

Unit 2: Research Methods

Psychology is an empirical discipline. Psychologists develop knowledge by doing research. Research provides guidance for psychologists who develop theories to explain behavior and who apply theories to solve problems in behavior.

Essential Questions: (you should be able to answer each of these questions fully and thoughtfully by test day!)

<ul style="list-style-type: none"> <input type="checkbox"/> How can the scientific method help us draw more informed conclusions? <input type="checkbox"/> In what ways is our confidence in our predictions often wrong? <input type="checkbox"/> Why is it important to understand how randomness work? <input type="checkbox"/> Why are curiosity, skepticism and humility important to a psychologist? <input type="checkbox"/> Why is critical thinking important to science? <input type="checkbox"/> What value does critical thinking provide to the scientific process? <input type="checkbox"/> How does the popular conception of a “theory” differ from the scientific use of the term? 	<ul style="list-style-type: none"> <input type="checkbox"/> Why are operational definitions important to the scientific process? <input type="checkbox"/> Why is replication such an important function of science? <input type="checkbox"/> How can a descriptive research method advance knowledge of a behavior or mental process? <input type="checkbox"/> What is the value of knowing that 2 variables are related? <input type="checkbox"/> Why is correlation not the same as causation? <input type="checkbox"/> Why is it important to know how 2 variables influence each other? <input type="checkbox"/> Why is randomness important to experimentation? <input type="checkbox"/> Why is it important to control variables in an experiment? 	<ul style="list-style-type: none"> <input type="checkbox"/> How can knowing statistics help you make more informed decisions? <input type="checkbox"/> How does knowledge of the properties of the normal curve and central tendency help you make more informed decisions? <input type="checkbox"/> What are the limits of descriptive statistics? <input type="checkbox"/> Why is it important to know that a difference between variables is significant? <input type="checkbox"/> Why should a sample represent the population? <input type="checkbox"/> What can psychological science tell us about everyday life? <input type="checkbox"/> Why does following ethical procedures matter?
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Vocabulary to Master: (you should be able to define each of these terms by test day)

<p>Hindsight Bias Overconfidence Critical Thinking</p> <p><u>Methodology:</u> <i><u>Define AND give Strengths and Weaknesses!</u></i></p> <p>Case Study Naturalistic Observation Survey Correlational Study/Research Experiment</p>	<p><u>Scientific Method:</u></p> <p>Theory Hypothesis Replication Population Random Sample Operational Definition Experimental Group Control Group Independent Variable Dependent Variable Confounding Variable</p> <p><u>Experimentation</u></p> <p>Double Blind Study Placebo Effect Random Selection Random Assignment</p>	<p><u>Statistics/Data Analysis</u></p> <p>Descriptive Statistics Inferential Statistics Measures of Central Tendency Mean Median Mode Range Standard Deviation Normal Distribution/Curve Statistical Significance Scatterplot Correlational Coefficient Perfect Positive Perfect Negative No Correlation</p> <p><u>Ethics</u></p> <p>Informed Consent Debriefing</p>
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Learning Targets:

For each of the statements listed below, you'll rate your level of understanding on a scale of 0-4.

0=Nothing, 4=Advanced. You'll complete this rating twice: once at the start of the unit and again at the end.

I can differentiate between different types of research. This means that I can explain the differences between experiments, correlational studies, survey research, naturalistic observations and case studies with regard to purpose, strengths and weaknesses.

Start of the Unit _____ End of the Unit _____

I can describe how research design drives the reasonable conclusions that can be drawn. This means that I can explain how experiments are useful for determining cause and effect and how the use of experimental controls reduces alternative explanations.

Start of the Unit _____ End of the Unit _____

I can identify independent, dependent, confounding, and control variables in experimental design. This means that when reading about an experiment, I can distinguish between the different types of variables and the role they each play in experimental design.

Start of the Unit _____ End of the Unit _____

I can distinguish between random assignment and random selection. This means that I can tell the difference between random assignment of participants in conditions in experiments and random selection of participants which occurs primarily in correlational studies and surveys

Start of the Unit _____ End of the Unit _____

I can distinguish the purpose of descriptive statistics and inferential statistics. This means that I can explain the difference between descriptive and inferential statistics and when it is appropriate to utilize each type.

Start of the Unit _____ End of the Unit _____

I can apply basic descriptive statistical concepts, including interpreting and constructing graphs and calculating simple descriptive statistics. This means that I understand and know how to calculate the measures of central tendency, such as mean, median and mode as well as standard deviation.

Start of the Unit _____ End of the Unit _____

I can discuss the reliance on operational definitions and measurement in behavioral research. This means that I can explain the importance of operational definitions and how they enable behavioral researchers to replicate studies.

Start of the Unit _____ End of the Unit _____

I can identify how ethical issues inform and constrain research practices. This means that I can explain the importance of following ethical guidelines when conducting research and how they enable and hinder research practices.

Start of the Unit _____ End of the Unit _____

I can describe how ethical and legal guidelines protect research participants and promote sound ethical practice. This means that I can describe the role of the ethical guidelines provided by the American Psychological Association, federal regulations, and local institutional review boards protect research participants and ensure safety for those involved in behavioral research.

Start of the Unit _____ End of the Unit _____

Content Outline:

Assignments to be handed in during unit:
(subject to change!)

Test Day:

- Common Biases/Introduction
- Types of Studies
- Scientific Method & Experimentation
- Correlational Studies

- Secrets of a Psychic
- "In Brief"
- Making Statements into Studies
- Statistics Review
- Ethics Overview

**Friday,
September 29th**

Statistics

Ethics

Day of Test:

Study Guide OR Vocabulary