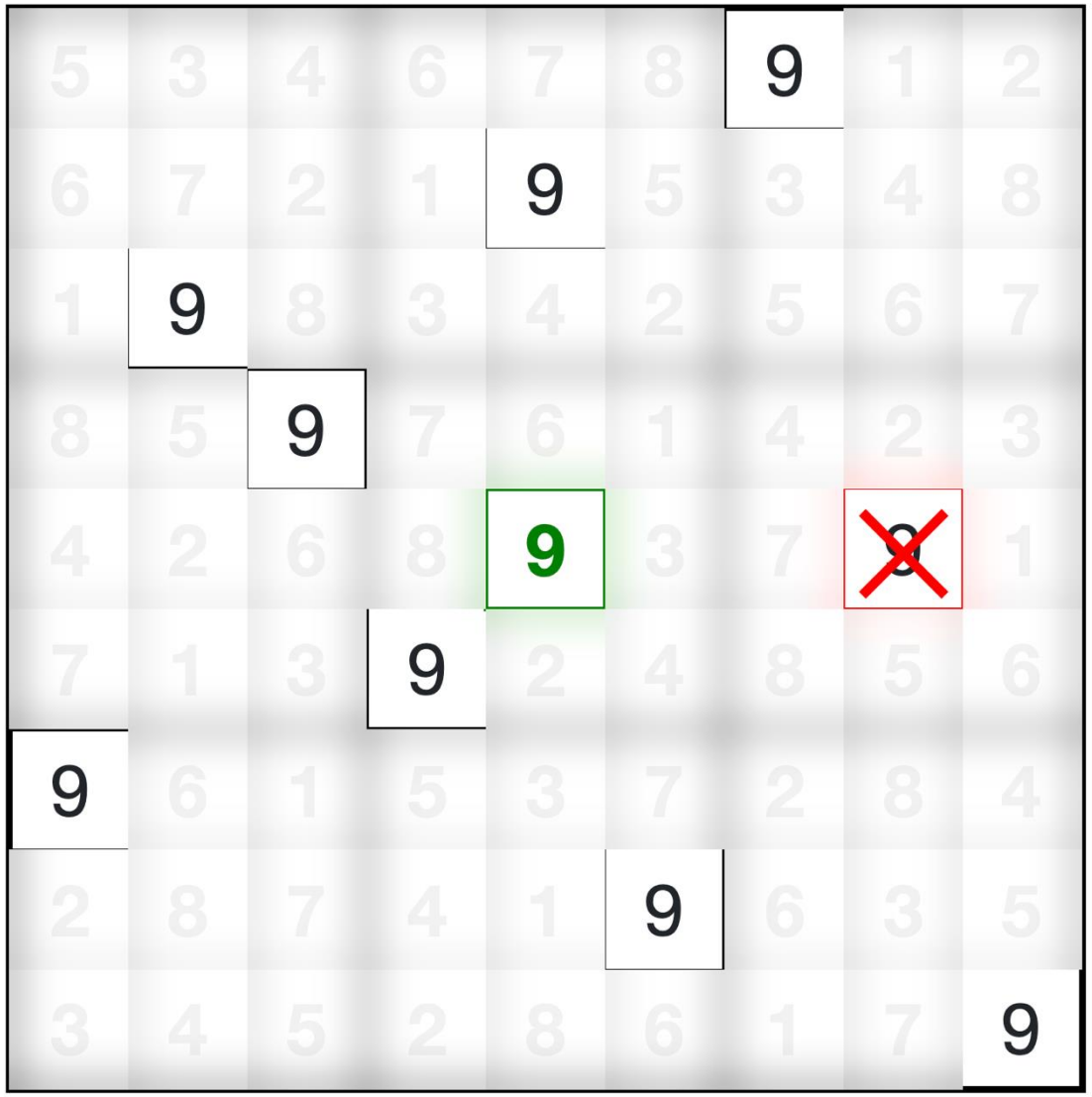
Number 3

Number 5

Number 9

Row 5, Column 8:
NOT the Problem

Solved



Corner

Column 2

Row 2

Number 3

Number 5

Number 9

Row 5, Column 8:

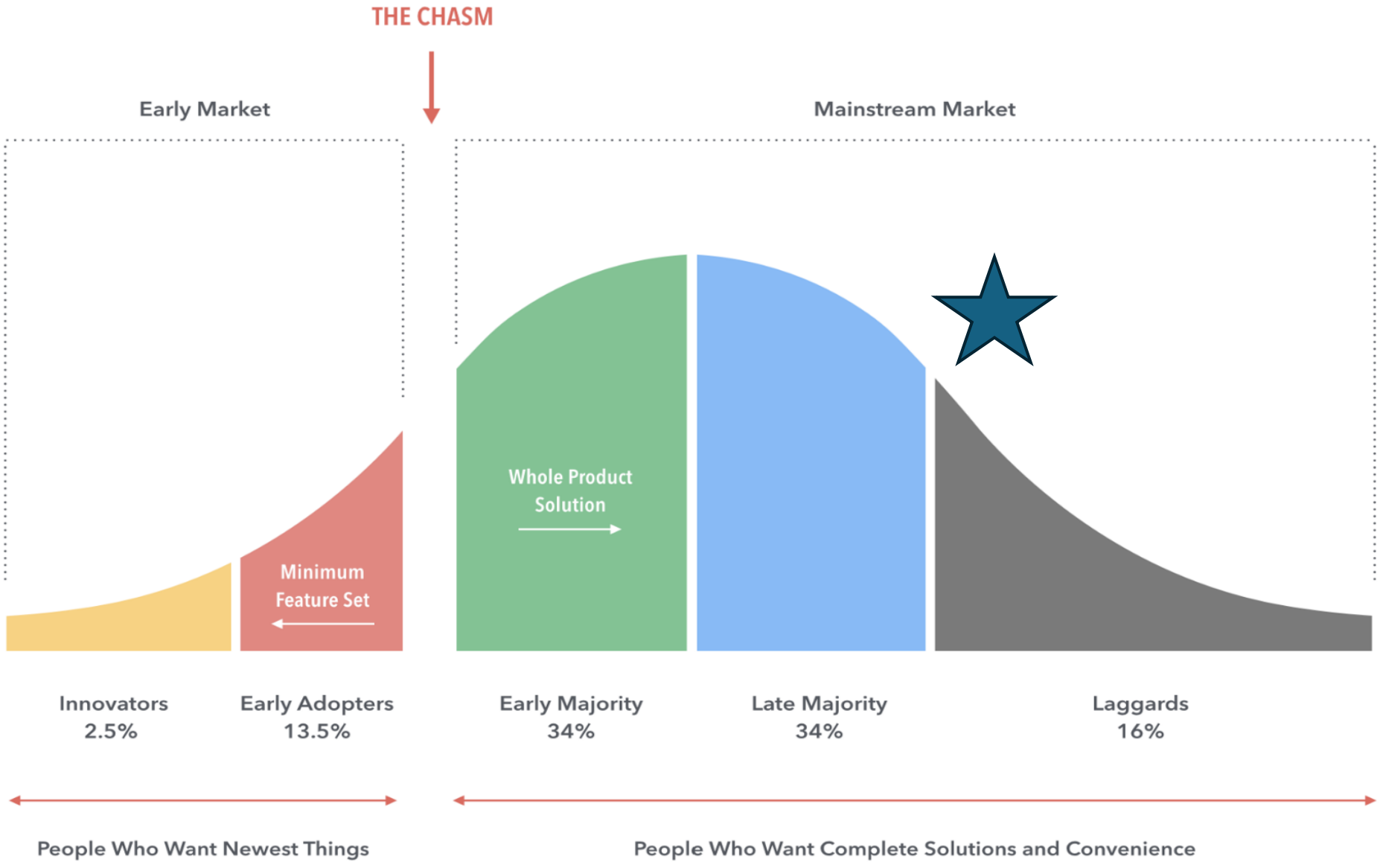
NOT the Problem

Row 5, Column 5:

