



Science/Engineering Project



Tricks and Tips

- Due week before break
- Space-out the project – Don't try to do it all in one weekend
- First time? Keep it simple!
- Remember, it's supposed to be fun



First Steps...

Science or Engineering? Choose a problem/question

- Start with the branch of science or engineering you are interested in
- Narrow it down
- Focus on your natural questions
- A problem asks a question that can be MEASURED



A Good Experiment...

Can be measured

- Distance
- Weight
- Volume
- Time
- Temperature
- Electric current
- Count

Is not...

- A survey
- Subjective
- Using a judgment to arrive at a conclusion
- Testing something only once or twice
- Using only one or two samples



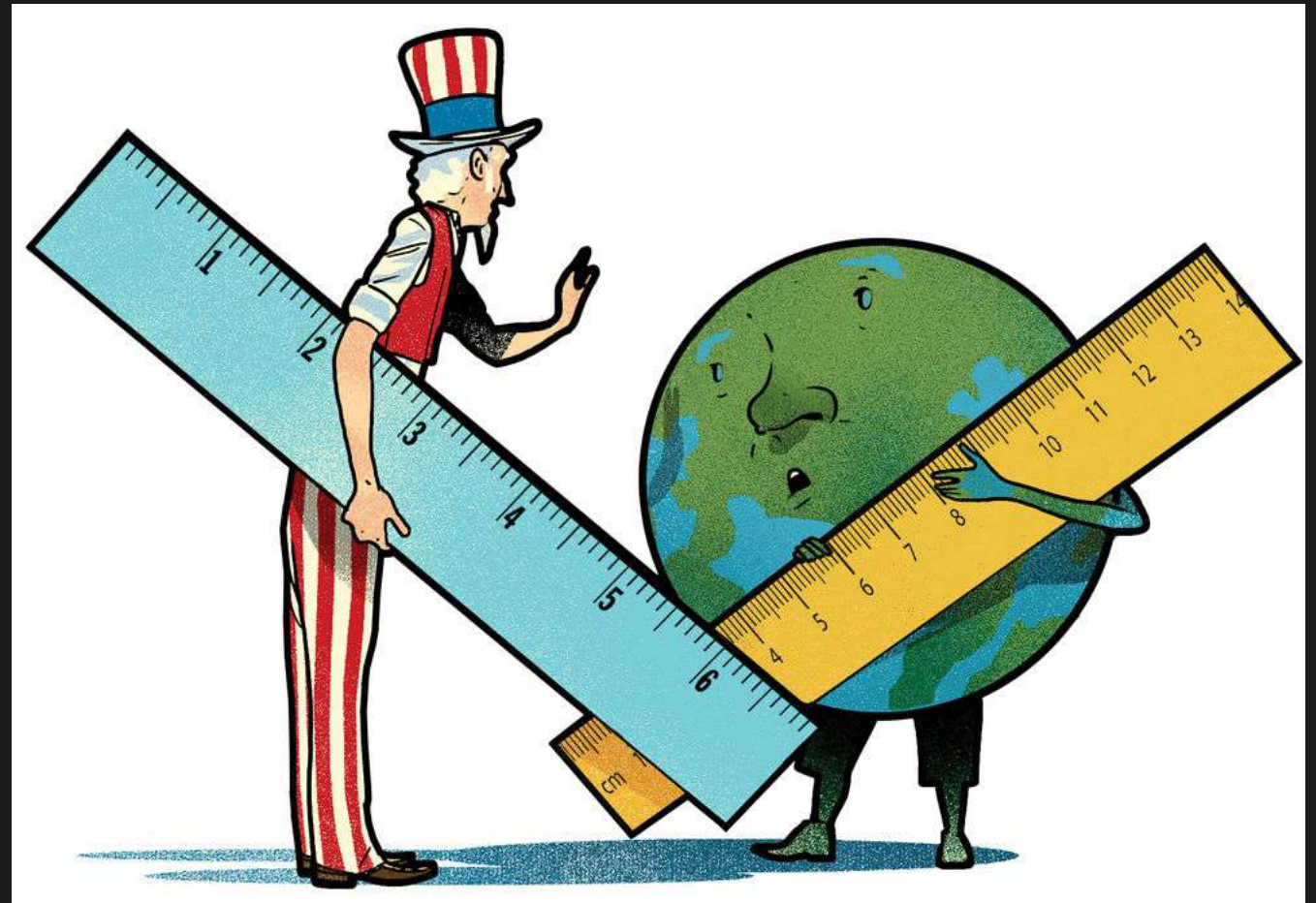
List of materials

Use grams not pounds

Use liters not gallons and teaspoons

Use meters not feet and inches

- Use metric measurements
- Put it in a list



Step Two...

Conduct Research - Create Hypothesis/Specify Problem

- Research it with a friend or parents
- Take notes
- Then refine your question
- **SCIENCE PROJECT:** After the research, answer your question in a hypothesis
- **ENGINEERING PROJECT:** Specify the problem



Procedure or Test Plan

- Step-by-step of the experiment
- Must be “repeatable”
- Please don’t start step 1 with “get a pencil and a paper”
- Aim for exact language



Don't forget the journal!



The journal describes everything that was done in the experiment.

It is written in the form of a diary marked with the dates and times.

It includes descriptions by the five senses, as well as thoughts.



Then comes the “write-up”



Include photos of the experiment – keep your kid’s face out of it!

Help them create graphs. The experiment should have been “measured,” so there should be numbers to graph.

Write a small paragraph about the graph, explaining it. This is called “Analysis of Data.”

Write a conclusion. What were the results of the experiment? If you had to do it all over again, what would you change?

Write an abstract – 6th grade only. This is a summary of the report to be included on a separate form.



But wait! There's more...

Research Report

- 300 - 500 words about what other scientists have already found out about their subjects
- Use introduction, body paragraphs and a conclusion
- Printing articles off the Internet is NOT research

Bibliography & Acknowledgments

- Cite 3-5 references to outside sources in their report
- Make sure the bibliography is formatted properly
- Make sure you thank whoever helped for their hard work



...and if you call
the next 10
minutes, you'll
also get...



- Type everything onto the quad chart except for the acknowledgements, bibliography, research report, journal and abstract. These should be included in a separate file called “notebook.” Abstract will be on a separate form.
- Students who advance to the district will be required to upload their project digitally (quad chart and notebook). They will also be required to complete a 3-minute video of their project.



Engineering vs. Science

- Design requirements
- Evaluate possible solutions
- Create a prototype
- Test and redesign
- Sketches, diagrams, and detailed drawings
- No “hypothesis” in engineering



Questions? Comments?

- Email: Alyssa_Gonzales@chino.k12.ca.us or Curt_Sumners@chino.k12.ca.us
- Contact your teacher
- Read the online attachments carefully

