

**So, you have an  
idea...now what?  
Let's Test It!**

# Session objectives

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Learn about the difference between changes and *testing* changes

Practice rapid-cycle PDSA testing

Understand how theory and prediction help your learning

Demonstrate how to collect real-time data

**Deliver on the promise of a life-changing game mentioned in the  
CHILA 3 reminder email**



The #1 job of an improver is  
to get curious.



# The 5 Key Principles for Improvement

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Knowing why you need to improve.

Having a feedback mechanism to know if improvement is happening.

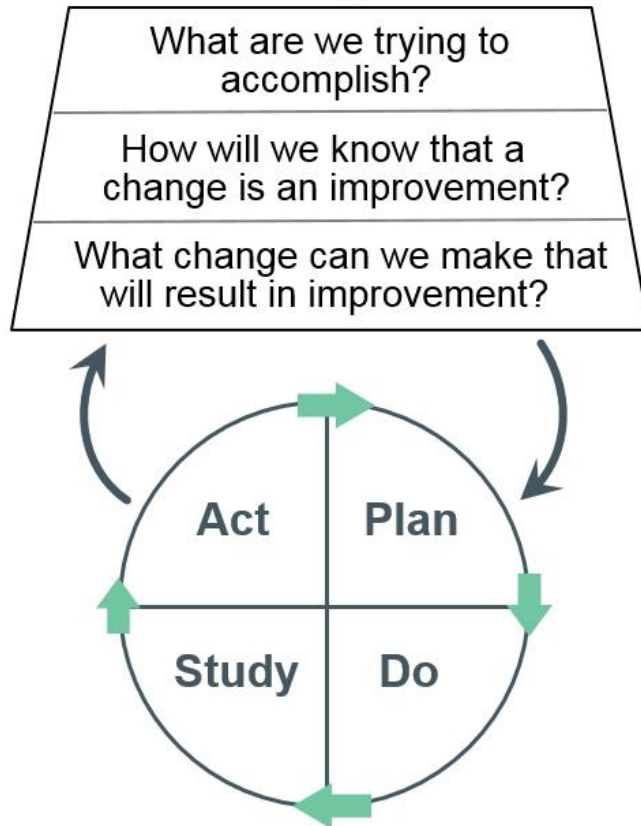
Developing an effective change that will result in improvement.

Testing a change before attempting to implement.

Knowing when and how to make the change permanent.



### Model for Improvement



## The thinking part

- Setting aims
- Tracking progress toward your goals
- Developing a change to the system to try out in the work

## The doing part

Trying out our ideas to see if they lead to improvement...

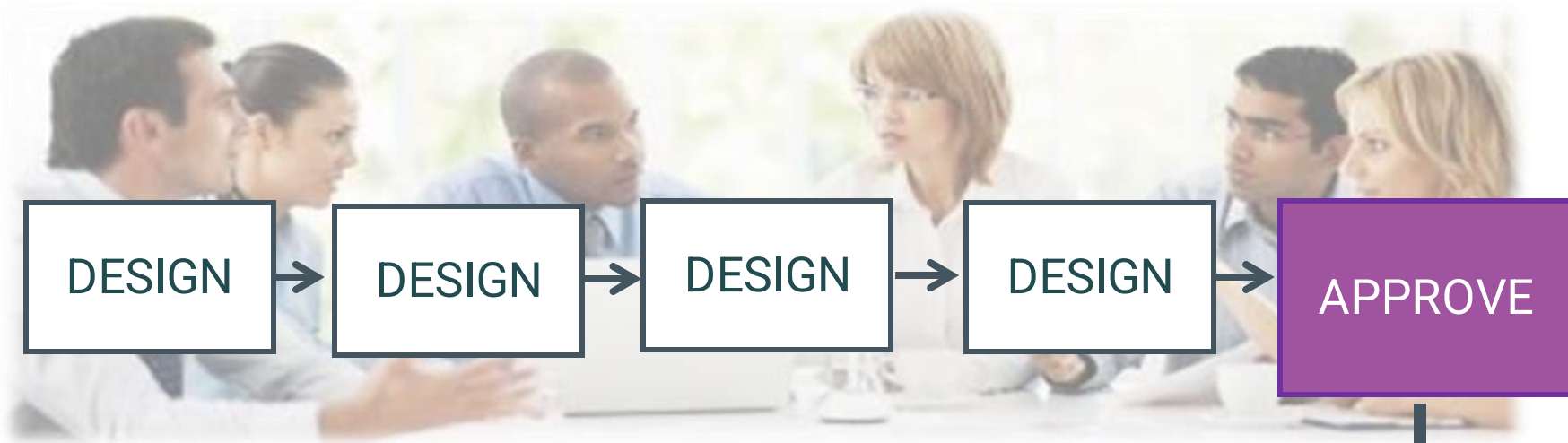
Why do we try out our ideas in practice?

Because all improvement will require change, but not all change will result in improvement.



# The Typical Approach...

In the conference room



....and in the real world.



# The Quality Improvement Approach

In the conference room





# Reactive vs. Fundamental change

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Reactive Change (First order change)	Fundamental Change (Second order change)
<ul style="list-style-type: none"><li>• Return the system or process to prior condition</li><li>• Keep the system running</li><li>• Solve problems or react</li></ul>	<ul style="list-style-type: none"><li>• Creates a new system (process, product or service)</li><li>• Alters how work gets done (process) and what people do (behavior)</li><li>• Necessary for improvement beyond problems</li><li>• Changes the system in a visible, measurable way</li></ul>



# Reactive vs. Fundamental change

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## Fundamental Change (Second order change)

- Creates a new system (process, product or service)
- Alters how work gets done (process) and what people do (behavior)
- Necessary for improvement beyond problems
- Changes the system in a visible, measurable way

# Reactive Change

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More flyers

More training

More resources

More rules

More audits

Finding failures and removing them



# Fundamental Change

Process redesign

Altering approach to be more person-centered

Standardization

Hardwiring changes

Changing boundaries of the system



# Ideas for improvement?

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## WHERE CAN WE FIND THEM?

Literature

Evidence

Experience

Successful organizations or practitioners that have solved the problem

Analogous Observation- places where similar problems have been solved

## WHAT IF WE CAN'T FIND THEM?

Tap into creativity

Adapt other ideas

Employ rational thinking processes: mapping, flow charting

More on this on  
Day 3!

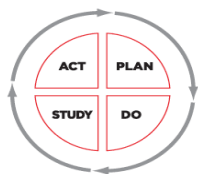


But...a change is different than  
a test of a change...

