

Title of Lesson Plan	I Wood if I Could
Prepared By	Jeanine Bryce
City and State	Edgewater Park, NJ
Grade Level(s)	10
Keywords	Individual
Brief Description	Groups of students will pick a product (from the list), they will research the process required to produce the product and present it to the class. Once approved, the students will be required to produce the product in the lab. List: Ice cream, bubble gum, paper, toothpaste, lipstick.
Total Time Required	6-8 class periods
Setting	Cooperating Groups
Lesson Objectives/Goals	THE LEARNER WILL DEMONSTRATE synthesis of products that come from trees by investigating the process, designing and producing the process in the lab
Materials Needed	Hot plate, Bunsen burner, beaker, glass stirring rod, thermometer, molds (for lipstick), refrigerator, sugar, milk, vanilla, rock salt, ziploc bags (1 gallon), ice cubes, gum base, powdered sugar, corn syrup, glycerin, citric acid, mint or peppermint oil, sponge, window screen, wood frame, plastic tub, paper pulp, flannel, tacks, liquid starch, sodium bicarbonate, salt, water, castor oil, mica pigments, white beeswax, canuba wax, vitamin E Acetate, Vaseline, and grapefruit seed.
Standards Addressed	5.1.12 Scientific Inquiry, 5.2.12 Science, Society and Technology, 5.3.12 Mathematical Applications, 5.4.12 Nature and Process of Technology, 5.5.12 Characteristics of Life, 5.10.12 Environmental Studies.
Procedure	Individual
Assessment	See Rubric Below
Literature Cited/References	http://crafts.kaboose.com/ice-cream-in-a-bag.html http://www.leeners.com/gumrecipe.html http://www.pioneerthinking.com/makingpaper.html http://chemistry.about.com/cs/howtos/ht/toothpaste.htm http://www.essortment.com/lifestyle/makelipstick_smxg.htm http://www.leeners.com/gumrecipe.html
Forestry Tour Attended	Pacific Northwest 2008

Lab Rubric

	Distinguished (3)	Satisfactory (2)	Borderline (1)	Unsatisfactory (0)
FORMAT				
Title Page	Contains title, name, date, course, teacher, period.	Missing one except title or name.	Missing two except title or name.	Missing more than two, or title or name.
Sequence	Logically sequenced: Question, Hypoth., Test, Mater./Proc., Data, Anal./Conclusion. All present.	Not more than one category missing or out of sequence.	Not more than 2 categories missing or out of sequence.	More than 2 categories missing or out of sequence.
Clarity	Lab report sections clearly distinct from each other; grammatically correct English; figures/graphs correctly titled & labeled.	Sections clearly labeled but not separated; English generally correct; figures/graphs correctly labeled but not titled.	Sections labeled but not separated; frequent errors in grammar; figures/graphs labeled but contain errors in units, axes or headings.	Sections not labeled nor separated; English poor; figures/graphs not titled nor labeled.
REPRODUCIBILITY				
Hypothesis	Clear explanation of purpose; educates by providing context.	Gives a correct purpose with some framework	Declares a purpose that is correct.	Purpose is incorrect.
Design	Clear step-by-step description of experimental procedures; labeled diagrams/drawings of any apparatuses/devices used to carry out the experiment.	Step-by-step description that misses not more than one key detail; diagrams/drawings included but not labeled	Step-by-step description that misses not more than two key details; apparatuses/devices mentioned but not shown.	Description lacks more than two key details; no mention of apparatuses/devices used to carry out the experiment.
Detail	Includes formulas/calculations used to analyze data & explains their use. Records observations and explains their import. All original data included.	Includes formulas and calculations used to analyze data. Records observations, sometimes their import. Most original data included.	Includes formulas and some calculations used to analyze data. Records some observations. Some original data included.	Does not include formulas nor calculations used to analyze data. No observations noted. Original data not present.

ACCURACY				
Units	Units are used correctly and consistently throughout the report.	Units generally used correctly in most of report	Units used only in some key parts of report.	Units are rarely used or are generally incorrect.
Data Manipulation	Calculations clearly laid out. Dimensional analysis/Math correct. Figures display data correctly, all variables labeled.	Calculations contain few errors in dimensional analysis or math. Figures correct, variables unlabeled.	Calculations contain some errors in dimensional analysis or math. Figures correct. No labels or legend.	Dimensional is analysis not used. Math not shown. Figures display data incorrectly.
CONCLUSION				
Framework	Restates the hypothesis, supports or refutes it and explains the role of the test in making the decision.	Restates the hypothesis and supports or refutes it.	Supports or refutes the hypothesis without restating it.	Does not address the hypothesis.
Evidence	Uses data powerfully as evidence to support statements.	Uses data to support statements.	Refers to data in the body of the report as support.	Does not use data to support arguments
Logic	Conclusion is logically forced from data and prior knowledge.	Conclusion is logical but not thoroughly defended.	The conclusion is logical but poorly defended	The conclusion is incorrect.
Error	Identifies sources of error and explains effect on results.	Identifies sources of error.	Suggests possibility of error but identifies no sources.	Does not address possibility of error.
Context	The expt. is made meaningful by discussion of its scientific or societal implications; proposals for further investigation are made.	An application or use of the work is provided; a proposal for further investigation is made.	The work is generally ascribed to be useful but no rationale is provided for thinking so.	No relevance is provided for the work.

- The Temperate Forest Foundation reserves the right to modify, revise, and reformat lesson plans for quality and appropriateness.
- Lesson plans submitted to us may be hosted on our web site: www.forestinfo.org and may be shared with other teachers across the nation.
- Lesson plans are for individual classroom and educational use only. We reserve the right to publish lesson plans and lesson plan summaries on any of the Temperate Forest Foundation's publications (emails, newsletters, etc).