

# 5 Ways to Create Charts and Graphs to Highlight Your Work

---

Presented by Elisabeth Swan  
Managing Partner & Executive Advisor  
at [GoLeanSixSigma.com](http://GoLeanSixSigma.com)



**go** LEANSIXSIGMA.com

# Our Expert: Elisabeth

- **Managing Partner & Executive Advisor at GoLeanSixSigma.com**
- **Master Black Belt**
- **Certified Executive Coach at Burnham Rosen Group**
- **BA in English Literature from Columbia University/ Barnard College**
- **Born in the UK**



# How to Interact

- Ask a question
- Answer polls

QuickPoll

**QUICKPOLL**

**Where are you from?**

Select one of the following:

- North America
- Europe
- Asia
- Other

Submit

GoToWebinar Control Panel

Audio

Telephone  
 Mic & Speakers

MUTED Speaker icon and volume bar

Talking:

▶ Handouts - 0

▼ Questions

Type question here.

Send

Test Webinar for GLSS  
Webinar ID# 122-961-891

GoToWebinar

# Let's Interact!



**Where are you from?**

Share your location in the Questions area in your Control Panel!



# Who Is GoLeanSixSigma.com?

**GoLeanSixSigma.com** makes it easy for everyone everywhere to build their problem-solving muscles.

We provide the most practical, easy to understand and enjoyable Lean and Six Sigma resources available.



# We've Helped People From...



# Today's Agenda

1. How Charts and Data Tell the Story
2. What Does a Histogram Tell You?
3. What Does a Run Chart Tell You?
4. What Does a Box Plot Tell You?
5. What Does a Pareto Chart Tell You?
6. What Does a Scatter Diagram Tell You?
7. How Charting Tricks and Tips Can Help



# Mini-Case Study Problem

- The Bahama Bistro is experiencing excessive breakage which results in replacement costs. There is no reason why there should be so many pieces of dishware breaking at the Bistro. No one has an explanation right now but some customers have mentioned that we seem to have a clumsy staff. The company that supplies the dishware doesn't always stock the right style which means the either operating without enough plates and cups or using non-matching dishware which is not optimal



# “ABC It for Me”

6 pieces of dishware  
break per day on average



I'm not  
sure why...



# Study Carefully

Reporting Information										
Report		Resource	New	New	New	New	Old	Old	Old	
Report	Text	Report	1	2	3	4	1	2	3	
Report	Text	Name	Reconcile	Delivery	Cover	Daily	Update	Destruction		
Report	Text	Background	New	medium	High	Low	Medium	Medium	Medium	
Report	Text	Description	Alert	PDF	Number	Ongoing	Sent	Update		
Report	Text	Frequency	Other	Daily	Daily	Other	Daily	Daily	Monthly	
Report	Text	Audience	Client	Client	Client	Mixed	Mixed	Internal	Client	
Report	number	Consumers	20	35	11	47	58	20	18	
Report	Minutes	SLA	5	4	6	3	5	6		
Report	Times/Mo	Normalized	0.833333	21.66667	21.66667	21.66667	21.66667	21.66667	21.66667	
Capture	Min/Mo	Capture	0	0	0	0	0	0	0	
General	Min/Mo	Pull	5	5	10	5	0			
General	Min/Mo	Aggregate	3	10	2	0	10	0	0	
General	Min/Mo	Manipulate	0	0	0	0	0	0	5	
General	Min/Mo	Validate	0	5	3	0	5	5	0	
General	Min/Mo	Gen	0	7	2	10	15	10	0	
General	Min/Mo	Contribute	2	2	1	10	1		1	
General	Min/Mo	Clarify	0	5	0	30	0	30	0	

# 5 Ways to Visualize Data



**Histogram**



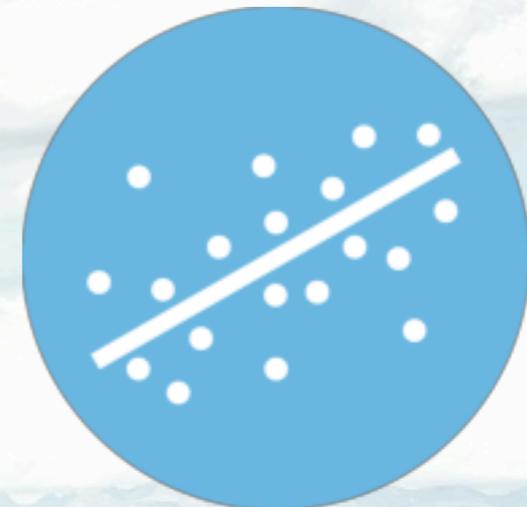
**Box Plot**



**Pareto Chart**



**Run Chart**



**Scatter Plot**



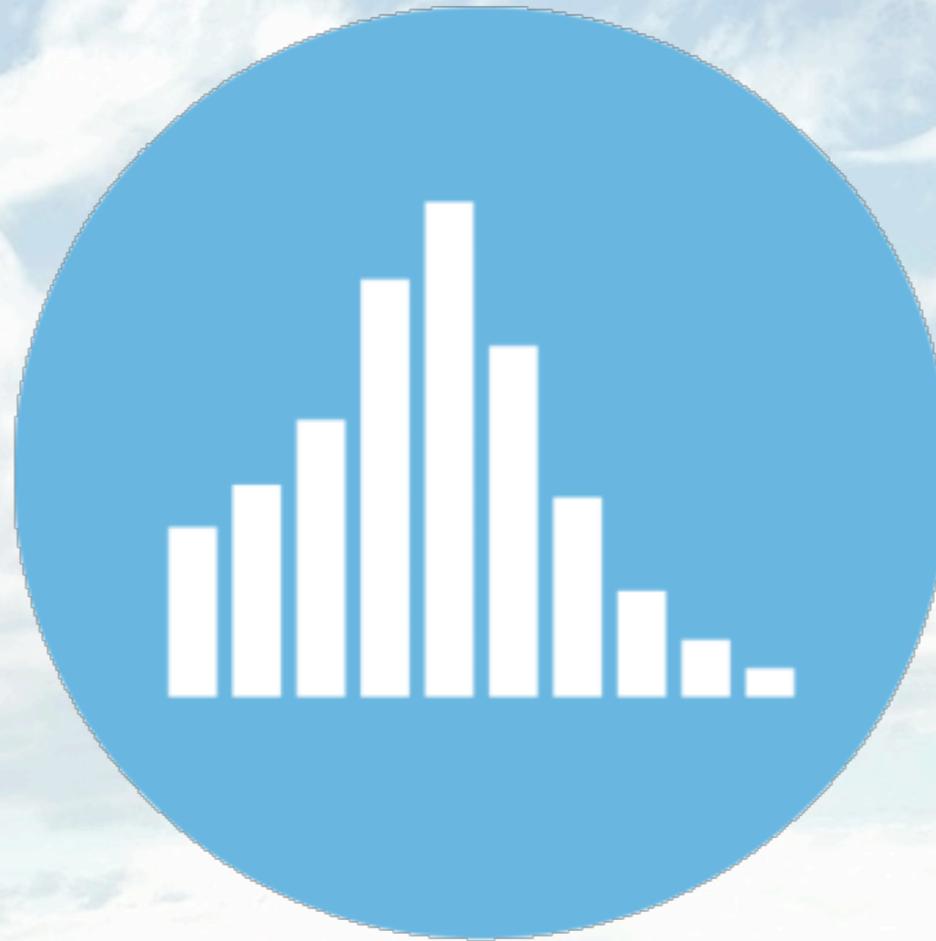
# Poll #1:

## Which is the bigger pet peeve?

- A. When people use (lots of) text to tell a story
- B. When people use a “wall of data” instead of a chart or graph
- C. Neither
- D. Both
- E. Hadn't really thought about it

