



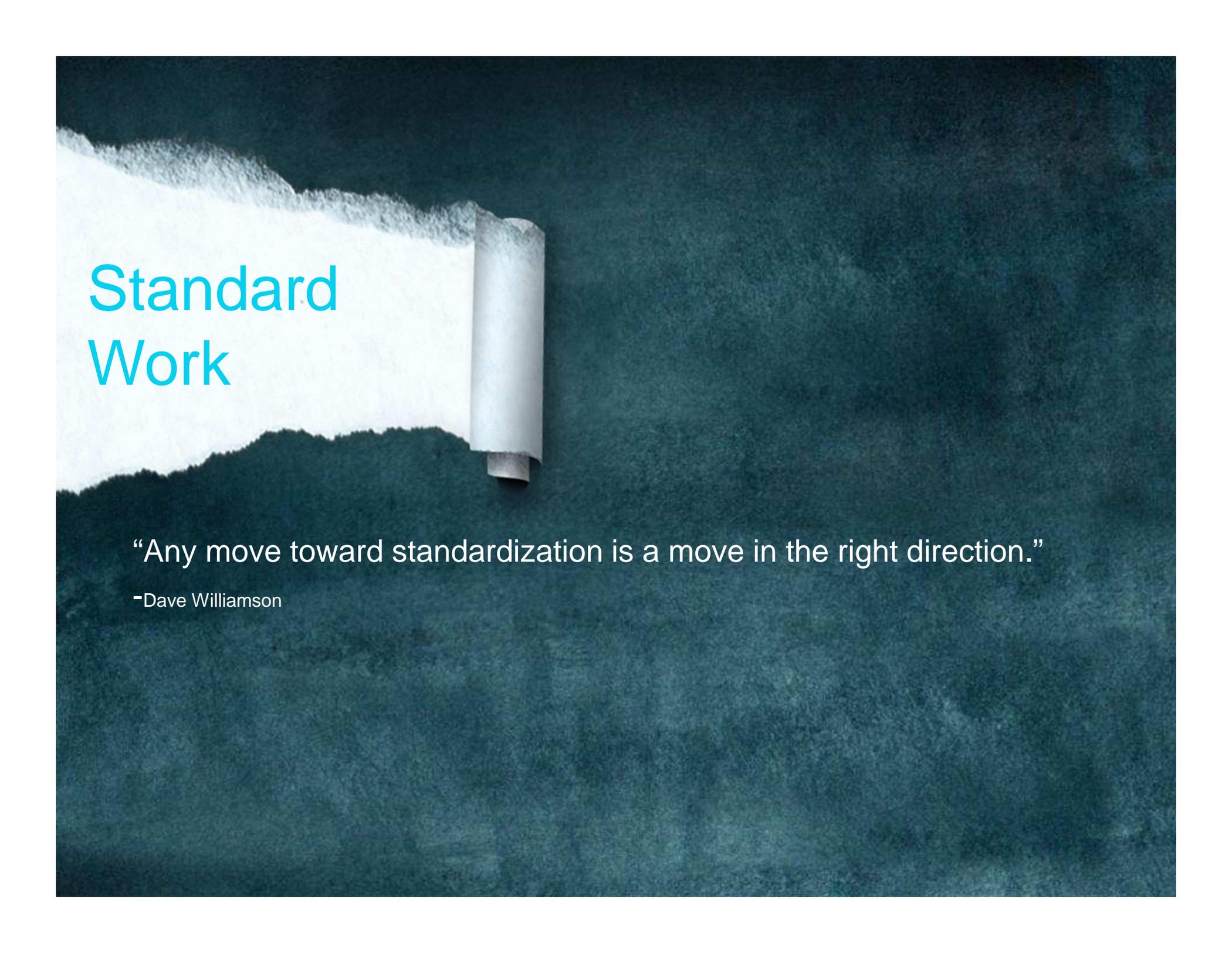
**LEANOhio**  
SIMPLER • FASTER • BETTER • LESS COSTLY

Now we bring you...

**STANDARD PROCESSES  
FOR CREATING  
CONSISTANT SERVICES**

A roll of white paper is partially unrolled, resting on a dark blue, textured background. The paper is bright white and contrasts sharply with the dark background. The text 'Standard Work' is written in a light blue, sans-serif font over the white paper.

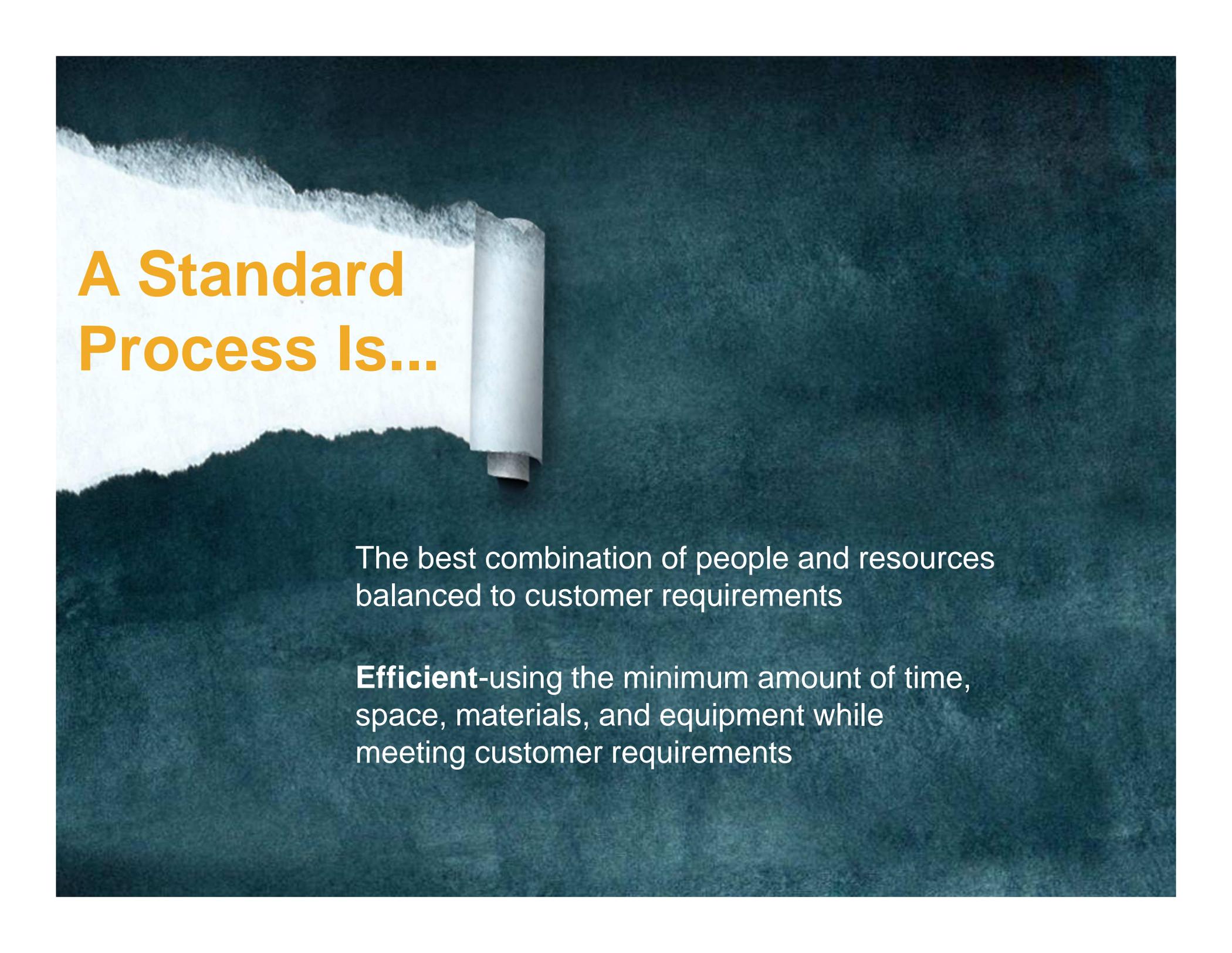
# Standard Work



# Standard Work

“Any move toward standardization is a move in the right direction.”