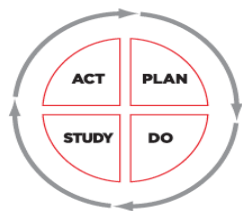


# A Change vs. a Test of Change

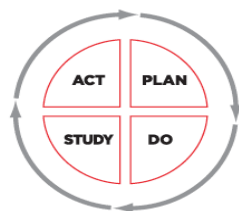
## Change: Placing a salad bar in a cafeteria



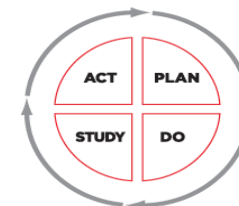
Placement of bar  
near entrance



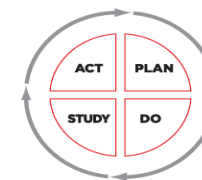
Plan a classroom  
competition of  
salad  
consumption



Recruiting  
students to be  
initial testers



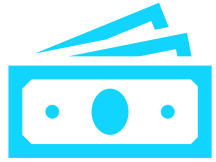
Awareness signs  
around school



Placement of  
salad bar in front  
of less healthy  
foods

# Why test out your changes?

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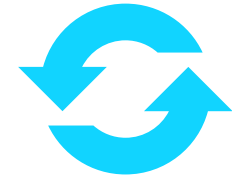
Use resources  
wisely



Learn more from  
doing than  
planning



Learn about the  
change:  
Cost, How much  
improvement,  
Side effects



Reduce  
resistance to  
change

P Please

D Do

S Something

A Anything!

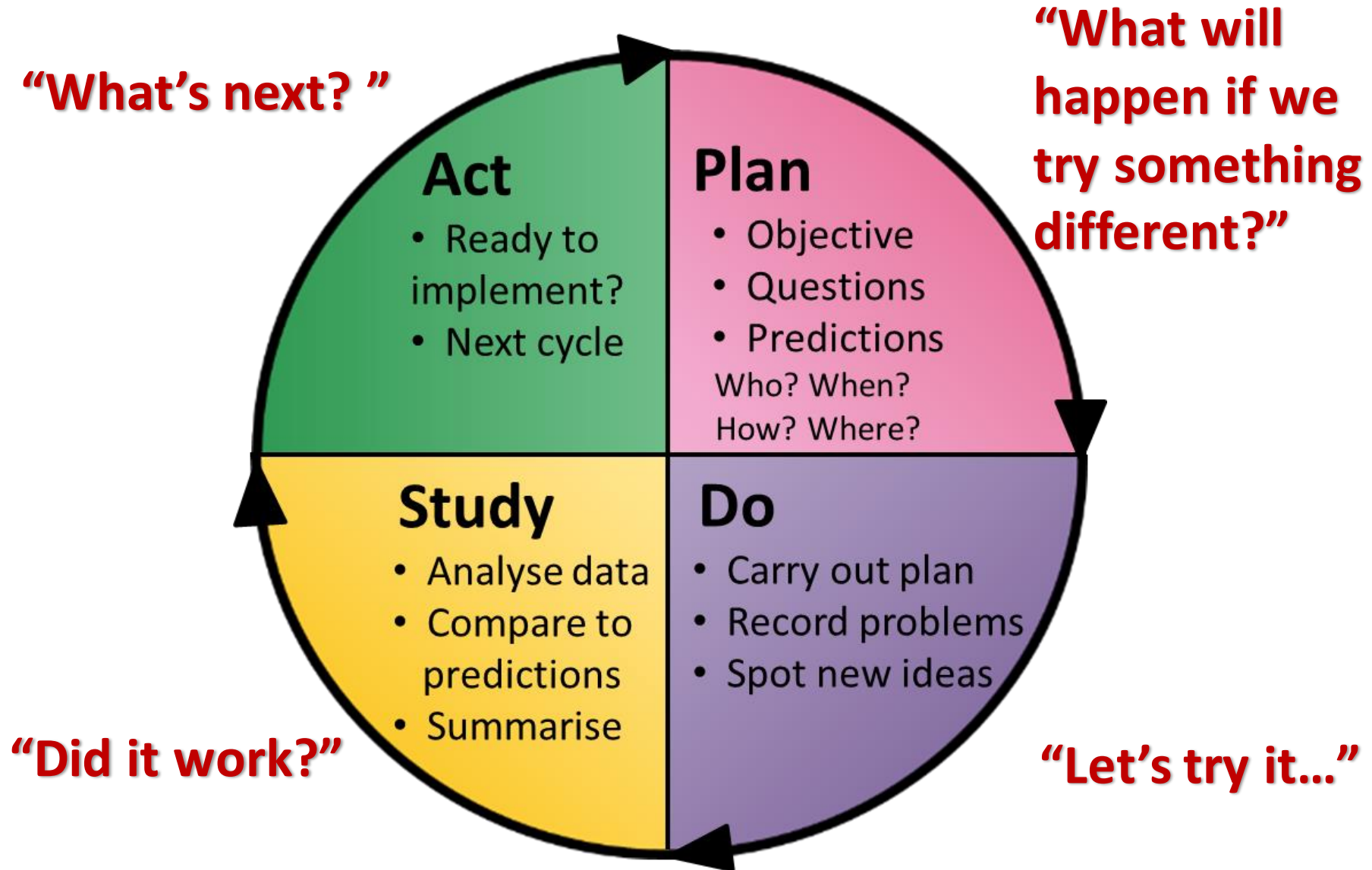


# Plan – Do – Study – Act



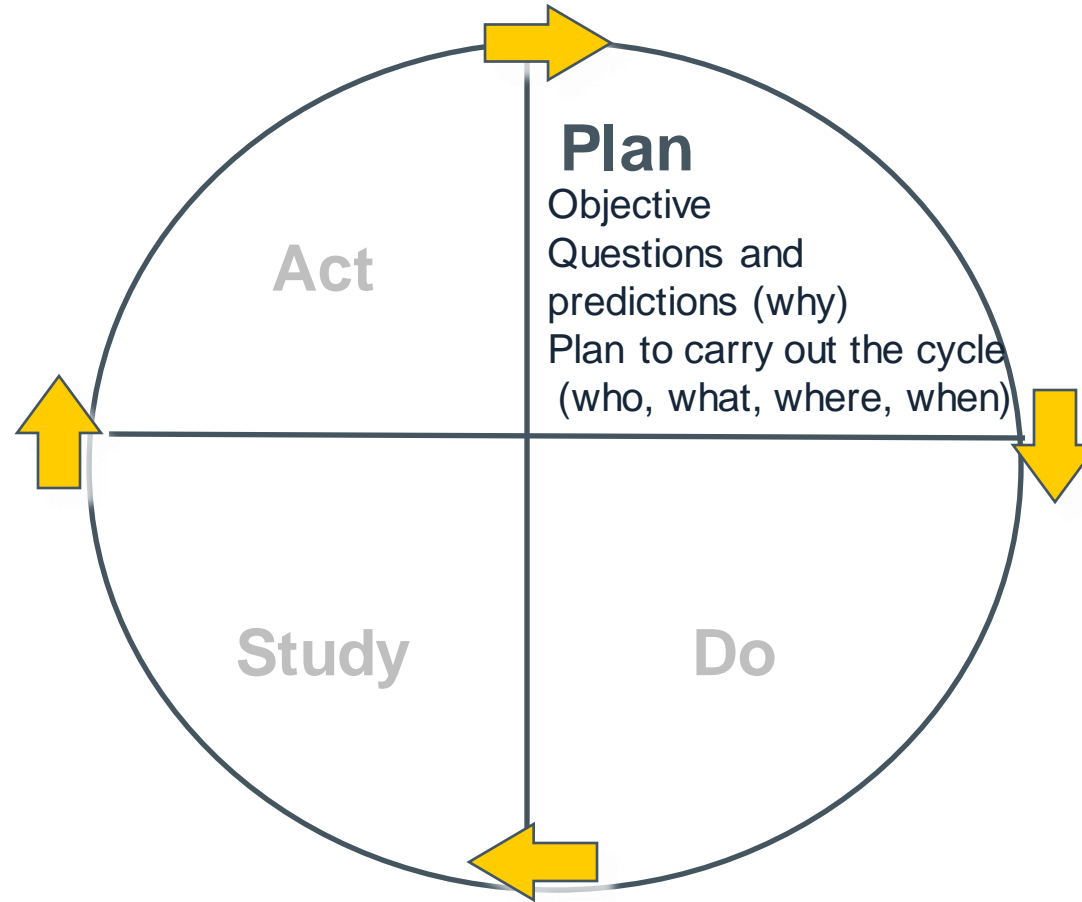
You actually do  
PDSAs every day!