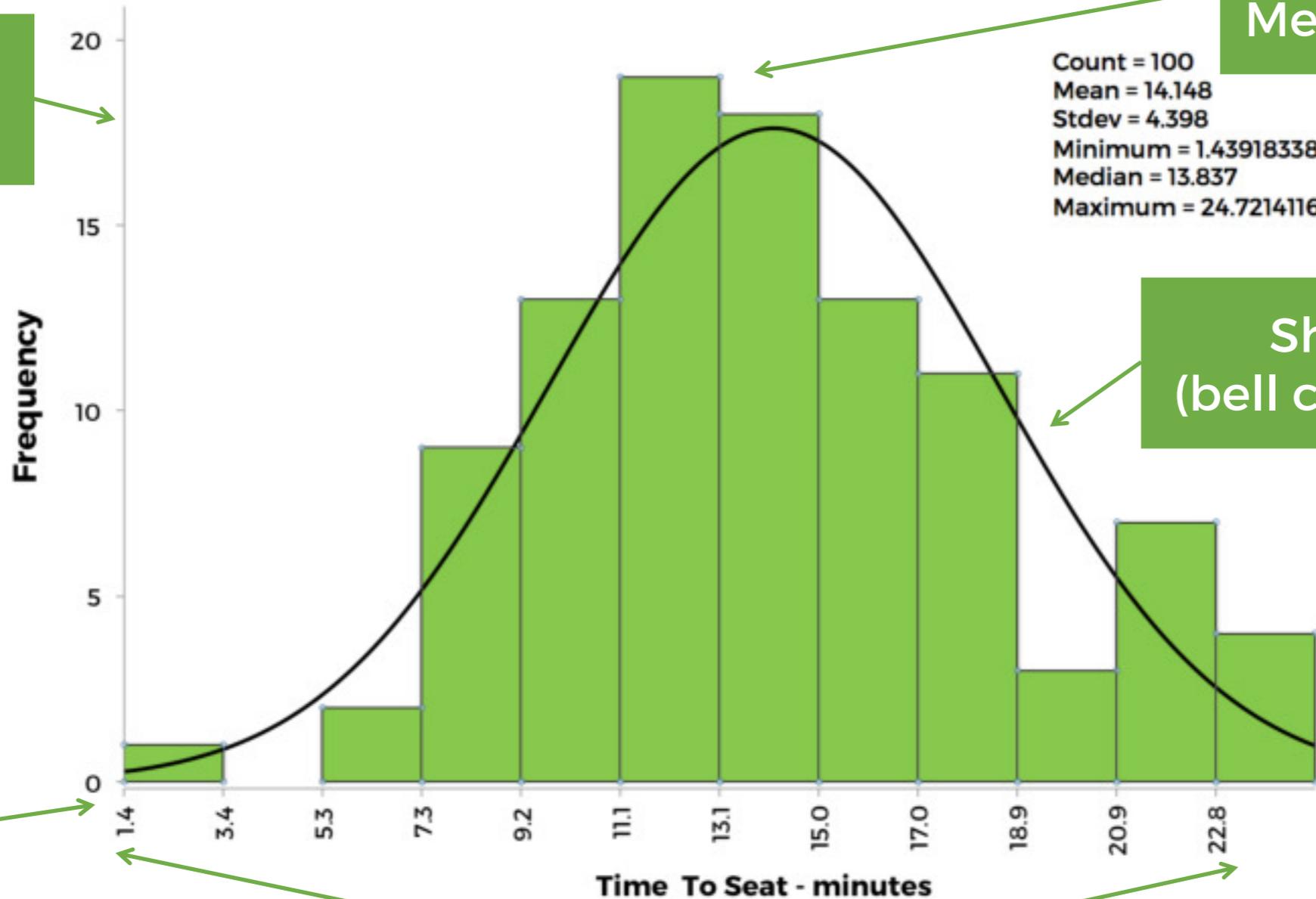


# The Histogram



# What's a Histogram?

## Time to Seat Customers - June



# of times at this level

Center (Mean, Median & Mode)

Shape - (bell curve, etc.)

Scale - (minutes, etc.)

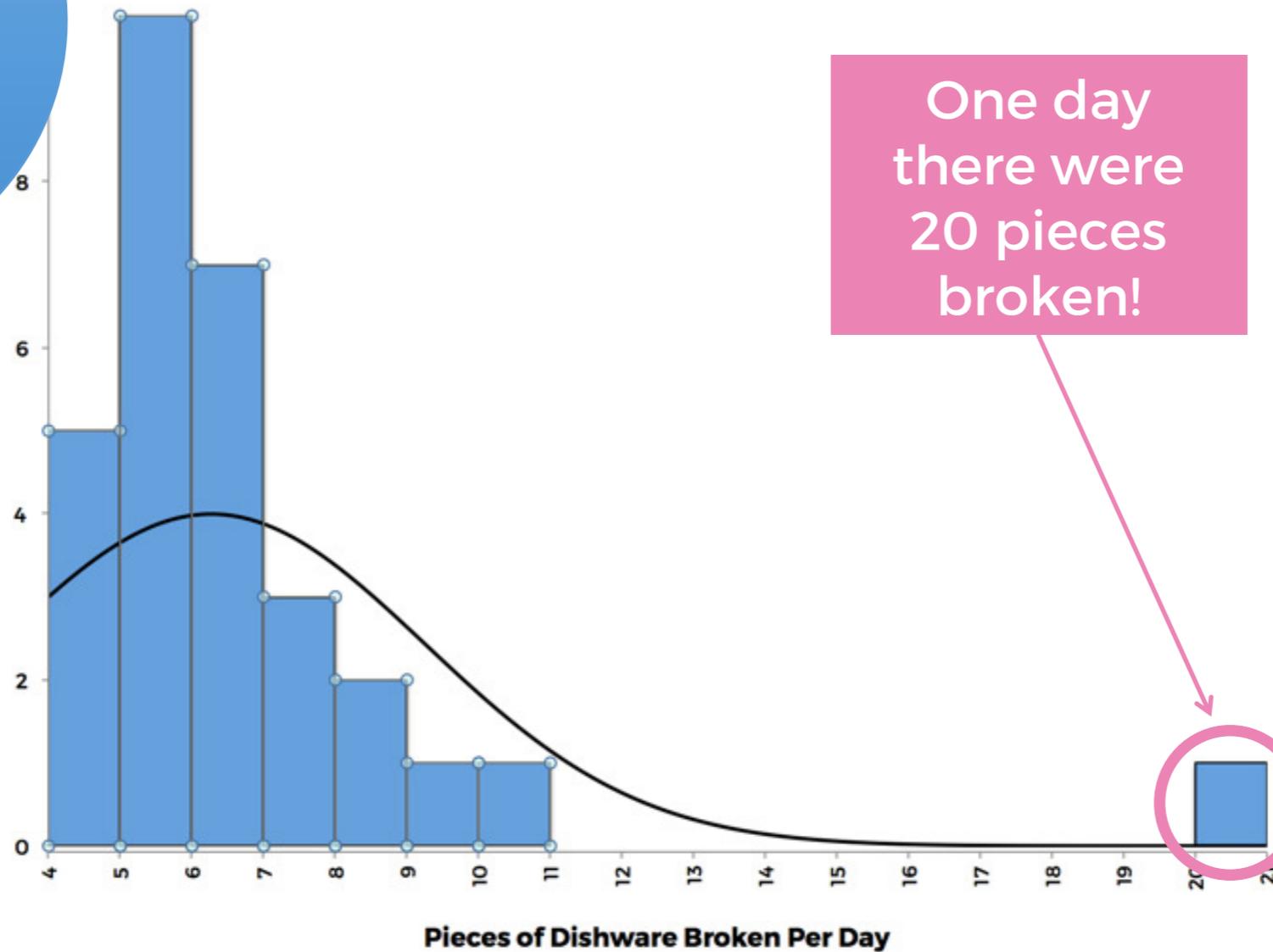
Range = Maximum - Minimum

# What Does the Histogram Tell Us?

What were the actual amounts of broken dishes each day in November?



## Breakage in November



# What Else Can a Histogram Do?

Compare process performance to customer requirements



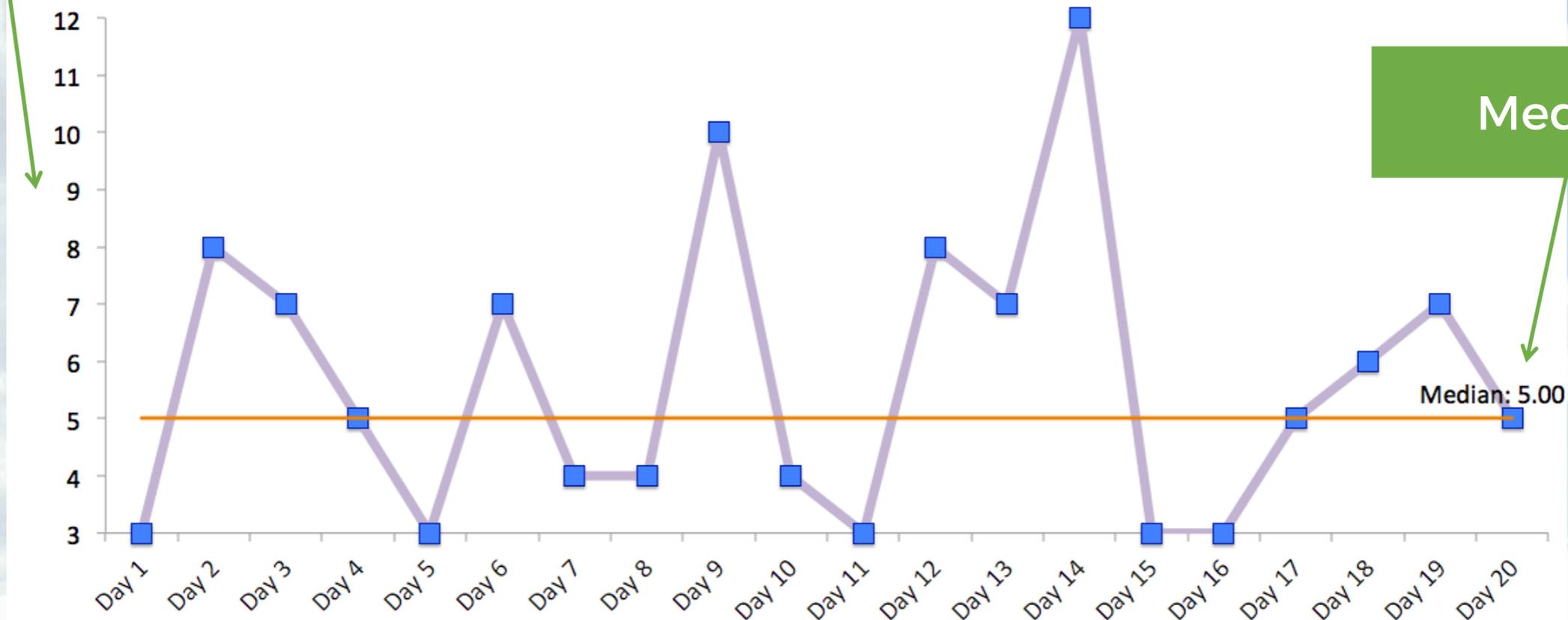
Highlight what is unacceptable to customers

# The Run Chart (Time Plot)



# What's a Run Chart (Time Plot)?

Level (minutes, defects, etc.)



