

SCIENCE BOARD LABELS

PURPOSE

A statement explaining what you are trying to investigate. Collect as much information as you can about your investigation. Spend some time in the library or on the internet learning more about it. Your research will help you understand the question a little better and help you write a testable question or "hypothesis" that can be tested by collecting experimental data.

CONCLUSION

True statements explaining the results/outcome of your investigation. What evidence did you discover in your experimental trials that supports each statement? Do they support or reject your hypothesis? What problems happened during your experimental trials that may have affected your results, if any? All findings must be explained. Any claims (assertions) you make must be supported by the data recorded in your tables/charts.

Project Title
&
Pictures

PROCEDURE

A list of all the steps in your experimental trials, in the exact order you perform them. Be clear, but keep it simple. Other scientists should be able to replicate your experimental results by following the same procedures.

REAL LIFE CONNECTIONS

If applicable, explain any application your project has to real-life or if it has any present or future career opportunities.

HYPOTHESIS

A prediction that can be tested by conducting an experiment. A hypothesis is an informed (researched) question. It uses the information you collect about your purpose (statement/question) to explain the observations made before, during, and after doing your experimental test trials.

DATA

a written record of all the observations (*changes*) and measurements made in your experimental trials. It is important to record everything that takes place. Record both qualitative and quantitative descriptions and measurements. Your data may be kept in a logbook. Take photographs that show the changes you observe, but **do not** photograph any *human faces (of the investigator or subjects)*. Once you have finished your first experimental trail, run two more trails following the same procedure exactly (for a minimum of 3 trials). If you are testing samples, you must test each sample a minimum of 3 times as well.

Pictures of Trials
Optional
Graphs of Data

MATERIALS

A list of all the equipment and materials you use in your investigation. List each item by quantity, in a column. Use metric tools, measures with units when possible (customary English measuring tools, and measures with units will also be accepted).

MATH BOARD LABELS

PURPOSE

A statement explaining what you are trying to investigate. Collect as much information as you can about your investigation. Spend some time in the library or on the internet learning more about it. Your research will help you understand the question a little better and help you write a testable question or "hypothesis" that can be tested by collecting experimental data.

CONCLUSION

True statements explaining the results/outcome of your investigation. What evidence did you discover in your experimental trials that supports each statement? Do they support or reject your hypothesis? What problems happened during your experimental trials that may have affected your results, if any? All findings must be explained. Any claims (assertions) you make must be supported by the data recorded in your tables/charts.

Project Title & Pictures

PROCEDURE

A list of all the steps in your experimental trials, in the exact order you perform them. Be clear, but keep it simple. Other scientists should be able to replicate your experimental results by following the same procedures.

RELATIONSHIP TO MATH

Required on math projects - explains any math skills, computations, or processes that were used in your investigation and/or design and engineering process.

HYPOTHESIS

A prediction that can be tested by conducting an experiment. A hypothesis is an informed (researched) question. It uses the information you collect about your purpose (statement/question) to explain the observations made before, during, and after doing your experimental test trials.

DATA

a written record of all the observations (*changes*) and measurements made in your experimental trials. It is important to record everything that takes place. Record both qualitative and quantitative descriptions and measurements. Your data may be kept in a logbook. Take photographs that show the changes you observe, but **do not** photograph any *human faces (of the investigator or subjects)*. Once you have finished your first experimental trail, run two more trails following the same procedure exactly (for a minimum of 3 trials). If you are testing samples, you must test each sample a minimum of 3 times as well.

REAL LIFE CONNECTIONS

If applicable, explain any application your project has to real-life or if it has any present or future career opportunities.

MATERIALS

A list of all the equipment and materials you use in your investigation. List each item by quantity, in a column. Use metric tools, measures with units when possible (customary English measuring tools, and measures with units will also be accepted).

DESIGN AND ENGINEERING BOARD DUAL-LABELS

Project Title

PURPOSE / ASK

What is the Problem? A statement explaining what you are trying to investigate. Collect as much information as you can about your investigation. Spend some time in the library or on the internet learning more about it. Your research will help you understand the question a little better and help you write a testable question or "hypothesis" that can be tested by collecting experimental data.

HYPOTHESIS / IMAGINE

What is a possible solution? A prediction that can be tested by conducting an experiment. A hypothesis is an informed (researched) question. It uses the information you collect about your purpose (statement/question) to explain the observations made before, during, and after doing your experimental test trials.

PLAN

Technical drawings of the designs, complete with a title, labels, measurements and units, of your final solution that is accurate and precise enough so they could be recreated by others.

MATERIALS

A list of all the equipment and materials you use in your investigation. List each item by quantity, in a column. Use metric tools, measures with units when possible (customary English measuring tools, and measures with units will also be accepted).

PROCEDURE / CREATE

A list of all the steps in your experimental trials, in the exact order you perform them. Be clear, but keep it simple. Other scientists should be able to replicate your experimental results by following the same procedures.

DATA / IMPROVE

Each experimental test (of 3 separate trials), along with a written record of what you improved and how it worked in each trial until it works perfectly, time after time.

Record both qualitative and quantitative descriptions and measurements. Your data may be kept in a logbook. Take photographs that show the changes you observe, but **do not** photograph any *human faces* (of the investigator or subjects). Once you have finished your first experimental trail, run two more trails following the same procedure exactly (for a minimum of 3 trials). If you are testing samples, you must test each sample a minimum of 3 times as well.

CONCLUSION / COMMUNICATE

Explain what you've learned in writing. Write about what you observed through the design and engineering process. Do they support or reject your hypothesis? What problems happened during your experimental trials that may have affected your results, if any? All findings must be explained. Any claims (assertions) you make must be supported by the data recorded in your tables/charts.

Pictures of Trials

RELATIONSHIP TO MATH

Required only on math projects - explains any math skills, computations, or processes that were used in your investigation and/or design and engineering process.

REAL LIFE CONNECTIONS

If applicable, describe if their design provides any real-life solutions or career opportunities.