

Statistical Literacy @ Augsburg

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 PKAL / Quirk Conference
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Statistical Literacy at Augsburg

- BUS 264: Statistical Literacy for Managers
 - Audience: Option for all Business majors with the exception of Accounting / Finance
 - PreReq: Problem Solving for Business Course
 - Excel Based - QR Skill Course
 - Focus: Less focus on Statistics Production, More emphasis on Statistics Consumption
 - Goal: Statistically Savvy Managers

Unique Traits of Stat Lit for Mgrs

- Critical Thinking Focus
 - Where Do Statistics Come From?
- Heavy Emphasis on "Hypothetical Thinking"
 - Assembly and Alternate Explanations
- Communication Components
 - Reading Graphs / Tables
 - Describing / Comparing values from Graphs / Tables
 - News Article Evaluations
- Course Survey Project using "Realistic Data"

What is Assembly?

- Selection of Operational Definition
 - how did they define categories?
 - how did they measure variables?


or

Selection of Data Presentation

- Chart or Graph
- Type of Table
- Type of Comparison

Important Considerations!

- All data is "Assembled"
 - Choices must be made in process of creating / communicating quantitative data
 - Some choices are better than others
 - Some choices are made to further support an argument or position on an issue
 - We must always think critically about Assembly when confronted with statistical data / claims.



Half of Kids Live with Parent Substance Abuse

Report: Smokers, drinkers, addicts more likely to abuse children

REUTERS

Updated: 5:43 p.m. ET March 29, 2005

Reading Tables of Counts / Percents

Fish sought	Number of anglers	Percent
Anglers, total	30.0	100
Freshwater except Great Lakes	25.0	83
Black bass	10.0	33
Panfish	7.5	25
Catfish/bullhead	7.0	23
Trout	6.8	23
Great Lakes	1.4	5
Walleye, sauger	0.5	2
Perch	0.5	2
Salmon	0.4	1
Lake trout	0.3	1
Saltwater	7.7	26
Flatfish (flounder, halibut)	2.1	7
Red drum (redfish)	1.8	6
Sea trout	1.5	5
Striped bass	1.4	5

Q: What percentage of Great Lakes anglers fished for perch?

Quick Facts
From the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation



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Sea trout	1.5	5
Striped bass	1.4	5

Q: What percentage of Great Lakes anglers fished for perch?

Common Wrong Answer: 2%

Correct Answer: $.5 / 1.4 = 36\%$

Results:
Undergrads: 12/13 Incorrect
MBA's: 10 / 11 Incorrect

Reading Tables of Counts / Percents

Q: What % of Great Lakes anglers fished for perch?

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Commonly Wrong Answer: 2%

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Two True Statements:
36% of all Great Lakes anglers fish for perch.
2% of all anglers fish the Great Lakes for perch.

Reading / Interpreting Pie Charts

Percent of Anglers by Age Group

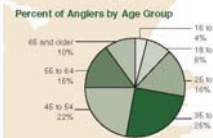
Q: What Percentage of Anglers are less than age 35?

Q: What Percentage of Anglers are between 35 and 54?



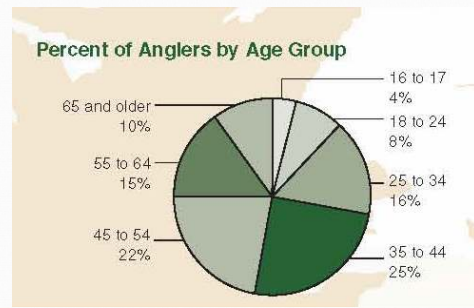
Reading / Interpreting Pie Charts

<p>Q: What Percentage of Anglers are less than age 35?</p> <p>Results: Answer: 28%</p> <p>Undergrads: 0 / 13 Incorrect</p> <p>MBA's: 1 / 11 Incorrect</p>	<p>Q: What Percentage of Anglers are between 35 & 54?</p> <p>Results: Answer: 47%</p> <p>Undergrads: 0 / 13 Incorrect</p> <p>MBA's: 1 / 11 Incorrect</p>
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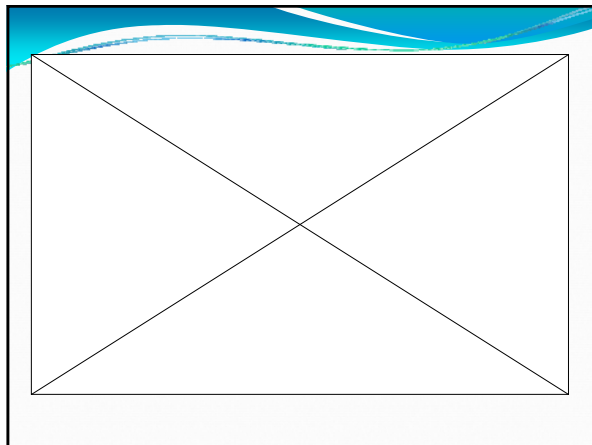
65 and older	10%
55 to 64	15%
45 to 54	22%
35 to 44	25%
25 to 34	16%
18 to 24	8%
16 to 17	4%

Reading / Interpreting Pie Charts



65 and older	10%
55 to 64	15%
45 to 54	22%
35 to 44	25%
25 to 34	16%
18 to 24	8%
16 to 17	4%

Q: What percentage of 18 to 24 year olds are anglers?



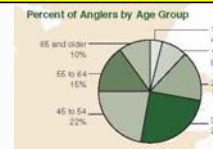
Assessing Statistical Literacy

Q: What percentage of 18 to 24 year olds are anglers?

Results:
Answer: Can't Tell

Undergrads: 10/13 Incorrect

MBA's: 6 / 11 Incorrect



65 and older	10%
55 to 64	15%
45 to 54	22%
35 to 44	25%
25 to 34	16%
18 to 24	8%
16 to 17	4%

Conclusions / Discussion

- This is not rocket science!
 - Reading Tables, Pie Charts and Bar Graphs
 - Writing Statements including #s
 - Interpreting Summary Data
- Test it out with your students!
 - Link to Census Brochure:
 - www.census.gov/prod/2008pubs/fhw06-qlfact.pdf
 - Link to 10 item sample survey:
 - www.StatLit.org/pdf/2008IsaacsonQuestionsPKAL.pdf
- Questions / Comments?
- Email address: isaacson@augsborg.edu