-Dave Williamson



# A Standard Process Is...

The best combination of people and resources  
balanced to customer requirements

**Efficient**-using the minimum amount of time,  
space, materials, and equipment while  
meeting customer requirements



# Standard Processes

## Why Implement Standard Processes?

To make it possible to identify and eliminate variations in work

To deliver consistent service to citizens

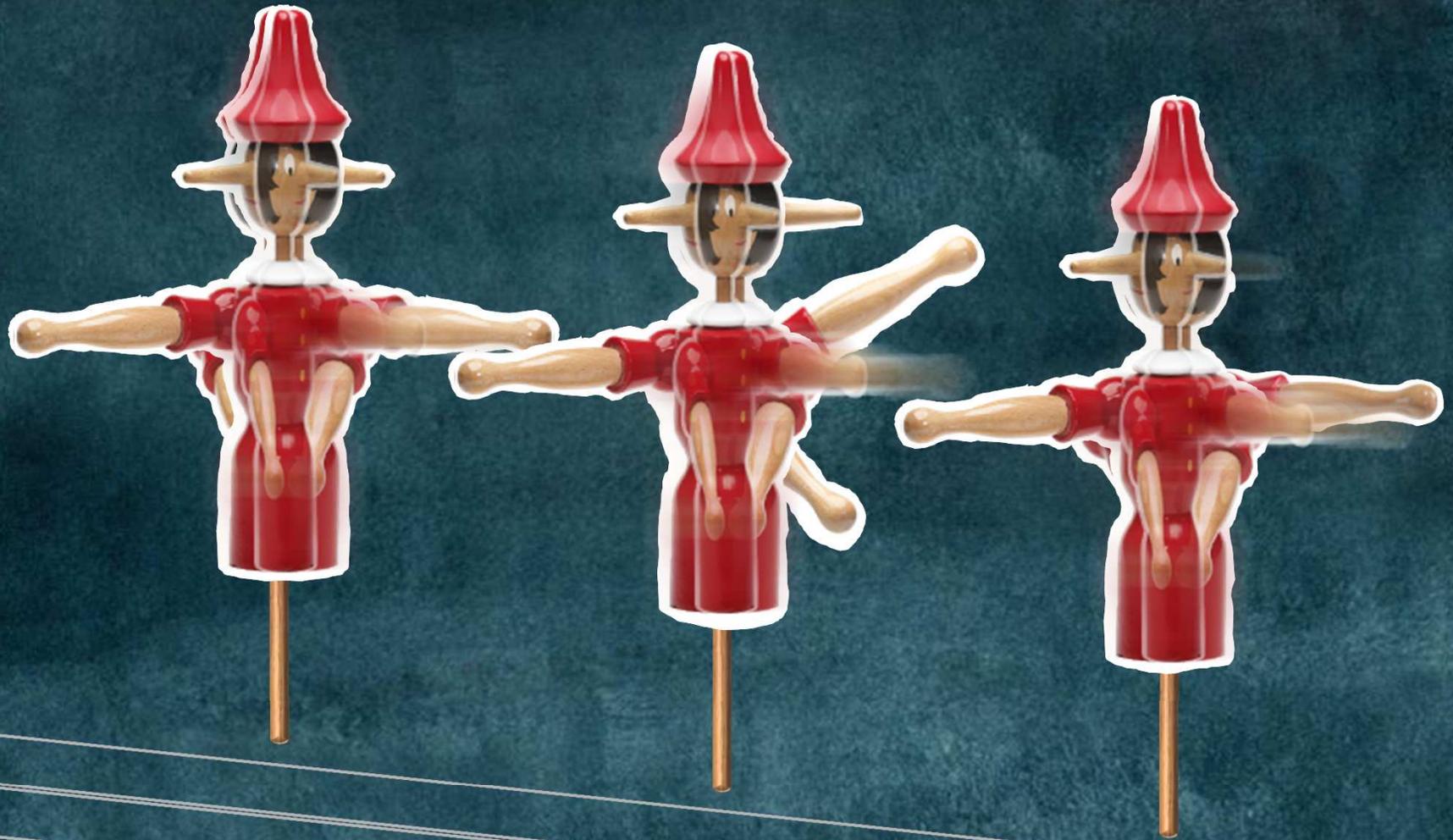
## How Do You Use Standard Processes?

