

# LHS Experimental Design Rubric (EDR) Checklist

BACKGROUND INFORMATION		
✓		
a	First paragraph provides a general overview of the topic of study to introduce main ideas	
b	Middle paragraph(s) includes clear, focused, accurate, and detailed information sufficient to understand the science investigated during the study	
c	Last paragraph briefly <i>summarizes</i> purpose of study and method for data collection	
d	<b>Sources Cited</b>	
	Sources are cited in the TEXT as <b>parenthetical references</b> (author last name, year of publication)	
	Sources are cited <b>in complete APA format</b> in "Sources Cited" section at the end of the lab	

PROBLEM STATEMENT		
(must be written in the following order)		
✓		
a	Purpose of experiment is accurately stated	
b	All <b>independent</b> and <b>dependent</b> variables are accurately identified	
c	All conditions held constant (controlled variables) are accurately identified	

HYPOTHESIS		
✓		
a	What effect will the IV have on the DV?	
b	Why? (SCIENCE included here!!)	
c	<b>Sources Cited</b>	
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DESIGN		
✓		
<b>a. Materials</b>		
	Lists all equipment and materials	
	Provides relevant sizes, quantities, and/or concentrations	
b	<b>Safety Guidelines:</b> Identifies potential hazards in using equipment/materials	
c	<b>Labeled Diagram:</b> Illustrates equipment set-up, with appropriate labels	
<b>d. Procedure</b>		
	Logical and numbered steps	
	Detailed instructions for collection of BOTH qualitative and quantitative data	
	Includes description of how relevant constants are kept the same	
	Includes instruction for multiple trials	
	Includes steps to test control when appropriate	

RESULTS		
✓		
a	<b>Data Table(s)</b>	
	Title includes IV & DV	
	Labeled columns and rows; organized	
	Metric units and uncertainty	
b	<b>Data</b>	
	Includes ALL qualitative and quantitative data	

DATA PROCESSING AND PRESENTATION		
<b>a. Calculations</b>		
✓		
	Calculations are useful for evaluating data	
	Each category of calculation is correctly titled	
	Each WORD formula is shown	
	ALL work is shown	
	Calculations are performed accurately	
	Each number has a metric unit	
<b>b. Graph</b>		
✓		
	Title includes <u>both</u> IV and DV and reflects the relationship	
	Axes labeled, including correct metric units	
	DV is on the y-axis; IV is on the x-axis	
	Consistent scale of numbers on each axis	
	Data points are plotted accurately	
	Appropriate graphing style is used	
	At least 2/3 of grid is used	

CONCLUSION AND EVALUATION		
<b>a. Conclusion</b>		
✓		
	Restate purpose and hypothesis	
	Identify relationship between the IV and DV, using EXPERIMENTAL DATA	
	IF hypothesis is written, compare results to stated hypothesis (accept/reject)	
	Use scientific laws, theories, and/or principles to explain what happened	
	Compare EXPERIMENTAL DATA (results) to published/accepted values	
<b>b. Evaluation of the Experiment</b>		
✓		
	Logical sources of error	
	Effect of error on experimental results	
	Validity of experimental results is based on error analysis	
<b>c. Improvement/Modification of the Experiment</b>		
✓		
	Suggestions for improvements of experiment, based on identified errors	
	Suggestions for further study, with an explanation	
c	<b>Sources Cited</b>	✓

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SOURCES CITED		✓
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b.	Sources are cited <b>in complete APA format</b> in the " <i>Sources Cited</i> " section at the end of the lab	