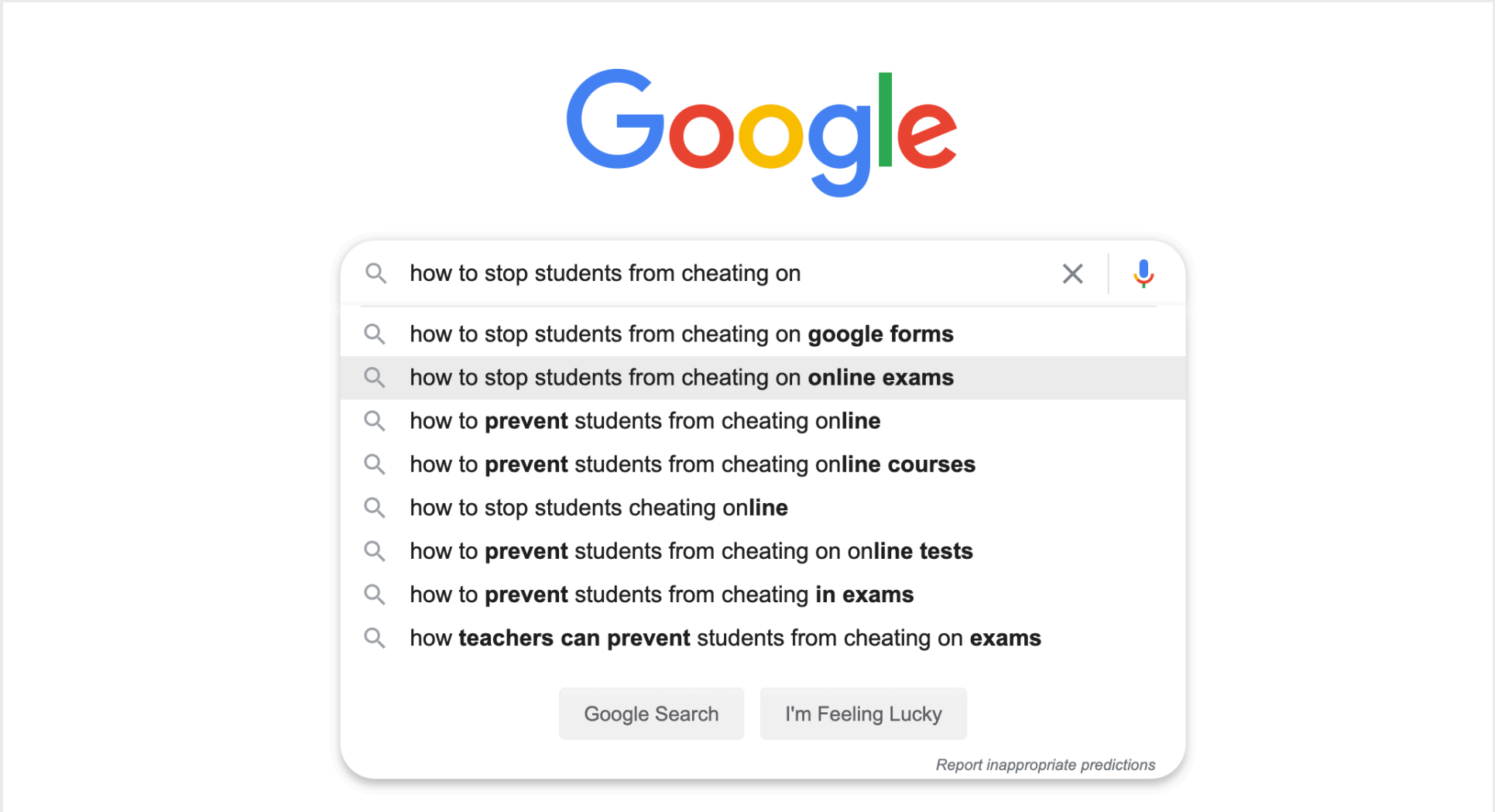
Online Exams!



