

# Toyota Kata

Vägen till ständig förbättring

Linköping 2014-03-13

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**“We are what we repeatedly do.  
Excellence, then, is *not an act*,  
but a habit.”**

 **Aristotle**







Håkan Forss  
Lean/Agile Coach  
**aveja** group

@hakanforss



# Agile/Scrum/XP

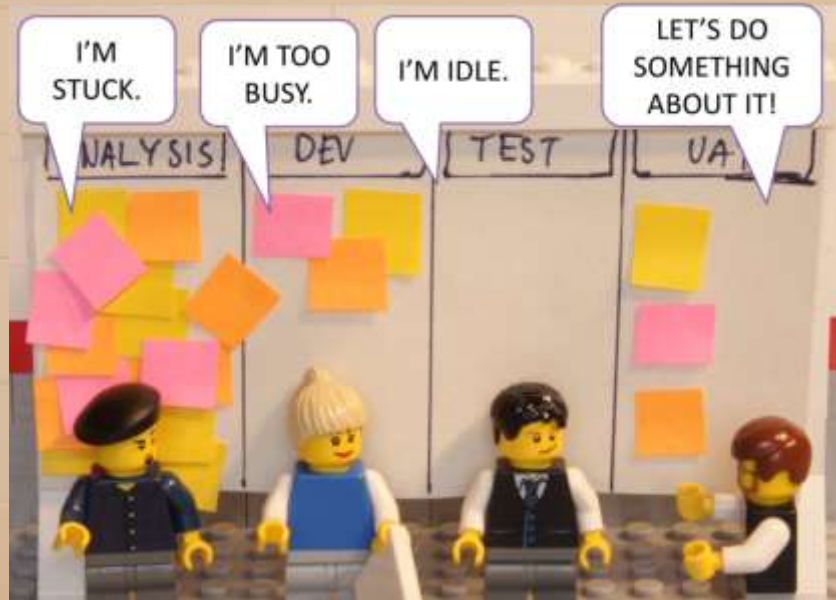








# Lean & Kanban













# Toyota Kata in a nutshell



Understand  
Direction



Grasp Current  
Condition



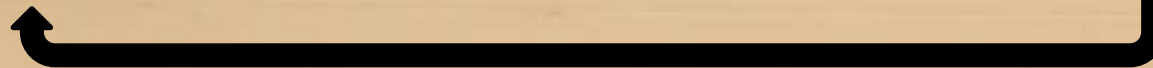
Set the Next  
Target  
Condition



Iterate toward  
Target  
Condition

Planning Phase

Executing Phase



Repeat

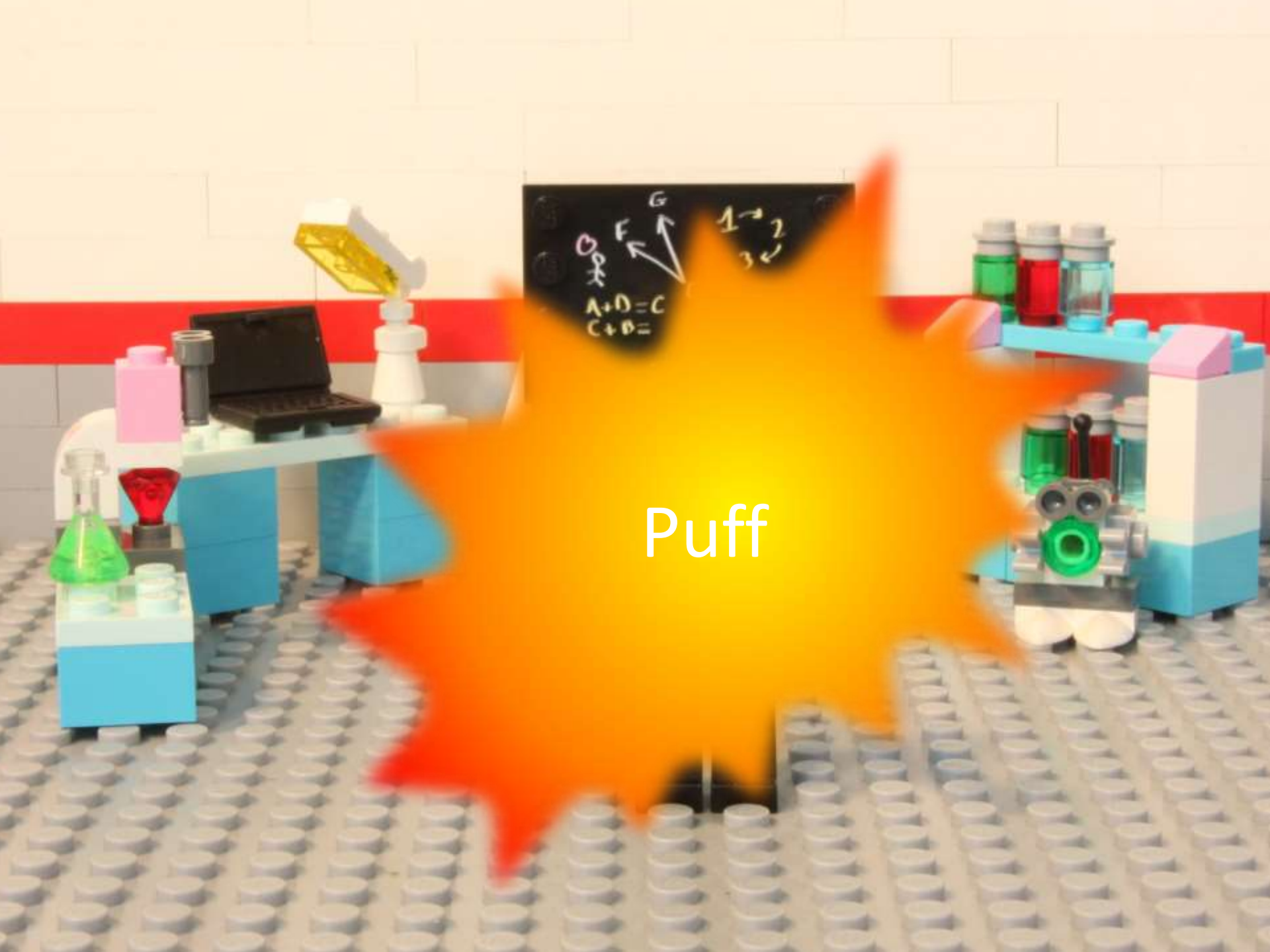




# Improvements are experiments








Puff



A LEGO minifigure of a scientist with white spiky hair, glasses, and a white lab coat with a pocket containing tools. The figure is holding a green flask in its right hand and a purple flask in its left. It stands on a grey LEGO baseplate. In the background, there is a blue desk with a pink block, a blackboard with a diagram, and other lab equipment. A speech bubble points to the figure.