Median

Time Period

# What Does the Run Chart Tell Us?

What's happening with dishware breakage over time?

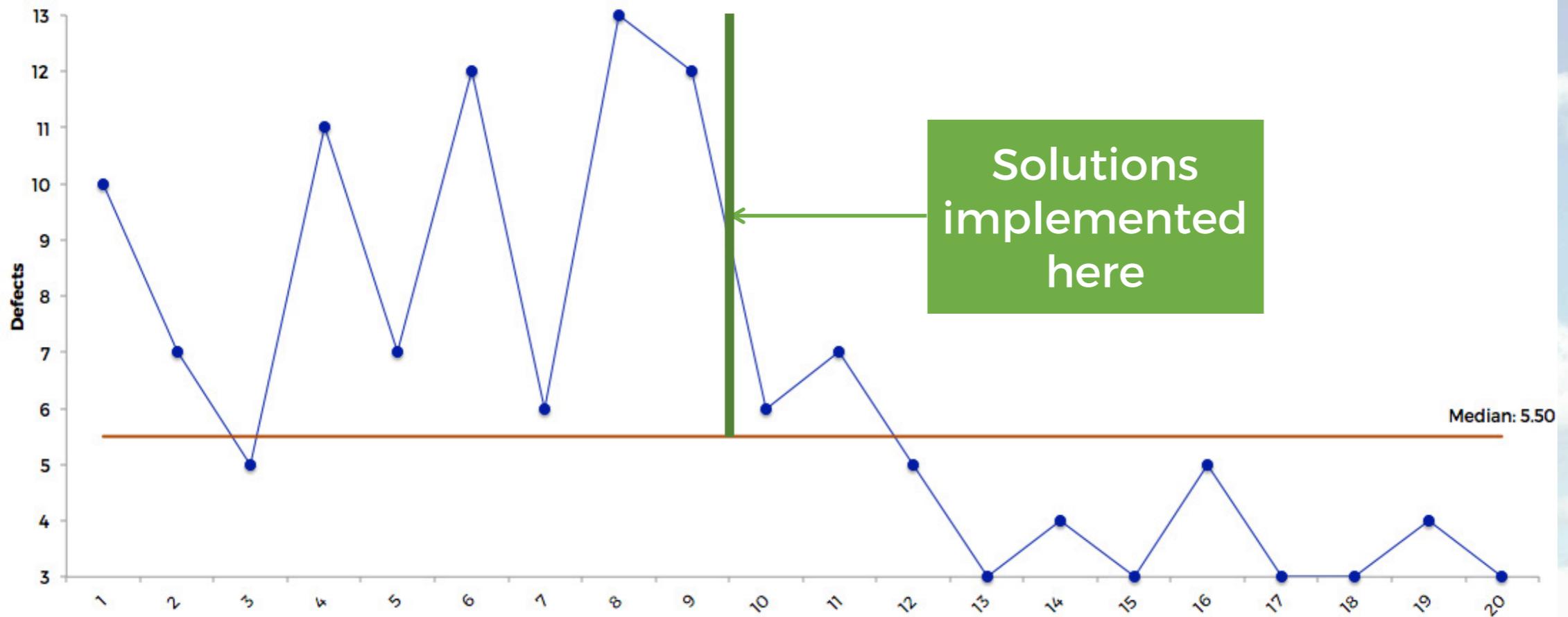


### Breakage Per Day in November



# What Else Can a Run Chart Do?

## Time to Seat Customers

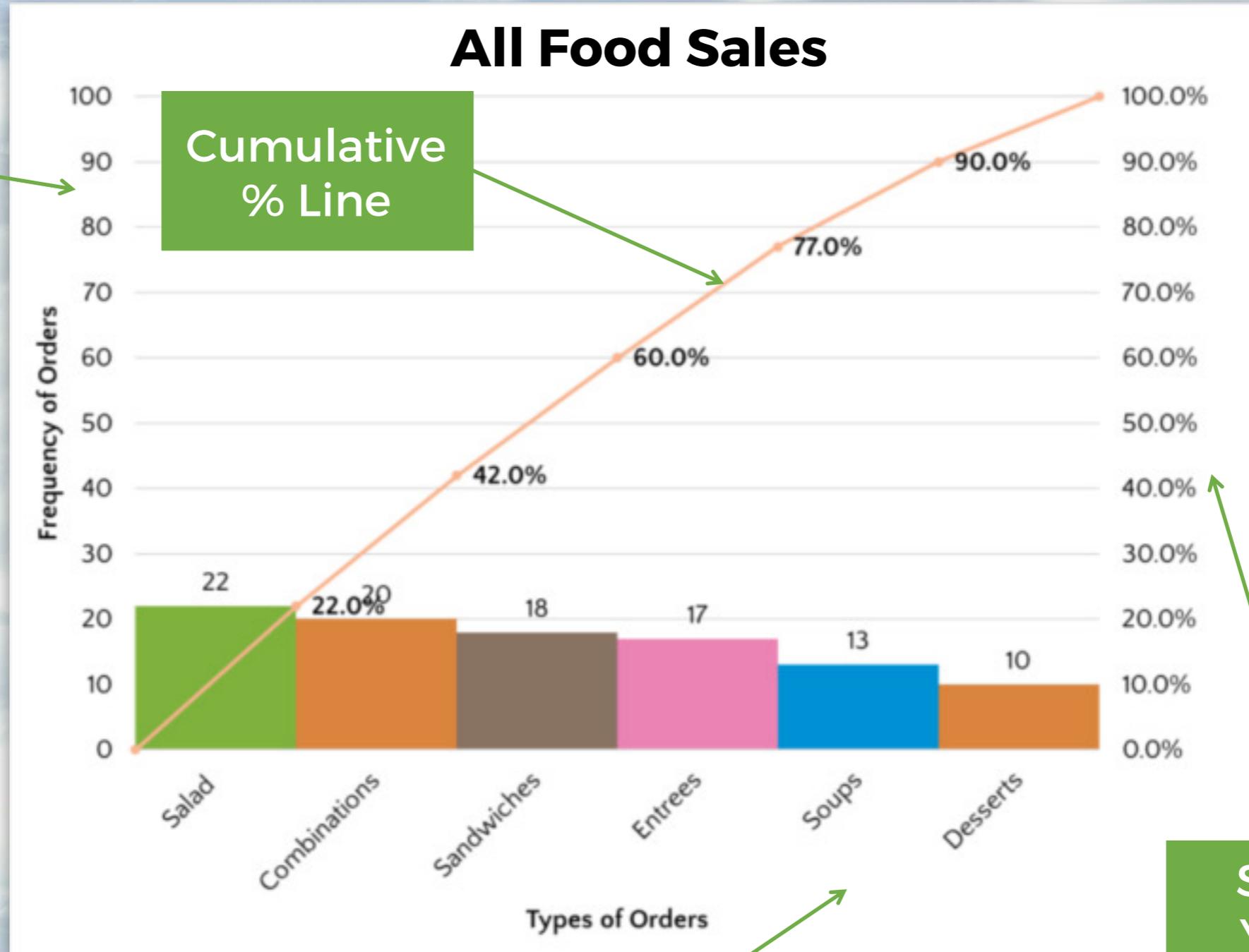


# The Pareto Chart



# What's a Pareto Chart?

Number of Units

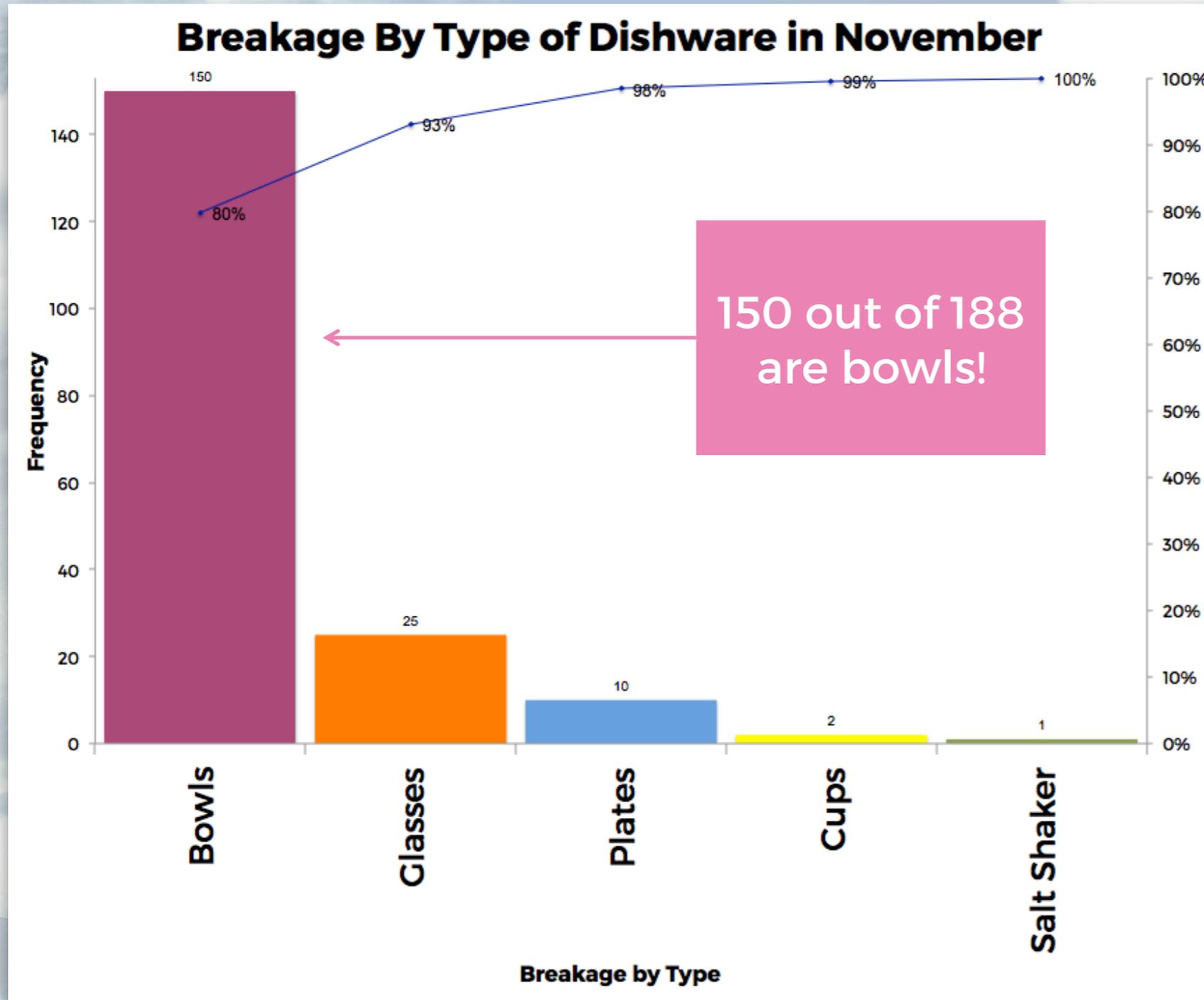


Cumulative % Line

Second Y Axis - Percentage

Categories

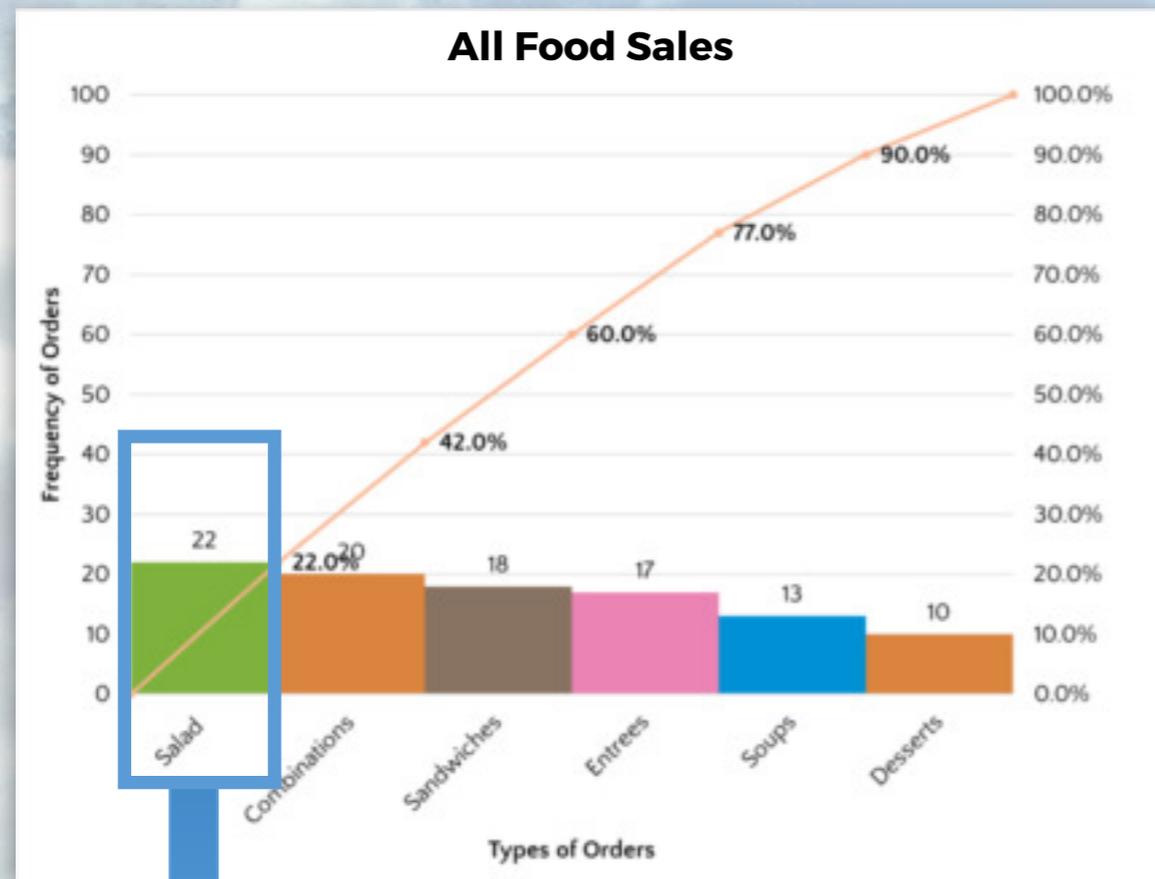
# What Does the Pareto Tell Us?



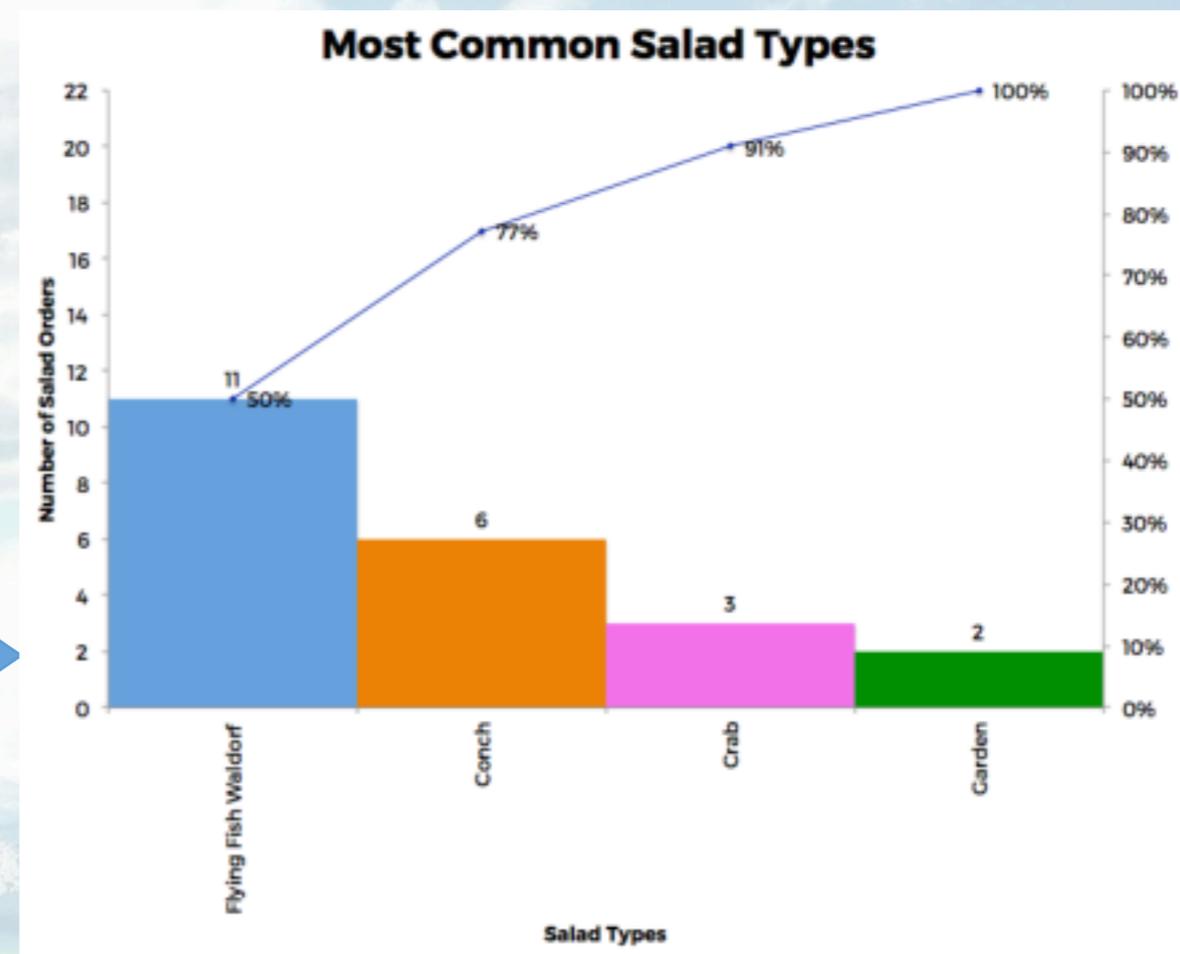
What piece of dishware breaks the most?