Document each standard process

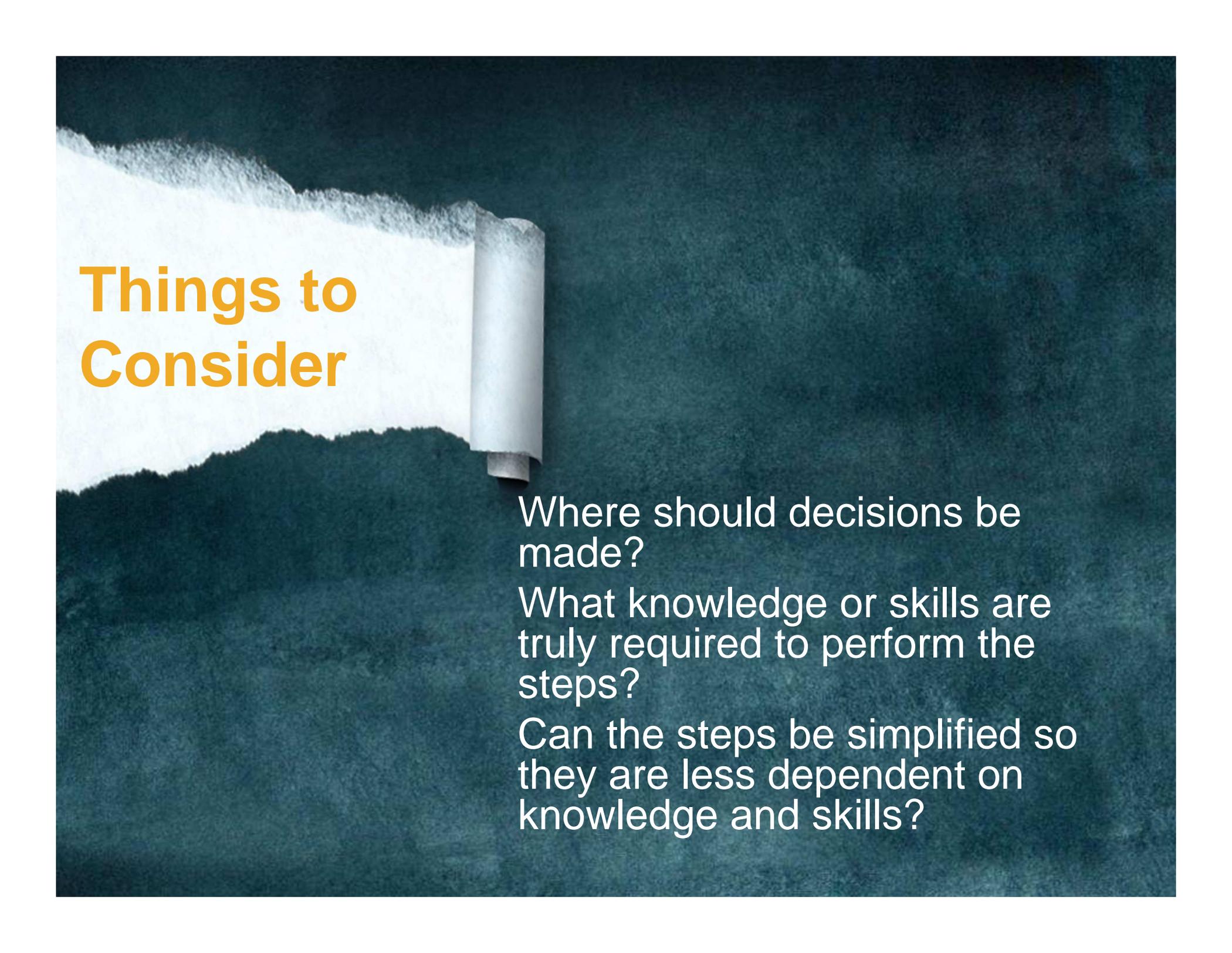
Display the documentation

Ensure that all staff are trained

VARIATION is EVIL



What is the ideal ordering of steps?

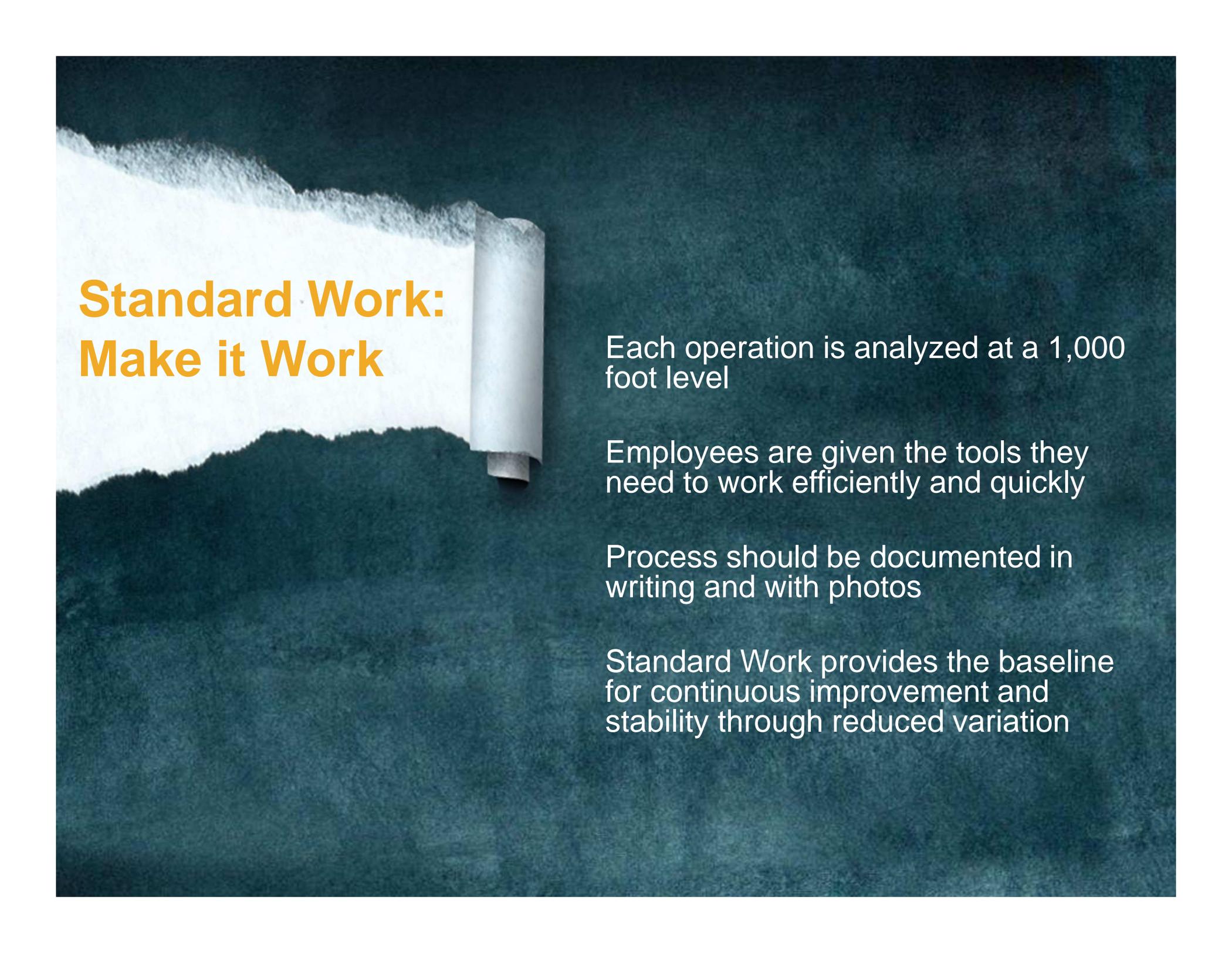


# Things to Consider

Where should decisions be made?

What knowledge or skills are truly required to perform the steps?

Can the steps be simplified so they are less dependent on knowledge and skills?



