

Teaching Tools & Ideas

Disk:

- Harvey's AP Questions w/answers
- CD Chemistry Animations (Gelder)

Misc. Handouts:

- Laura Spencer's Guided Inquiry Activities
- 2002 Grading Standards
- 2002 Exam Questions

Videos:

- Chemistry Animation Project Videos
- 50's video on gases & liquids, Sodium (Marek)
- Mechanical Universe (Low Temperatures)

Demonstrations:

- Buffer demonstration (Alka-Seltzer???)
(phosphate buffer) (buffer tablets)
- M.O.M., 3M HCl, Universal Indicator, Stir Bar, Stirrer [Mg(OH)₂]
- Electrolysis of Na₂SO₄
- Rainbow Glasses
- Phth on overhead with rainbow
- Hot packs (supersaturated solutions)
- Cu + Nitric Acid demonstration
- Lightstick Demonstration
- Rainbow Tube (.1 M HCl, sat'd Na₂CO₃, universal indicator)
- Genie in the Bottle
- Elephant Toothpaste (Back to School Night)
- Boiling H₂O in a syringe
- Marshmallow in a Syringe
- Dry Ice w/limewater, universal indicator, excess with limewater (bicarbonate ion?)
- Christmas Tree (Cu + AgNO₃)
- Paramagnetism of MnCl₂ vs. NaCl
- ROYGBV gels over phosphorescent film (analogy of photoelectric effect)
- Soda water in salt & ice (colligative properties)
- Acid + Base = H₂O (500. mL each 2.00 M HCl & NaOH) – two 500-mL Vol Flasks & 1-1L Vol Flask + 25 mL graduated cylinder.
- Soda w/hot Al bar, pixie stick, Menthos.
- Radial Polarizers + Karo Syrup (tallform beaker)

Labs:

- Kinetics as a class experiment (stopwatches, beakers, syringes, solutions, overhead)
- Buffer lab (Arden Zipp) based on demo
- Le Chatelier Lab: tubes, CuSO₄, cups, stir rods, salt & ice, hot water bath
- Column Chromatography Lab
- Stoichiometry Lab
- Electrochemical Cell Lab
- Gas Laws in a bottle w/compressor (car, Lab volt, gas station)
- Vernier Lab Pro (gas laws, temp, pH, voltage)

Labettes/Activities:

- Tetrahedral Bubbles w/potato & toothpicks
- Cabbage Juice—Acids & Bases
- pH series and acid-base indicators
- Balloon thermodynamics
- Complex ions (CuSO₄, +NaOH, +NH₃, +HCl)
- Electrolysis (graphite rods? Nichrome wire?)
- Handboiler Distillation
- Phase Diagram w/CO₂
- Hydrolysis Labette (use universal indicator, pH indicator paper, litmus paper)
- Rates in burets (first order?)
- Ornament Labette
- Cloud Chambers w/mantle & Fiestaware
- Crystals in Gels Labette
- Potato Cells / Activity Series
- Human Graph – Iodine Clock Reaction
- Repulsive Units

Teaching Ideas:

- Bloogle, Telephone cord
- FlatMan, Mr. Sphere, Mr. Cube
- Balloon Shapes of Molecules
- Flintstones
- Two-potato clock
- Iron hot pack
- Tetrahedral Dog Toy / Octahedral Dog Toy

Dr. Rettig

- Safer Flame Tests: Q-tip w/10% sol'n of Li⁺, Na⁺, Ca²⁺, CuCl₂, Sr²⁺, K⁺? in bunsen burner
- Spectra of flames using rainbow glasses
- Radioactivity meter (Vernier)
- Rainbow glasses over camera lens