

# Cool Chemistry

## (9<sup>th</sup> – 12<sup>th</sup> Grade Rotational Version)

### Morning Learning Stations for Students –

#### **STATION 1:** Explore IQhub & Drive Tractor Simulator (Needs 2 Adults)

- (60 min) IQhub Scavenger Hunt (2 students at a time go drive tractor simulator)

#### **STATION 2:** AgroLiquid and Chemistry (Needs 2 Adults)

- (30 min) LEED Building Tour inside AgroLiquid Headquarters
  - o Discuss what LEED (Leadership in Energy and Environmental Design) is all about
  - o Explore ways to make businesses and homes more environmentally friendly
  - o Learn how “going green” can make positive impacts on the world
- (30 min) Product Compatibility Activity
  - o Understand the importance of product compatibility for the environment and farmers
  - o Explore how chemical reactions can cause issues for the soil and farming equipment
  - o Understand the value of protected and unprotected nutrients

### LUNCH BREAK

### Afternoon Learning Stations for Students –

#### **STATION 2:** Elephant Toothpaste (Needs 2 Adults)

- (15 min) Reactions
  - o Understand what is a reaction and what is a catalyst
  - o Explore reactions that occur in nature (photosynthesis) and in a chemistry lab (elephant toothpaste)
  - o Discover the different products that can be given off from a reaction
- (15 min) Elephant Toothpaste Activity
  - o Learn different types of decomposition
  - o Understand how different catalysts can create different types of reactions
- (15 min) Analyze and Wrap-Up
  - o Understand the type of reaction that occurred
  - o Analyze the reactants

#### **STATION 4:** Soil CSI (Needs 2 Adults)

- (15 min) Importance of Soil Science
  - o Understand a soil profile
  - o Learn how structure effects the environment and food production
- (30 min) Soil Forensic Activity
  - o Explore ways that soil chemistry can solve crimes
  - o Discuss the important things to look for at a crime scene
  - o Examine how abiotic and biotic factors can
  - o Evaluate if you can tell the difference in products

### Michigan Learning Standards for today's IQhub visit –

- Science Standards:
  - HS-PS1-2 Simple Chemical Reactions
  - HS-PS1-3 Electrical Forces and Bulk Scale Structure
  - HS-PS1-5 Collision Theory and Rates of Reaction
  - HS-PS1-6 Increased Products Design Solution
- Math Standards:
  - HS-S-MD Using Probability to Make Decisions
- Career Preparation for 9<sup>th</sup> – 10<sup>th</sup> Grade:
  - Target 3: Build Knowledge about Careers, Postsecondary, and Employment Opportunities
    - Soft skills/work ethics
- Career Preparation for 11<sup>th</sup> – 12<sup>th</sup> Grade:
  - Target 3: Continue to Build Knowledge about Careers, Education, and Employment Opportunities
    - Business tours
    - Soft skills/work ethics
    - Have local employers visit students to discuss top employability skills

### Possible Careers Discussed in today's IQhub visit –

- Farmer
- Food Scientist
- Nutritionist
- Chemist
- Engineer
- Agronomist
- Environmentalist
- Ecologist
- Entrepreneur