

4Q "Teach-a-Topic" Project:
MUST BE TIED TO LEARNED CHEMICAL PRINCIPLES

KEY

Industries & Careers

Chemical Engineering
Air Quality Management
Water Quality Management
Oceanography - P1 Emily
Geochemistry*
Material Science
Mining & Metallurgy
Food Science - P1 Nguyen
Forensic Science - P1 Brook Shields
Clinical Chemistry
Organic Chemistry

Energy & Environment

Nuclear energy & waste storage
WMD Storage - P2 Karl
Bio Fuels
Solar Energy - P1 Solar energy
Natural Gas & "Fracking"
Renewable Energy Sources
Asteroid Mining
Recycling - P1 Kathleen
Waste Disposal/Landfills
Composting
Fresh Water & Desalination
Farming & Fertilizers P3 Leon
Household Chemicals & Disposal
Oil Spills & Cleanup P2 Edgar
Environmental Conversation
Ocean Acidification - P3 Grace
Atmospheric Chemistry (i.e. ozone depletion)
Plastics & Health Effects
Electric Car - P3 Nicholas

Material Science

Polymers (Kelvar)
Memory Metals (Nitinol)
Ceramics
Semiconductors

Health & Medicine

Immunizations - P2 Dawn
New drug discoveries, (cancer therapies, etc.) - P2 Anh
Drug of Abuse Testing - P3 Karina
Nutrition - P2 Dawn
Diagnostic Imaging (isotopic dyes)
Cryosurgery
Trace elements (critical for life)

Physics

Cryogenics - P3 Roland
Absolute Zero
Cold Fusion - P2 Anh
Electron Microscope (seeing atoms?)
Diamagnetism
Astrochemistry (e.g. asteroid mining)
Rocket Launches - P2 Vianney

Analytical Methods

Spectroscopy
Gas Chromatography
HPLC (high pressure liquid chromatography)
Affinity Chromatography
Filtration (all types)
Nuclear Magnetic Resonance (NMR)
Mass Spectroscopy
OTC diagnostic tests (e.g. - P1 Crystal pregnancy tests, drug tests)

Miscellaneous

Diamonds - P1 Vy
Pyrotechnics - P1 Jessica
Isotopic Dating
Catalytic converters
Cryogenics
Artificial Sweeteners - P3 Sarah
Cooking - P2 Derek
Pool water
Peppers & Spices - P3 Derek Le
Making popcorn - P1 Vincent
Calcium Carbonate
Iron Age
Bronze Age
Alchemy - P2 Tyler
Animal defenses (toxins & pheromones) - P1 Tuan
Voodoo lily - P2 Grace
Mountain climbing
Deep water diving - P3 Monica
Arnold Beckman
Air bags
ECO Household cleaning - P2 Kenneth
Chemical Warfare - P1 Joey

*Topic of choice (must be pre-approved!)

→ Methamphetamine - P2 Khoi
→ Ecstasy MDMA - P2 Daisy

P3 Roland Cryopreservation

Content Elements

- Description
 - Background
 - Educational Requirements
 - History
 - Technology
 - Methodology
 - Purpose/Intended Use
 - Ingredients
 - Processes
 - Applications
 - Pros/Cons
 - Compare/Contrast
 - Risk/Benefit
 - Safety
 - Challenges/hurdles
 - Look to the future
 - Summary/Conclusion
- MUST HAVE CHECKS FOR UNDERSTANDING

General Tips:

- Write in LAYMAN'S TERMS!!!
- Use academic & scientific vocabulary
- Cite your references and provide hyperlinks
- Use animation, sound, slide transitions, video, realia

P3 - Sarah: Volcanoes*

- P2 Grace: Wine-making

~~Cosmetics~~ P2 Alina
- Fluorescence glow