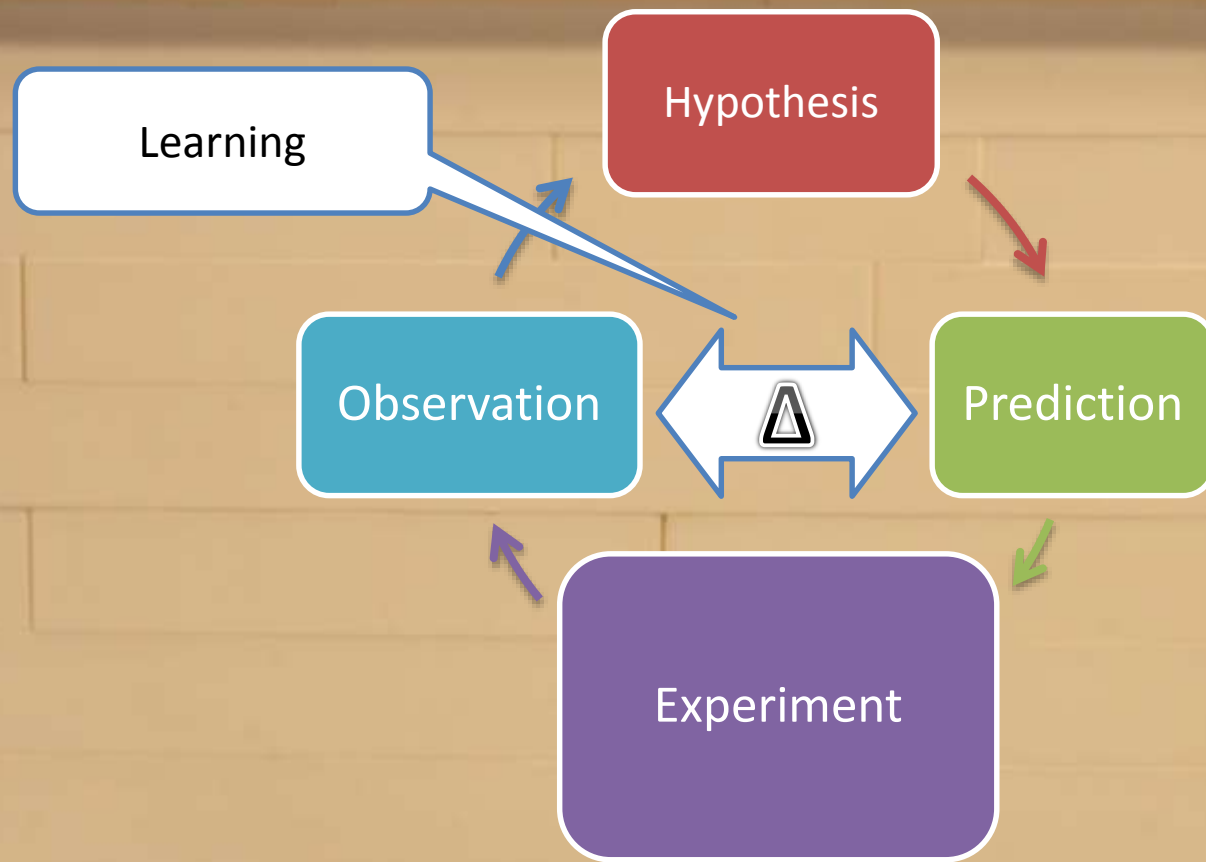
Oh, I did NOT  
expect that!



# The sound of learning









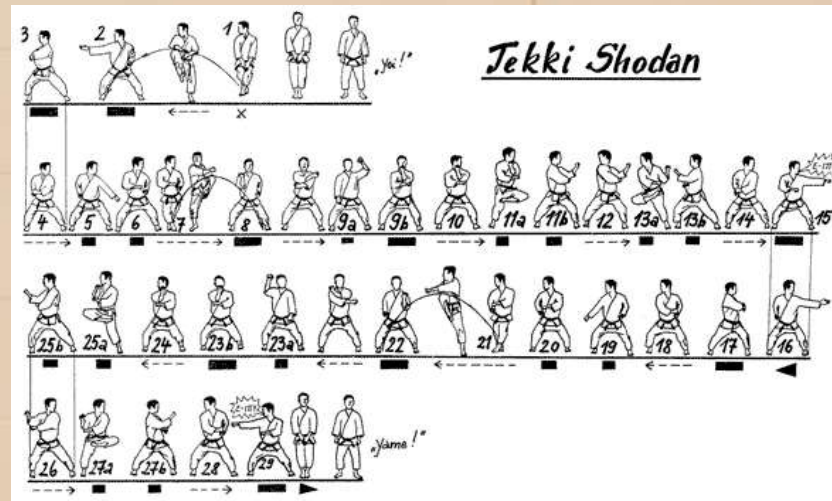
Expect at least 50% of the  
experiments will not give the  
expected result

This is when we REALLY learn!





# What is a Kata?

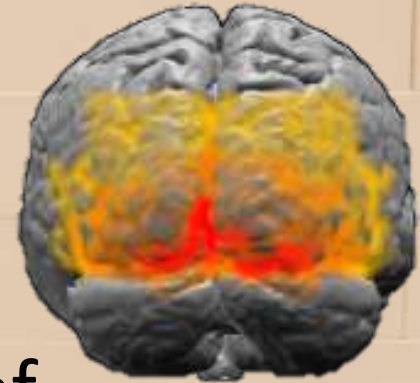




# What is a Kata?

Synthesizing thought and  
behavior in skillful action;

the metacognition of  
reflection in action





Wax on, wax off





Create "muscle memory"  
for continuous improvements





Let's do an experiment!





Cross your arms



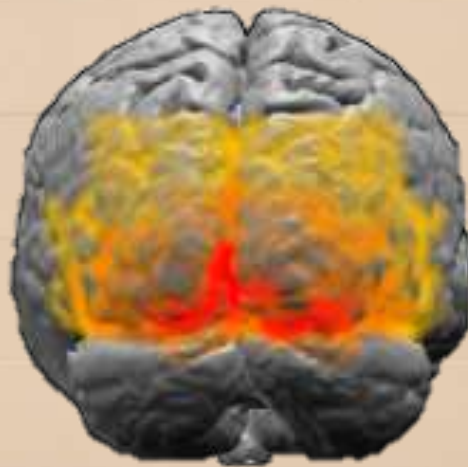


Now cross them the other way



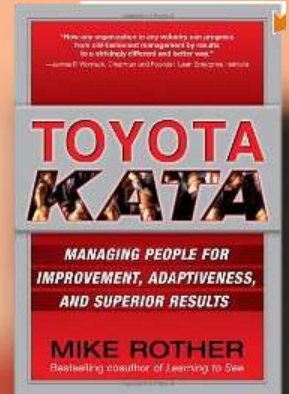


We need to rewire our brains for  
continuous improvements

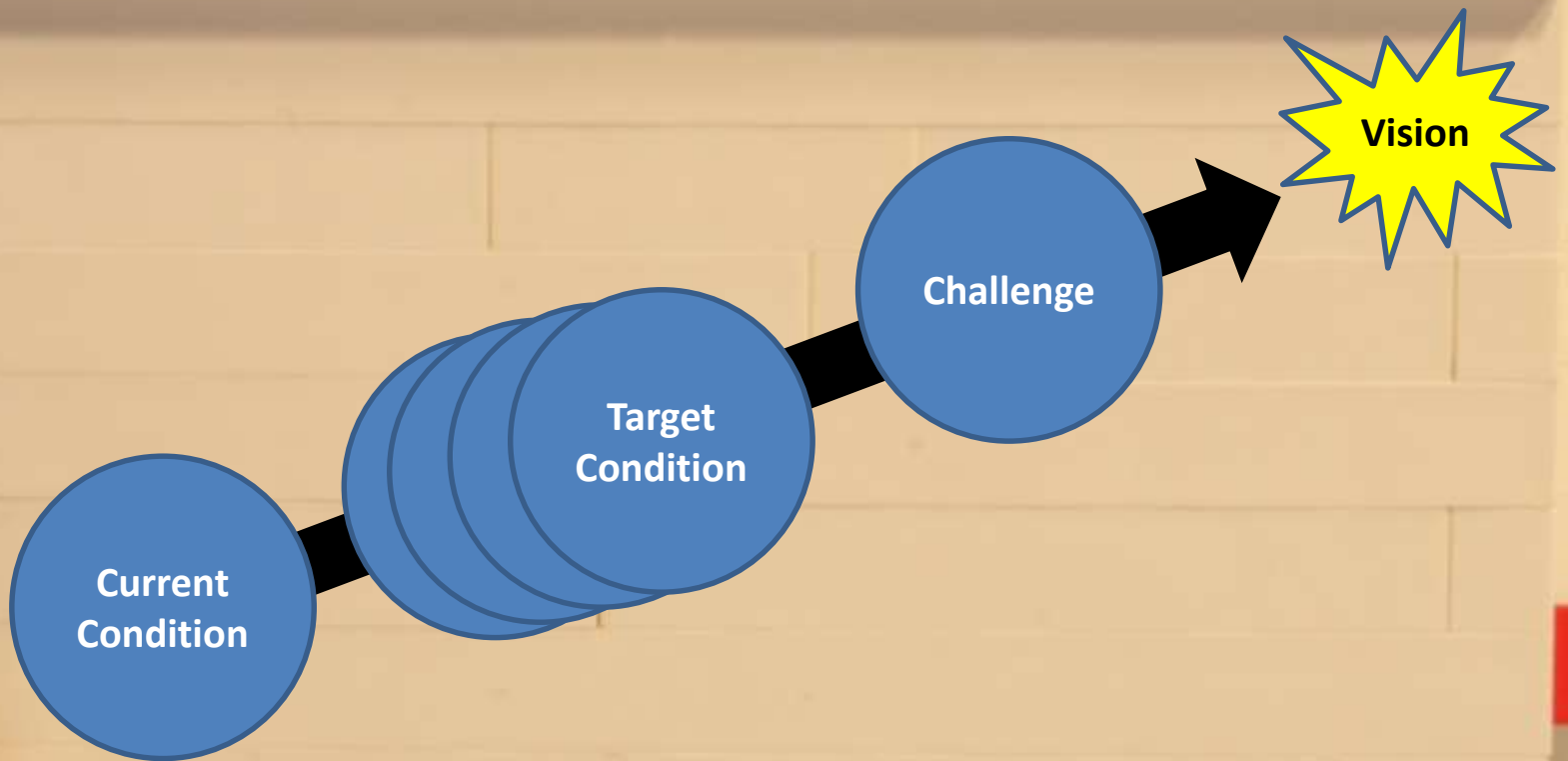




# Toyota Kata









## Improvement Kata



## Coaching Kata





**Understand  
the  
Direction**



**Grasp the  
Current  
Condition**



**Establish the  
Next Target  
Condition**



**PDCA Toward the  
Target Condition**







Understand  
the  
Direction





# The Vision

“A goal is not always meant to be reached, it often serves simply as something to aim at”

■ Bruce Lee

Understand  
the  
Direction





# The Vision

- ❏ Process focused
- ❏ Not outcome focused
- ❏ Not a business or company vision

Understand  
the  
Direction





# Toyota's Vision for Its Production Operations

- Zero defects
- 100 percent value added
- One-piece flow, in sequence, on demand
- Security for people (no injuries)

Understand  
the  
Direction





# Software development Vision example

- Zero defects, in production
- 100 percent value added
- Highest value first, on demand
- Security for people (no injuries)

Understand  
the  
Direction





**Understand  
the  
Direction**



**Grasp the  
Current  
Condition**



**Establish the  
Next Target  
Condition**



**PDCA Toward the  
Target Condition**





**Get out of the corner office**

Grasp the  
Current  
Condition





# Go and See

Grasp the  
Current  
Condition







Grasp the  
Current  
Condition





# What to collect

- ▣ Data and facts, not gut feel

- ▣ Process description (Value Stream Map)

- ▣ Process metrics

- ▣ Outcome metrics

Grasp the  
Current  
Condition





# Process metrics

Grasp the  
Current  
Condition



## Cycle time

- The period required to complete an item, or task from start to finish in one part of the process

## Work-In-Process

- The amount of items, or tasks currently in one process step

## Queue size

- The amount of items, or tasks currently in a queue in the process

## Iteration length, Takt time

- The duration of a process cycle, at what pace/cadence the process should run

## Defects

- The number of defects





# Outcome metrics

## Lead-time

- The time to complete an item, or task from start of the process all the way to the end of the process

## Throughput

- The number of items, or tasks completed in a period of time

## Quality

- The quality of the product you produce

Grasp the  
Current  
Condition





**Understand  
the  
Direction**



**Grasp the  
Current  
Condition**



**Establish the  
Next Target  
Condition**



**PDCA Toward the  
Target Condition**





Our next target condition is...

Establish the  
Next Target  
Condition

Target  
Condition





# Beyond the knowledge threshold





Put a square peg in a round hole



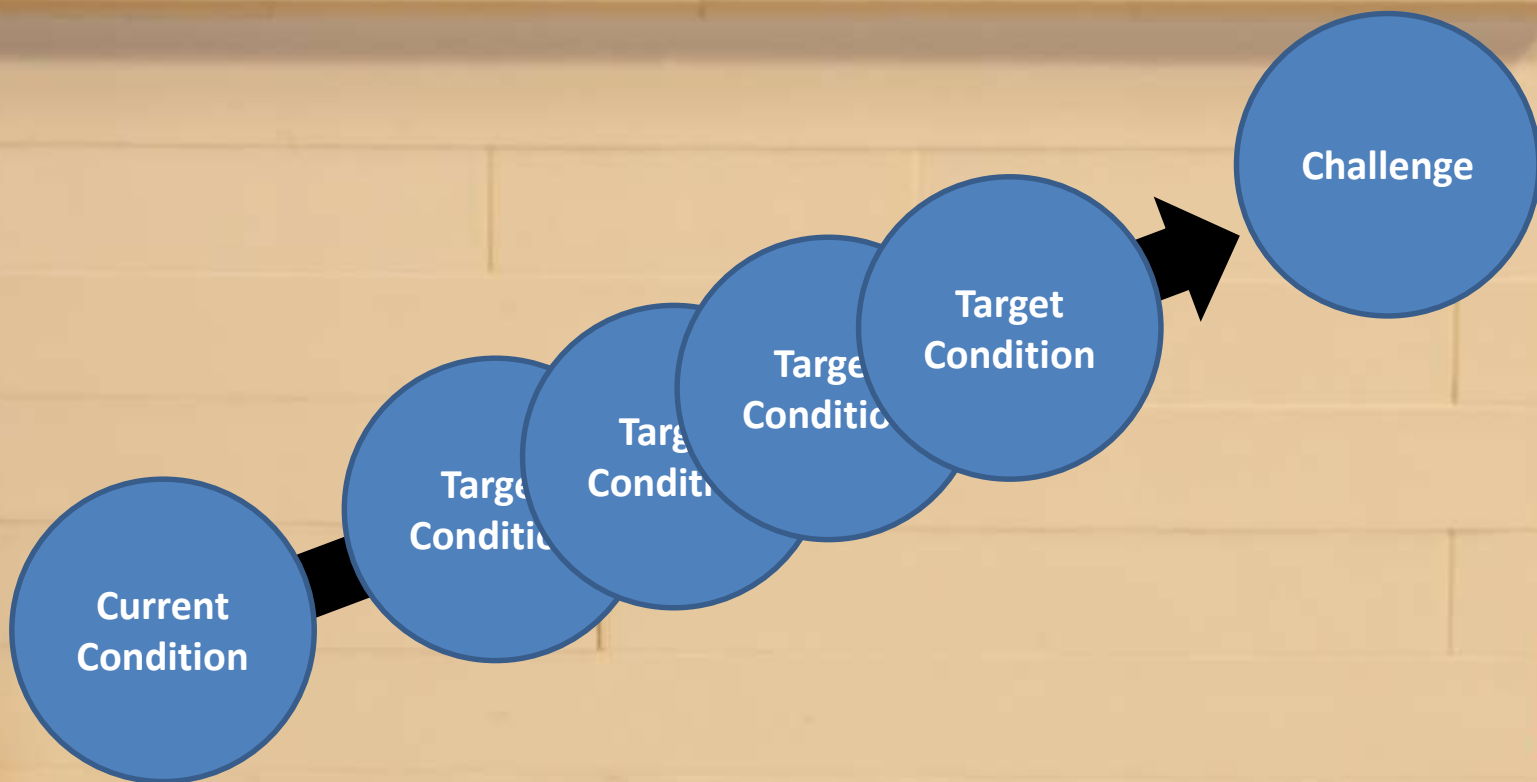


# Setting a target condition

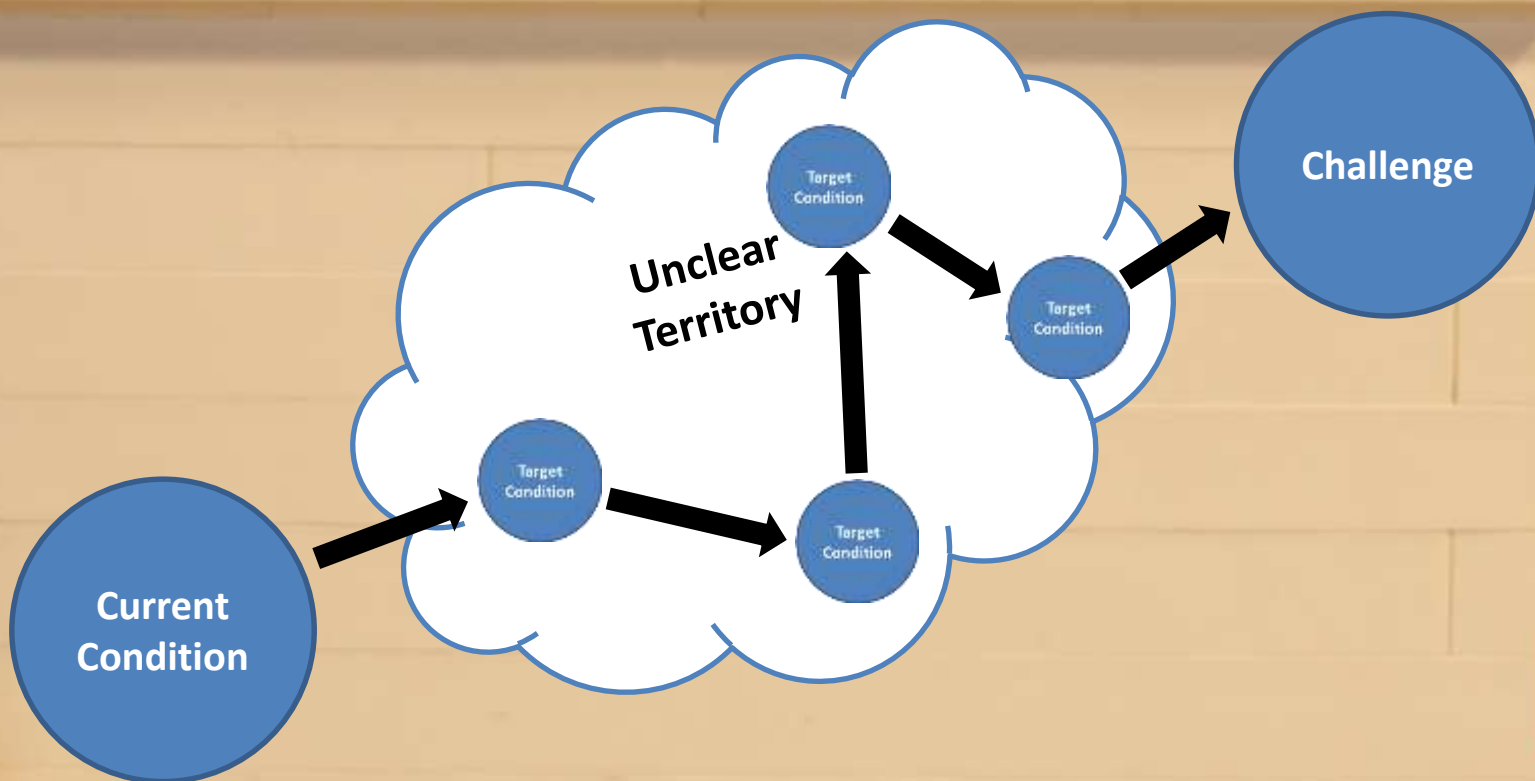
- ❖ Hypothesis on the journey towards the next Challenge and Vision
- ❖ Based on your business strategy and model for process improvement
- ❖ Follow the Goldilocks rule
  - ❖ Not too hard, Not too easy, Just Right













# Target Condition examples

- All work visible
- Lead time 60 days (from 80 days)
- Work-in-process 15 (from 20)
- Deploy to production every 2 weeks
- Specification by Example is used for 80% of the features





**Understand  
the  
Direction**



**Grasp the  
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Condition**



**Establish the  
Next Target  
Condition**



**PDCA Toward the  
Target Condition**







## PDCA Toward the Target Condition





# PDCA CYCLES RECORD (Each row = one experiment)

Date:

Process  
Metric

Process:

Step

What do you  
expect?

Result

Observe  
closely

What We Learned

Hypothesis

Prediction

Experiment

Observation

Learning

Learning

Hypothesis

Observation

Prediction

Experiment

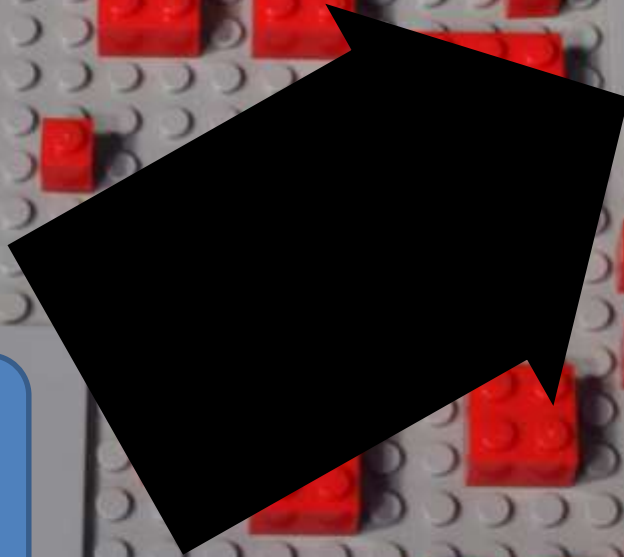
Coaching Cycle  
EXPERIMENT





**Current Condition**

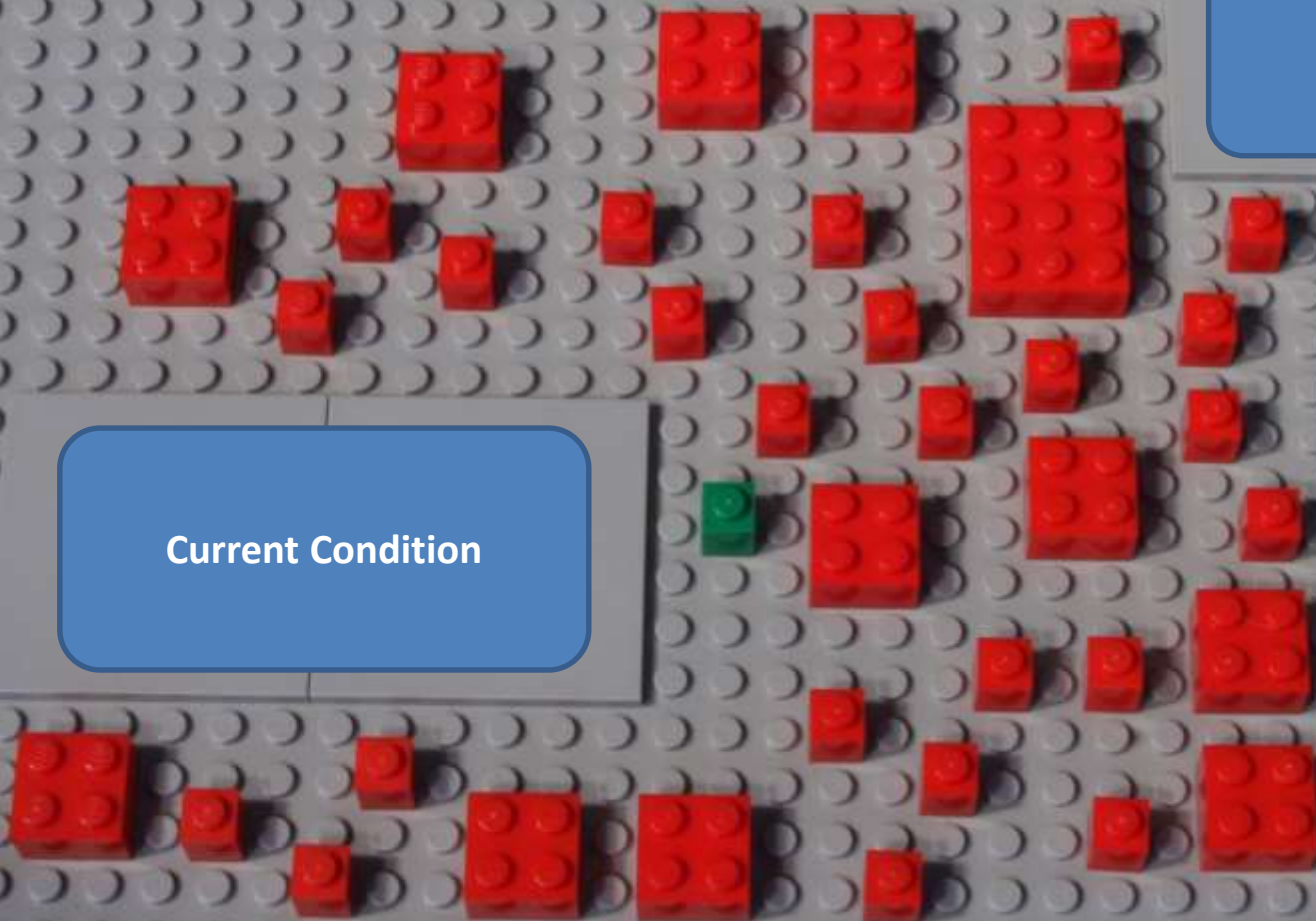
**Target Condition**





**Current Condition**

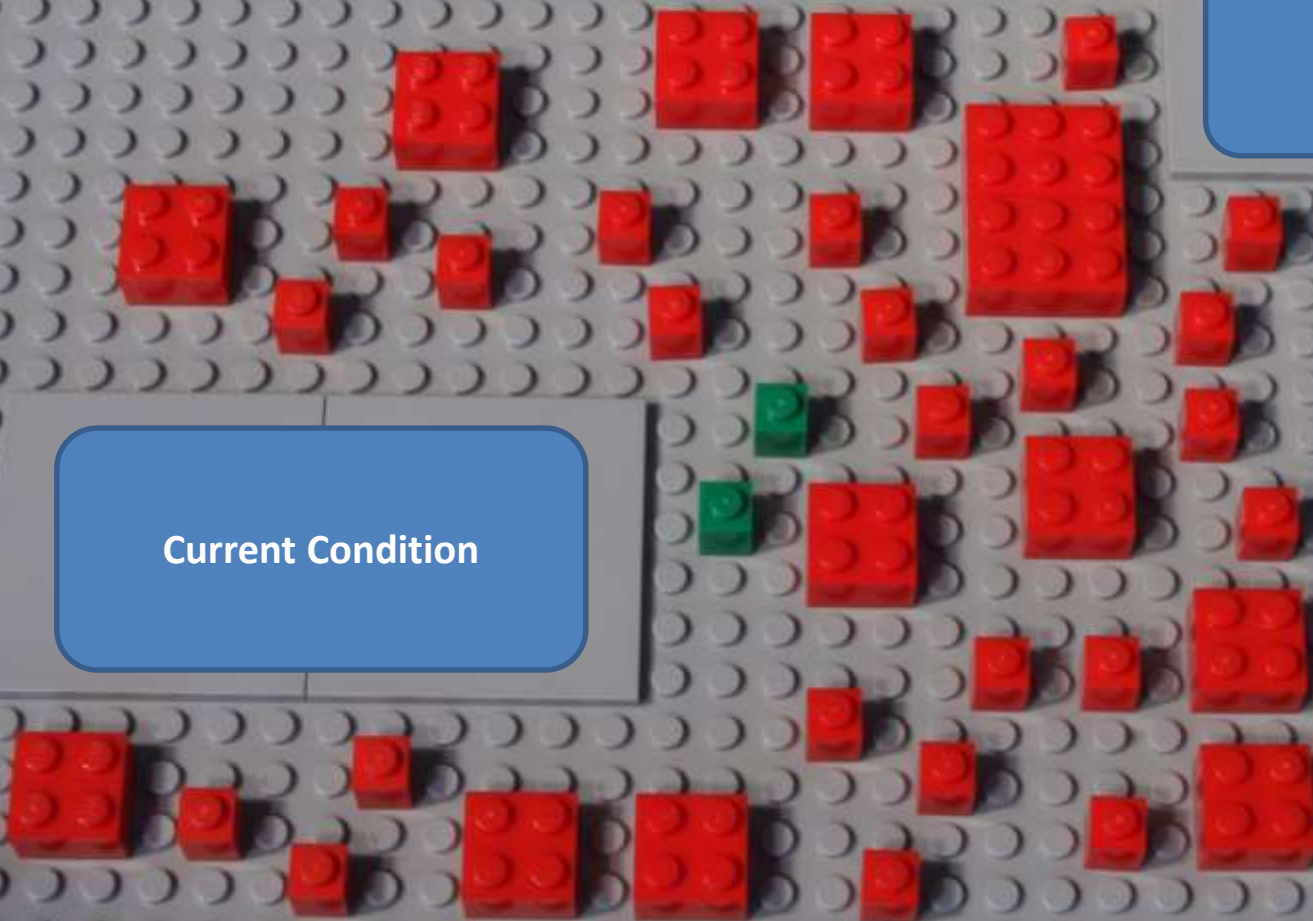
**Target Condition**





**Current Condition**

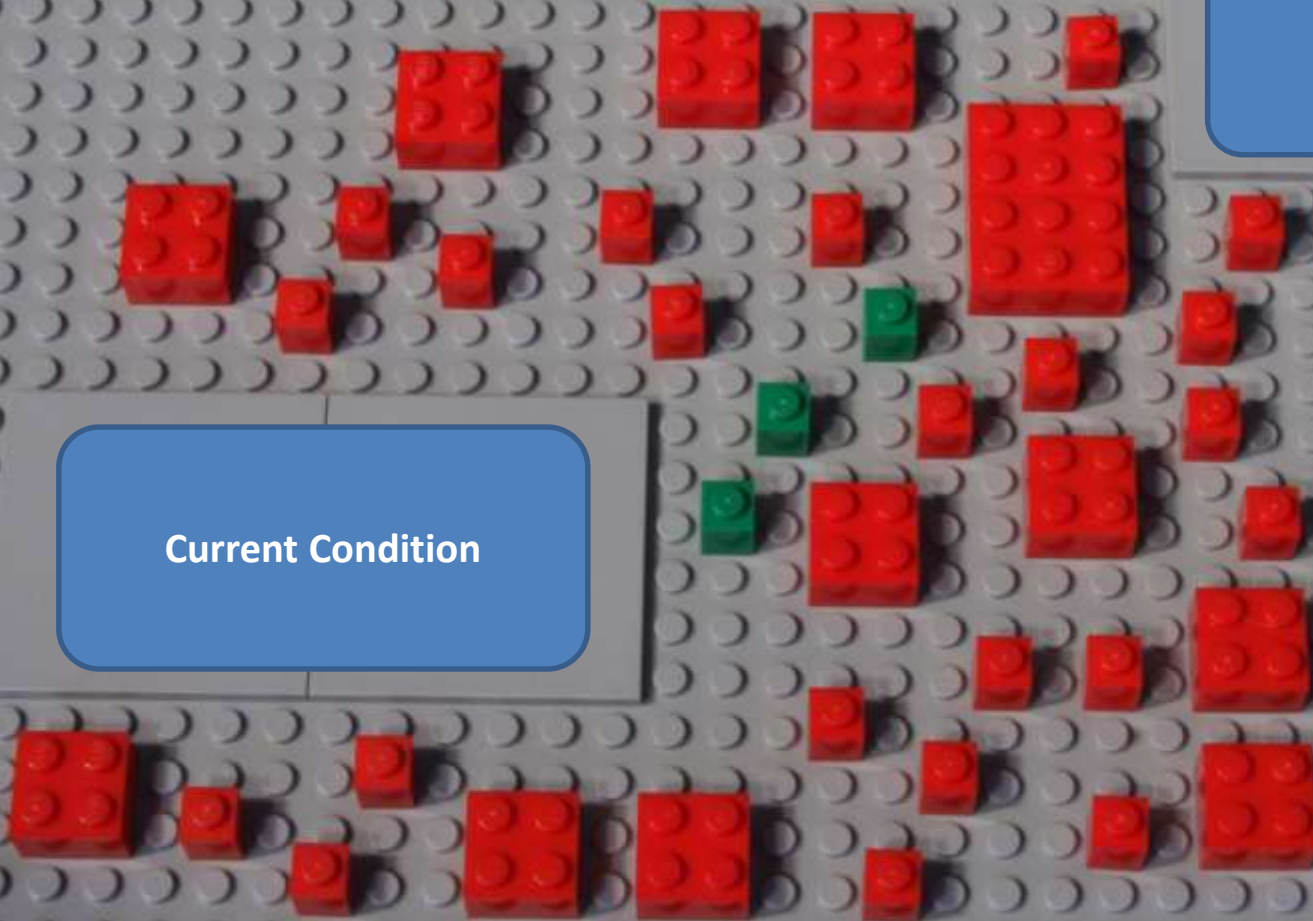
**Target Condition**





**Current Condition**

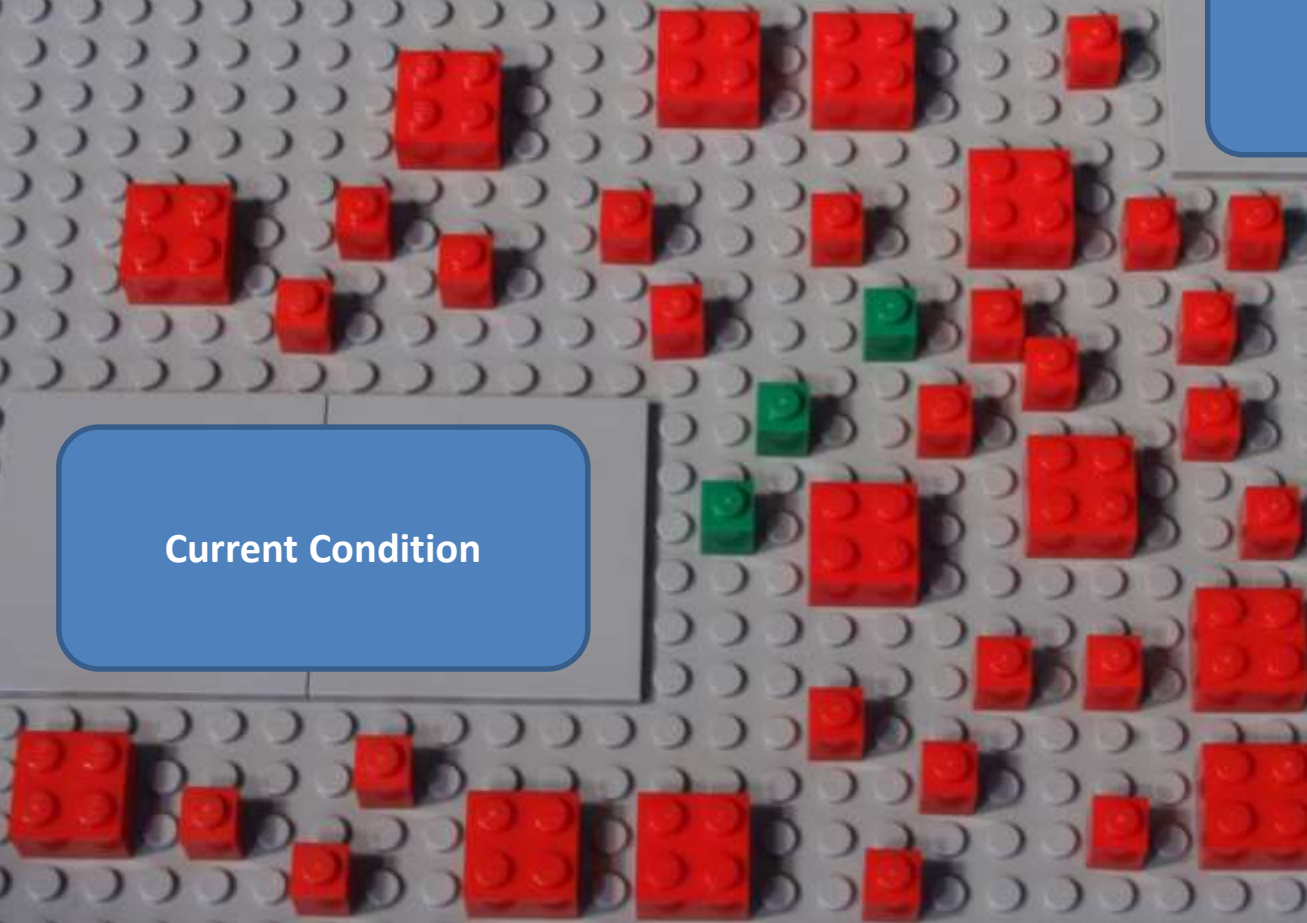
**Target Condition**





**Current Condition**

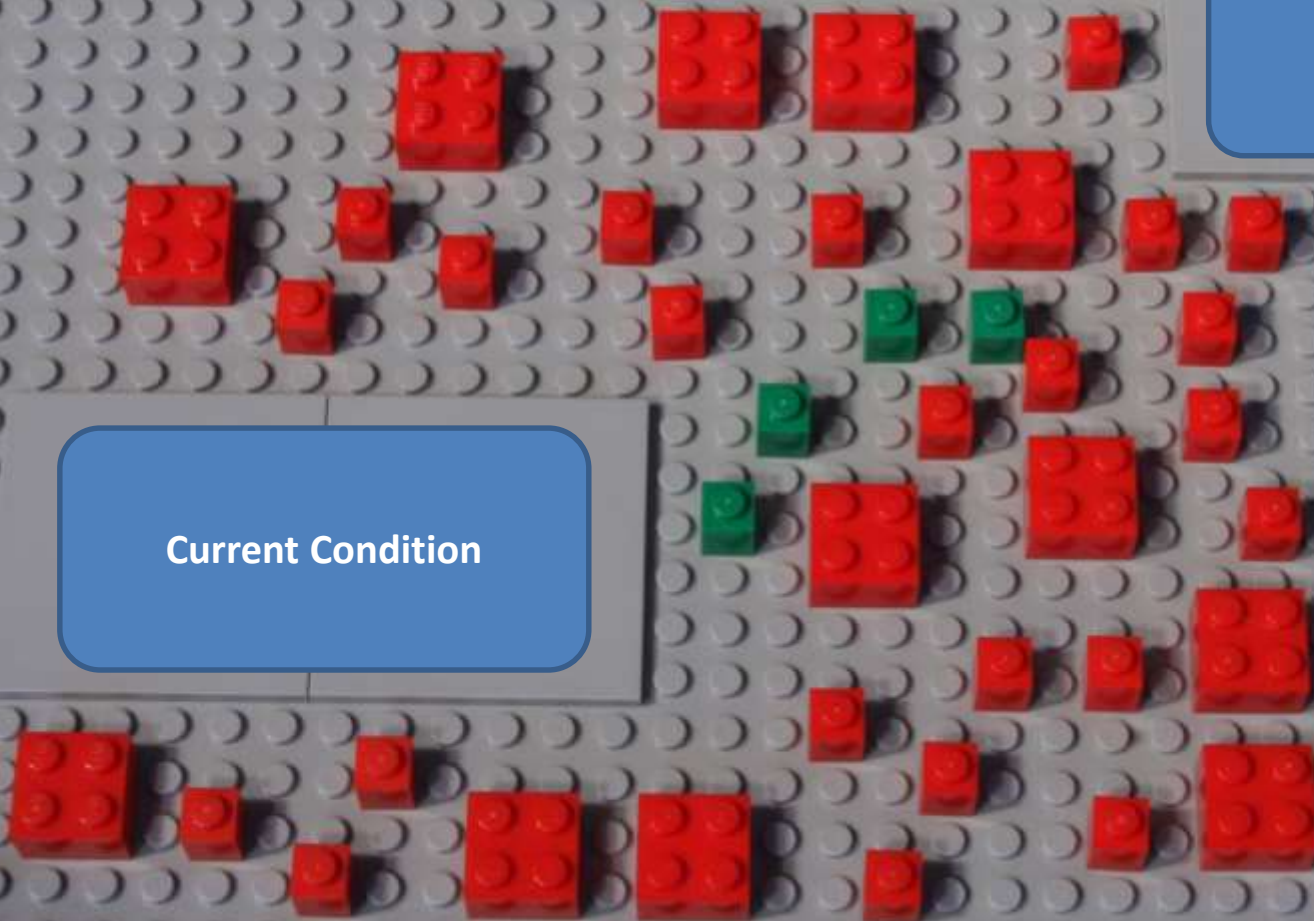
**Target Condition**





Target Condition

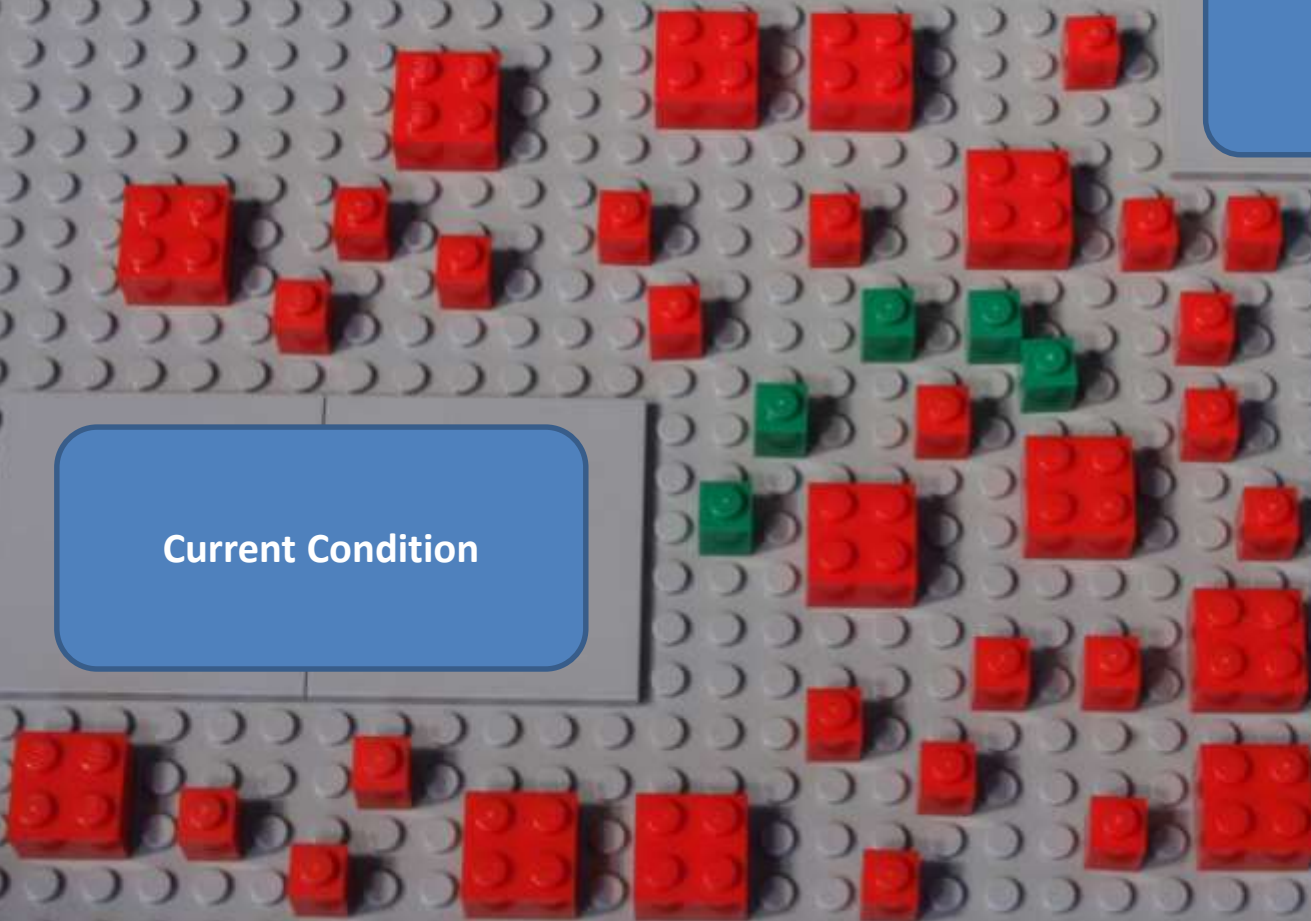
Current Condition





**Target Condition**

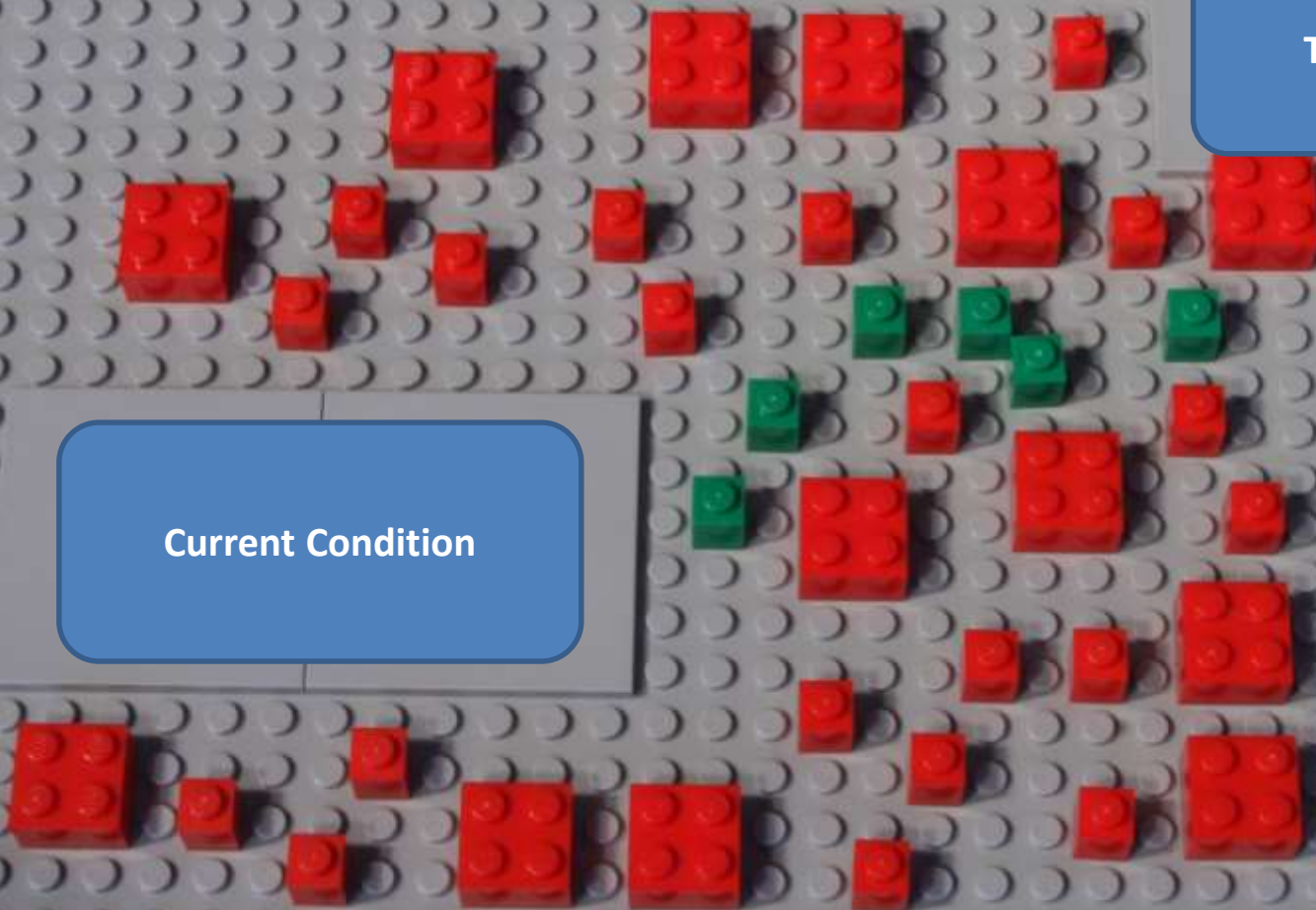
**Current Condition**





**Current Condition**

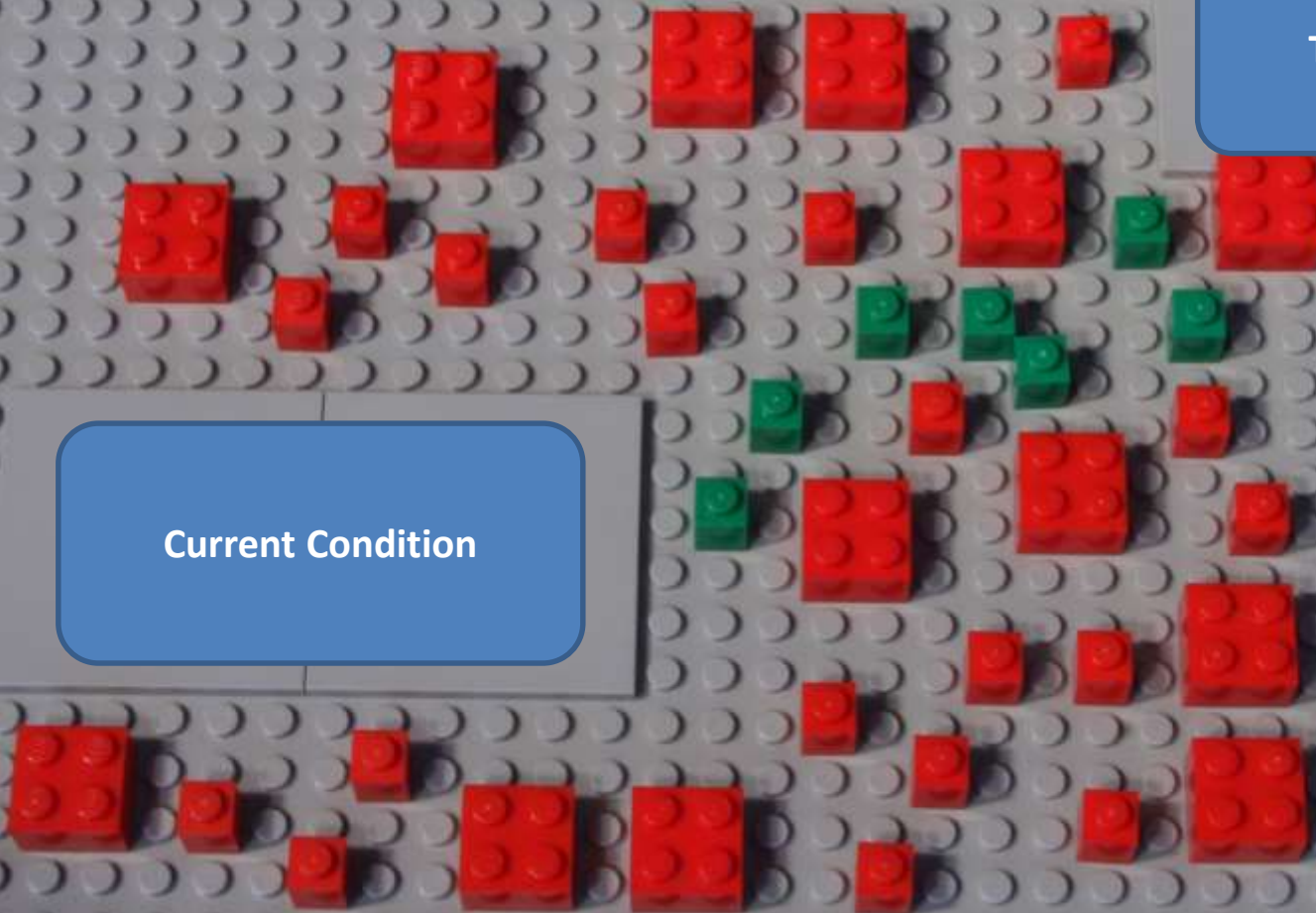
**Target Condition**





**Current Condition**

**Target Condition**





## Improvement Kata



## Coaching Kata

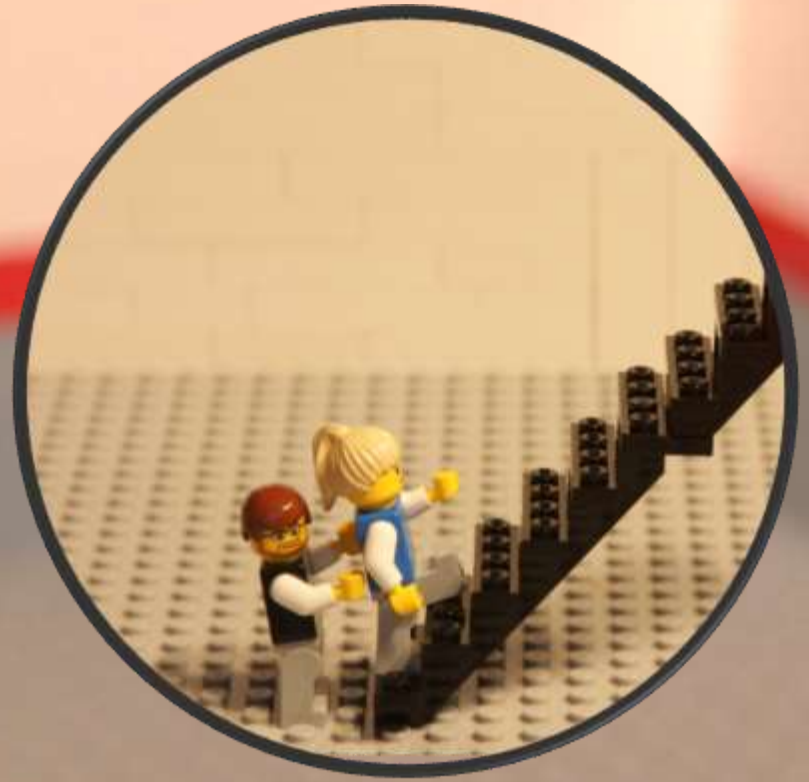
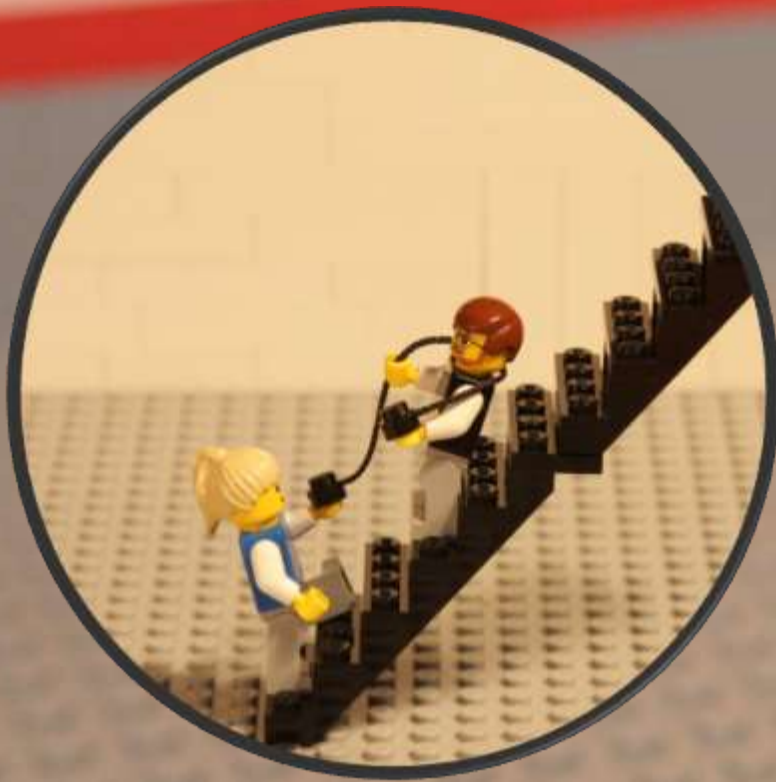




# Leader coaching the learners









## The Five Questions

- 1) What is the **Target Condition**?
- 2) What is the **Actual Condition** now?  
  
-----(*Turn Card Over*)----->
- 3) What **Obstacles** do you think are preventing you from reaching the target condition?  
Which *\*one\** are you addressing now?
- 4) What is your **Next Step**? (next PDCA / experiment) What do you expect?
- 5) When can we go and see what we **Have Learned** from taking that step?

\*You'll often work on the same obstacle for several PDCA cycles



## Reflect on the Last Step Taken

Because you don't actually know  
what the result of a step will be!

- 1) What was your **Last Step**?
- 2) What did you **Expect**?
- 3) What **Actually Happened**?
- 4) What did you **Learn**?

----->  
*Return*



## The Five Questions

- 1) What is the **Target Condition**?
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Focus process

Challenge

Target Condition  
Achieve by: \_\_\_\_\_

1

Actual Condition

2

PDCA Cycle Records

PDCA CYCLES RECORD			
Previous Cycle		Target Condition (Focus on Results)	
Learnings	Obstacles	What Happened	What We Learned
Goals, Steps & Metrics	What did you expect?		

Obstacle parking lot

Obstacle Parking Lot
*
*
*
*
*
*
*
*
*
*
*
*

COACHING KATA

### The Five Questions

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Focus process

Challenge

Target Condition  
Achieve by: \_\_\_\_\_

Actual Condition

PDCA Cycle Records

PDCA CYCLES RECORD				
Previous		Target Condition (Future Goals)		
Learned	Check	Plan	Do	Act
Date, Step & Metric	What did you expect?	What happened?	What did you learn?	What did you learn?
1	2	3	4	

Obstacle parking lot

Obstacle Parking Lot	
*	_____
*	_____
*	_____
*	_____
*	_____
*	_____
*	_____
*	_____
*	_____
*	_____
*	_____

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- 3) What **Actually Happened**?
- 4) What did you **Learn**?

----->  
Return









# Toyota Kata summary

Improvements are experiments

Creates organization "muscle memory" for continuous improvements

Familiar routines, as you probe through the unknown









# Toyota Kata Rocks !!





# Your treasure map to Toyota Kata!

<http://hakanforss.wordpress.com/tag/toyota-kata/>

<http://www.slideshare.net/hkanforss/>

<http://www-personal.umich.edu/~mrother/Homepage.html>

<http://www.lean.org/kata/>

<http://www.slideshare.net/mike734>

<http://www.slideshare.net/BillCW3/>





# Q & A

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