## **Standard Work: Make it Work**

Each operation is analyzed at a 1,000 foot level

Employees are given the tools they need to work efficiently and quickly

Process should be documented in writing and with photos

Standard Work provides the baseline for continuous improvement and stability through reduced variation



<http://www.youtube.com/watch?v=Xedkk1xvgeo>



# McDonald's

HAMBURGER

15¢

CHEESEBURGER

19¢

FRENCH FRIES

10¢

MILK

10¢

MILK SHAKE

Chocolate

Strawberry

Vanilla

20¢

ROOT BEER

10¢

ORANGEADE

10¢

COCA COLA

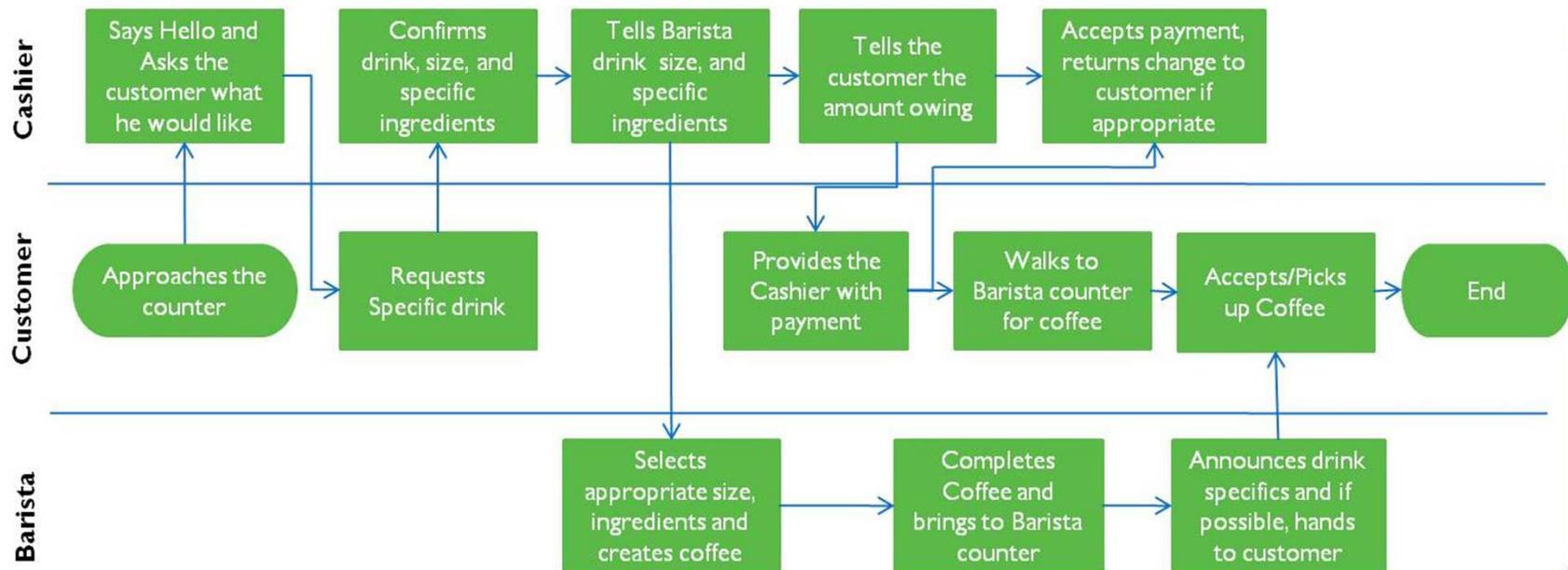
10¢

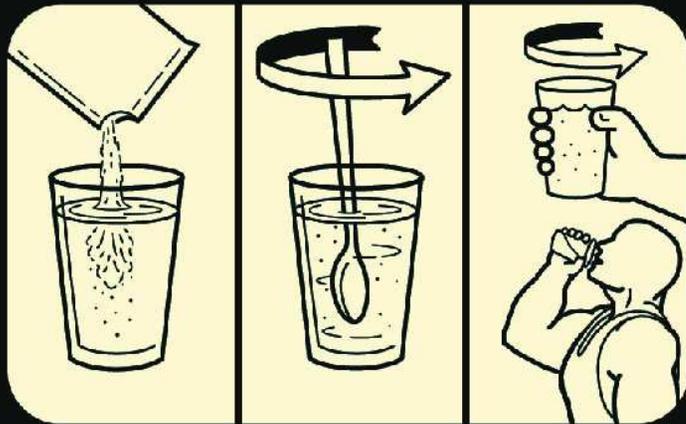
COFFEE

10¢



## Beverage Ordering





## LARGE DECALS | Installation Instructions



**#1**  
First, if your decal comes in sections, make sure you have separated all the sections before positioning them on the wall. You can easily do this with a pair of scissors. You'll also want to make sure your surface is CLEAN and completely DRY before installing your decals.



**#2**  
Now, position your decal on the wall and secure it in place with pieces of painter's tape. Make sure you're happy with the placement, because this is where it's going to be applied! Using a level and a tape measure during this step may be helpful. Then, take a long piece of painter's tape and place it up and down (or across) the middle of the decal (as shown) to divide it into two halves. This method is referred to as the "hinge" method.



**#3**  
Choose one half of the decal to work with and fold it over the other half (that's taped to the wall.) Carefully separate the hard paper backing from the transfer paper and decal. (The hard paper backing will have the vinyl manufacturer's logo on it, such as Oracal) Be sure all pieces of the decal are sticking to the transfer paper as you remove the backing, otherwise it will stretch and tear the decal. Now the adhesive from the decal and transfer paper will be exposed, but make sure they don't fold over and stick to themselves!



**#4**  
Once the paper backing is removed from the first half of the decal, you'll need to remove the backing by trimming it off with scissors. Be sure not to cut the transfer paper or decal, and don't let it stick to anything yet!



**#5**  
Holding this half of the decal perpendicular to the wall, start from the center where your hinge tape is and smooth the transfer paper and decal with your hand starting from the middle and working your way towards the edge. Repeat steps with enclosed squeegee in a sunburst pattern. This pushes air bubbles out and allows your decals to stick better. :)



**#6**  
Remove the "hinge" tape as well as any other painter's tape that's holding the decal in place. Carefully remove the hard paper backing from the other half of the transfer paper and decal. Remember, don't let the adhesive from decal or transfer paper stick to themselves or anything else.



**#8**  
Carefully peel the transfer paper from the wall. The best way to do this is to start at one corner, and roll it back over onto itself. Doing this keeps pressure against the decal while the transfer paper is being removed. Be sure the decal sticks to the wall and does not come off with the transfer paper. If the decal comes up, firmly press transfer paper back to the wall & smooth again with the squeegee.



**#9**  
For decals that come in sections, repeat the above outlined process. You'll want to overlap the decals to fit during the placement step. Trimming any extra paper will help with the overlapping. Smaller pieces can be installed by simply removing the paper backing and applying the decal.

**Don't forget to send us your pictures!**





### The Blog Post Checklist

1. Did I read the post after writing it?
2. Is the post as complete as it could be?
3. Did I research the related keywords?
4. Did I craft the title carefully?
5. Did I proofread it?
6. Did I link to one or more of my older posts?
7. Did I link to external resources when appropriate?
8. Did I make sure all links are working?
9. Did I credit any sources I might have used?
10. Did I include an enticing image?
11. Did I optimize the permalink?
12. Did I add one or more elements to engage readers?
13. Is this a good day for traffic?

