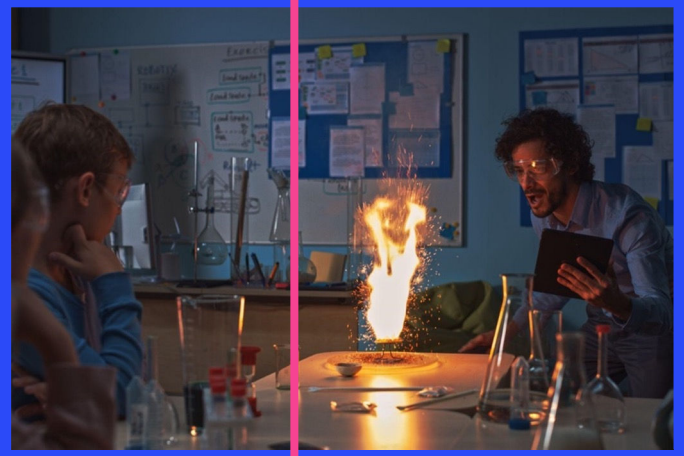
CAROLINA
UNLEASH LEARNING™



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

Laurie Nixon Watauga High School

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

Building Toward 3-Dimensional Learning

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
▪ Developing and using models ▪ Planning and carrying out investigations ▪ Analyzing and interpreting data ▪ Constructing explanations	**PS 1:** Matter and its interactions **PS 3:** Energy	▪ Cause and effect: Mechanism and explanation ▪ Scale, proportion, and quantity ▪ Systems and system models ▪ Energy and matter: Flows, cycles, and conservation[1]

1. NGSS Lead States, Next Generation Science Standards: For States, By States *(Washington, DC: The National Academies Press, 2013), retrieved from www.nextgenscience.org or ngss.nsta.org*

Workshop Safety

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

Demo: Frozen Beaker

An extreme endothermic reaction

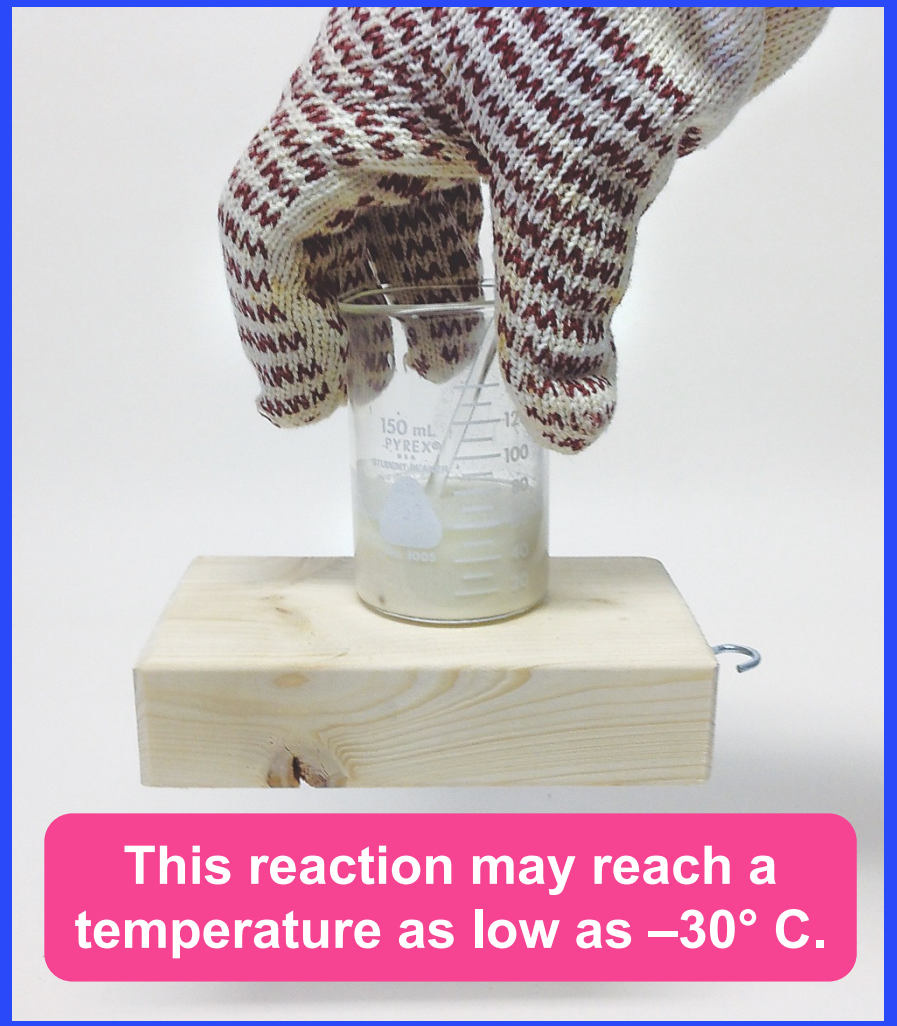
Goggles On! Carolina Chemonstration® in progress

Solid barium hydroxide octahydrate and solid ammonium chloride

Predict

Observe

Explain



CAROLINA
UNLEASH LEARNING

Demo: Frozen Beaker
An extreme endothermic reaction

Curriculum connections:

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

Possible discussion questions:

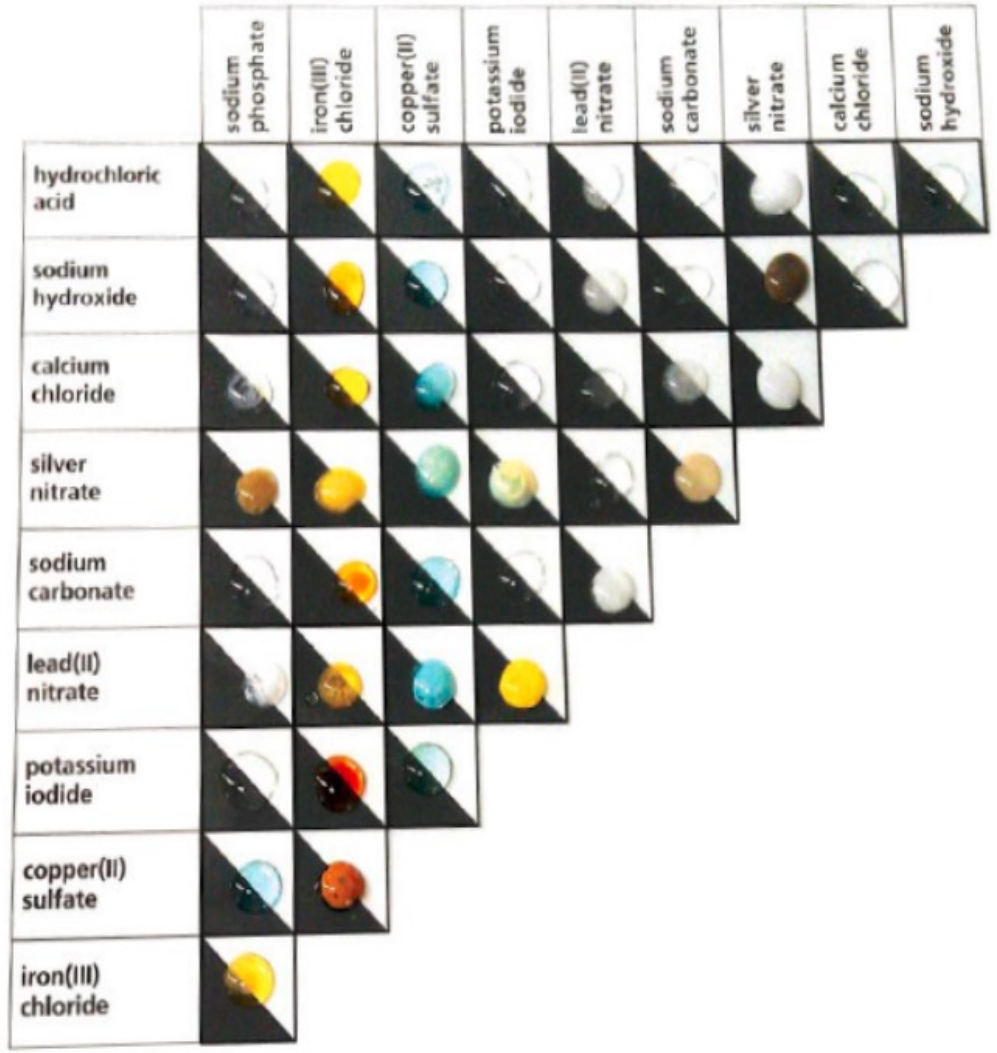
- What would be some practical, real-world applications of an endothermic reaction?
- Could you measure the heat of reaction in this demo? If not, why?
- Are heat and temperature the same thing?

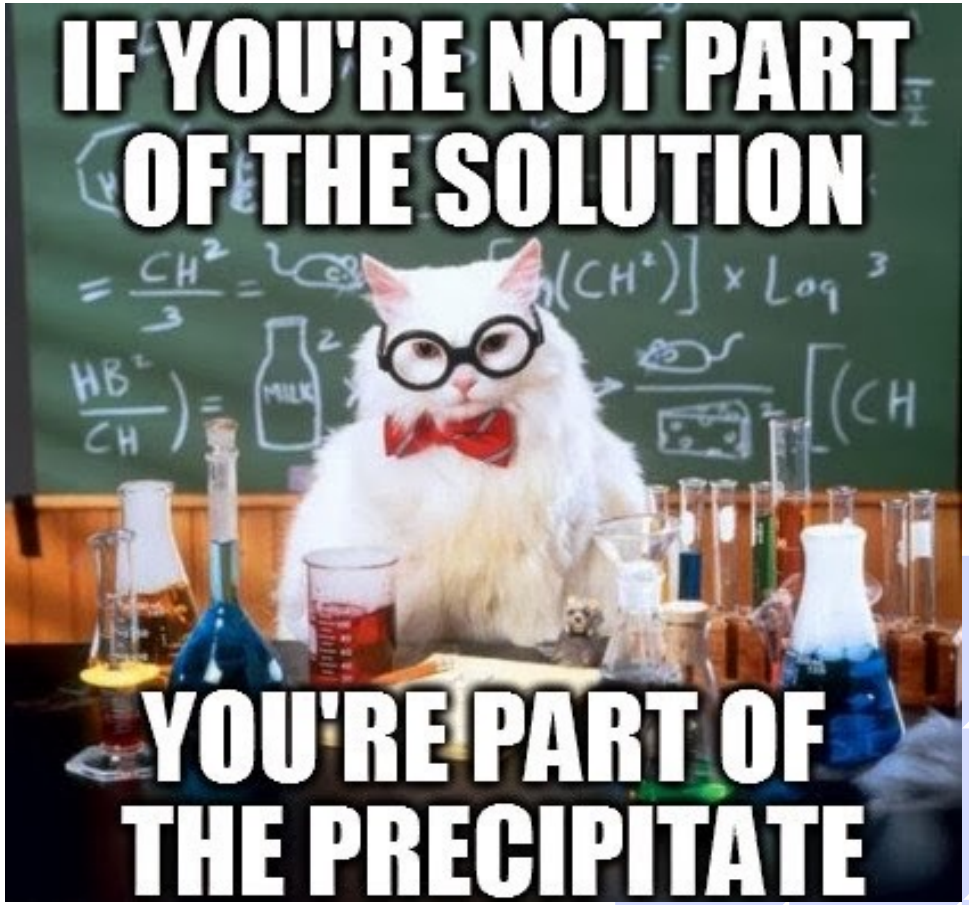
Lab: Mystery Chemical Reactions

- **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

Lab: Mystery Chemical Reactions

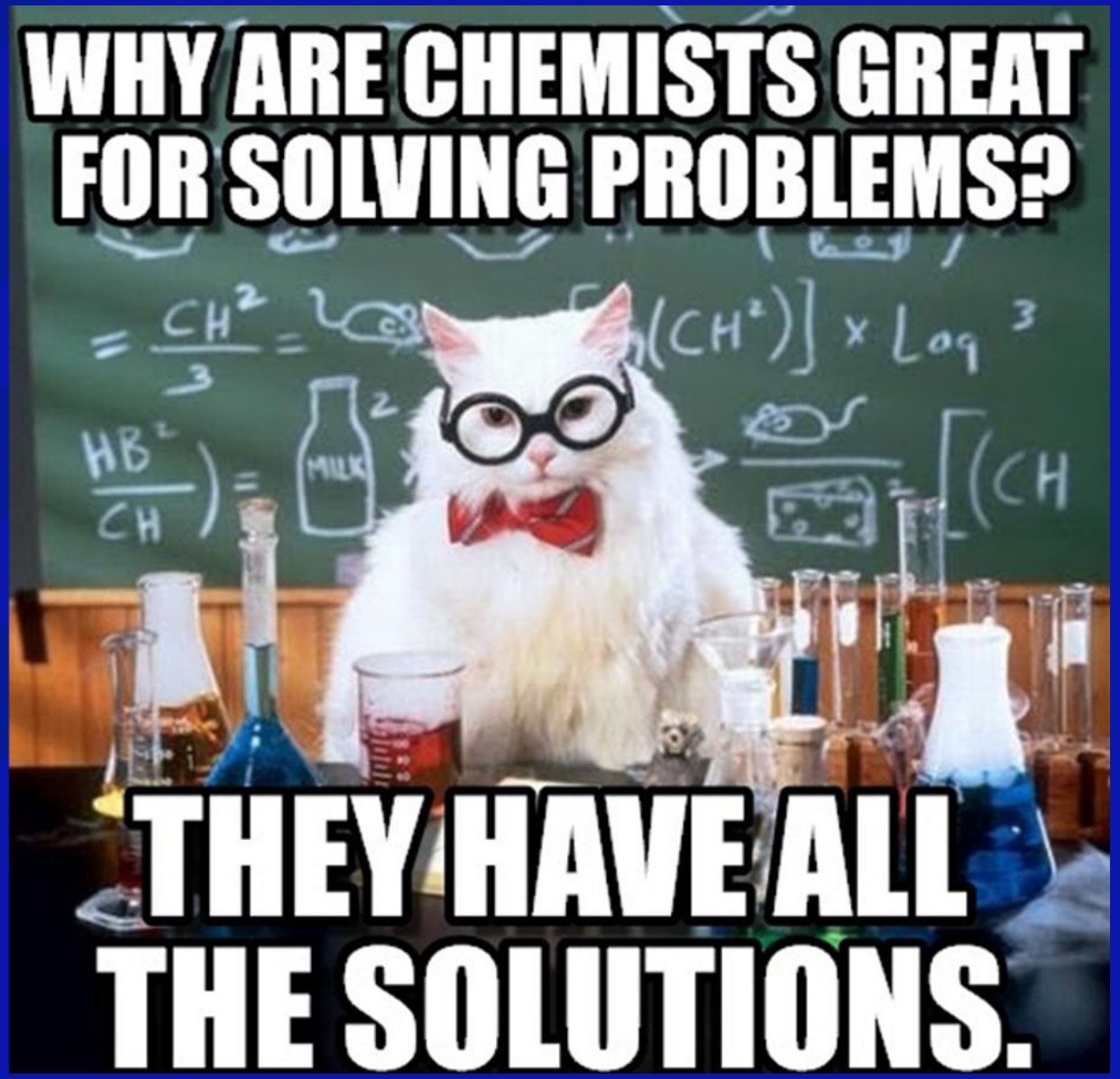




Lab: Balancing Chemical Equations

A tactile introduction to stoichiometry

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



Workshop Kit Review

Endothermic Reactions: Beaker Freezer

Item #840378

Mystery Chemical Reactions

Item #840660

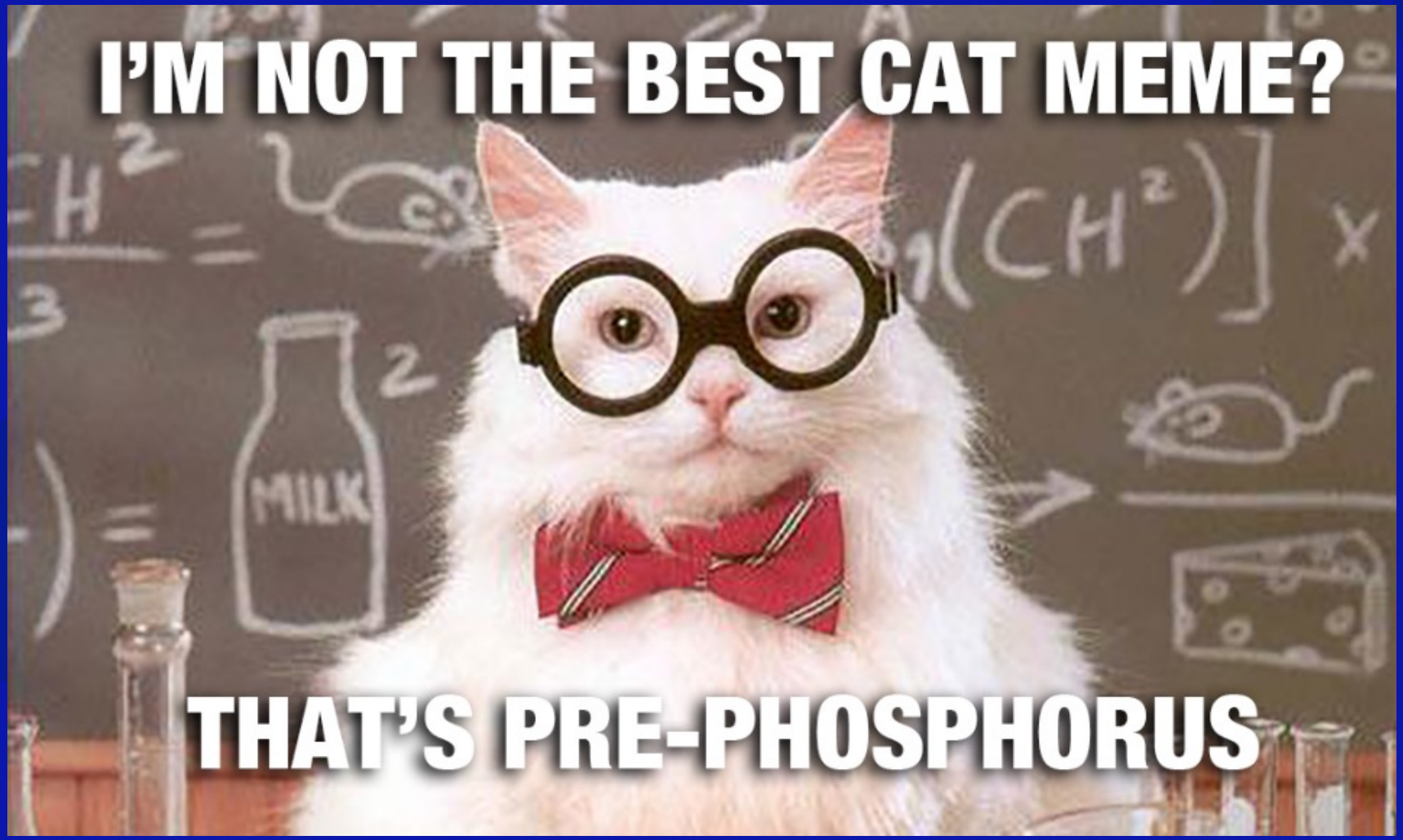
Petri Dish Electrolysis

Item #840830

Balancing Chemical Equations

Item #840656

CAROLINA
UNLEASH LEARNING



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