

CHECKLIST FOR THE PHYSICAL ARRANGEMENT OF THE STEM RESEARCH PAPER TO BE DOWNLOADED TO VIRTUAL SITE

(Abstract, Safety Sheet, Endorsements, & Research Summary)
ALL ITEMS MUST BE TYPED

- ABSTRACT**
 - Included in paper and a picture must be displayed in your power point presentation
 - Three (3) paragraphs with headings: Purpose, Procedure, and Conclusion
 - Typed single-spaced, 250 words or less
 - Check appropriate box - either Experimental or Design Investigation
- SAFETY SHEET**
 - Included in paper and a picture must be displayed in your power point presentation
 - Lists possible hazards, precautions described
 - If no hazards were possible a statement indicating this is included
 - Signed by student and sponsor
- APPROPRIATE ENDORSEMENTS AND ATTACHMENTS** (If applicable)
 - Included in paper and a picture must be displayed in your power point presentation
 - Endorsement signed and stamped by the Scientific Review committee member
 - Signed by student and sponsor
 - All pages of completed endorsement and proper documentation is attached, if necessary
 - 2019-2020 Endorsements being used must have updated stamp and approval date
- TITLE PAGE OF RESEARCH SUMMARY**
 - Formatted as on page 56 and indicate type of investigation either Experimental or Design
 - Approval signed by Sponsoring Teacher
- TABLE OF CONTENTS**
 - All subsections are listed with page numbers +
 - Pagination is accurate
- ACKNOWLEDGMENTS**
 - Credit is given to those who have helped with the research
- PURPOSE AND HYPOTHESIS OR NEED/REAL WORLD PROBLEM**
 - Design Project – defines a need or real-world problem and established design criteria
 - Experiment Project - Hypothesis and prediction is present
- BACKGROUND RESEARCH**
 - Provides information that supports the hypothesis and if necessary, the procedure
 - Provides adequate background information about the topic
 - Use of third person is evident
 - Logical and/or related grouping of information
 - Accurate spelling, grammar, quotations and citations and page set-up
 - Parenthetically cited.
- MATERIALS AND METHODS OF PROCEDURE**
 - All equipment and materials are listed
 - Drawings and photographs are present if they enhance and clarify the project
 - Step-by-step, chronological procedures are present and replicable
 - A control or comparison group is present and appropriate
 - Number of trials within each test group is adequate
 - Control of variables is evident
- RESULTS**
 - All data is presented, including results inconsistent with the hypothesis, if applicable
 - Data and calculations are clear and accurate
 - Data is quantitative and correct units of measurement (metric) are used
 - Data is organized into clear & informative tables or charts with accompanying graphs

- Effect of experimental error was estimated and considered
- CONCLUSIONS**
 - Evaluation and interpretation of data is present
 - Refers back to purpose and hypothesis
 - Answers the original question
 - Is valid and limited to the results of the experiment
- REFERENCE LIST**
 - References in this list are actually cited in the paper
 - References from a variety of at least 12 sources and are current (copyright within the last seven years)
 - Reference list is alphabetical
 - Proper APA format is used for all references
 - Titled "Reference List" or "References Cited" not "Bibliography"
- OTHER REQUIREMENTS**
 - STEM Project Paper clearly and concisely explains the project in short, simple sentences
 - Exhibitor's last name & project title typed at top **right** corner of all pages after Table of Contents
 - Typed double-spaced, one inch margins on all sides, single-sided
 - All pages are numbered and referenced in the Table of Contents
 - Standard type font and size (ex. Times New Roman 10 - 12 point font)
 - STEM Research Summary (Abstract, Safety Sheet, and Research Summary) is no more than 30 pages (33 if an endorsement is included)
 - Paper is well typed, with correct spelling, grammar, punctuation and consistent point of view
 - Indicate Experimental or Design Investigation on all forms and pages were required
 - No address is to be given on the Title Page.