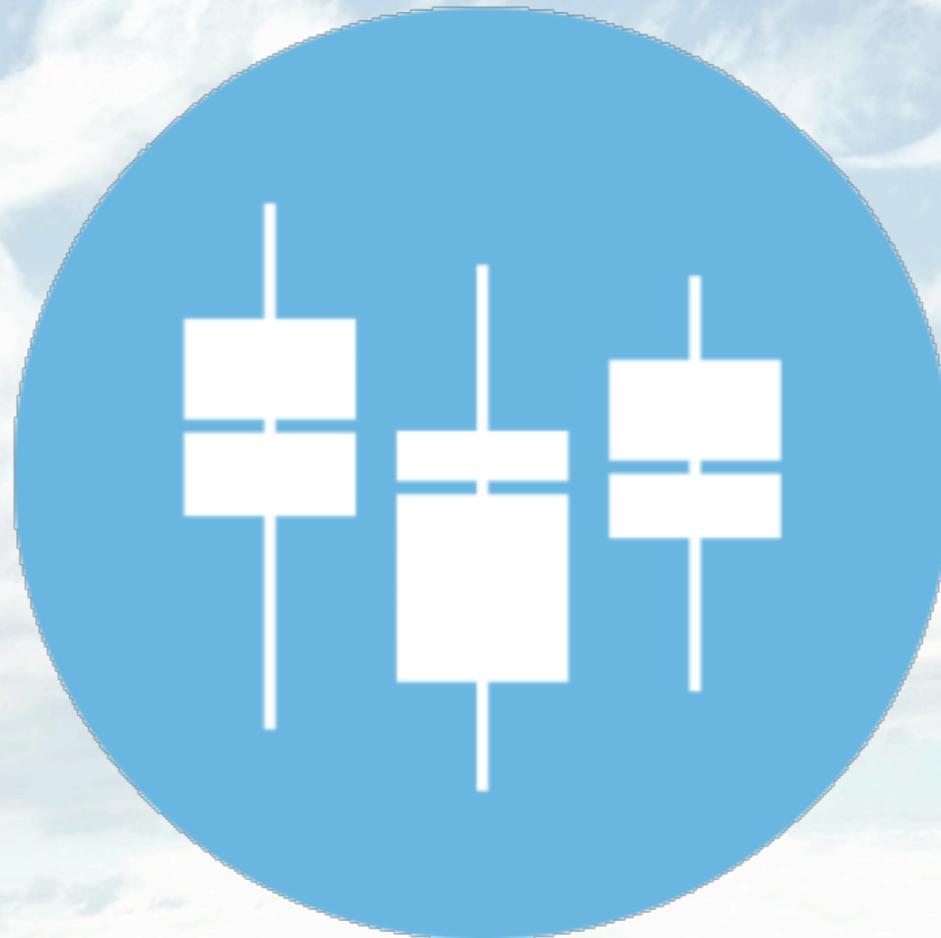
# What Else Can a Pareto Chart Do?



