

# APPENDIX - KEY FORMS

- 1) **Improvement Kata Poster - The Five Kata to Practice**
- 2) **The Roles**
- 3) **Learner's Storyboard**
- 4) **Process Analysis Steps Table**
- 5) **Worksheet for Timing Cycles**
- 6) **Information in a Target Condition**
- 7) **Improvement Kata Proficiency Table** (to gage skill level)
- 8) **Coaching Kata Proficiency Table** (to gage skill level)

## **Coaching Cycle Forms:**

- ☐ **Who Uses What Forms**
- ☐ **Where the Forms Go on the Learner's Storyboard**
- ☐ **Current/Target Condition Form** (for production)
- ☐ **Current/Target Condition Form** (for office/service)
- ☐ **Current/Target Condition Form** (for other processes)
- ☐ **Description of Work Steps & Sequence**
- ☐ **Obstacle Parking Lot**
- ☐ **PDCA Cycles Record**
- ☐ **5 Question Card** (front)
- ☐ **5 Question Card** (back)
- ☐ **Coaching Cycle Plan / Tracking** (coach)
- ☐ **Coaching Cycle Observation Form** (2nd coach)

# IMPROVEMENT KATA *Where's the Threshold of Knowledge?*

## PLANNING

**Where do you want to go?**

### GRASP THE CURRENT CONDITION

*What are the facts  
and data about  
where you are now?*

**2**

Tool:  
IK Process Analysis

### UNDERSTAND THE DIRECTION

*What challenge are  
you striving for?  
(6 mo - 3 years out)*

**1**

Tool:  
Future-State Mapping

### ESTABLISH THE NEXT TARGET CONDITION

(with an achieve-by date)

*Describe where you  
want to be next on the  
way to the challenge.*

(1 week - 3 months out)

**3**

Tool: Current Condition  
Target Condition Form

### ITERATE TOWARD THE TARGET CONDITION

*Conduct rapid, frequent  
experiments to move  
from current condition  
to the target condition.*

