



Test Ninjas

VOCABULARY STUDY SERIES

ACT VOCABULARY

ACT Science Vocabulary: Experimental Design & Procedures

20 focused words in Experimental Design & Procedures

20

UNIQUE WORDS

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CATEGORIES

ACT

EXAM FOCUS



About this study guide

This vocabulary guide was prepared and published by Test Ninjas as an independent study resource. It is designed to help students build the precise word knowledge needed for demanding academic reading and reasoning.

How to use this guide

Study in short, repeated sessions. Read each definition, say the word aloud, and use the example to understand how the word functions in context. Return to unfamiliar words until you can explain them without looking at the definition.

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001 hypothesis *noun*

EXPERIMENTAL DESIGN & PROCEDURES

a proposed explanation for something, based on limited evidence, used as a starting point for further investigation.

The researcher developed a **hypothesis** to explain the unusual phenomenon, shaping how confidently the people involved could reach a defensible conclusion.

MEMORY CUE: A hypothesis is a possible explanation waiting at the start of an investigation.

002 replicable *adjective*

EXPERIMENTAL DESIGN & PROCEDURES

Capable of being exactly copied or reproduced

For a scientific finding to be taken seriously, the experiment that produced it must be **replicable** by independent labs.

MEMORY CUE: A replicable result can be copied exactly by repeating the same procedure.

003 empirical *adjective*

EXPERIMENTAL DESIGN & PROCEDURES

Based on observation or experience rather than theory or pure logic

The hypothesis, however elegant, must be supported by **empirical** evidence before it can be accepted as theory.

MEMORY CUE: Empirical knowledge wears muddy field boots because it comes from observation and experience, not theory alone.

004 calibrations *noun*

EXPERIMENTAL DESIGN & PROCEDURES

precise adjustments or measurements for accuracy

Regular **calibrations** ensure the equipment produces accurate readings, giving the reviewers concrete evidence for judging the quality of the completed work.

MEMORY CUE: Calibrations turn a scale's tiny adjustment knob until zero is exactly accurate.

005 methodology *noun*

EXPERIMENTAL DESIGN & PROCEDURES

The organized system of methods and principles used to conduct an investigation.

The researchers published their **methodology** so other teams could evaluate and reproduce the unusual findings.

MEMORY CUE: Methodology is the labeled toolbox and instruction manual behind an entire investigation.

006 observation *noun*

EXPERIMENTAL DESIGN & PROCEDURES

Information obtained by carefully noticing, watching, or measuring a phenomenon.

A single **observation** may suggest a hypothesis, but repeated measurements are needed to test it reliably.

MEMORY CUE: An observation is one carefully recorded view through the scientist's window.

007 parameters *noun (plural)***EXPERIMENTAL DESIGN & PROCEDURES**

Measurable factors or variables that define a system or set the conditions of its operation

The experiment's **parameters** were carefully controlled to isolate the effect of a single variable.

MEMORY CUE: Parameters draw the measurable boundaries within which a system operates.

008 feasible *adjective***EXPERIMENTAL DESIGN & PROCEDURES**

possible to do easily or conveniently; practical and achievable.

The engineers determined that the project was technically **feasible**, showing how demanding the task became for the people responsible for completing it.

MEMORY CUE: A feasible plan crosses bridges marked PRACTICAL and ACHIEVABLE.

009 modify *verb***EXPERIMENTAL DESIGN & PROCEDURES**

to change or adjust something slightly, especially to improve it or make it more suitable.

The engineer **modified** the design to improve efficiency, allowing observers to compare the new result with its earlier form.

MEMORY CUE: Modify a machine by changing one part while keeping the whole recognizable.

010 validate *verb***EXPERIMENTAL DESIGN & PROCEDURES**

to prove or confirm that something is true or correct; to make valid.

The experiment was designed to **validate** the researcher's hypothesis, shaping whether the audience considered the account reliable and worthy of confidence.

MEMORY CUE: Validate a claim by checking it and applying a TRUE AND CORRECT seal.

011 scrutinized *verb (past participle)***EXPERIMENTAL DESIGN & PROCEDURES**

Examined or inspected closely and thoroughly

The contract was **scrutinized** by three different law firms before the board of directors approved the deal.

MEMORY CUE: The object was scrutinized beneath a magnifying glass that checked every detail.

012 isolate *verb***EXPERIMENTAL DESIGN & PROCEDURES**

to set apart from others; to identify and examine separately

Scientists worked to **isolate** the virus in the laboratory, making the important points of resemblance and contrast easier to identify.

MEMORY CUE: Place one sample alone under a glass dome to isolate and examine it separately.

013 repeatable *adjective*

EXPERIMENTAL DESIGN & PROCEDURES

able to be done or made again in the same way

The experiment must be **repeatable** for the results to be valid, making the important points of resemblance and contrast easier to identify.

MEMORY CUE: A repeatable process follows the same circular arrow and produces the same result again.

014 constrained *verb (past tense)*

EXPERIMENTAL DESIGN & PROCEDURES

Severely restricted the scope, extent, or activity of; compelled or forced

Limited funding **constrained** the researchers to a much smaller sample size than they had originally planned.

MEMORY CUE: Constrained movement strains against tight limits that restrict its range.

015 predetermined *adjective*

EXPERIMENTAL DESIGN & PROCEDURES

established or decided in advance

The outcome seemed **predetermined** before the trial even began, shaping how confidently the people involved could reach a defensible conclusion.

MEMORY CUE: A predetermined route is locked into the map before the trip begins.

016 control *noun*

EXPERIMENTAL DESIGN & PROCEDURES

A comparison condition that does not receive the tested treatment and helps isolate its effect.

The **control** plants received plain water, allowing researchers to judge the fertilizer's actual effect.

MEMORY CUE: The control is the untouched comparison lane that shows what happens without the treatment.

017 trial *noun*

EXPERIMENTAL DESIGN & PROCEDURES

One complete repetition of an experimental procedure under specified conditions.

During each **trial**, the team released the ball from the same height and measured its rebound.

MEMORY CUE: A trial is one full lap through an experiment from setup to recorded result.

018 procedure *noun*

EXPERIMENTAL DESIGN & PROCEDURES

The ordered set of actions used to carry out an experiment or measurement.

The **procedure** requires students to rinse the probe before measuring each new solution sample.

MEMORY CUE: A procedure is the experiment's numbered recipe, telling exactly what to do and when.

019 apparatus *noun***EXPERIMENTAL DESIGN & PROCEDURES**

The assembled equipment used to perform an experiment or scientific task.

The **apparatus** included a sealed flask, pressure sensor, rubber tubing, and digital recording device.

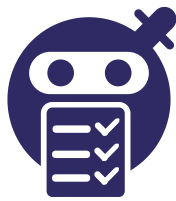
MEMORY CUE: An apparatus is the full equipment setup assembled on the laboratory bench.

020 randomization *noun***EXPERIMENTAL DESIGN & PROCEDURES**

The use of chance to assign subjects or treatments, reducing systematic bias between groups.

Randomization made preexisting differences equally likely to occur in either experimental group during assignment.

MEMORY CUE: Randomization uses a shuffled deck to assign groups without a researcher's preference steering the deal.



ACT VOCABULARY

Keep building your edge.

Vocabulary grows through repeated exposure and deliberate use.
Revisit this list, write with the words, and practice recognizing their
meaning in context.

More focused practice at test-ninjas.com