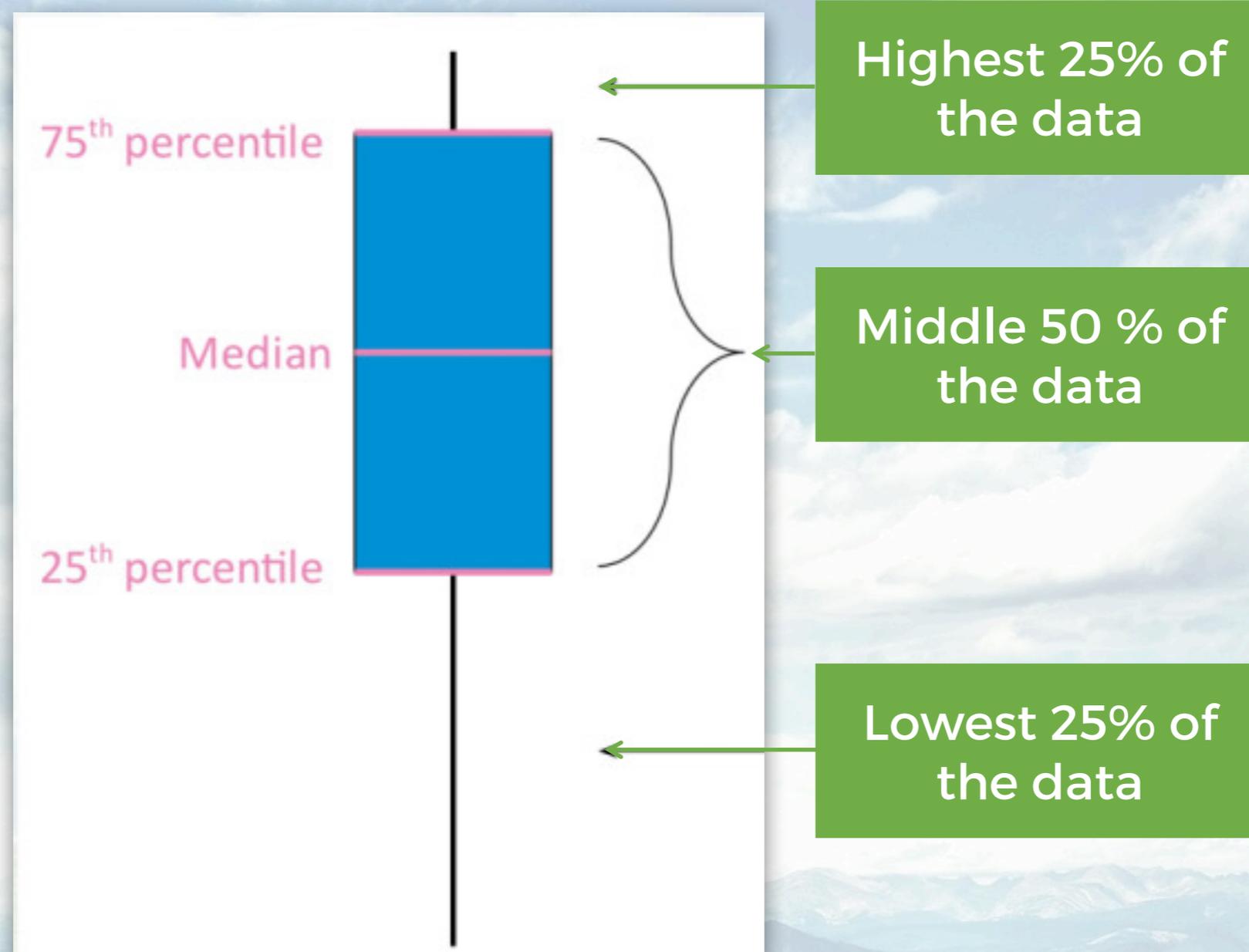
They can “nest”  
or cascade



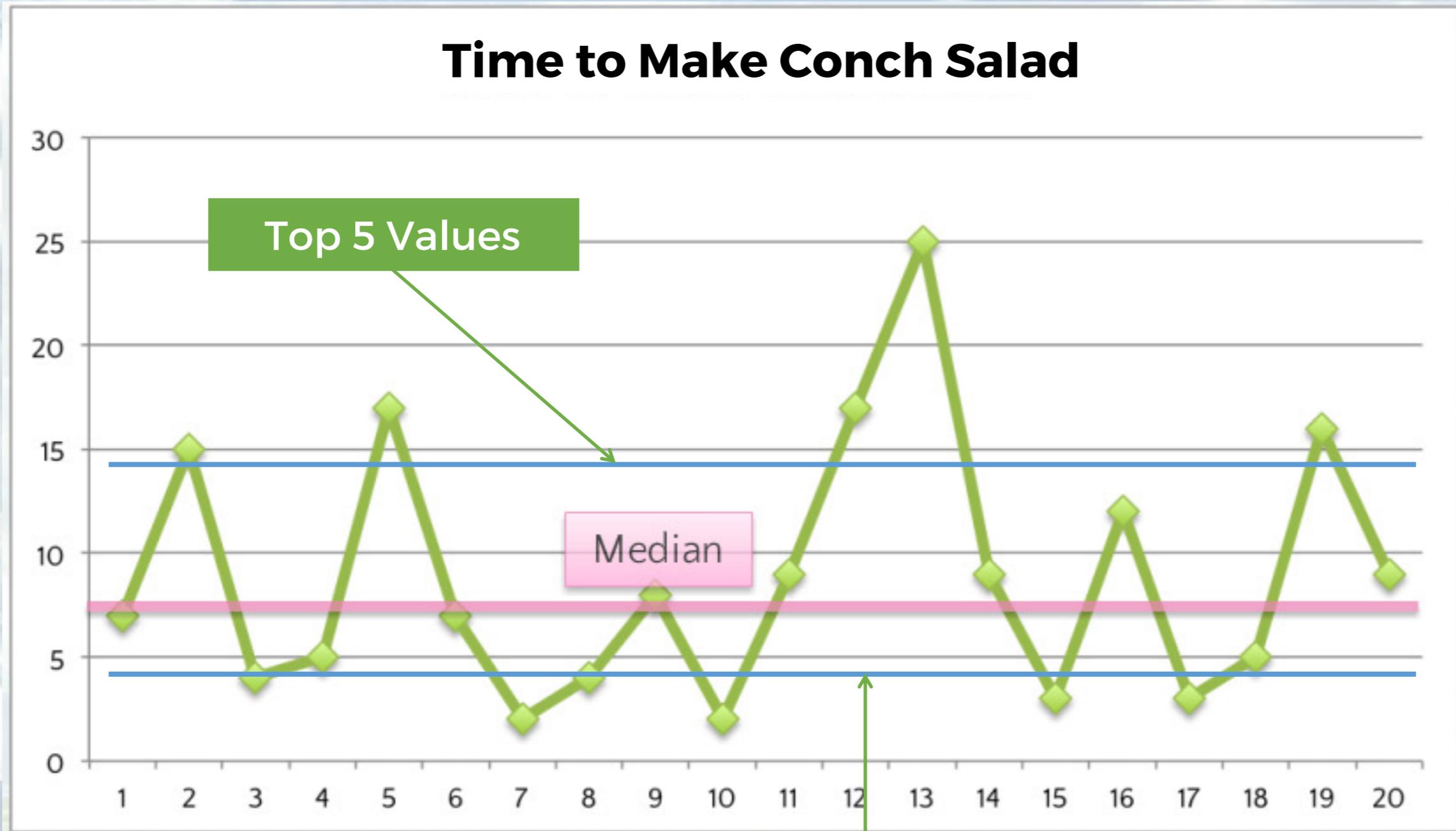
# The Box Plot



# What Is a Box Plot?

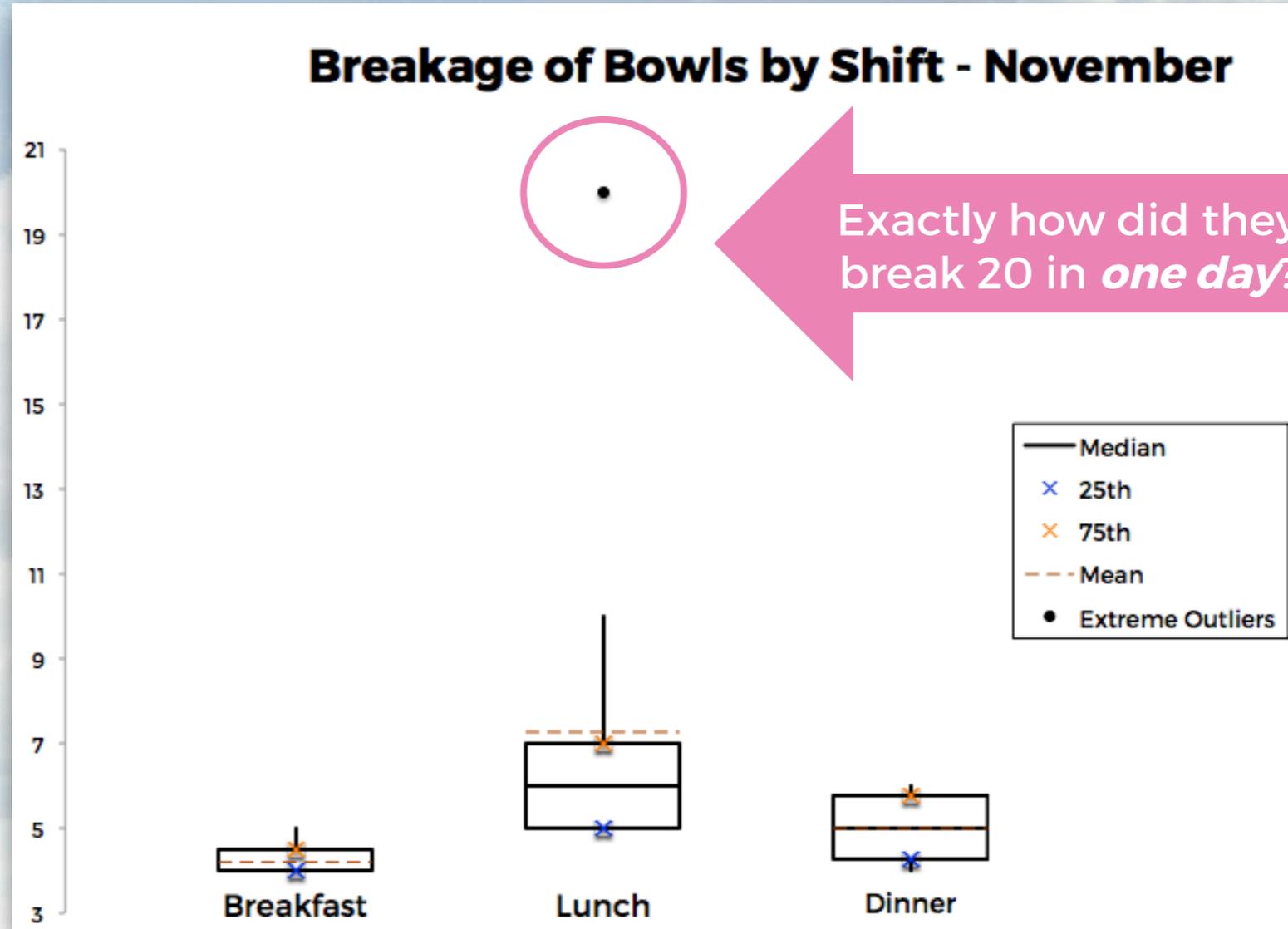


# No Really - What Is a Box Plot?



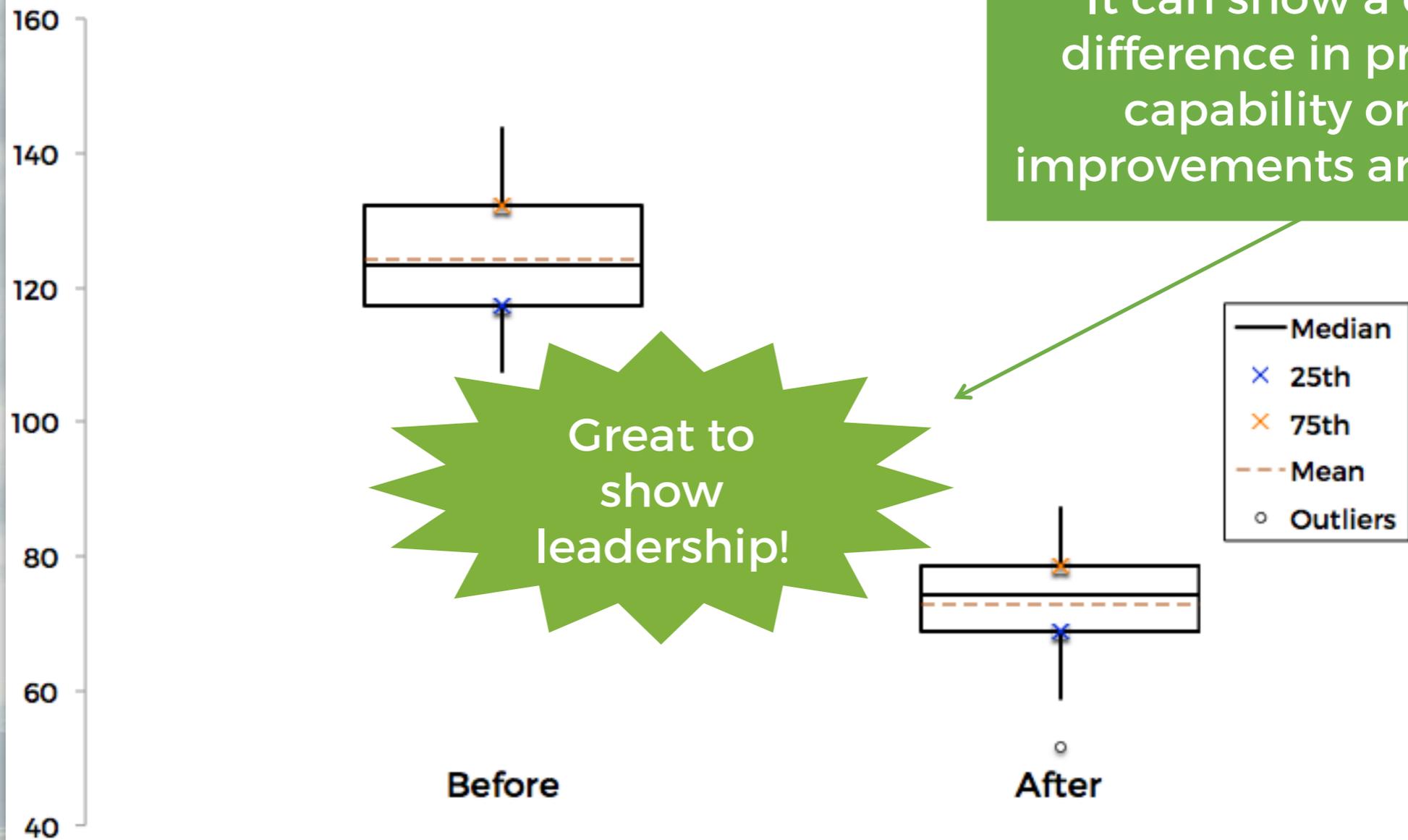
# What Does the Box Plot Tell Us?

Is there a shift where more bowls break than others?