**4**

Tool:  
PDCA Cycles Record

### COACHING CYCLES WITH THE 5 QUESTIONS

*Coach escorts the  
Learner and gives  
procedural guidance.*

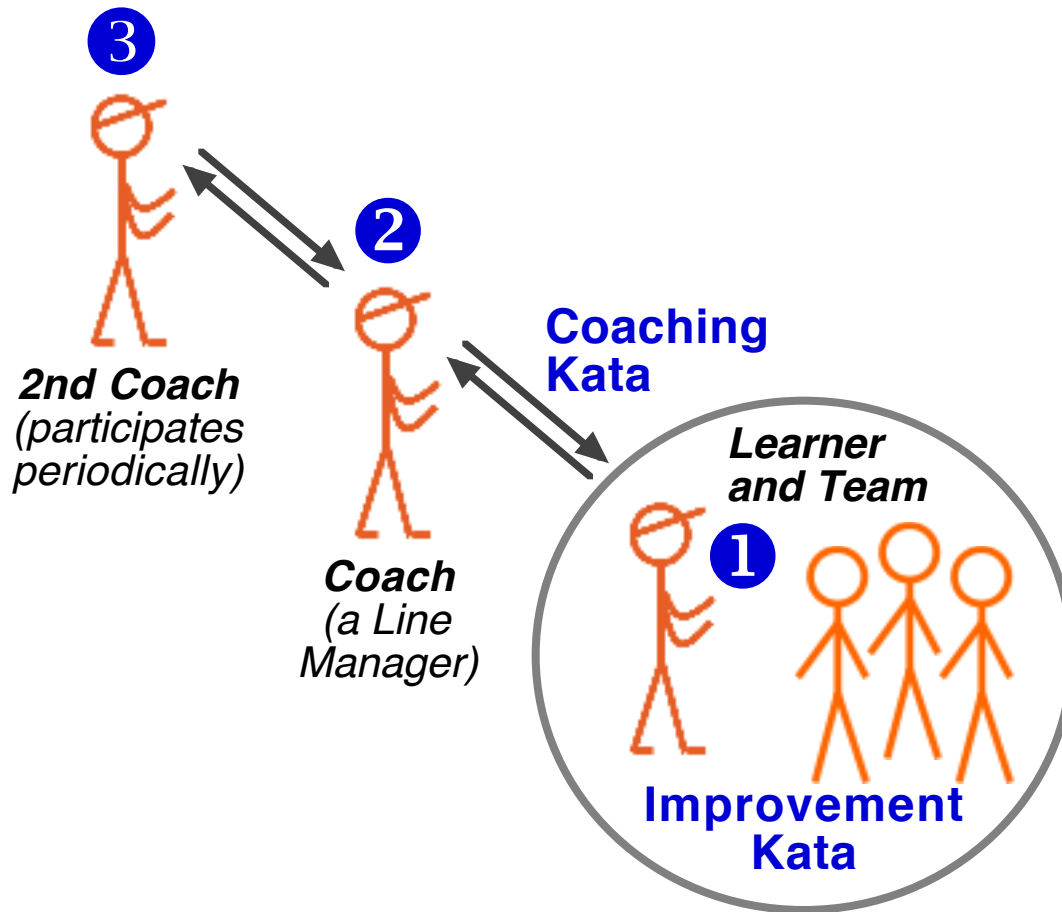
**5**

Tool:  
5-Question Card

**Daily**

**EXECUTING**  
**Then iterate to get there**

# THE ROLES



**Learner and Team (The Process Owners):**  
Apply the Improvement Kata to establish and work toward the target condition. Learner conducts experiments with PDCA and develops solutions to obstacles, in daily dialog with the coach and the process operators.

**Coach / Manager (The Teacher):**  
Conducts coaching cycles daily using the 5 questions. Ensures the learner is working toward the target condition scientifically according to the Improvement Kata pattern. The coach's job is to develop the learner by guiding the learner on Improvement Kata procedure, not to improve the process.

**2nd Coach (Coaches the Coach):**  
Periodically observes coaching cycles between the coach and the learner. Helps the coach/manager develop his or her coaching skills. Ensures that the team's target condition ties in to a larger challenge, such as a future-state value stream design.

# LEARNER'S STORYBOARD

<b>Focus Process:</b>		<b>Challenge:</b>
<b>Target Condition</b> Achieve by: _____	<b>Current Condition Now</b>	<b>PDCA Cycles Record</b>
		<b>Obstacles Parking Lot</b>

# THE 5 STEPS OF THE PROCESS-ANALYSIS KATA

Step ①	<b>Customer Demand &amp; Planned Cycle Time</b>  <b>What is a task unit and how much time do we have to complete it?</b>	<ul style="list-style-type: none"> <li>• Customer takt</li> <li>• Planned cycle time</li> <li>• Number of shifts currently running</li> </ul>
