

SNC1D Remote Learning Summative (Possible 15% of final mark)

Choose a row or column. Create a video/slide show/portfolio/study guide showing how well you understand the topics in that row or column. In addition, design an experiment based off one of the possible topics given.

The rules:

- no more than 2 items in each row/column may use material that is not your own work
 - if you are using someone else’s video, you may not also use their audio
 - the blue squares are a free topic: you may choose any other topic as long as it is something that was covered in class; subject to your teacher’s approval
 - If you choose the !! column or last row, for the green box pick a topic from the missing unit (subject to your teacher’s approval).
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- **Experimental design:** Pick a topic from the list. A list of possible independent and dependent variables is included. Design an experiment to test the effects of changing one variable on another for your topic. You don’t need to perform the lab, but you will write it up as if you had and set up a data table and graph for the results.

Due date for topic choice: May 31

Due date for initial outline: June 7

Due date for final project: June 14

Rubric

Category		Level 4	Level 3	Level 2	Level 1
Draft Outline:	/10				
Outline shows _____ detail & clarity		outstanding	good	some	limited
Final project:					
Student shows _____ understanding of the topic					
Topic 1	/5	outstanding	good	some	limited
Topic 2	/5	outstanding	good	some	limited
Topic 3	/5	outstanding	good	some	limited
Topic 4	/5	outstanding	good	some	limited
Topic 5	/5	outstanding	good	some	limited
Experimental Design	/15	outstanding	good	some	limited
Total	/50				

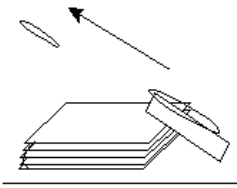
The Choices

B	I	N	G	O	!!
Objects in the solar system	Charging by friction	Carbon cycle	Metals vs nonmetals	Choose a science topic not listed	Lab design
Ohm's Law	Choose a science topic not listed	Classification of matter	Lab design	Solar nebula theory	Bohr-Rutherford diagrams
Food Webs	Lab design	Periodic Table of the Elements	Choose a (space) science topic not listed	Current calculations	Charging by induction
Atomic structure	Density	Circuits	Biomes	Lab design	Choose a science topic not listed
Choose a science topic not listed	Atomic Chemistry	Lab design	Spectroscopy	Charging by friction	Trophic levels
Lab design	Hertzprung-Russell Diagram	Choose a science topic not listed	Charging by contact	Mixtures	Choose a science topic in either Ecosystems or Space
Space	Properties of Matter	Atomic Chemistry	Static Electricity	Current Electricity	Ecosystems
Solar system	density	atomic structure	Charging by friction	Circuit	Food Webs
Solar nebula theory	classification of matter	BR diagrams	Charging by contact	current calc	Carbon cycle
HR diagram	mixtures	PET	Law of charges	Ohm's law	Trophic levels
Spectroscopy		Metals vs nonmetals	Charging by induction	energy generation	Biomes
Cosmology					

Experimental Design Topics

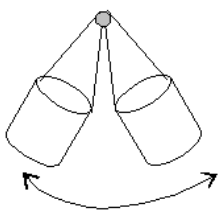
Elastic Band Rockets

One end of an elastic band is placed around the end of a ruler which is resting on some books. The other end of the elastic is pulled back a given distance, then let go. The following list of variables may be explored.

Possible Independent Variables	
thickness of bands	
length of band (stretched)	
angle of bands	
Possible Dependent Variables	
distance travelled	
maximum height reached	

A Swing

A cup with marbles inside can be used as a swing. The following list of variables may be explored.



Possible Independent Variables
length of strings
mass in cup
distance pulled back
diameter of cup
Possible Dependent Variables
time to swing
number of swings

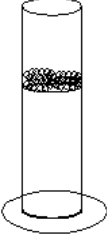
Dissolving Sugar

Sugar tends to obey most rules about dissolving. The following list of variables may be explored.

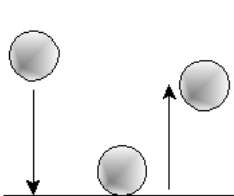
Possible Independent Variables	
# times stirred	
volume of water	
# sugar cubes	
temperature of water	
Possible Dependent Variables	
time to dissolve	
amount dissolved	

Making Soap Suds

Soap suds can be made by adding drops of detergent to water in a graduated cylinder and then shaking the cylinder with your hand cupped over the opening. The following list of variables may be explored.

Possible Independent Variables	
# drops of soap	
# of times shaken	
amount of fat in soap	
volume of water	
Possible Dependent Variables	
height of suds	
time suds stay at the top	

Bouncing Balls

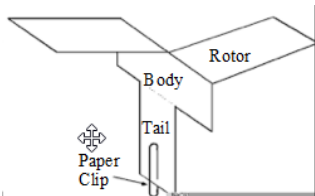


Balls can be tested for their bounciness. The following list of variables may be explored.

Possible Independent Variables
volume of ball
air pressure in ball
temperature of ball
amount of rubber in ball
Possible Dependent Variables
height of bounce
number of bounces

Paper Helicopters

Toy paper ‘helicopters’ can be constructed as in the diagram below. The following list of variables may be explored.



Possible Independent Variables
length of rotor
number of paperclips
width of body
length of tail
height of drop
Possible Dependent Variables
time of flight
number of turns

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