# What Else Can a Box Plot Do?

## Time to Process an Application - Proof of Improvement



# Mystery of the Broken Bowls

Waitstaff are breaking bowls, and breaking them at lunch.



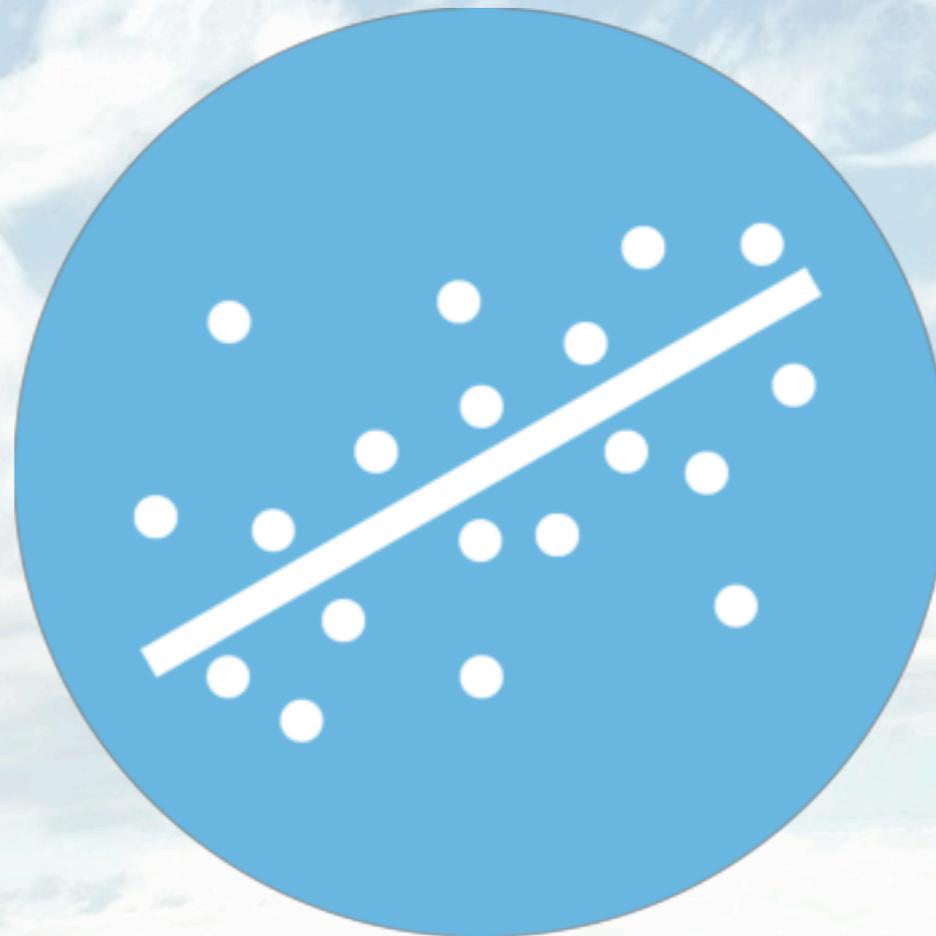
The soup n' salad lunch special is driving conch chowder sales.



