2022 Scavenger Hunt Worksheet

You will be seeing lots of great chemistry today. Here is a worksheet to help you start a discussion with your students. This is more for them to observe than to just walk up and ask questions off the worksheet. ICEF encourages students to be Citizen Scientists by observing and listening to what is happening around them.

Booths

1) When do you wear a hazmat suit? (SET booth)
   Anytime you have to clean up hazardous materials or are entering an environment that has hazardous materials.
2) Were you able to see the virtual refinery tour? What did you see? What is one fact that you learned? Students' perceptions of the virtual tour
3) What is density? density, mass of a unit volume of a material substance. The formula for density is d = M/V, where d is density, M is mass, and V is volume.
4) At the Stepan booth, how does the cup feel when holding it after the chemical reaction occurs? Hot/warm (exothermic)
   Discuss with your chaperone/teacher why this happens.
5) How many company booths dealt with food? three
6) Which booth has the mussels? GZA GeoEnvironmental When listening to the presenter, why are mussels important to the environment? Mussels play a key role in aquatic environments and are considered to be "ecosystem engineers" because they modify aquatic habitat, making it more suitable for themselves and other organisms.
7) What is fluorescence? (UOP) Fluorescence is the emission of light by a substance that has absorbed light or other electromagnetic radiation. It is a form of luminescence.
8) When you were at the UOP booth, what did you see under the microscope? Each slide was different – students' interpretation
9) At the MKD booth, did you try on any safety equipment? Did you work the electrical circuitry switchbox? Why is electrical safety so important? Do you need a college degree to be an electrician? No If not, what kind of schooling is required?
10) At the TLC Ingredients and CEF booth, explain what is a non-Newtonian liquid? A non-Newtonian fluid is a fluid that does not follow Newton's law of viscosity, i.e., constant viscosity independent of stress. In non-Newtonian fluids, viscosity can change when under force to either more liquid or more solid. Ketchup, for example, becomes runnier when shaken and is thus a non-Newtonian fluid. At this booth it was cornflour and water.
11) At the Univar booth, this company is a distributer. What does a distributer do and what kind of products do they distribute? A distributor is an intermediary entity between a producer of a product, or manufacturer, and a downstream entity in the distribution channel or supply chain. The downstream entity is typically a retailer or value-added reseller (VAR), but it can also be a wholesaler. Univar distributes chemicals including raw chemicals for paint.
12) At the booth where you made gummy worms, how many senses to you "eat" with? All of your senses
13) What is the name of the scholarship offered to students who attend historically black colleges and universities? FOSSI

14) At the Innophos booth, why did the beads glow? The beads are UV beads. UV beads are made from white or clear plastic, with a photochromic dye, which means that the dye changes color when it reacts with ultraviolet light. Can you explain the reaction? When UV beads are exposed to sunlight, they react by changing colors. UV beads can do this because they contain certain pigments that change color when exposed to sunlight or other forms of ultraviolet radiation. With the singing bowls, what caused the water to "jump"? Resonance: in physics, relatively large selective response of an object or a system that vibrates in step or phase, with an externally applied oscillatory force. The students rubbed the handles of the bowls to make the water "jump".
15) Did you meet any chemists or chemical engineers? Which booth were they at? UOP; Innophos; Nouryon; and Stepan
16) At the AbbVie booth, why is DNA important? DNA contains the instructions needed for an organism to develop, survive and reproduce. To carry out these functions, DNA sequences must be converted into messages that can be used to produce proteins, which are the complex molecules that do most of the work in our bodies. And why is PPE important? Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards.
17) At the Jacob & Hefner booth, watch the video. What is happening in the video? What is remediation? Booth was not at the conference this year – last minute cancellation
18) At the Dow booth, how many everyday items can you name that contain polymers? After the event, discuss with your teacher what polymers are. Product made from polymers are all around us: clothing made from synthetic fibers, polyethylene cups, fiberglass, nylon bearings, plastic bags, polymer-based paints, epoxy glue, polyurethane foam cushion, silicone heart valves, and Teflon-coated cookware.
19) Did you meet any engineers at the booths? UOP; Innophos; Nouryon; and Stepan
    Can you give a first name of the engineer? Holly; Rafael; Raelynn; Cea; Rehman; Kyle; Sanaz; Randy; Ken; Cameron; Sarah; Steven; David; Nathan; and Mariano. What kind of engineers are they? Application/systems engineer; R&D engineer; chemical; process engineer; and production engineer.
20) At the Nouryon booth, describe the color reaction. The reaction goes from colorless to purple.