Step ②	<b>Characteristics of the Current Process</b>  <ul style="list-style-type: none"> <li>• Sketch the current work pattern.</li> <li>• Measure &amp; graph fluctuation.</li> <li>• Record bullet-point observations.</li> </ul>	<ol style="list-style-type: none"> <li>1) Get to know the process by sketching a block diagram of it. What are batch sizes? Where does WIP accumulate?</li> <li>2) How much does the process fluctuate? Time and graph 20-30 exit cycles of each operator's work. Are each operator's work steps the same from cycle to cycle?</li> <li>3) Note other details about current operating pattern</li> </ol>
Step ③	<b>Equipment Capacity</b>  <b>Do we have any machine constraints? What are they? (Data)</b>	<ul style="list-style-type: none"> <li>• Can the automatic equipment support the planned cycle time?</li> <li>• How close are we to current machine capacity limit?</li> <li>• What is the fastest Pc/t the equipment can currently support?</li> </ul>
Step ④	<b>Necessary Number of Operators</b>  <b>How many people are necessary if the process were stable? (Calc)</b>	<ul style="list-style-type: none"> <li>• Calculate number of operators</li> </ul>
Step ⑤	<b>Outcome Metrics</b>  <b>How is the process performing over time? (Outcome metric data)</b>	<ul style="list-style-type: none"> <li>• Graph (a) output per shift, (b) overtime and any other desired outcome metrics</li> </ul>

