

Experimental Design

2000 Wisconsin State Science Olympiad Div. B

A toy company research division has hired you to design the best paper airplane. Using only the following materials conduct an experiment to determine what is the best paper airplane (or at least one aspect of the best). You may use any design for your paper airplane and you may test any aspect of it. However, your experiment **MUST** test a PAPER AIRPLANE . Any questions? Just ask. Please keep in mind that you **WILL** be penalized for throwing a paper airplane at another team, etc. Keep your experiment to yourself.

Your building materials.

(10) Sheets of white paper	(10) Toothpicks	A timer (if you brought one)
(3) Sheets of construction paper	(1) Newspaper	we do not have any for
(5) 4x6 cards	Tape	you to borrow
(10) pennies	Scissors	
(5) paperclips	Ruler	Pen

You may also use as much lined and graph paper as you need to write your report (but only to write the report).

Your write-up must include all of the following parts (Rubric points are given in parentheses):

1. Problem (4)
2. Hypothesis (4)
3. Variables (14)
Dependent, Independent, Controlled
4. Materials and Methods/Procedure (8)
5. Qualitative: Results and Observations (4)
6. Quantitative: Results and Observations to include charts, graphs, etc. (12)
7. Analysis and Interpretation of Data including Error (6)
8. Conclusion (4)
9. Recommendation for Further Experimentation (4)
10. Clean-up/Safety (Up to 4 points will be subtracted for EACH infraction, clean-up instructions are listed below.)

Clean-up:

1. Please discard the following: cards or paper which you have folded or torn; toothpicks which have been broken or bent; and any tape which is used.
2. Replace any discarded materials with new ones. You should leave your station the exact same way you found it, with the exception of the next point (3).
3. Place your write-up, in its appropriate order, in the center of your table or station. Make sure that **each** page is marked with your school number. Place this sheet on top of your report. If you would like to have a copy of this sheet, please see us after the competition and we will make one available to you. Any team removing this sheet from the competition will be disqualified.

YOU MUST BE FINISHED CLEANING, RE-STOCKING AND HAVE YOUR WRITE-UP FINISHED 50 MINUTES AFTER THE START OF THE ROUND. THIS WILL BE STRICTLY ENFORCED.