<http://www.dailyblogtips.com>

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### APPROVED B-17F and G CHECKLIST

REVISED 3-1-44

PILOT'S DUTIES IN RED  
COPILOT'S DUTIES IN BLACK

#### BEFORE STARTING

1. Pilot's Preflight—COMPLETE
2. Form 1A—CHECKED
3. Controls and Seats—CHECKED
4. Fuel Transfer Valves & Switch—OFF
5. Intercoolers—Cold
6. Gyros—UNCAGED
7. Fuel Shut-off Switches—OPEN
8. Gear Switch—NEUTRAL
9. Cowl Flaps—Open Right—OPEN LEFT—Locked
10. Turbos—OFF
11. Idle cut-off—CHECKED
12. Throttles—CLOSED
13. High RPM—CHECKED
14. Autopilot—OFF
15. De-icers and Anti-icers, Wing and Prop—OFF
16. Cabin Heat—OFF
17. Generators—OFF

#### STARTING ENGINES

1. Fire Guard and Call Clear—LEFT Right
2. Master Switch—ON
3. Battery switches and inverters—ON & CHECKED
4. Parking Brakes—Hydraulic Check—On—CHECKED
5. Booster Pumps—Pressure—ON & CHECKED
6. Carburetor Filters—Open
7. Fuel Quantity—Gallons per tank
8. Start Engines: both magnetos on after one revolution
9. Flight Indicator & Vacuum Pressures CHECKED
10. Radio—On
11. Check Instruments—CHECKED
12. Crew Report
13. Radio Call & Altimeter—SET

#### ENGINE RUN-UP

1. Brakes—Locked
2. Trim Tabs—SET
3. Exercise Turbos and Props
4. Check Generators—CHECKED & OFF
5. Run up Engines

#### BEFORE TAKEOFF

1. Tailwheel—Locked
2. Gyro—Set
3. Generators—ON

#### AFTER TAKEOFF

1. Wheel—PILOT'S SIGNAL
2. Power Reduction
3. Cowl Flaps
4. Wheel Check—OK right—OK LEFT

#### BEFORE LANDING

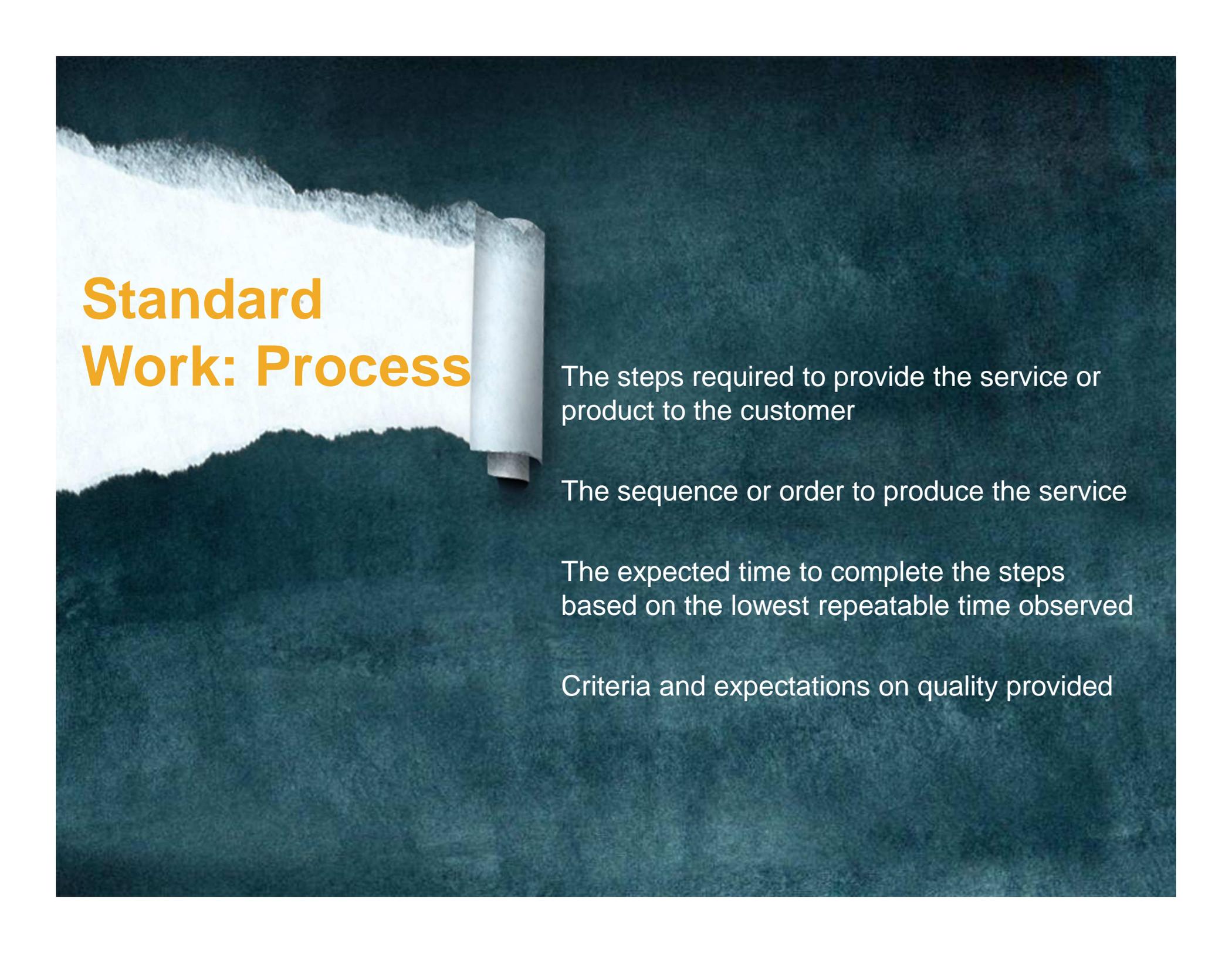
1. Radio Call, Altimeter—SET
2. Crew Positions—OK
3. Autopilot—OFF
4. Booster Pumps—On
5. Mixture Controls—AUTO-RICH
6. Intercooler—Set
7. Carburetor Filters—Open
8. Wing De-icers—Off
9. Landing Gear
  - a. Visual—Down Right—DOWN LEFT  
Tailwheel Down, Antenna in, Ball Turret Checked
  - b. Light—OK
  - c. Switch Off—Neutral
10. Hydraulic Pressure—OK Valve closed
11. RPM 2100—Set
12. Turbos—Set
13. Flaps  $\frac{1}{2}$ — $\frac{1}{2}$  Down

#### FINAL APPROACH

14. Flaps—PILOT'S SIGNAL
15. RPM 2200—PILOT'S SIGNAL

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# Standard Work: Process

The steps required to provide the service or product to the customer

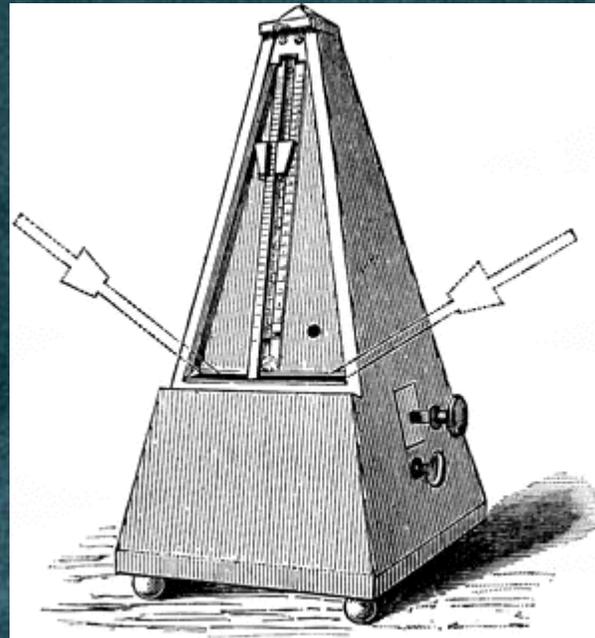
The sequence or order to produce the service