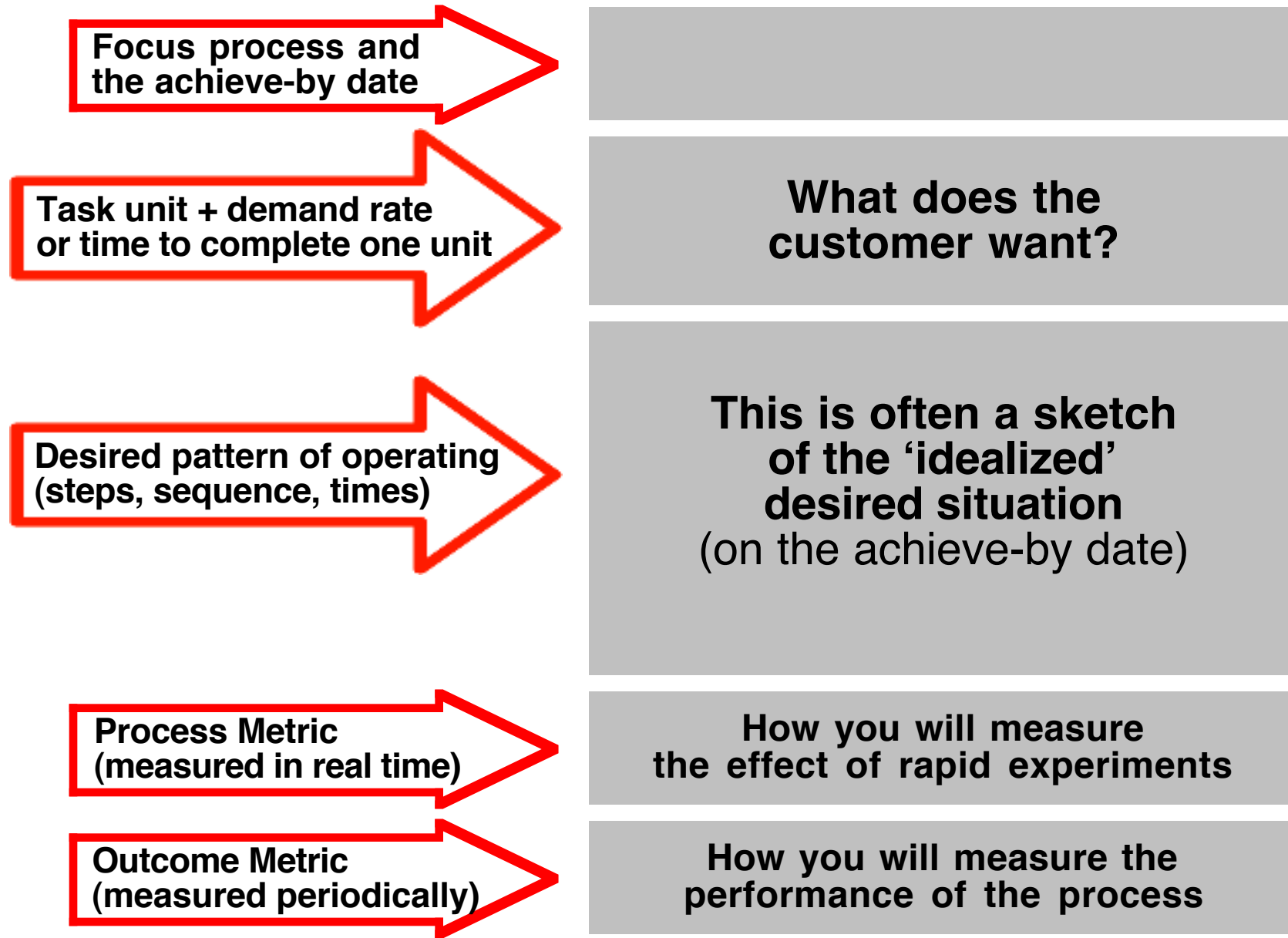
# WORKSHEET FOR TIMING CYCLES

Process  
Metric

	Observed Times (Data)	Observations about the current operating pattern (Facts)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

Note if there  
is consistent  
wait time

# INFORMATION IN A TARGET CONDITION



# IMPROVEMENT KATA PROFICIENCY ASSESSMENT

Note that this scale measures Improvement Kata skill level or degree of habit formation, not the person

Able to Coach	Stage	Level	Description	Standard of Work	Autonomy
	3	<b>Expert</b> Not everyone reaches this level	No longer relies on rules / guidelines / maxims Grasp of situations & decision making intuitive Vision of what is possible	Excellence achieved with relative ease	Able to take responsibility for going beyond existing standards and creating own interpretations
	2	<b>Proficient</b>	Has unconscious understanding and applies the IK routine more on “auto pilot.” Deviates from the strict kata to fit the situation. Sees what’s most important in a situation. High degree of self-efficacy with the IK pattern.	Fully acceptable standard achieved routinely	Able to take full responsibility for own work, and coach others
		<b>Competent</b>	Has standardized and routinized procedures Sees actions partially in terms of LT goals Can prioritize	Fit for purpose, though may lack refinement	Able to achieve most tasks using own judgement
	1	<b>Advanced Beginner</b>	Actions are based on the kata Situational perception still limited All aspects are given equal importance	Straightforward tasks likely to be completed to an acceptable standard	Able to achieve some steps using own judgement, but coaching needed for overall task
		<b>Novice</b>	Strict adherence to the Kata. Little situational perception & discretionary judgement. Has to purposely concentrate on the IK routine. Low self-efficacy in applying the IK routine.	Unlikely to be satisfactory unless closely coached	Needs close coaching and instruction

Table adapted from the Dreyfus Model of Skill Acquisition  
Dreyfus, Stuart E., *Formal Models vs. Human Situational Understanding: Inherent Limitations on the Modelling of Business Expertise*, University of California, Berkeley, 1981