Customers want their chowder hotter...

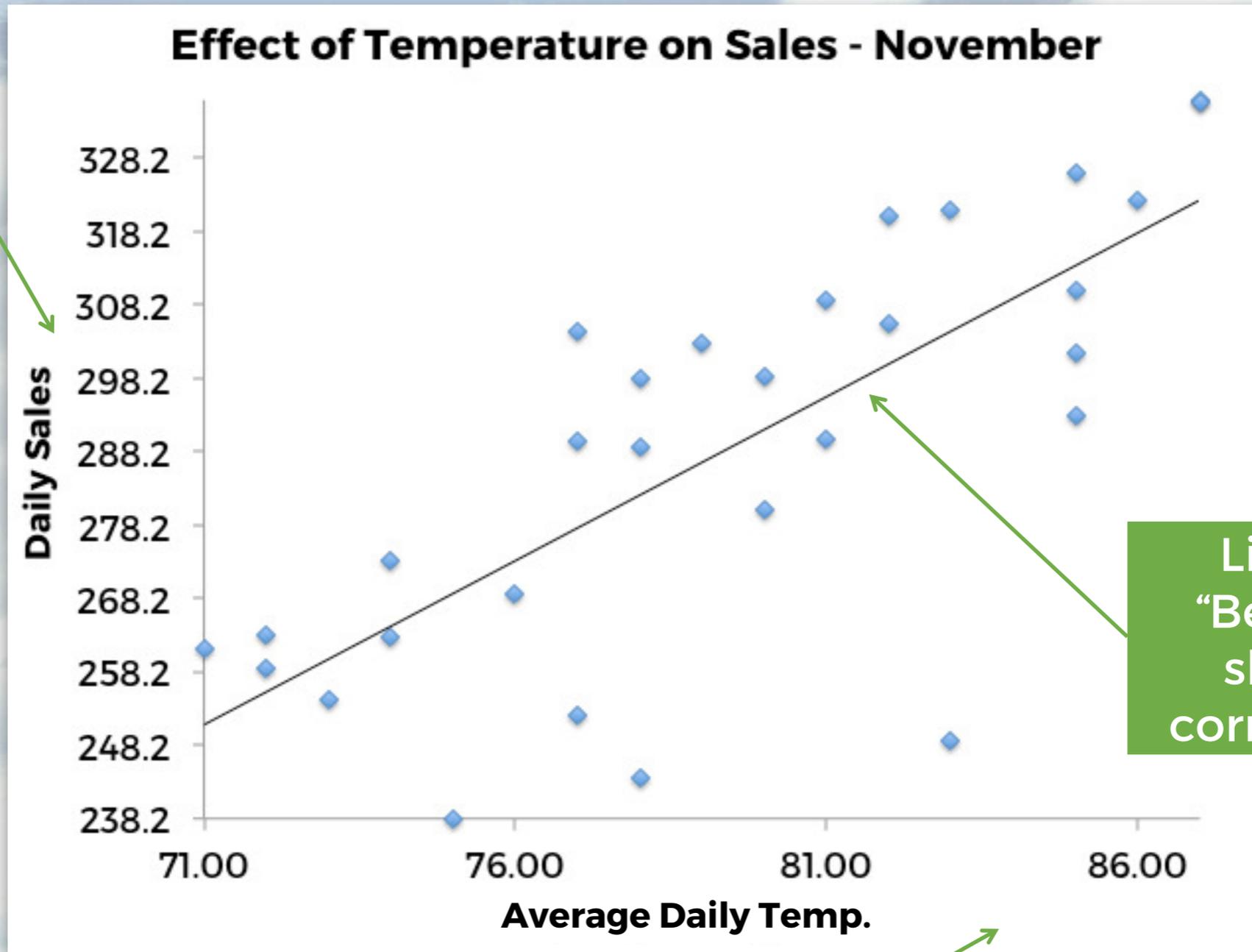


# The Scatter Plot



# What's a Scatter Plot?

The "Y" or  
Dependent  
Variable



Line of  
"Best Fit"  
shows  
correlation

The "X" or  
Independent  
Variable

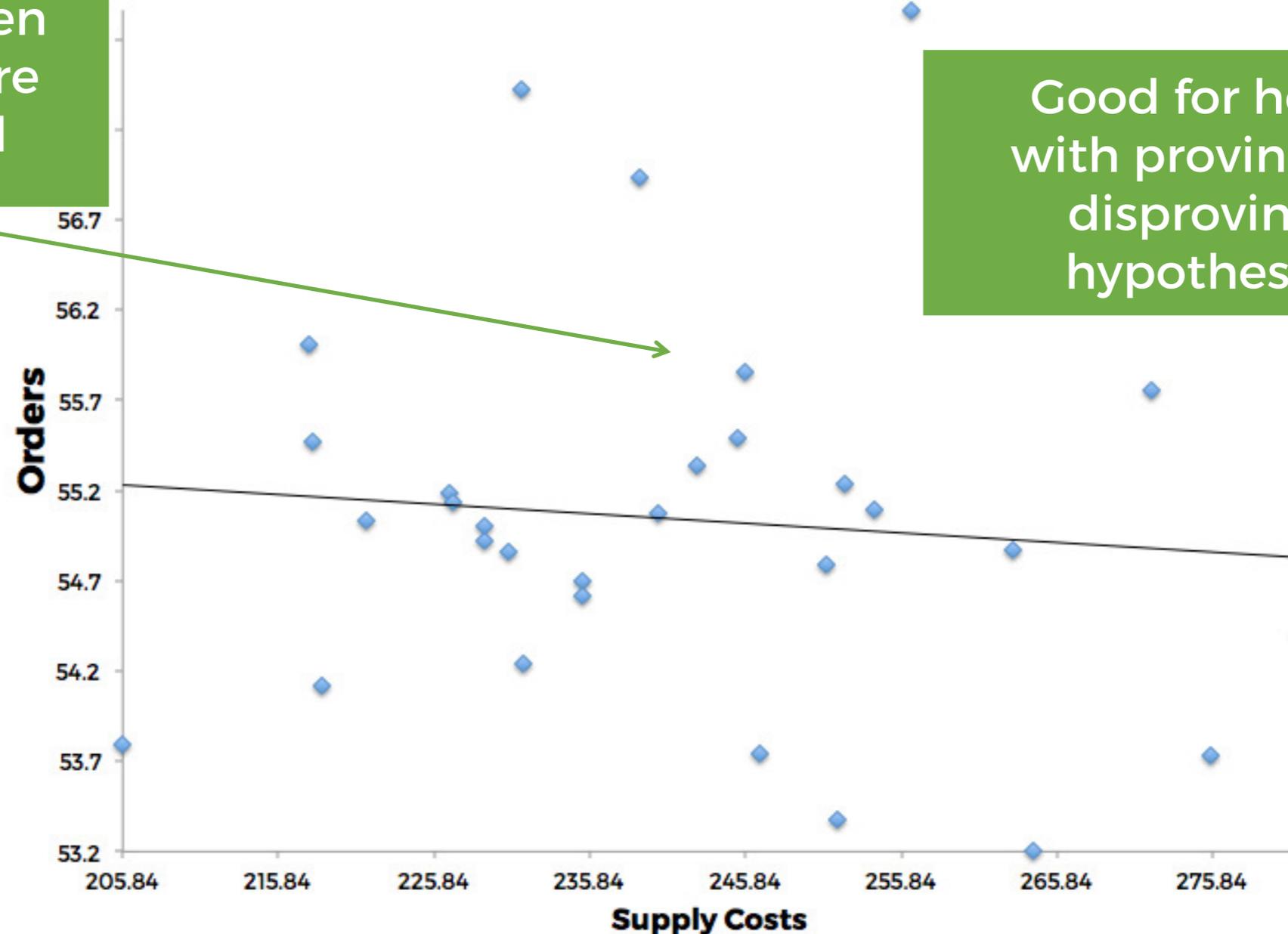


# What Else Can a Scatter Plot Do?

## Impact of Supply Costs on Orders - June

It can show when two variables are *not* correlated

Good for help with proving or disproving hypothesis



# Problem Solved!



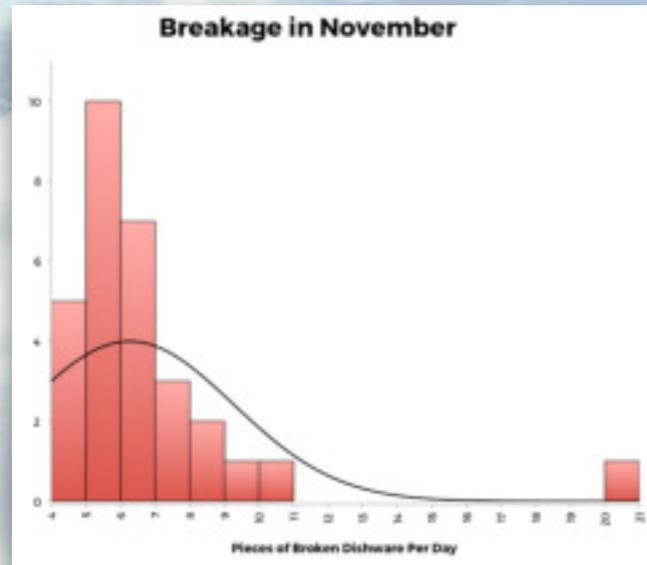
# Poll #2:

**Which chart or graph are you most comfortable using?**

- A. Histogram
- B. Run Chart (Time Plot)
- C. Pareto Chart
- D. Box Plot
- E. Scatter Diagram

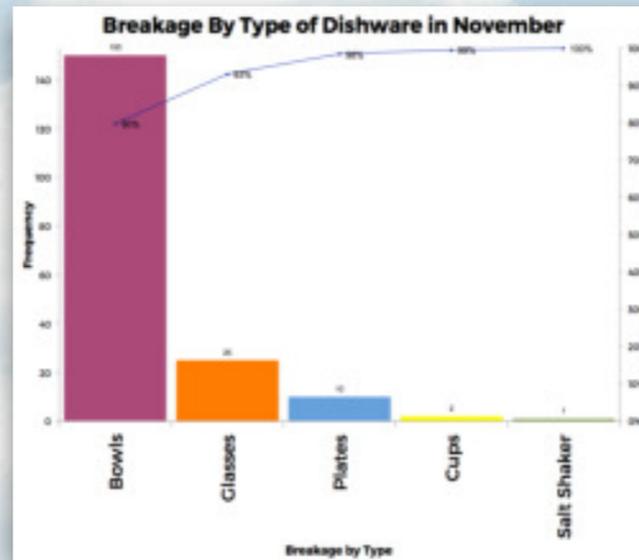


# How Charting Tricks and Tips Can Help



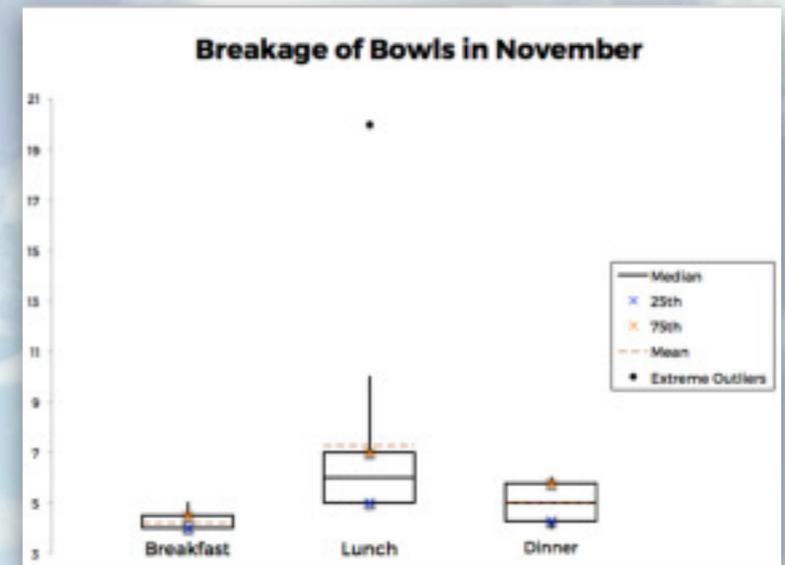
## Histogram

Shape, center & spread



## Pareto Chart

80/20 rule



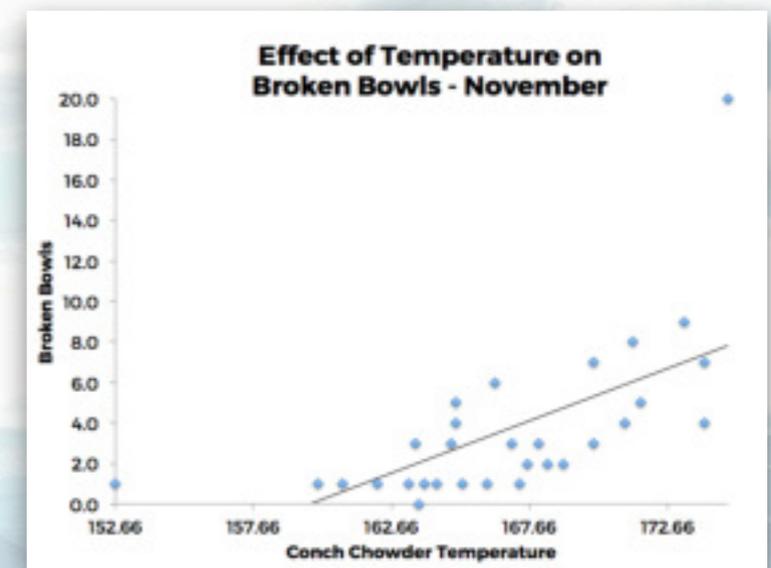
## Box Plot

Comparison



## Run Chart

Trends over time



## Scatter Plot

Correlation



# What Data Goes With Each Chart?

Breakage Per Day
5
4
4
4
4
4
5

## Histogram

1 column of data

Breakfast	Lunch	Dinner
5	5	4
4	5	5
4	6	6
4	5	5
4	6	
	6	
	7	

## Box Plot

1 or more columns of data

Date	Breakage Per Day
1-Nov	5
2-Nov	4
3-Nov	4
4-Nov	4
5-Nov	4
6-Nov	5

## Run Chart

Time ordered data

Breakage by Type	Number Broken
Bowls	150
Plates	10
Glasses	25
Cups	2
Salt Shaker	1

## Pareto Chart

Table of categories and counts

Conch Chowder Temperature	Broken Bowls
164	1
168	2
166	6
167	3
174	4
168	3

## Scatter Plot

2 columns of paired data



# Poll #3:

**What is most difficult for you when creating charts and graphs?**

- A. Figuring out what chart to use given the situation
- B. Collecting the right data
- C. Properly setting up the data in a spreadsheet
- D. Using the charting software
- E. Some combination of all of these



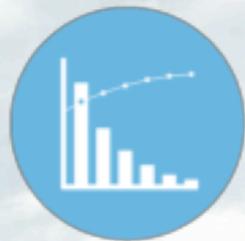
# Do-It-Yourself



- <https://goleansixsigma.com/create-histogram-sigmaxl/>
- <https://goleansixsigma.com/create-histogram-minitab/>



- <https://goleansixsigma.com/create-run-chart-sigmaxl/>
- <https://goleansixsigma.com/create-run-chart-minitab/>



- <https://goleansixsigma.com/create-pareto-chart-sigmaxl/>
- <https://goleansixsigma.com/create-pareto-chart-minitab/>



- <https://goleansixsigma.com/create-box-plot-sigmaxl/>
- <https://goleansixsigma.com/create-box-plot-minitab/>



- <https://goleansixsigma.com/create-scatter-plot-sigmaxl/>
- <https://goleansixsigma.com/create-scatter-plot-minitab/>



# Today We Covered

1. How Charts and Data Tell the Story
2. What Does a Histogram Tell You?
3. What Does a Run Chart Tell You?
4. What Does a Box Plot Tell You?
5. What Does a Pareto Chart Tell You?
6. What Does a Scatter Diagram Tell You?
7. How Charting Tricks and Tips Can Help



# Q & A



# Getting Started

Learn more by starting some more training!

- [Yellow Belt Training is FREE at GoLeanSixSigma.com](http://GoLeanSixSigma.com)
- [Green Belt Training & Certification](#)
- [Black Belt Training & Certification](#)
- [Lean Training & Certification](#)



# Upcoming Webinar – 8/21 11am PDT



 **5 Ways to Ensure Green Belts Apply Their New Skills After Certification**

 Tracy O'Rourke

 Elisabeth Swan

WEBINAR  [goLEANSIXSIGMA.com](http://goLEANSIXSIGMA.com)

**[Register today at GoLeanSixSigma.com/webinars](http://GoLeanSixSigma.com/webinars)**

We'll select upcoming webinars based on your feedback, so please share your feedback on the survey at the end of close of this webinar.

# Just-In-Time Podcast

**Just-In-Time CAFE**

## Telling Stories That Create Monumental Change

With Mitch Ditkoff, President of Idea Champions

**Tracy O'Rourke**      **Mitch Ditkoff**      **Elisabeth Swan**

PODCAST

**go**LEANSIXSIGMA.com

Tune in at [GoLeanSixSigma.com/cafe](https://GoLeanSixSigma.com/cafe) for the latest Lean Six Sigma news, easy ways to apply Lean Six Sigma and interviews with process improvement leaders like you!

# Q & A



# Thank you for joining us!

More Questions?

Ask us at [contact@goleansixsigma.com](mailto:contact@goleansixsigma.com)!

[Click here to download  
free tools, templates, infographics and more!](#)