Dr. Jon French
Syracuse University
Department of Chemistry

Online Exams

- Talk about Academic Honesty with your class
- Have an Academic Honesty pledge
- Start the exam with a statement on academic honesty
- Define was is and what is NOT acceptable
  - Open notes
  - Open book
  - No outside websites
- Set a time limit scheduled well in advance

Online Exams

- Add in more ”low stake” assessments

CHE 106 pre-2017

80% exams (4, 20% each)
20% homework

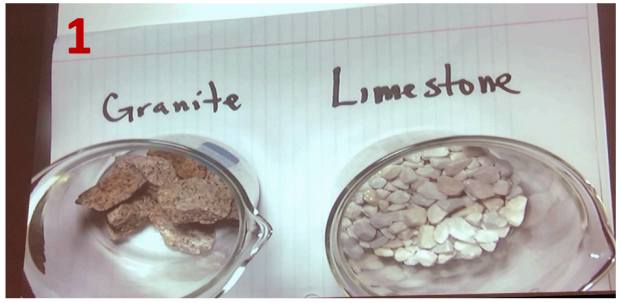
CHE 106 Today

50% exams (4 exams, 12.5% each)
20% homework (pre/post)
10% weekly recitation problem set (10 problem sets, 1% each)
10% practice exams (4, 2.5% each)
5% class participation
5% discussion board participation

Online Exams

- Base questions on in class experiences/discussions/demonstrations

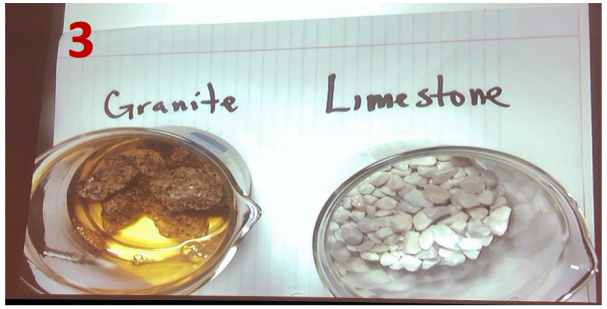
Impact of Acid Rain in NY



Granite (SiO_2) is the predominant bedrock in the Adirondacks. Limestone ($CaCO_3$) is the predominant bedrock in CNY

Acid rain is then added to both bedrock samples. The solution contains bromothymol blue, a pH indicator that is **yellow in acidic** conditions and **blue above pH 7.4**

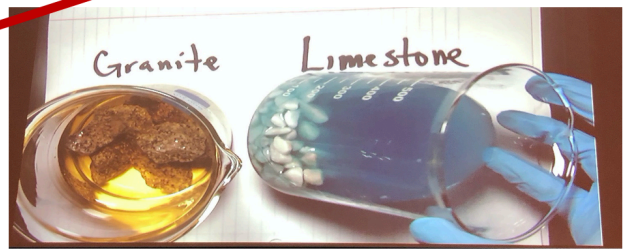
The solution is added to the granite sample and remains acidic because the granite is unable to buffer against the acid



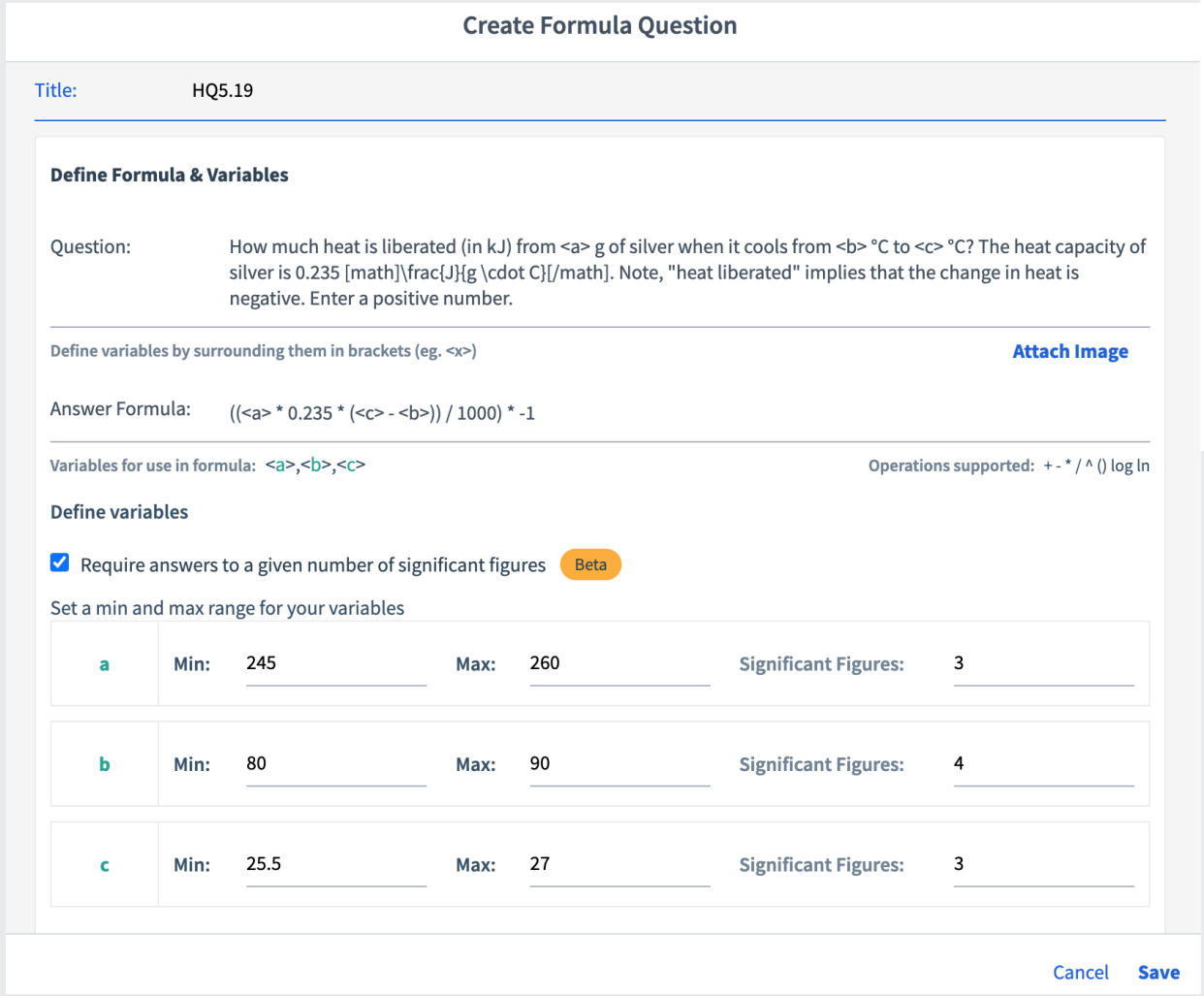
$CaCO_3(s) \rightarrow Ca^{2+}(aq) + CO_3^{2-}(aq)$

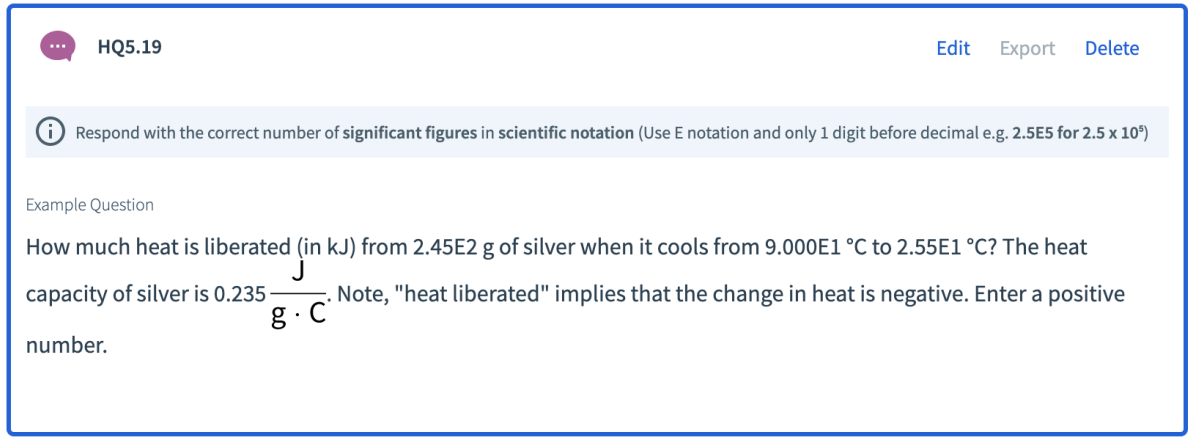
$CO_3^{2-}(aq) + H^+(aq) \rightarrow HCO_3^-(aq)$

The solution is added to the limestone sample and the acid is neutralized as is indicated by the change of the solution color from yellow to blue. This change occurs because limestone ionizes into calcium and carbonate. Carbonate (CO_3^{2-}) is able to react with and neutralize the acid



Online Exams





- Formula questions with defined variables
- Creates different variables each time the question is generated

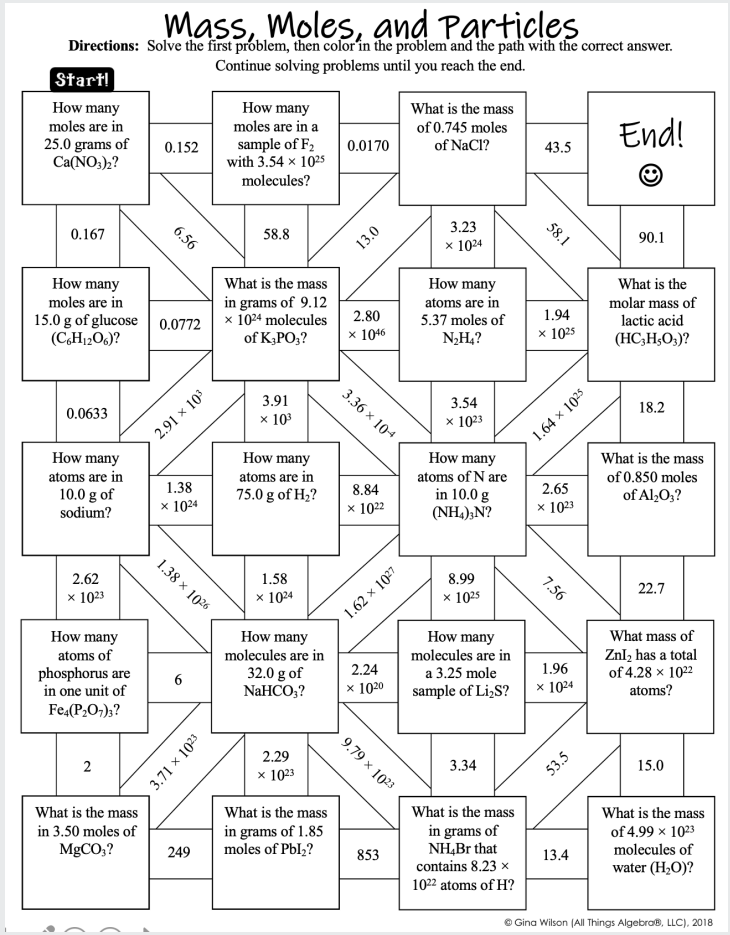
Online Exams

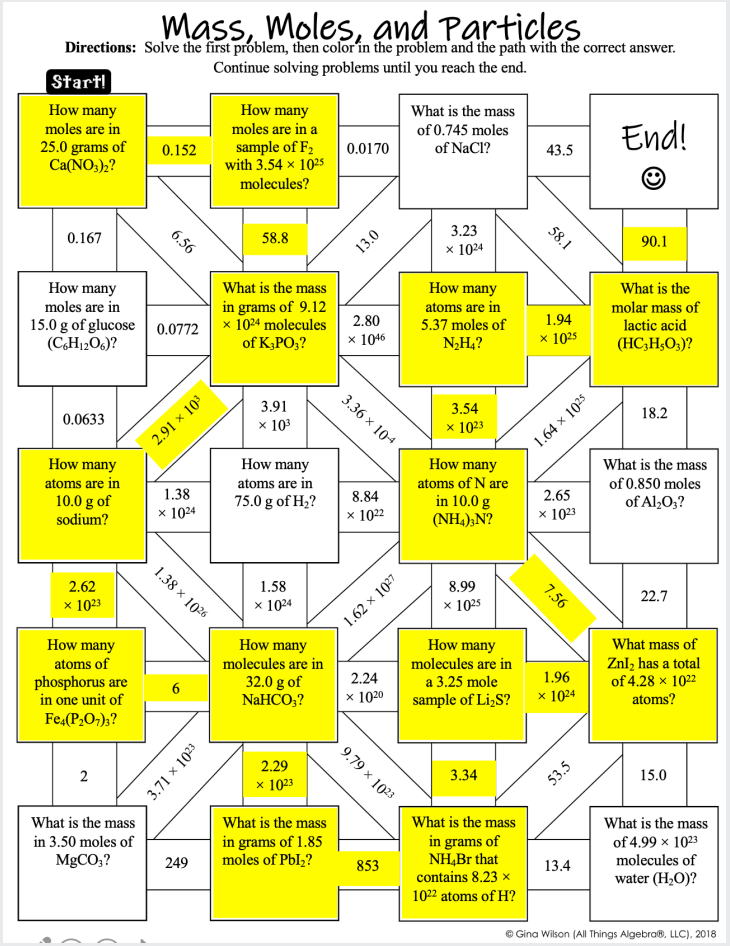
- Don’t use publisher provided test banks!
- Hack to creating multiple versions of questions w/ excel

	Reagent	grams	moles	mole product	mass product	wrong moles	wrong conversion 1	wrong conversion 2	wrong mass
	C2H2	51	1.96	3.92	172.39	86.37	43.10	344.78	101.92
	C2H2	38	1.46	2.92	128.45	64.35	32.11	256.89	75.94
	C2H2	62	2.38	4.76	209.57	105.00	52.39	419.14	123.90
	C2H2	43	1.65	3.30	145.35	72.82	36.34	290.70	85.93
	C2H3	17	0.65	1.31	57.46	28.79	14.37	114.93	33.97

Problem Sets

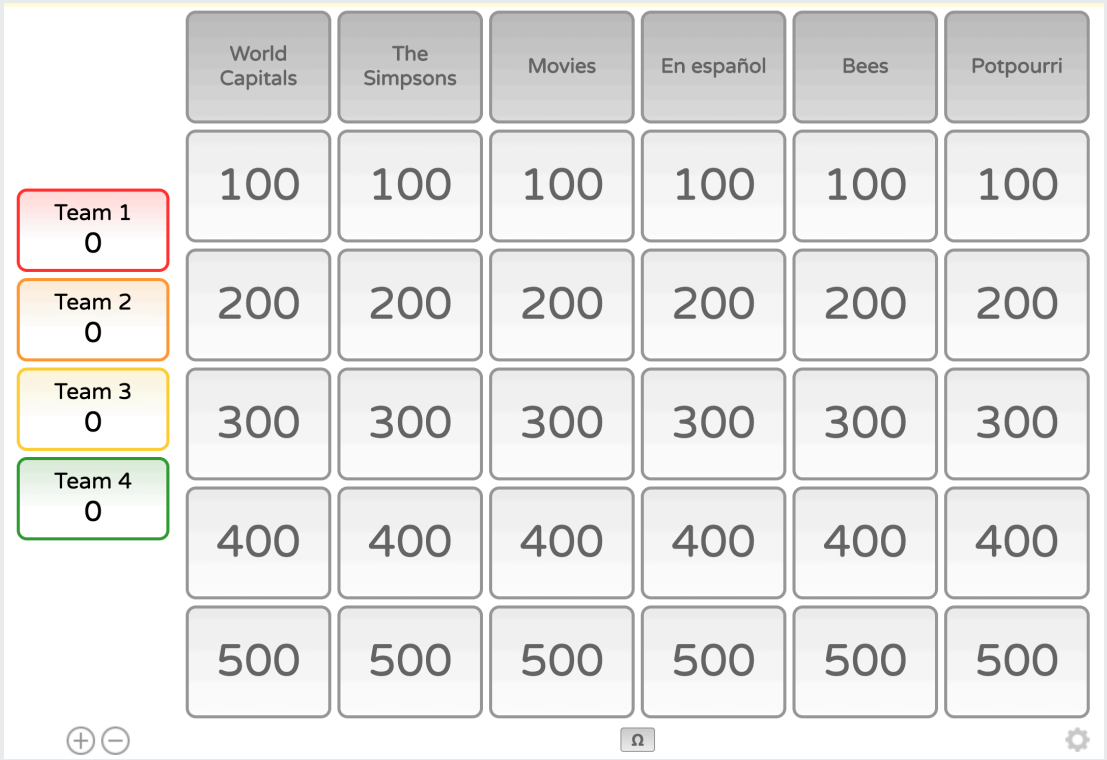
- Fun and easy to grade problem sets

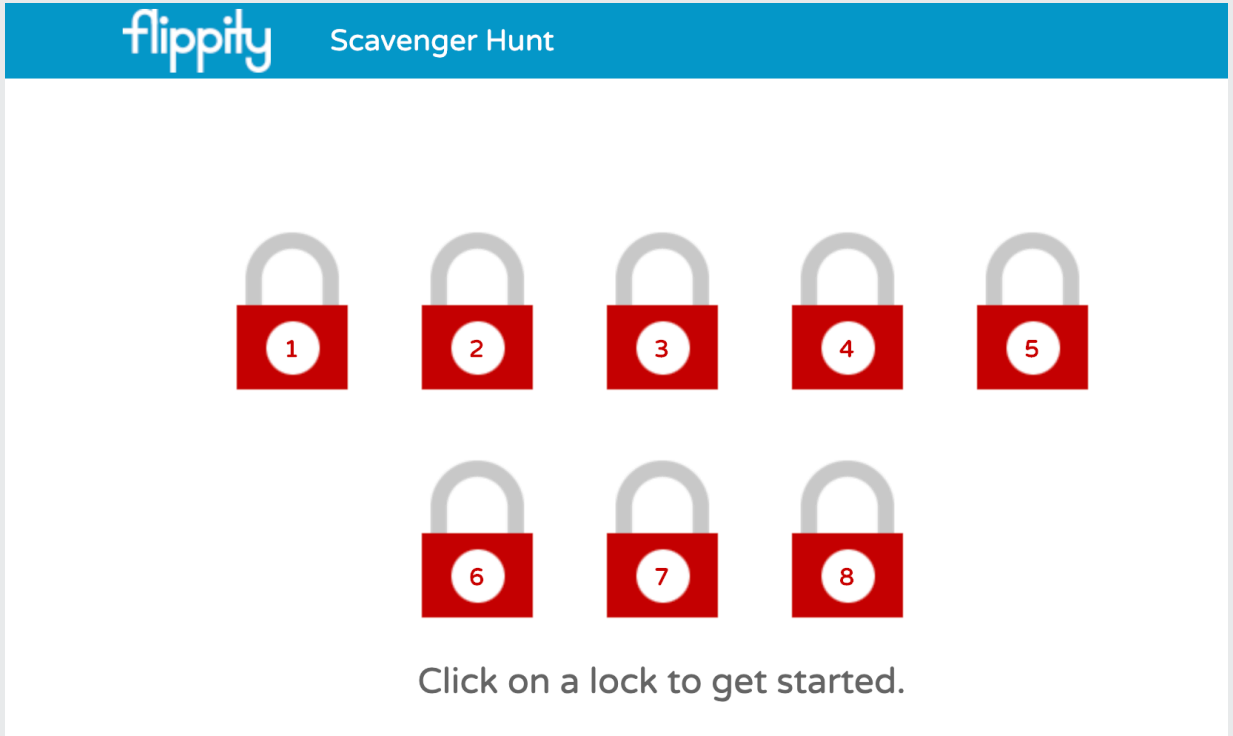




Problem Sets

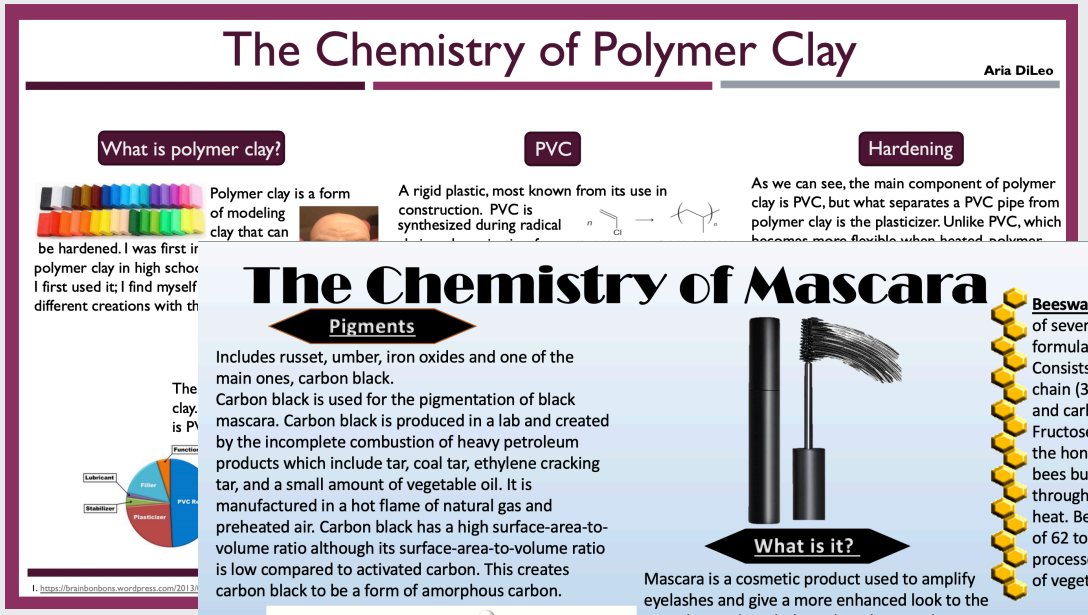
- Flippity.net – free, google forms for different activities

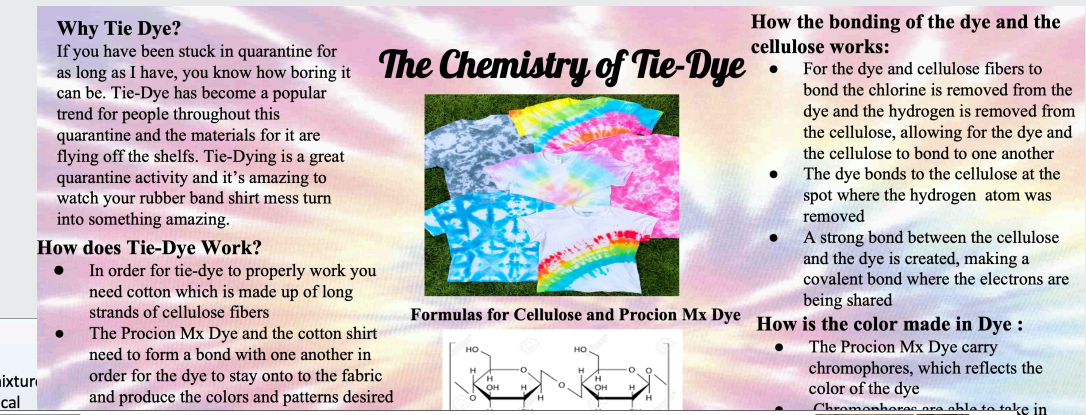


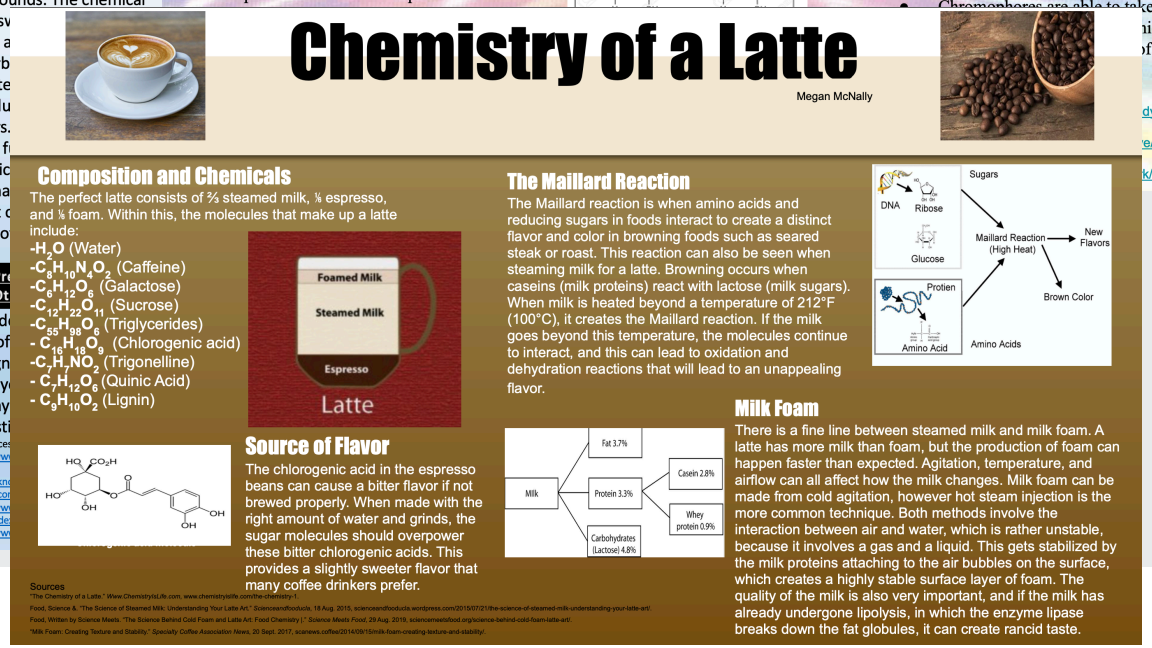


“Chemistry in My Life”

- 1-page infographic diving into the chemistry of something from your life, hobby, major, etc.







Online Exams

- Change your mode of assessment
- “Chemistry in the News”
- 2-3 page essay on a current science article
- Limit the source of the article