# COACHING KATA PROFICIENCY ASSESSMENT

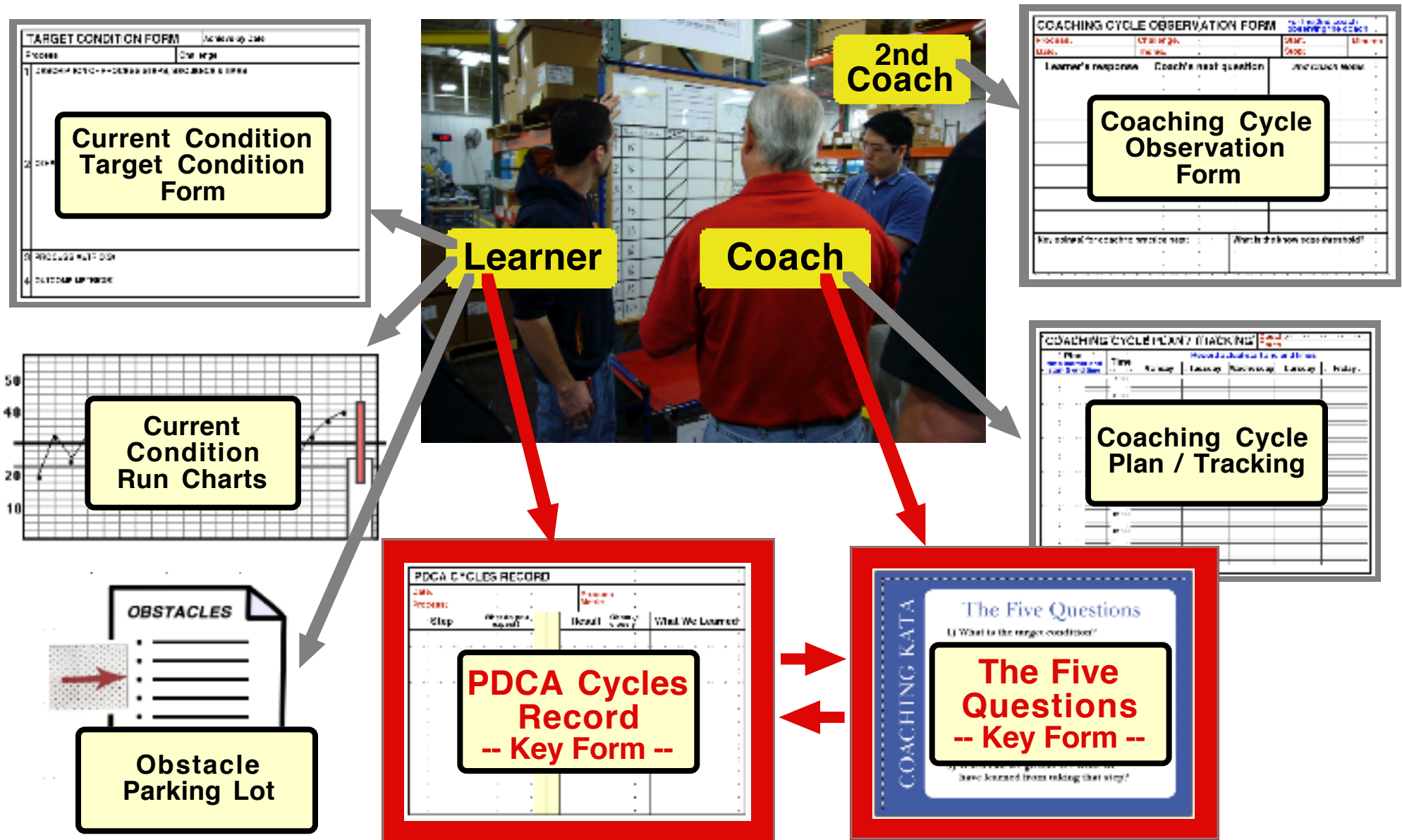
By Yvonne Muir, Jennifer Ayers & Julie Simmons

Stage	Level	Characteristics	Autonomy
<b>3</b>	<b>Expert</b>	<ul style="list-style-type: none"> <li>• Intuitive grasp of coaching based on deep, practiced understanding</li> <li>• Direct, yet supportive</li> <li>• Coaching conversations are natural; learner doesn't notice being coached</li> <li>• Sought after for coaching advice</li> </ul>	<b>2nd Coach needed occasionally</b>
<b>2</b>	<b>Proficient</b>	<ul style="list-style-type: none"> <li>• Clear perception of learner's gaps or weaknesses</li> <li>• Uses coaching to guide: adapts to the situation, asks meaningful questions</li> <li>• Ability to assess learners preferred learning style (auditory, visual, kinesthetic)</li> <li>• 2nd Coach capability</li> </ul>	<b>2nd Coach needed periodically</b>
	<b>Competent</b>	<ul style="list-style-type: none"> <li>• Capable of sensing learners uncertainty level and knowledge threshold</li> <li>• Consistently coaches learner with a repeatable pattern</li> <li>• Coaching embedded in normal daily work</li> </ul>	
<b>1</b>	<b>Advanced Beginner</b>	<ul style="list-style-type: none"> <li>• Narrow "development perception"; recognizes need for 2nd coach</li> <li>• Becoming comfortable providing feedback to learner</li> <li>• Beginning to observe and listen more (vs. talk and advise)</li> <li>• Asks some probing questions to gain insight</li> </ul>	<b>Must have a proficient 2nd Coach at each coaching cycle</b>
	<b>Novice</b>	<ul style="list-style-type: none"> <li>• Rigidity in asking questions / uses closed ended questions</li> <li>• Lack of discipline to follow a pattern and recognize its importance</li> <li>• Focuses on results (command and control)</li> <li>• Not able to hear and identify when learner has hit a Threshold of Knowledge</li> </ul>	