The expected time to complete the steps based on the lowest repeatable time observed

Criteria and expectations on quality provided

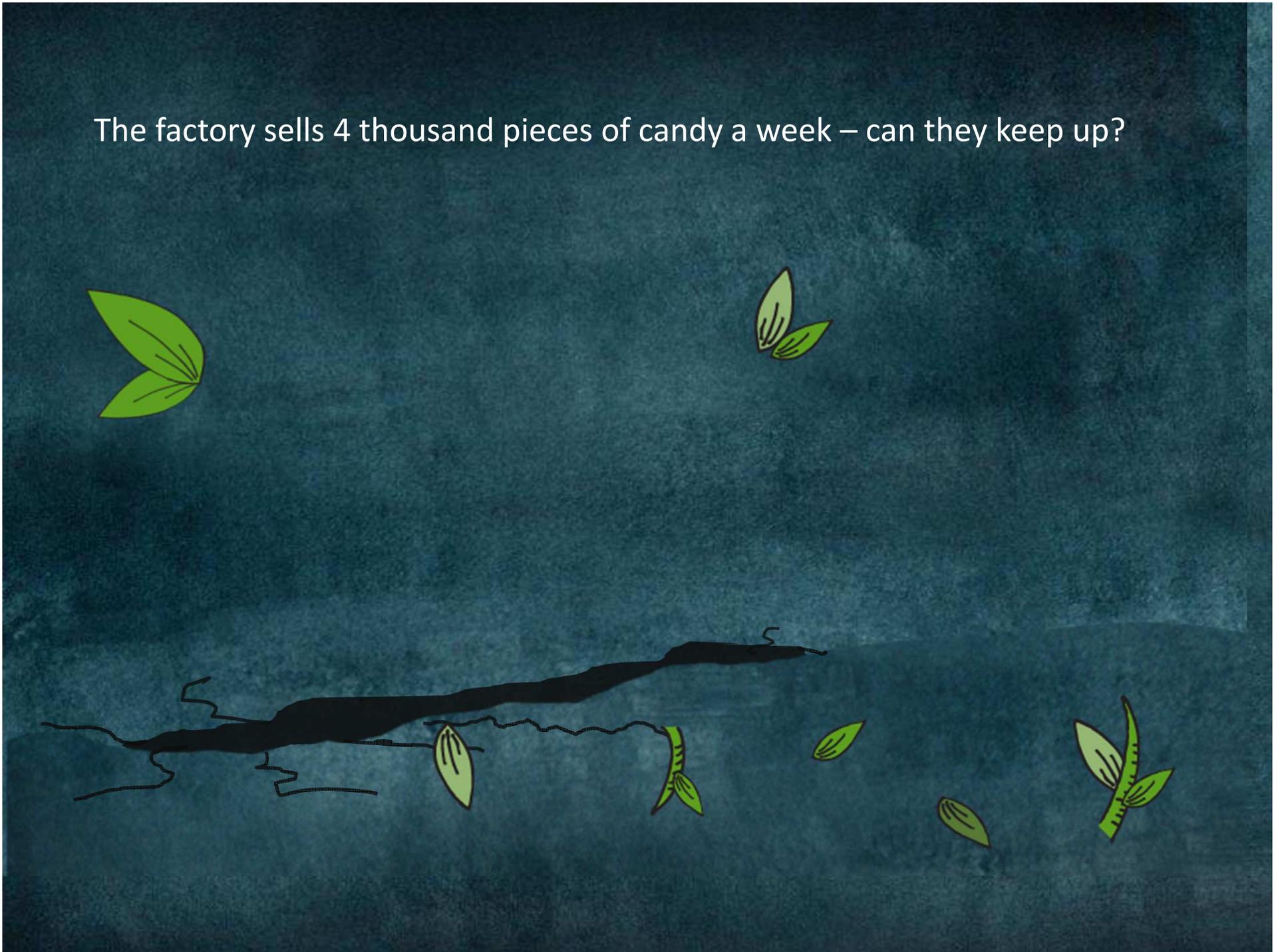
# A Standard Process Is... Measured

Paced-Takt Time



\*From the German *Taktzeit* for “metronome”

The factory sells 4 thousand pieces of candy a week – can they keep up?



# Takt Time

6hrs/day = 390 minutes (available to wrap candy)

4000 (pcs.candy per day) DEMAND

6 seconds per candy

Lucy and Ethel must wrap a candy every 6 seconds

Takt Time Calculator	
Note: A shift = 4 days x 10 hours	
<b>Net Available Time</b>	<b>Customer Demand</b>
Working shifts / day	Customer demand / day
Hours / shift	
Available time / shift	
Break time / shift	
Lunch time / shift	
Planned downtime / shift	
Net working time / shift	
Net working time / shift	
Net available time / day	
	Net available time / day
	Customer demand / day
	takt time =

Takt Time Calculator	
Note: B shift = 3 days x 12 hours	
<b>Net Available Time</b>	<b>Customer Demand</b>
Working shifts / day	Customer demand / day
Hours / shift	
Available time / shift	
Break time / shift	
Lunch time / shift	
Planned downtime / shift	
Net working time / Shift	
Net working time / shift	
Net available time / day	
	Net available time / day
	Customer demand / Day
	takt time =

[http://www.gembapantarei.com/2008/02/101\\_kaizen\\_templates\\_takt\\_time\\_calculator.html](http://www.gembapantarei.com/2008/02/101_kaizen_templates_takt_time_calculator.html)

# A Standard Process Is...Sequenced

Pacing to takt time



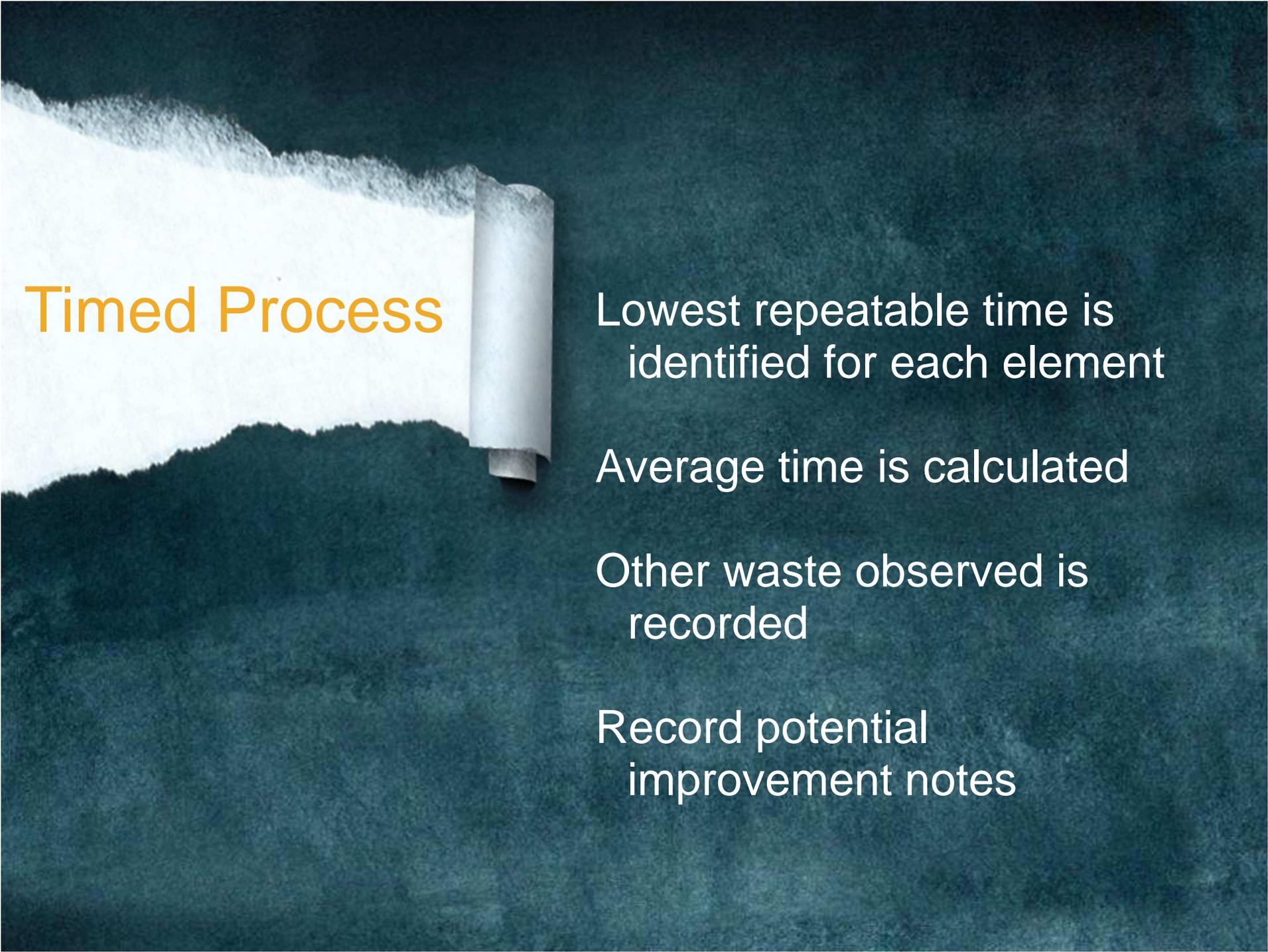
Establishing work sequences



# A Standard Process Is...Timed

Employee	Time – Wrapping Candy	Time – other task
Lucy	4	
Ethel	6	
Lucy	5	
Ethel	3	
Lucy	4	
Ethel	4	
Lucy	6	
Ethel	5	
Lucy	5	
Ethel	6	





## Timed Process

Lowest repeatable time is identified for each element

Average time is calculated

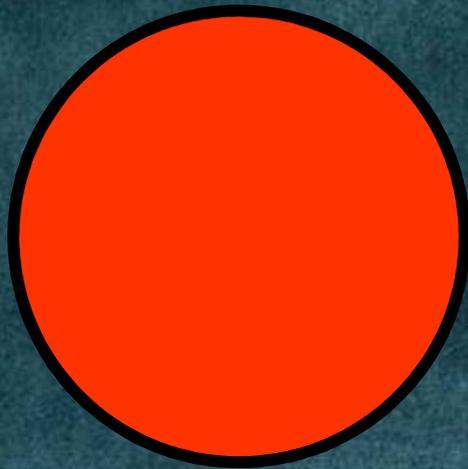
Other waste observed is recorded

Record potential improvement notes

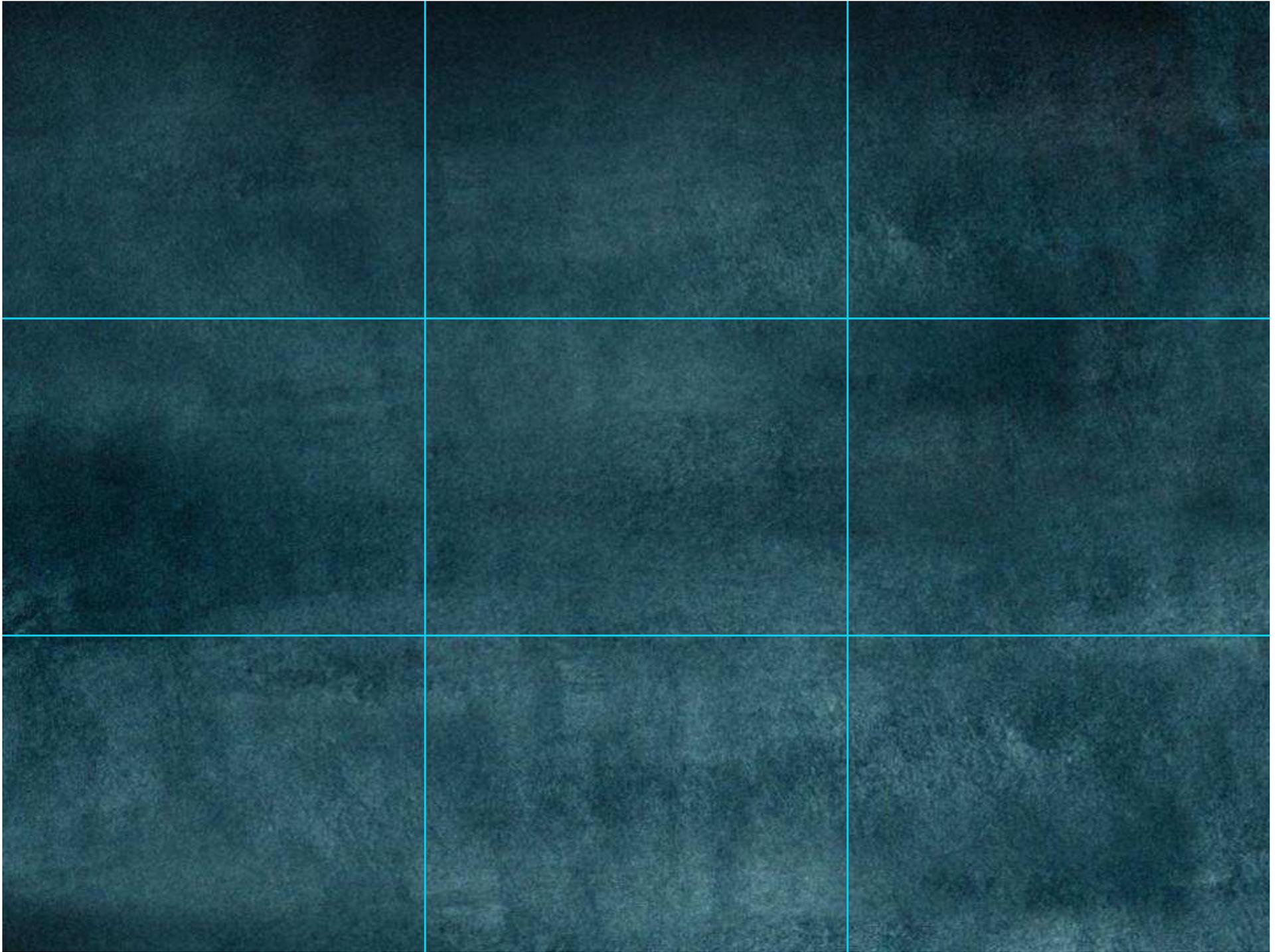
# Standard Work Exercise:

1. Use the blank side of the paper
2. Draw a picture of a pig with:
  - Nose
  - Mouth
  - Four legs
  - Tail
  - Nostrils
  - Eye
  - Body
  - Two ears
3. Must complete the drawing in **30 seconds** per customer demand

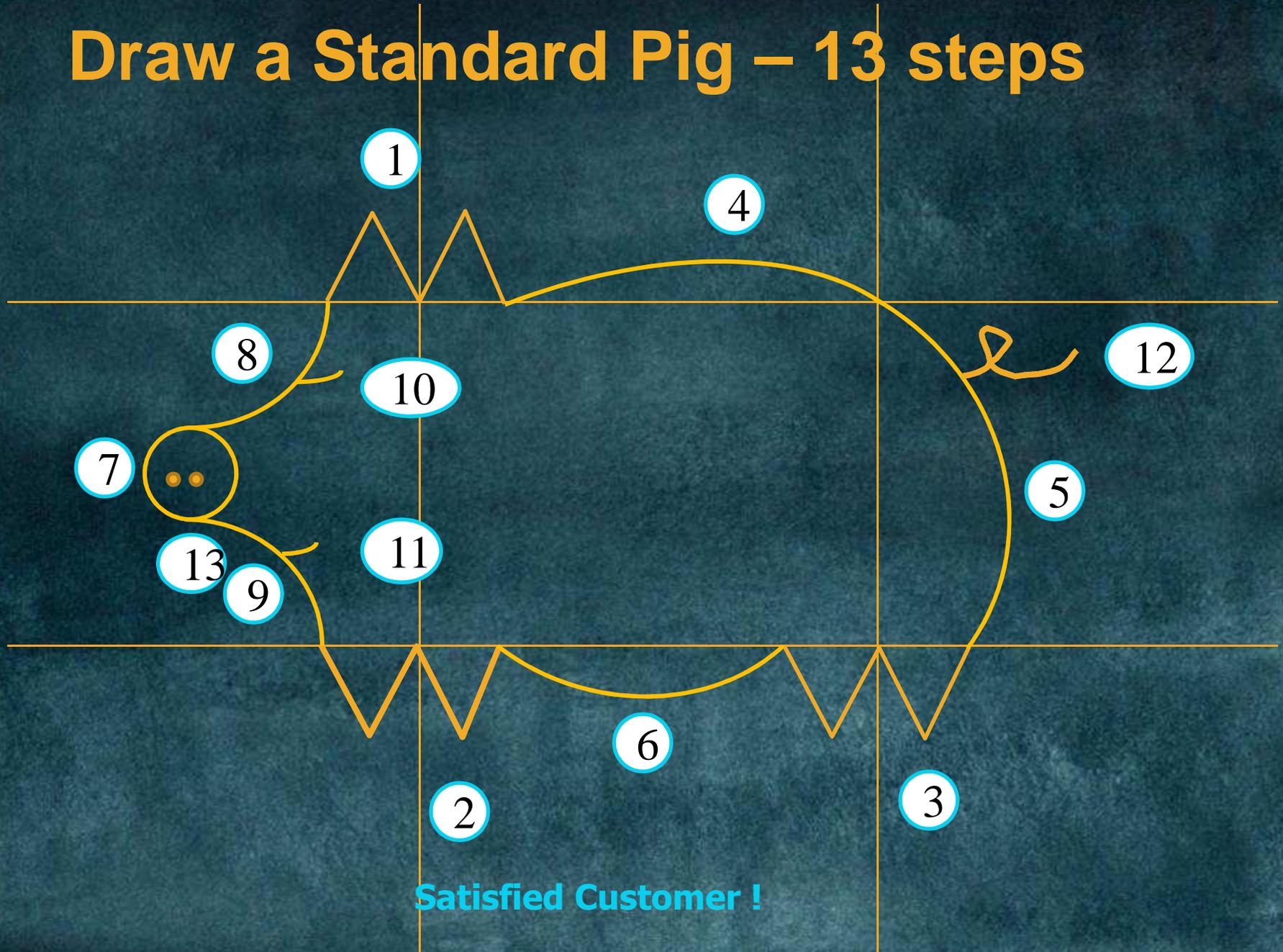
30 Second Timer



End



# Draw a Standard Pig – 13 steps



# All the Cycles = Lead Time

- Combine the cycle (takt) times
- The gives the Lead time of the process
- Or – how long the customer must wait



+



+



=





# Batching

**“BATCHING is the  
enemy of speed.”**

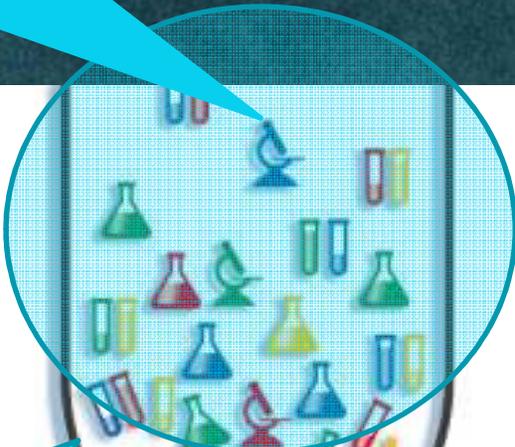
**-Miller**



**First in  
LAST out!**

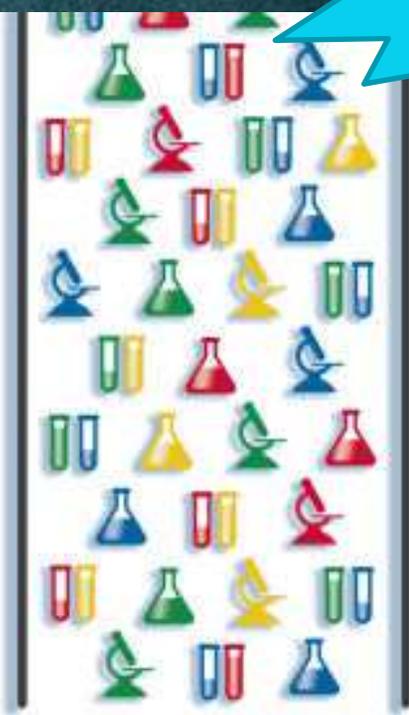
# batching

BATCH Upstream



“Let’s wait until we get a bunch”

BEFORE



“Let’s process them as they come in”

AFTER





# Try This!

- Team1 – write your name on one and pass
- Team2 – write your name on three and pass
- Team3 – write your name on all and pass

