CAROLINA
UNLEASH LEARNING™

Keep Calm and Chemistry On: Successful Lab Activities for the New Chemistry Teacher

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Laurie Nixon Watauga High School

- 25 years teaching
- Currently teaching AP® Chemistry and Honors Chemistry
- Carolina consultant for more than 20 years

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Building Toward TEKS Science Concepts

Beaker Freezer

- **C.13.A:** Explain everyday examples that illustrate the four laws of thermodynamics.
- **C.13.C:** Classify processes as exothermic or endothermic and represent energy changes that occur in chemical reactions using thermochemical equations or graphical analysis.

Mystery Chemical Reactions

- **C.5.B:** Predict the properties of elements in chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals, based on valence electrons patterns using the Periodic Table.
- **C.5.C:** Analyze and interpret elemental data, including atomic radius, atomic mass, electronegativity, ionization energy, and reactivity to identify periodic trends.
- **C.9.A:** Interpret, write, and balance chemical equations, including synthesis, decomposition, single replacement, double replacement, and combustion reactions using the law of conservation of mass.
- **C.11.D:** Investigate the general rules regarding solubility and predict the solubility of the products of a double replacement reaction.

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Building Toward TEKS Science Concepts

Balancing Chemical Equations

- **C.9.A:** Interpret, write, and balance chemical equations, including synthesis, decomposition, single replacement, double replacement, and combustion reactions using the law of conservation of mass.

Petri Dish Electrolysis

- **C.9.A:** Interpret, write, and balance chemical equations, including synthesis, decomposition, single replacement, double replacement, and combustion reactions using the law of conservation of mass.

CAROLINA
UNLEASH LEARNING
©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Workshop Safety

CAROLINA
UNLEASH LEARNING

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Workshop Reminders

- PowerPoint® for this workshop is available at knowledge.carolina.com. Type “workshop” in the search bar.
- More demos? Chemistry webinar available at knowledge.carolina.com. Type “webinar” in the search bar.
- Handout includes all demos and activities from the workshop.

Highly Visual Chemistry Phenomena for 3D Instruction - Web

44:30

Presenters: Matt Bostic and Chris Petersen, Carolina Product Developers
Grades: 6–12

What are the aspects of good phenomena? How can you redesign classic, tried-and-true chemistry demos to support 3-dimensional learning? Find out in this webinar.

CAROLINA UNLEASH LEARNING

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Demo: Frozen Beaker

An extreme endothermic reaction

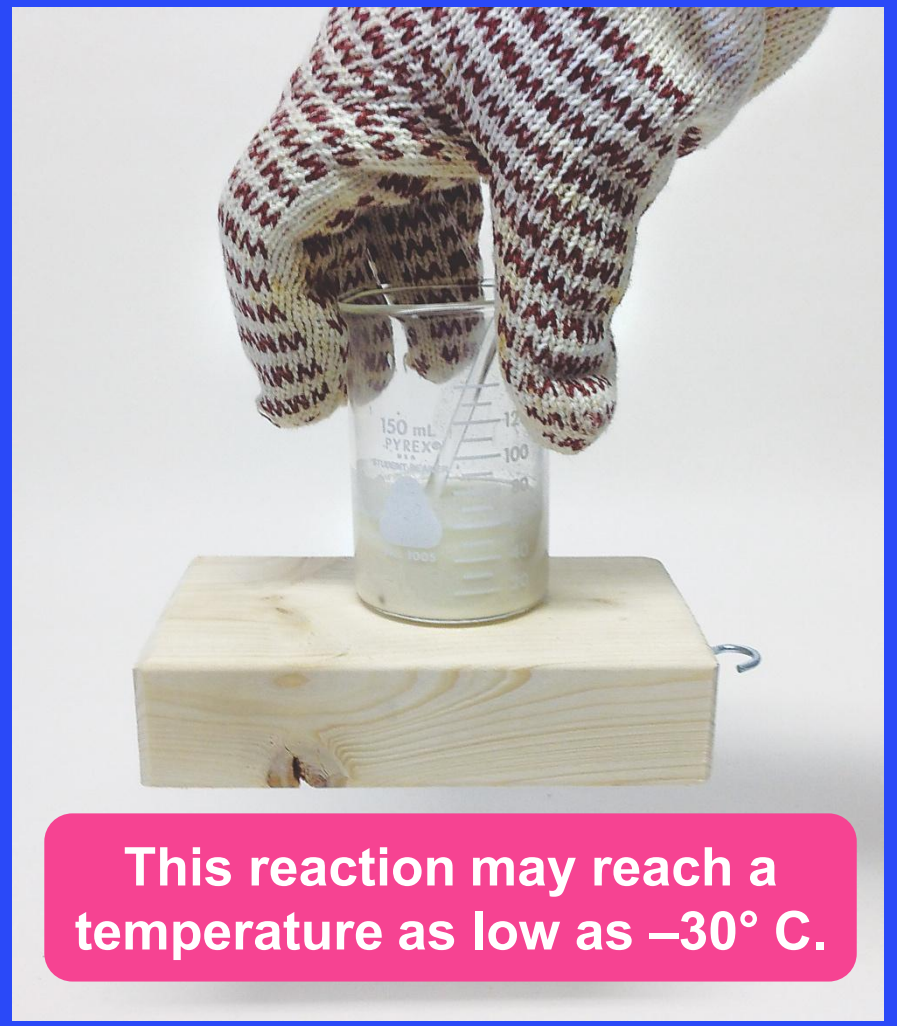
Goggles On! Carolina Chemonstration® in progress

Solid barium hydroxide octahydrate and solid ammonium chloride

Predict

Observe

Explain



CAROLINA
UNLEASH LEARNING

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

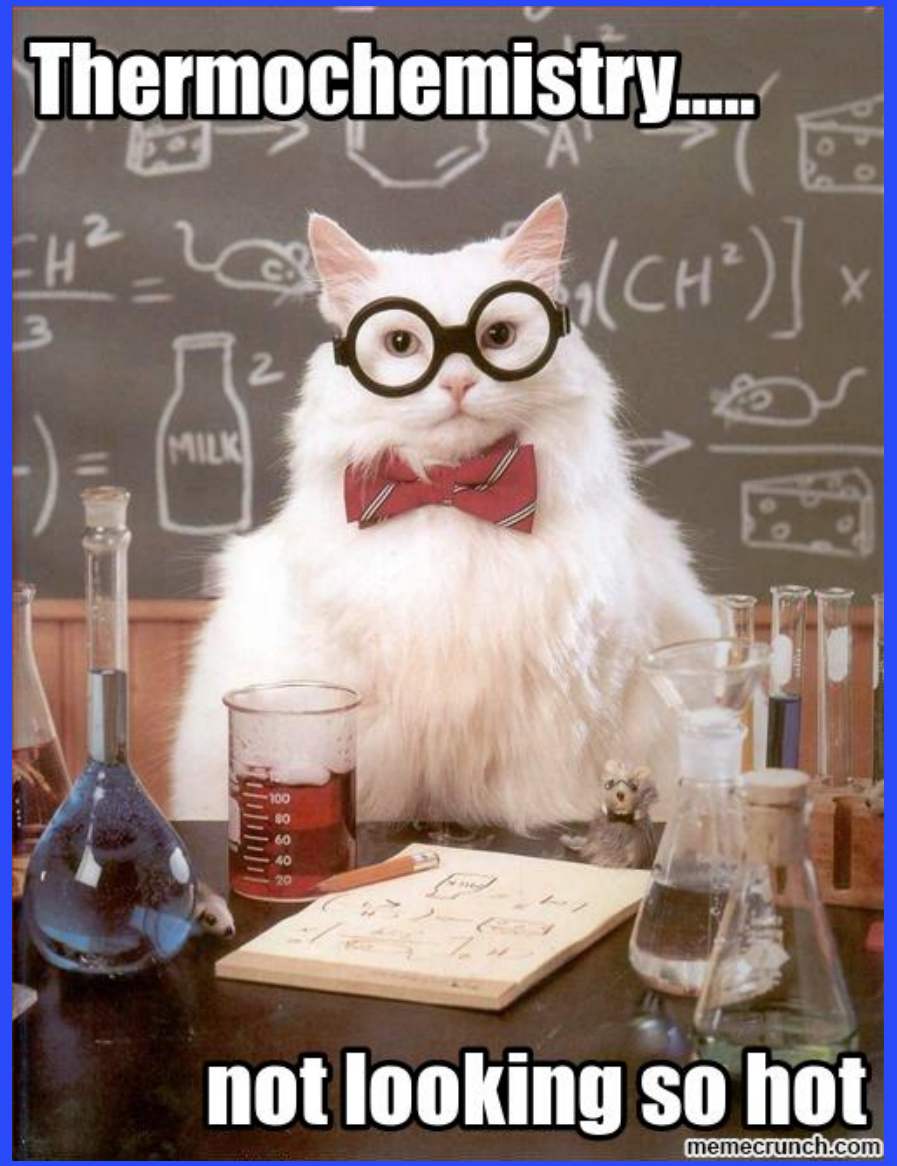
Demo: Frozen Beaker
An extreme endothermic reaction

Curriculum connections:

- Laws of thermodynamics
- Energy changes
- Endothermic vs. exothermic reactions

Possible discussion questions:

- What would be some practical, real-world applications of an endothermic reaction?
- Could you measure the heat of reaction in this demo? If not, why?
- Are heat and temperature the same thing?



©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Lab: Mystery Chemical Reactions

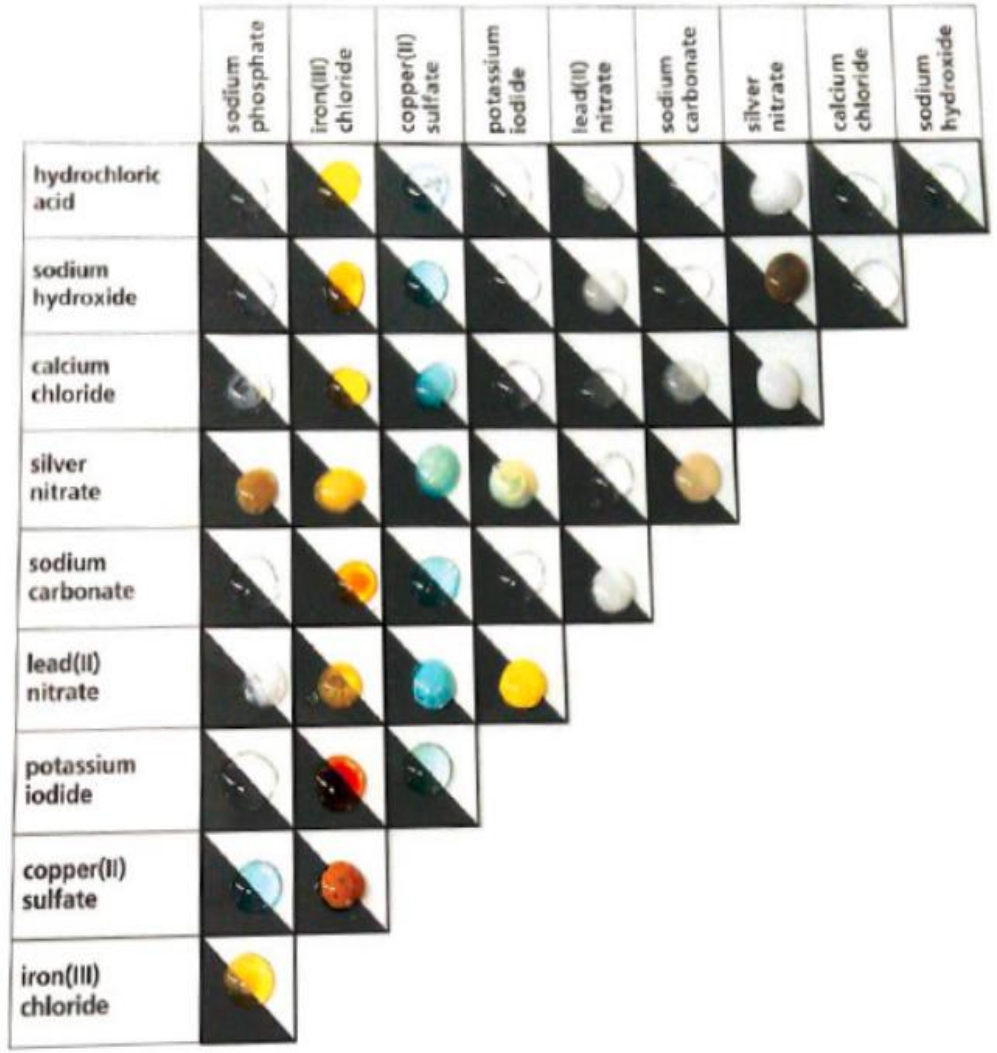
- **Explore scientific phenomena**
- **Identify visible signs of reaction** (precipitate, gas, and/or color change)
- **Microscale chemistry benefits** (save time and money; reduce waste)

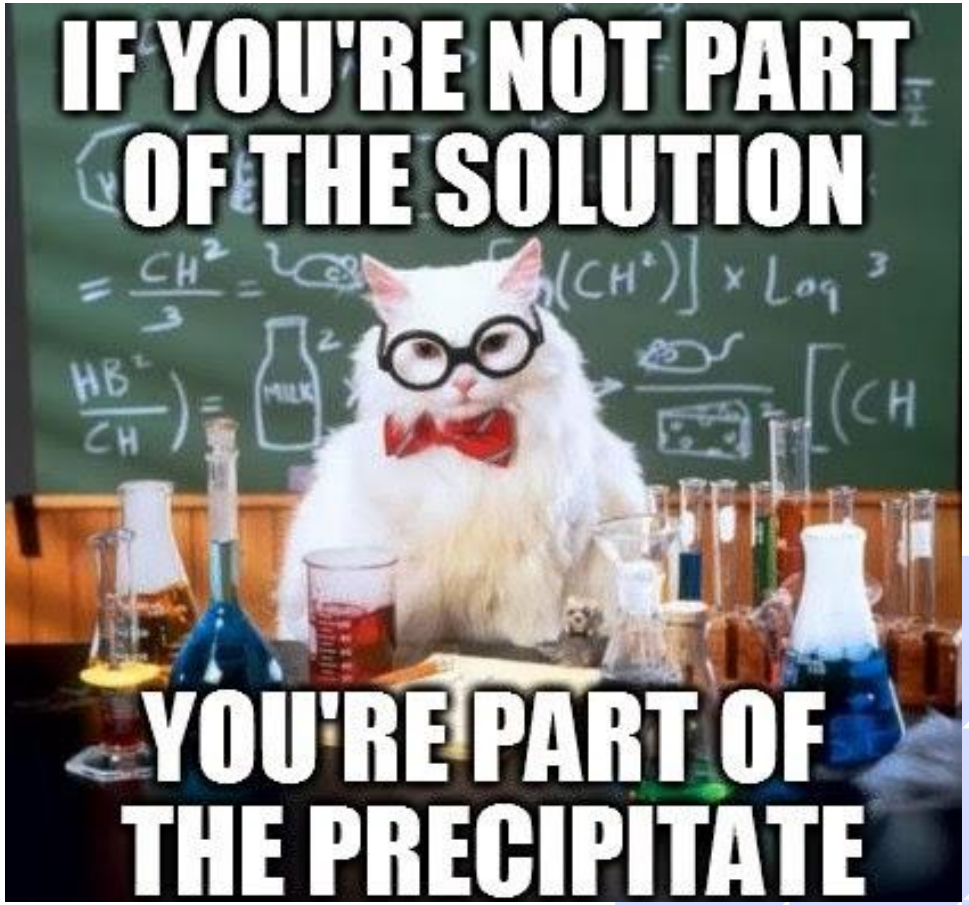
Featured Digital Content
- Interactive lessons

CAROLINA UNLEASH LEARNING

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Lab: Mystery Chemical Reactions



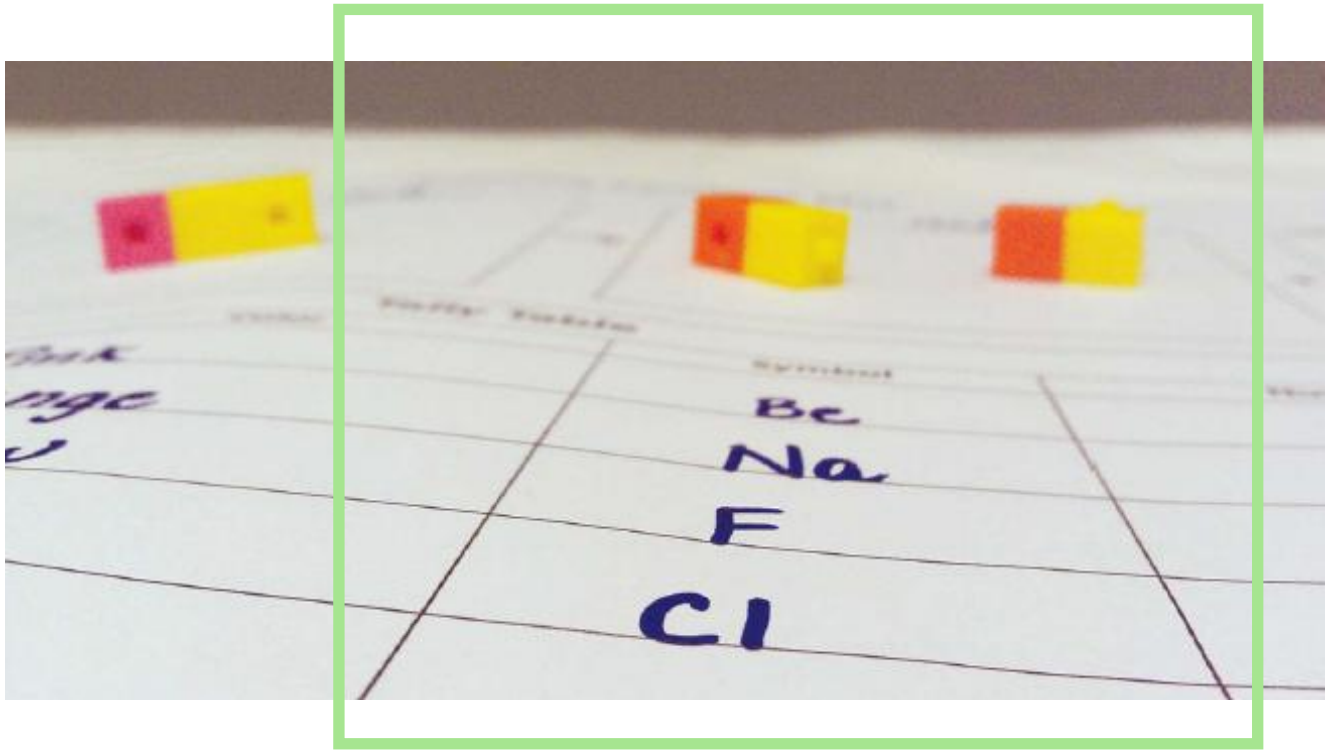


©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

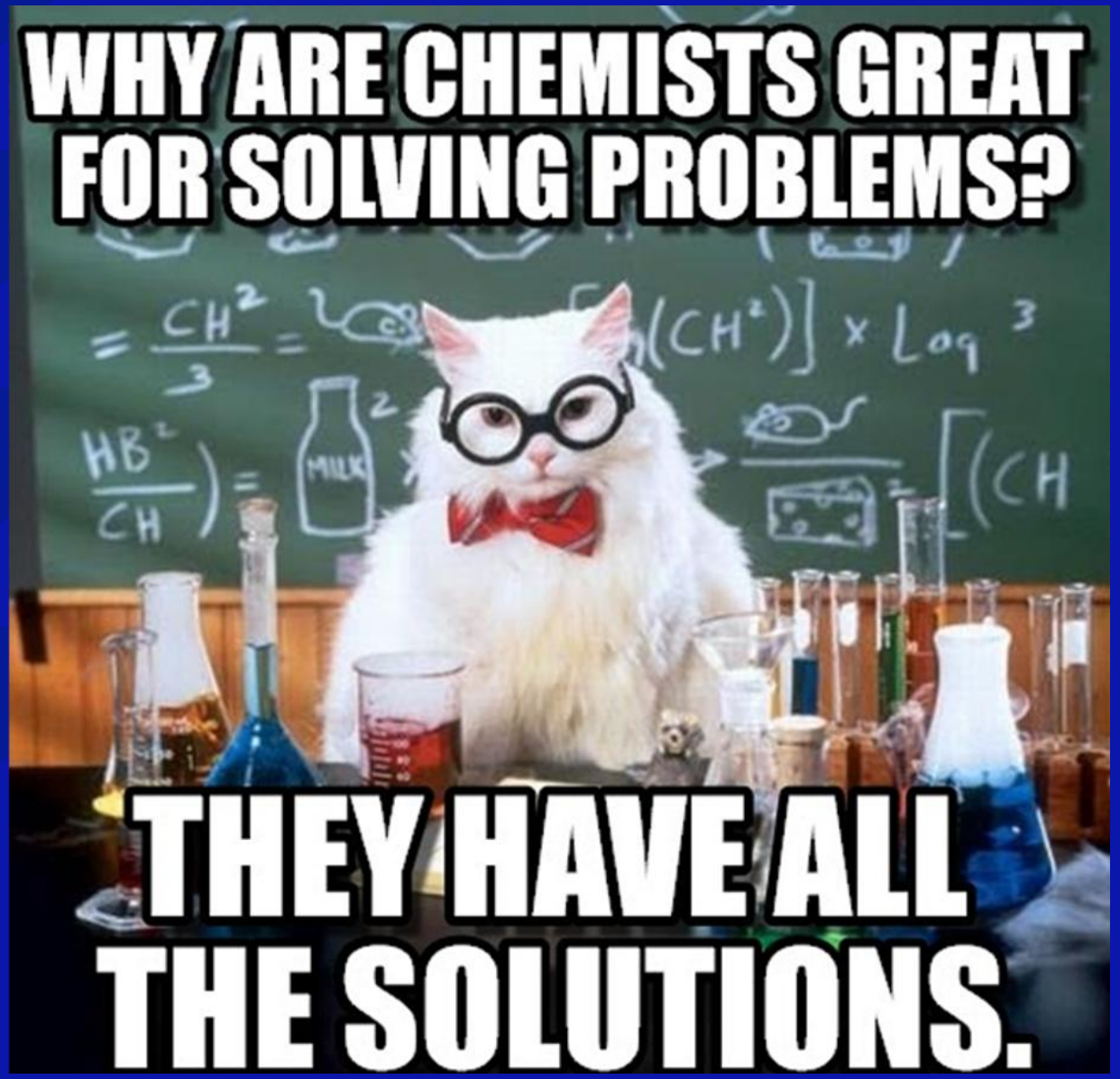
Lab: Balancing Chemical Equations

A tactile introduction to stoichiometry

- **Understand the Law of Conservation of Mass**
- **Understand the difference between coefficients and subscripts in chemical equations**



©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.



CAROLINA UNLEASH LEARNING

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Workshop Kit Review

Endothermic Reactions: Beaker Freezer

Item #840378

Mystery Chemical Reactions

Item #840660

Petri Dish Electrolysis

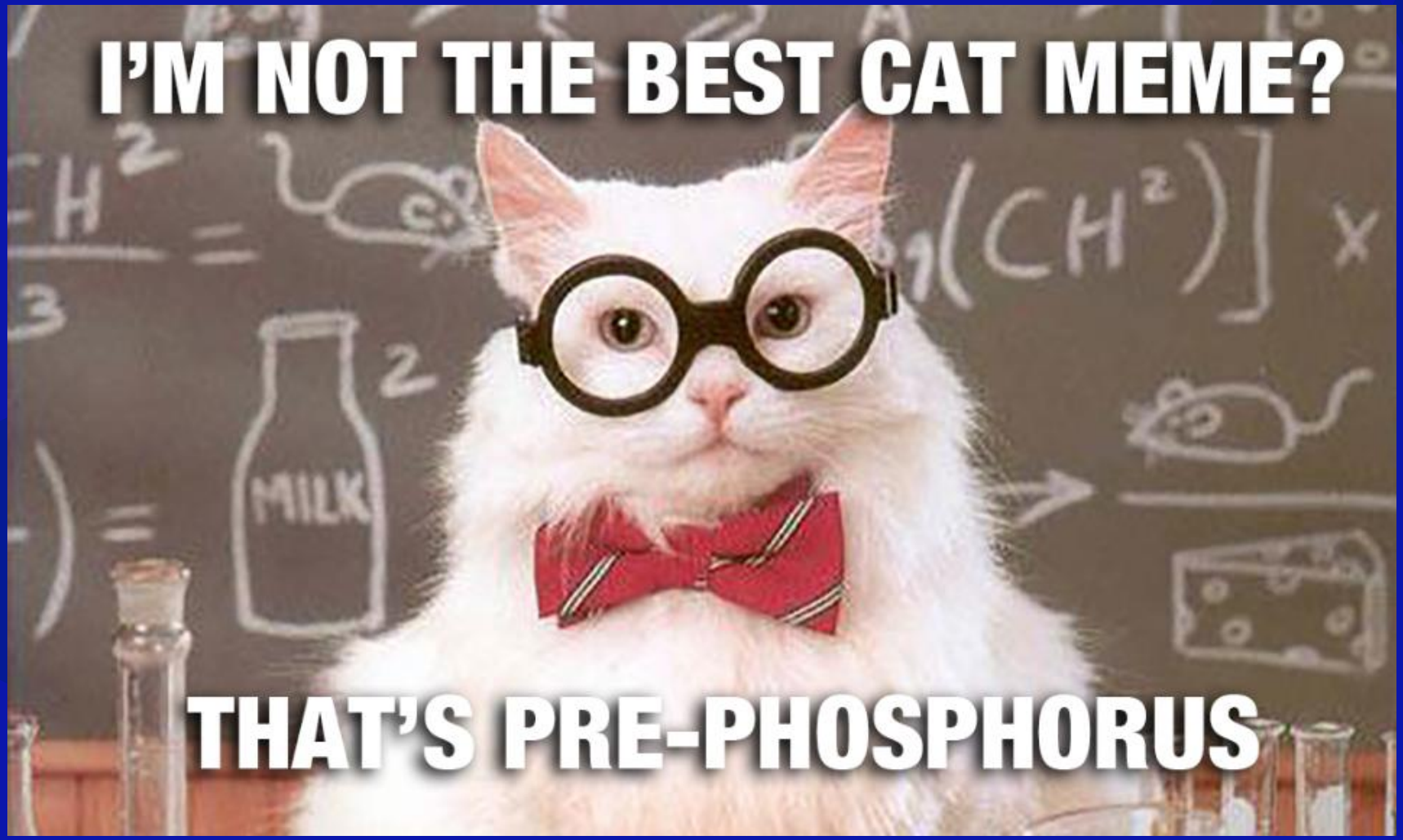
Item #840830

Balancing Chemical Equations

Item #840656

CAROLINA
UNLEASH LEARNING

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.



©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.

Join us on social media to stay up to date with new kits and free lessons!

YouTube @CarolinaScience

@CarolinaScience

LinkedIn Carolina® Science

@carolinascience

CAROLINA UNLEASH LEARNING

©2025 Carolina Biological Supply Company
Unauthorized reproduction, distribution, or display of copyrighted materials is prohibited.