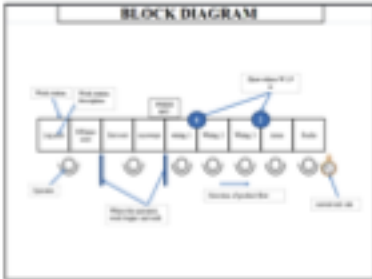
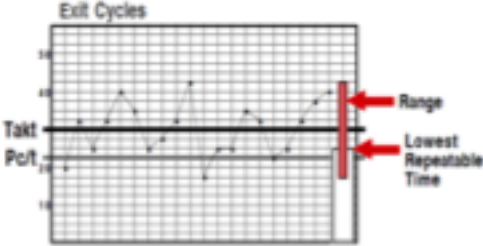
# Coaching Cycle Forms



# WHO USES WHAT FORMS



# WHERE THE FORMS GO ON THE LEARNER'S STORYBOARD

<b>Focus Process:</b>		<b>Challenge:</b>																								
<p><b>Target Condition</b> Achieve by: _____</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>TARGET CONDITION</b> <small>Achieve by date</small></p> <p>Process: _____ Challenge: _____</p> <p>DESCRIPTION OF PROCESS STEPS, SEQUENCE &amp; TIMES</p> <p>1</p> <p>2</p> <p>3 PROCESS METRIC/S</p> <p>4 OUTCOME METRIC/S</p> </div>	<p><b>Current Condition Now</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>CURRENT CONDITION</b> <small>Process Metric Outcome Metric</small></p> <p>Process: _____ Challenge: _____</p> <p>1 Takt time</p> <p>2 Pct/</p> <p>3 n of Shifts</p> <p>Process steps, Sequence, Times</p> <p>4 Batch Size, Where WIP</p> <p>5 n of Operators</p> <p>6 n of cycle fluctuations</p> <p>Other Observations about the current pattern</p> <p>7 Equipment Capacity</p> <p>8 n of Operators calculated</p> <p>9 Actual output / shift</p> <p>10 Overtime</p> </div> <div style="text-align: center; margin-top: 20px;"> <p><b>BLOCK DIAGRAM</b></p>  </div> <div style="text-align: center; margin-top: 20px;"> <p><b>Exit Cycles</b></p>  </div>	<p><b>PDCA Cycles Record</b></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 5px;">Process</th> <th style="text-align: left; padding: 5px;">Process</th> </tr> <tr> <th style="text-align: left; padding: 5px;">Step, Step &amp; Metric 'What do you expect?'</th> <th style="text-align: left; padding: 5px;">What happened?</th> <th style="text-align: left; padding: 5px;">What we learned</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">1</td> </tr> <tr> <td style="text-align: center; padding: 5px;">2</td> <td style="text-align: center; padding: 5px;">2</td> <td style="text-align: center; padding: 5px;">2</td> </tr> <tr> <td style="text-align: center; padding: 5px;">3</td> <td style="text-align: center; padding: 5px;">3</td> <td style="text-align: center; padding: 5px;">3</td> </tr> <tr> <td style="text-align: center; padding: 5px;">4</td> <td style="text-align: center; padding: 5px;">4</td> <td style="text-align: center; padding: 5px;">4</td> </tr> <tr> <td style="text-align: center; padding: 5px;">5</td> <td style="text-align: center; padding: 5px;">5</td> <td style="text-align: center; padding: 5px;">5</td> </tr> </tbody> </table>	Process		Process	Step, Step & Metric 'What do you expect?'	What happened?	What we learned	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5			
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**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 →