→ Do → Study → Act → Plan → Do → Study → Act



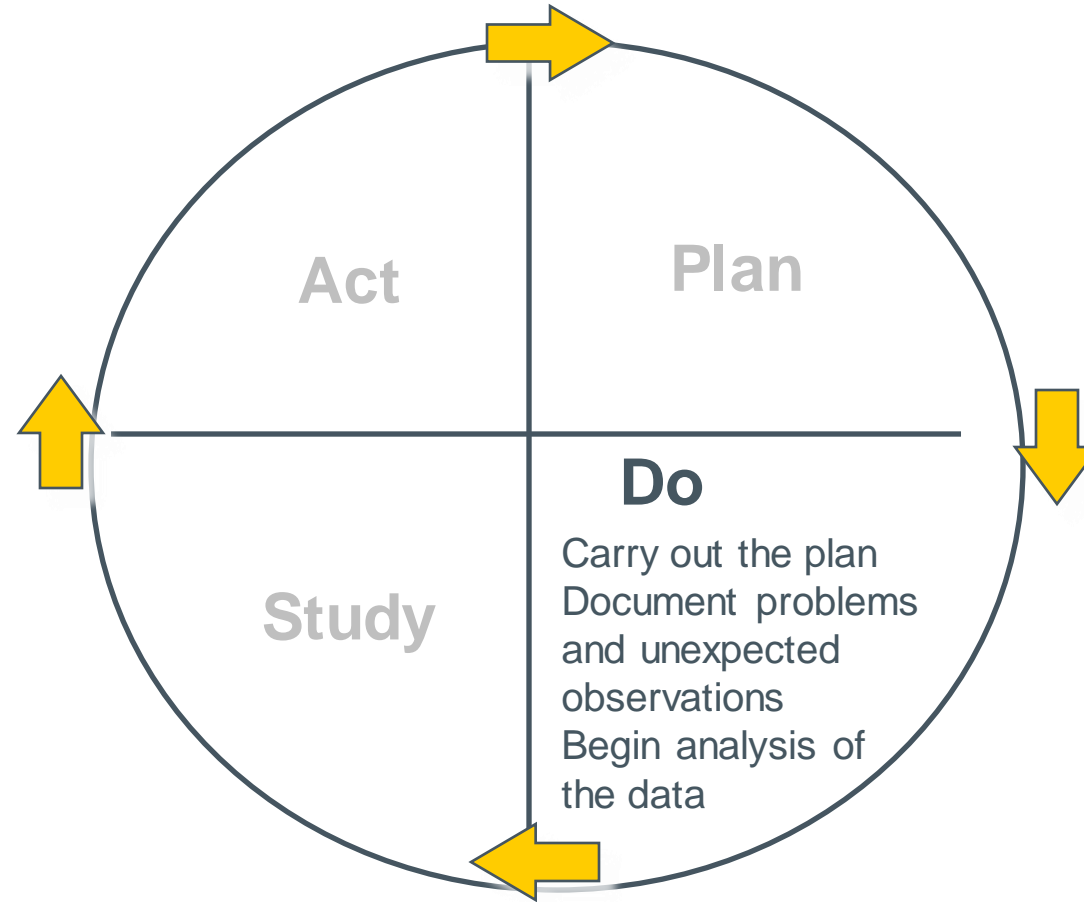
# Plan, Do, Study, Act Cycle

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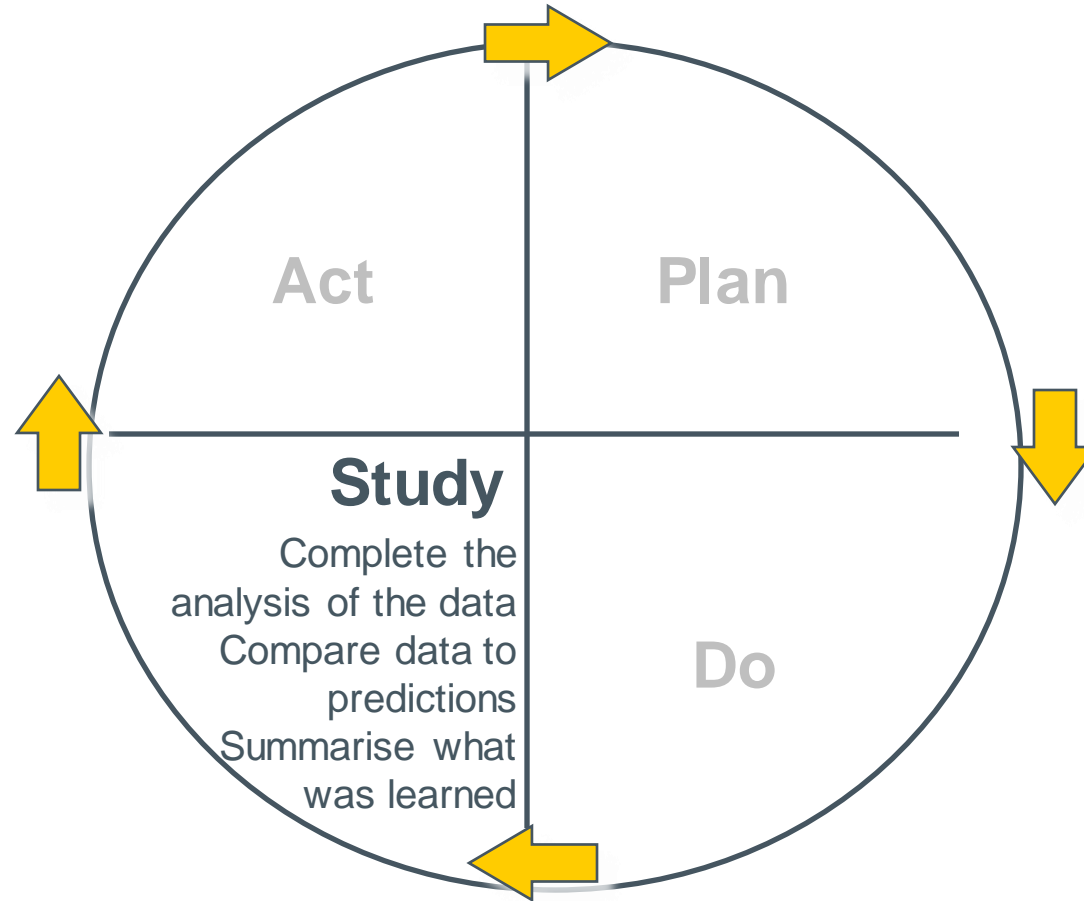
# Plan, **Do**, Study, Act Cycle

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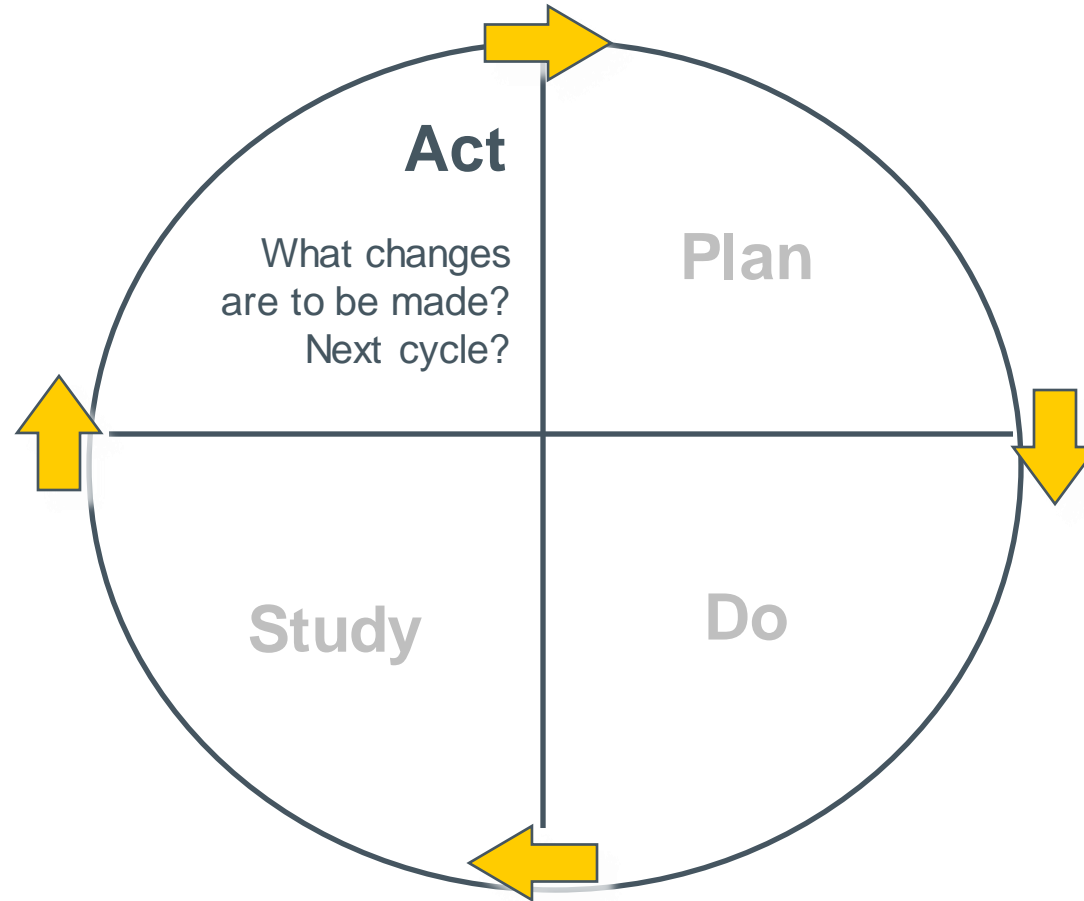
# Plan, Do, **Study**, Act Cycle

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# Plan, Do, Study, **Act** Cycle

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## On the basis of what is learned from any cycle, a change might be:

Implemented as is (adopt)

Dropped (abandon)

Modified (adapt)

Increased in scope (expand)

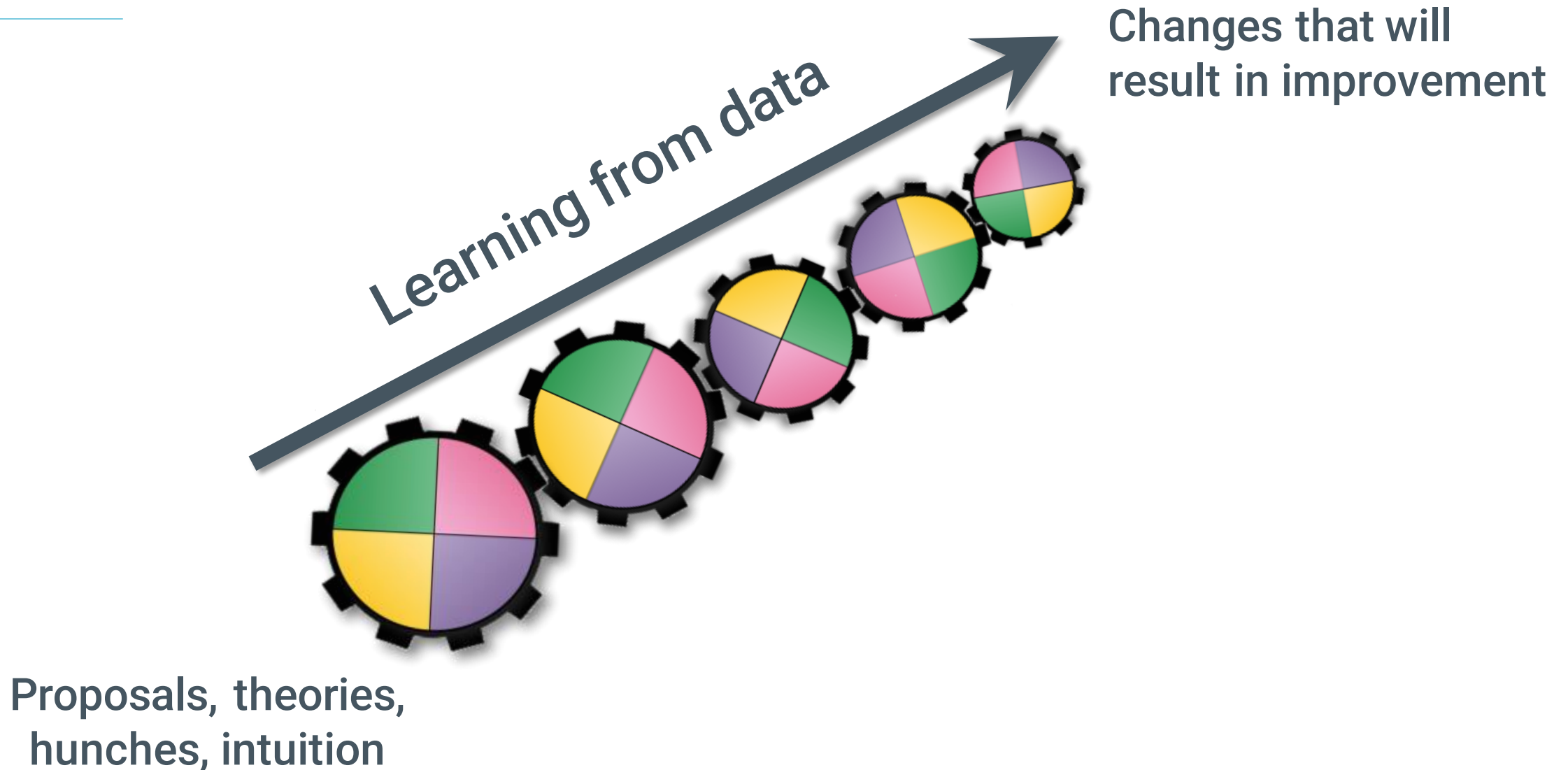
Test under other conditions





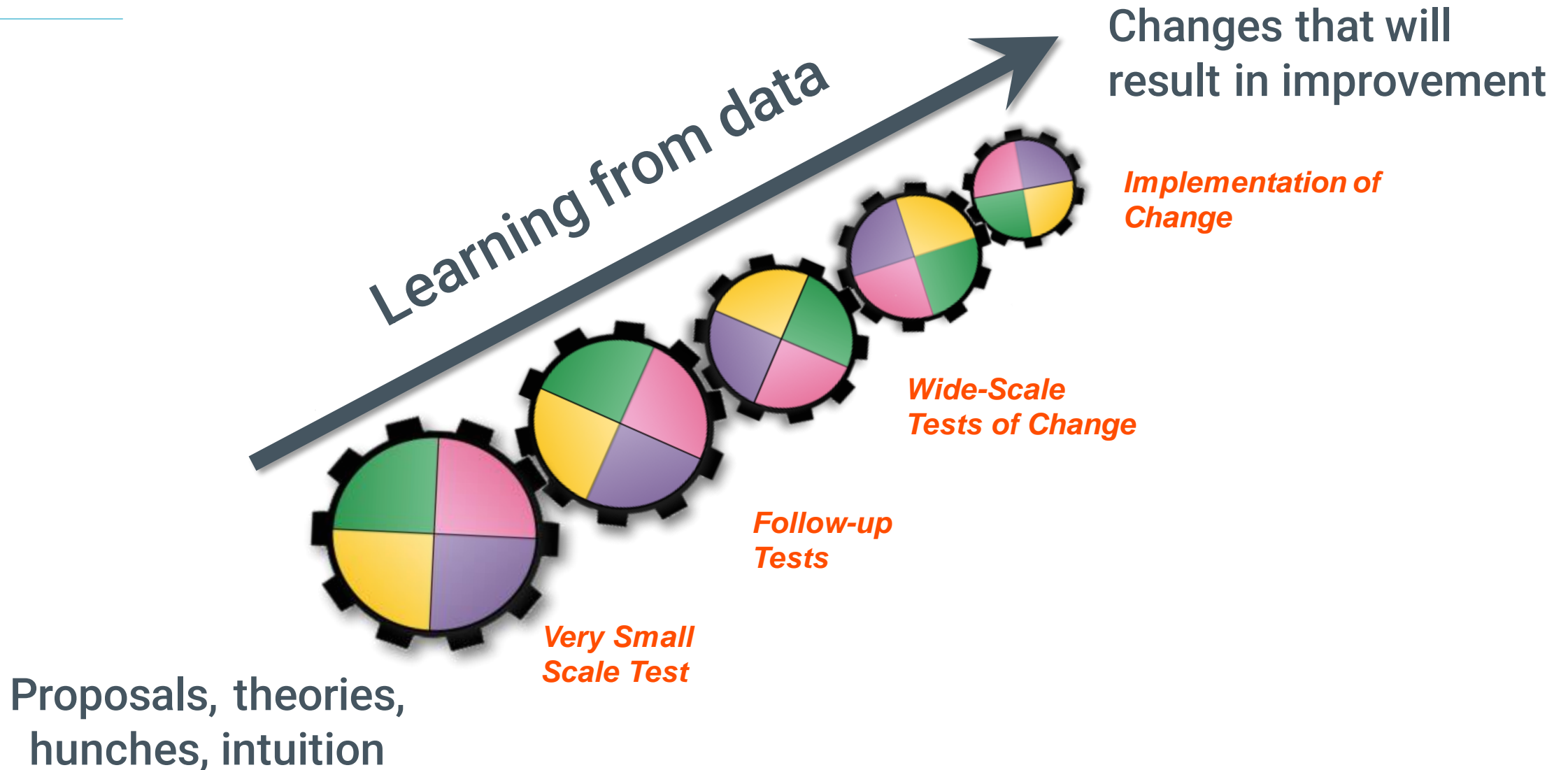
# Cycles of Tests Build Knowledge and Confidence

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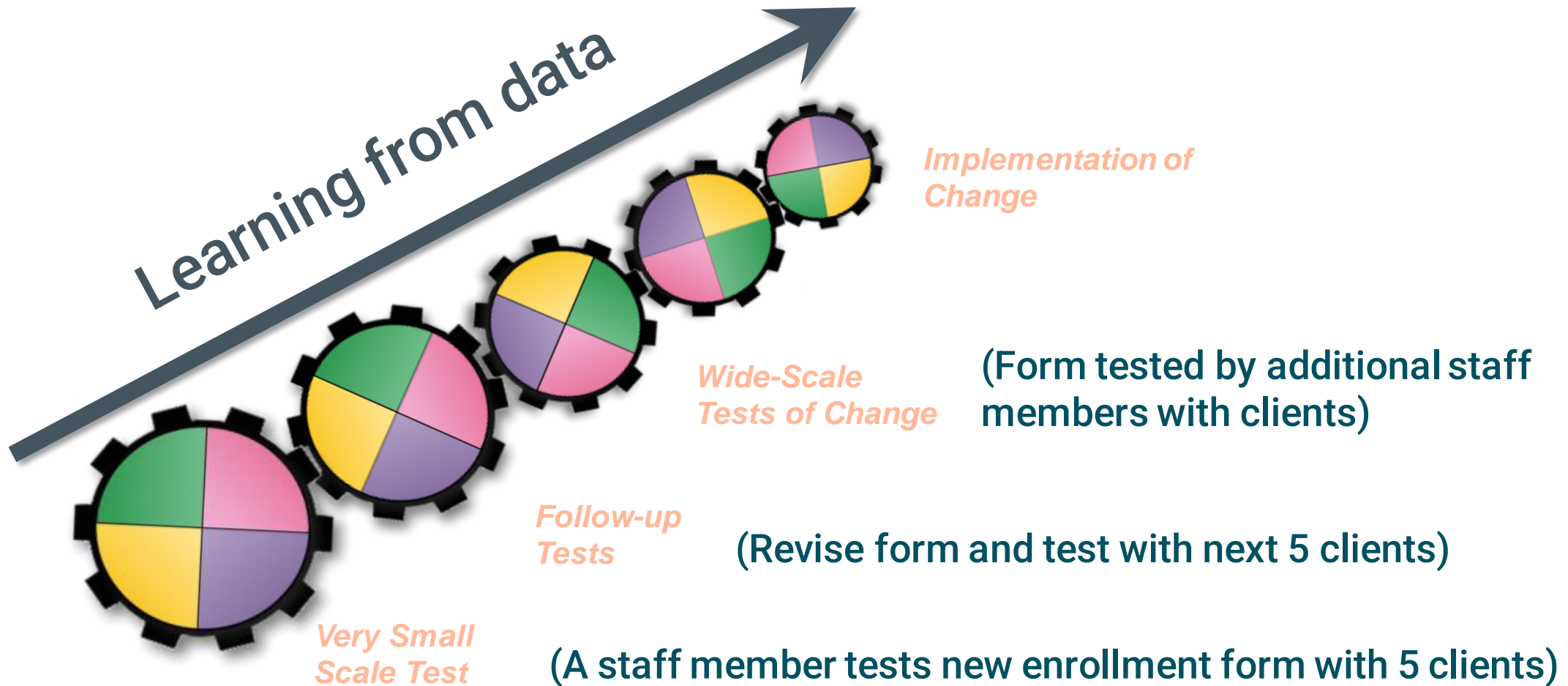




# Cycles of Tests Build Knowledge and Confidence



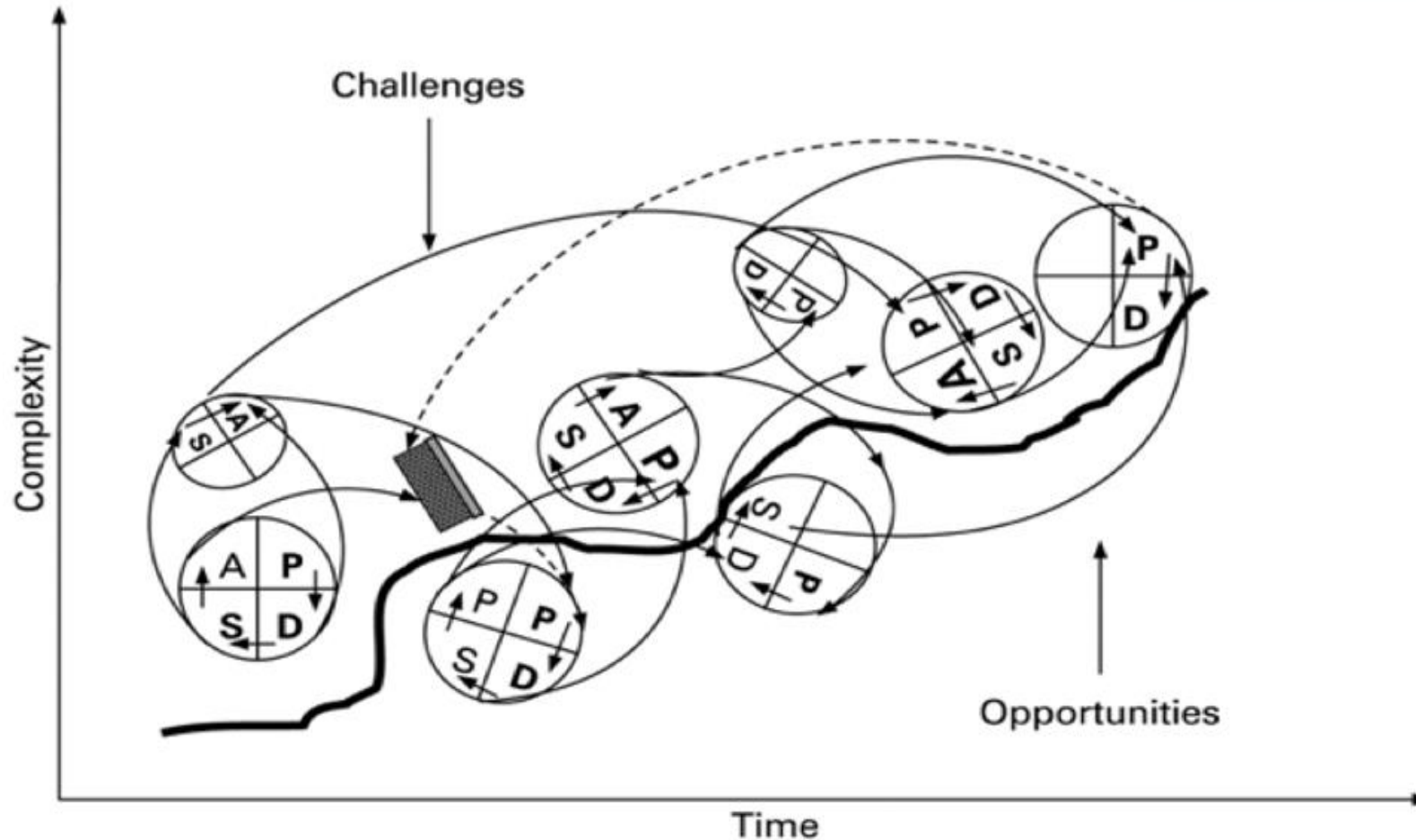
# Cycles of Tests Build Knowledge and Confidence



The world always looks  
better in Powerpoint.



# Early PDSA tests (adopt, adapt, abandon)



Source: A case study of translating ACGME, to a comprehensive curriculum improvement projects as the key component requirements into reality: systems quality practice-based learning and improvement, A M Tomolo, R H Lawrence and D C Aron, *Qual Saf Health Care* 2009 18: 217-224



# Guidance for Testing a Change

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A test of change should answer a specific question!

A test of change requires a theory and a prediction!

Test on a small scale and collect data over time.

Build knowledge sequentially with multiple PDSA cycles for each change idea.

Include a wide range of conditions in the sequence of tests.

Don't confuse a task with a test!



# Activity ≠ Change

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## Is *NOT* a change:

(but may be a necessary preliminary task  
however)

Planning

Having a meeting

Educating staff

Creating a protocol

Assigning responsibility

## Is a change:

Use a new form

Run a case conferencing meeting

Use the form on the next 10 cases

New outreach process

For each change idea, you should have  
an explicit prediction of how it will impact  
the outcome.

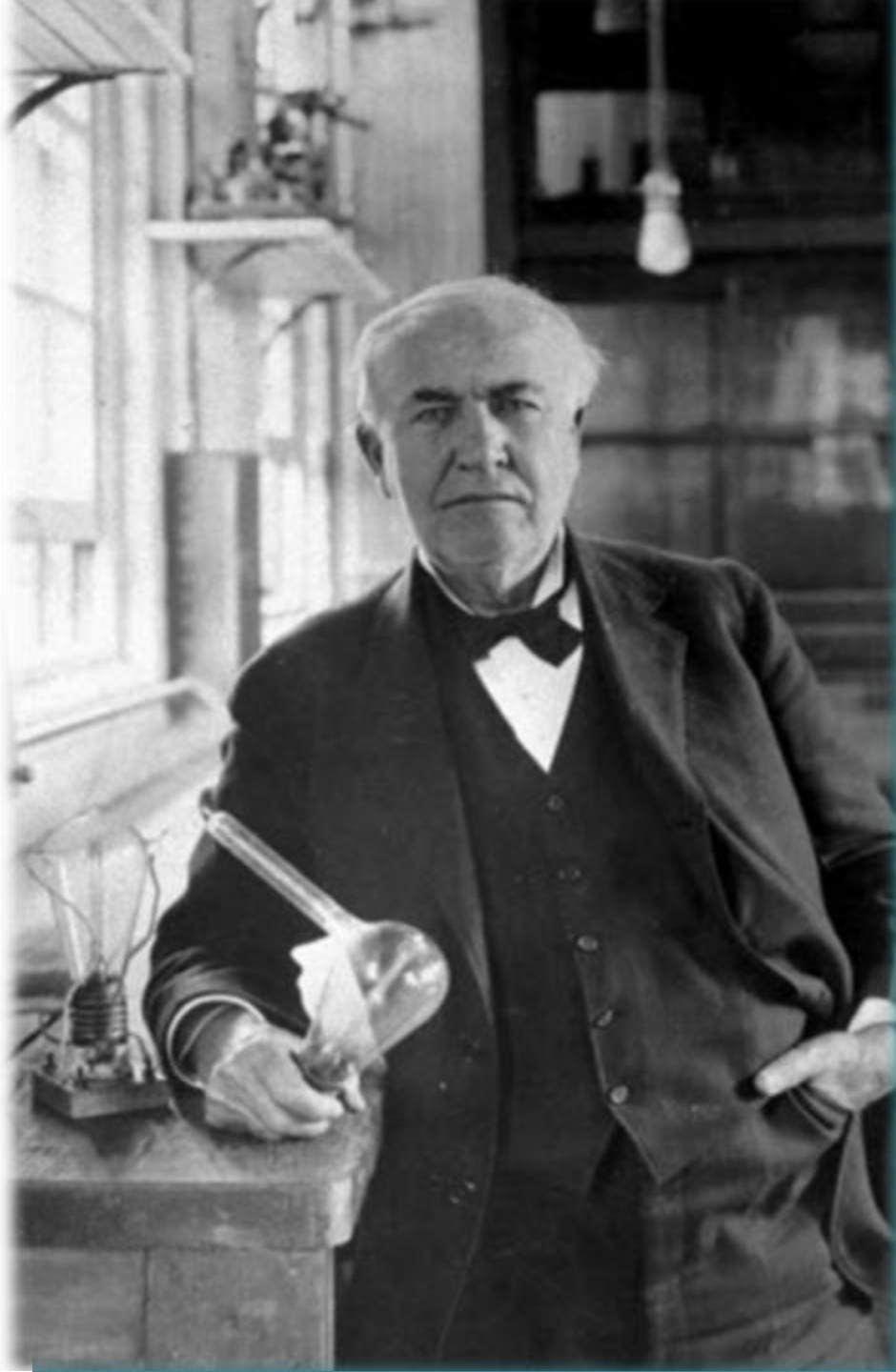


# To Be Considered a Real Test...

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- ☐ The test was planned, including a plan for collecting qualitative or quantitative data.
- ☐ The plan was carried out and the data were collected.
- ☐ Time was set aside to analyze the data and study the results.
- ☐ Action was based on what was learned.





*“I did not fail one thousand times; I have found one thousand ways that won’t work.”*

Thomas Edison



# Tips

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Focus on learning and build on that learning with each test

Your prediction and theory are key to your learning

Honor the documentation

Consider team dynamics

Harness creativity

You do not need consensus to run a PDSA

Avoid analysis paralysis



But where is the game?

They said there would be a  
game.



**Aim:** Test to spin a U.S. coin for the longest amount of time in 15 minutes

**Test:** Best technique, best surface, best conditions.

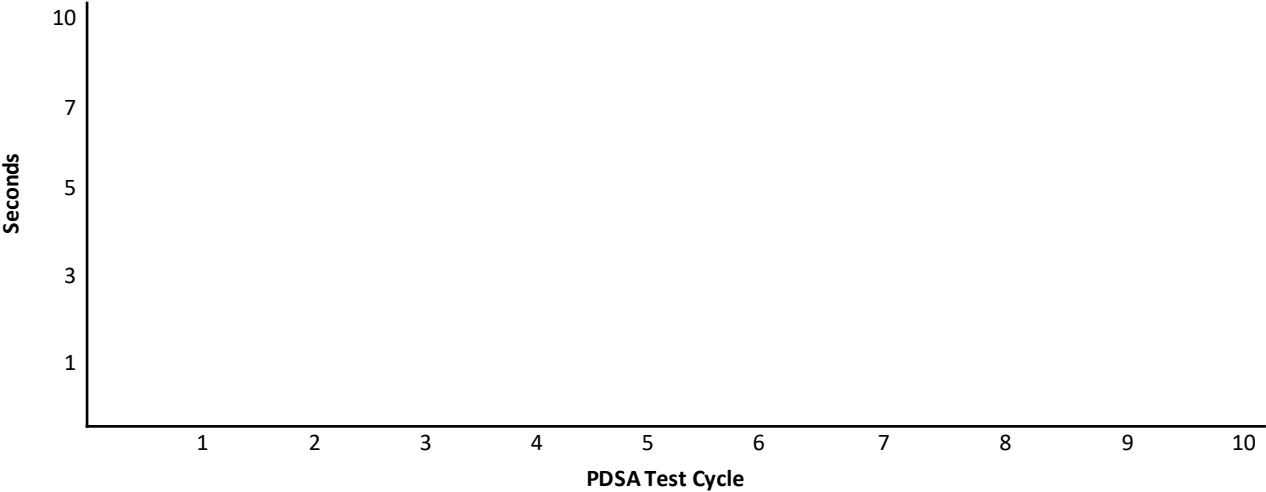
- Appoint a spinner
- Appoint a timekeeper (use the stopwatch on your phone)
- Appoint a recorder
- Document PDSAs on worksheet
- Plot the time of each spin onto the run chart
- Complete 10 cycles or more!



PDSA Tracker

#	Plan		Do	Study	Act
#	What questions? Theories?	Prediction	What do you see? How Long?	How did what you see match prediction?	What now? Adopt, adopt, abandon?
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

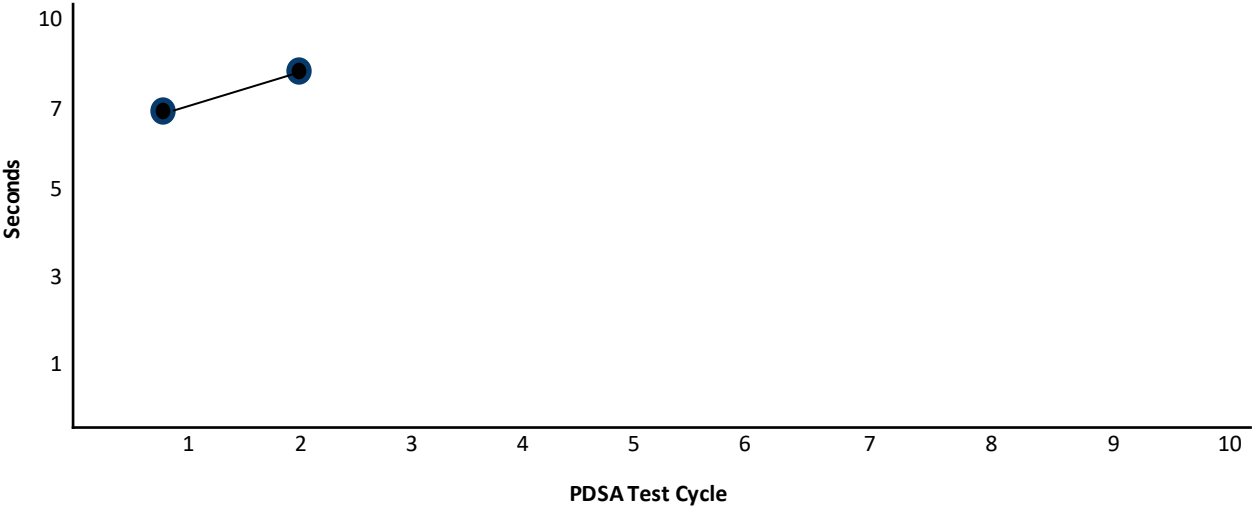
Data  
Collection on  
a Run Chart



PDSA Tracker

#	Plan		Do	Study	Act
#	What questions? Theories?	Prediction	What do you see? How Long?	How did what you see match prediction?	What now? Adopt, adopt, abandon?
1	Large coins last longer	Nickle = 10 seconds	Started to wobble. Time = 7	No, Three seconds short. Large Size/weight	Adapt - Test Quarter
2	Bigger quarter will spin longer	Quarter = 10 seconds	Started to lose spin fast. Time = 8	Two seconds short. Size may be more important	Adapt?
3					
4					
5					
6					
7					
8					
9					
10					

Data  
Collection on  
a Run Chart



Let's debrief.



# PDSAs – KEY POINTS

Cannot be  
too small

One PDSA  
will almost  
always  
lead to  
another

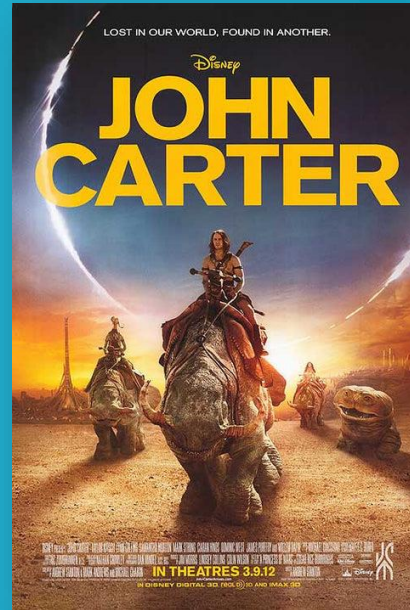
Help you  
to be  
thorough  
&  
systematic

Help you  
learn from  
your work

Can  
produce  
rapid  
results



# But what if my test fails?





# Failed Test...Now What?

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Be sure to distinguish the reason:

- Change was not executed
- Change was executed, but not effective

If the prediction was wrong – not a failure!

- Change was executed but did not result in improvement
- Local improvement did not impact the secondary driver or outcome
- In either case, we've improved our understanding of the system!



# CREATIVE PROCESS

## TIMELINE



# It took 40 attempts to create WD-40



The 40<sup>th</sup> time was the charm for the blue canister that boasts more than 2,000 uses.

In 1953, chemist Norm Larsen finally created on his 40<sup>th</sup> try, a formula to stop corrosion by displacing moisture (hence the name “Water Displacement , 40<sup>th</sup> attempt).

# Embracing Failing Forward

Characteristic	Failing	Failing Forward
Motto	Get it Right the First Time	Test hypothesis, fail (quickly) and improve
World View	Solving Problems is liking baking bread	Solving Problems is like raising a child
Beginning Premise	If we plan enough, we can get it right	We can figure it out over time if we have a way to test hypothesis and improve
Implementation Protocol	Follow implementation Plan	Test hypothesis, iterate as needed, chart new course if called for
Use of Data	Data used to report on past activities	Data used to test assumptions, guide current activities and inform decisions
When things go wrong...	Hide mistakes and/or apportion blame	Share mistakes, analyze and refine hypothesis and/or form new ones
Follow-up from mistakes	Increase intensity, continue doing exact same thing or stop doing it	Next step is dependent on lessons learned

# Testing v. Implementation

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## Testing

Trying and adapting existing knowledge on small scale. Learning what works in your system.

## Implementation

Making this change a part of the day-to-day operation of the system

Would the change persist even if its champion were to leave the organization?



# Are you ready to Implement a new idea?

Current Situation		Resistant	Indifferent	Ready
Low Confidence that current change idea will lead to Improvement	Cost of failure large	<u>Very Small Scale Test</u>	<u>Very Small Scale Test</u>	<u>Very Small Scale Test</u>
	Cost of failure small	Very Small Scale Test	Very Small Scale Test	Small Scale Test
High Confidence that current change idea will lead to Improvement	Cost of failure large	Very Small Scale Test	Small Scale Test	Large Scale Test
	Cost of failure small	Small Scale Test	Large Scale Test	<b>Implement</b>



# Some life lessons of an improver



- The #1 job of an improver is to get curious.
- All improvement will require change, but not all change will result in improvement.
- A change is different than a test of a change.
- The world always looks better in PowerPoint. It will get messy and that's okay.
- Don't be afraid to play and be creative.
- Expect to fail forward.
- It feels powerful to know you're moving toward your goal because you're taking action and documenting the data.





# Thank you & some parting gifts



Coin spinning instructions & debrief videos on YouTube so you can run this exercise with your team.