Found the Problem

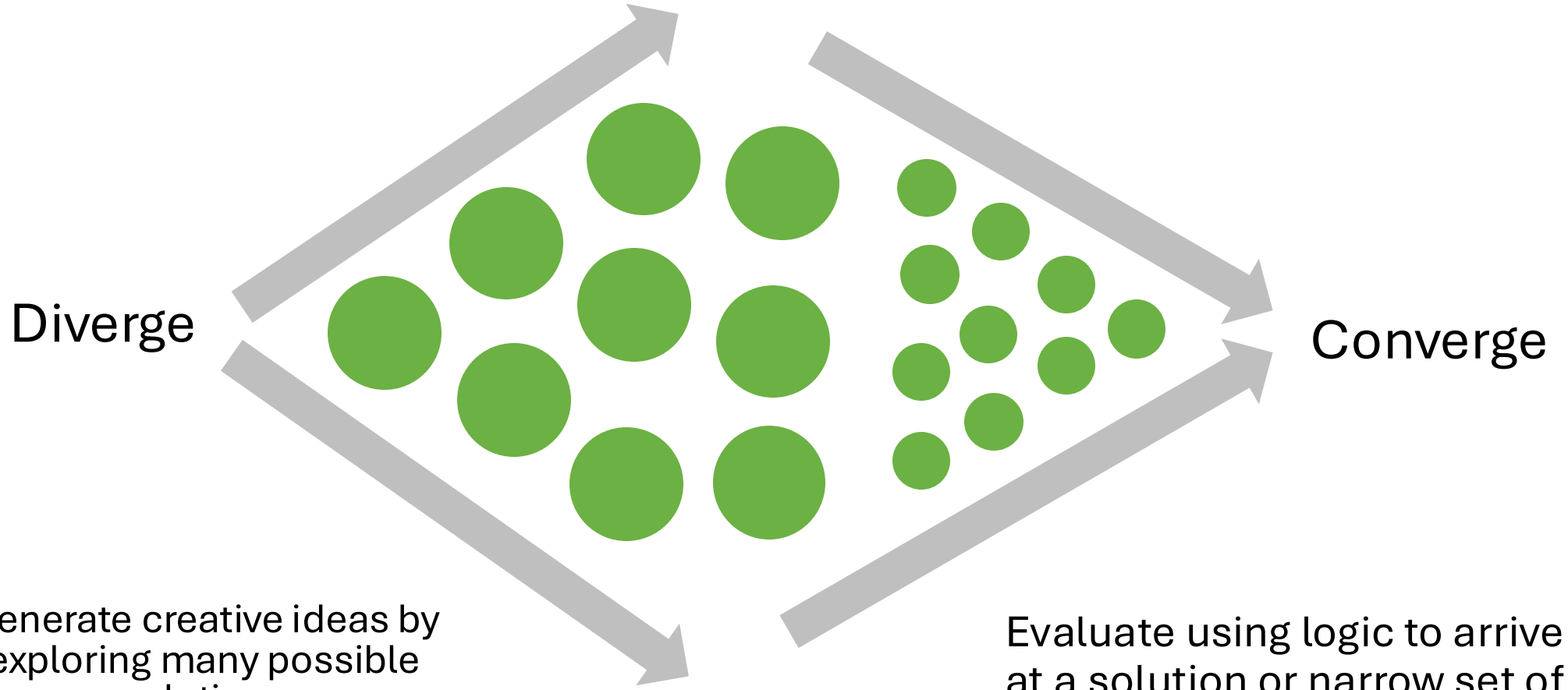
Why is this needed?

Problems are inevitable,
what are you going to do about it?


THE CHASM
Early Market
Mainstream Market
Whole Product Solution
Minimum Feature Set
Innovators 2.5%
Early Adopters 13.5%
Early Majority 34%
Late Majority 34%
Laggards 16%
People Who Want Newest Things
People Who Want Complete Solutions and Convenience

What-is,
What-if,
What-wows,
What-works

Divergent vs. Convergent Thinking



A Design Thinking Process

- What is?
  - Baseline understanding
- What if?
  - Divergent thinking
- What wows?
  - Another round of divergent thinking
- What works?
  - Convergent thinking

Debrief

Debrief Reflection

- What's one new thing you learned today?
- What's one new skill you think you can use right away?
- Are there any needs or connections that you are looking for at Nebraska.Code()?
  - How might we help you make a connection?

Feedback

- We enjoy doing this.
- Feedback is a gift.
- Let us know what was excellent and one aspect that could have been better.

Next Steps!