# CURRENT CONDITION / TARGET CONDITION



Overarching Breakthrough Challenge

Learner:

Coach:

Process:

Categories		Current Condition <span style="color: red;">Date</span>	Target Condition <span style="color: red;">Achieve-By Date</span>
<b>1</b> Task unit & time to complete	Takt time		
	Pc/t		
	# of Shifts		
<b>2</b> Current operating pattern	Process steps and sequence	<i>show block diagram</i>	<i>show block diagram</i>
	Batch size		
	Where WIP accumulates		
	Number of operators		
	% exit cycle (at end fluctuation of line)	<i>+ show all run charts</i>	
	Process metric		
<b>3</b> Equipm. capacity	Machine capacity chart	<i>show chart</i>	<i>show chart</i>
<b>4</b> People required	Calculated number of operators		
<b>5</b> Outcome metrics	Actual output / shift	<i>show run chart</i>	
	Overtime?		

# CURRENT CONDITION / TARGET CONDITION



Challenge:

Learner:

Coach:

Process:

Outcome Metric

Process Metric

	Categories	Current Condition <span>Date</span>	Target Condition <span>Achieve-By Date</span>
1	Task unit and time to complete		
2	Current operating pattern		
3	Equipment capacity		
4	Number of people required		
5	Outcome metrics (performance data)		

# CURRENT CONDITION / TARGET CONDITION



Challenge:

Learner:

Coach:

Process:

Outcome Metric

Process Metric

Categories

Current Condition

Date

Target Condition

Achieve-By Date

WORK STEPS & SEQUENCE				Process:		Date:	
Operator	Operator	Operator	Operator	Work Sequence ① ② ③	Walking →	Return to Start ←	Standard WIP ●

As you progress, you can develop a more detailed description of work steps for each operator, called a *Standard Work Chart*. For non-manufacturing processes you can use or develop a different depiction of work steps and sequence



# Obstacle Parking Lot

**Obstacle**

**How can you  
measure that?**

●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____
●	_____	_____

# PDCA CYCLES RECORD *(Each row = one experiment)*

**Obstacle:**

**Process:**

**Learner:**

**Coach:**

**Date, step & metric**

**What do you expect?**

**What happened**

**What we learned**

*Do a Coaching Cycle*

*Conduct the Experiment*

## 5 QUESTION CARD (front)

**COACHING KATA**

### 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

## 5 QUESTION CARD (back)

### 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*

# COACHING CYCLE PLAN & TRACKING

Coach: \_\_\_\_\_

Dates: \_\_\_\_\_

Plan Note learner and start & end time	Time	Draw a dot for actual start and end times				
		Monday	Tuesday	Wednesday	Thursday	Friday
	7:00					
	8:00					
	9:00					
	10:00					
	11:00					
	12:00					
	13:00					
	14:00					
	15:00					
	16:00					
	17:00					
	18:00					

<b>COACHING CYCLE OBSERVATIONS</b>		<b>Process:</b>
		<b>Date:</b>
<b>Coach:</b>	<b>Learner:</b>	<b>Start/End:</b>
<b>Question</b>	<b>COACH</b>	<b>LEARNER</b>
<i>Review Challenge</i>		
<i>Q1: Target condition?</i>		
<i>Q2: Actual condition now?</i>		
<i>Reflect: PDCA Cycles Record</i>		
<i>Q3: Obstacles? Which one?</i>		
<i>Q4: Next step? PDCA Record</i>		
<i>Q5: When see what learned?</i>		
What is the knowledge threshold?		Impressions:
Key point(s) for this Coach to practice next:		Next coaching cycle: