Chemical Scavenger Hunt

Chemistry is truly everywhere and you are about to embark on a scavenger hunt to find it. These items can all be found in one form or another in most households or around your neighborhood. You may need to look in your text, online, in the library, in the community or on labels to get information about the items listed. In order to earn credit for each item, you must follow the rules:

1) There are 40 items listed on the next page. You will pick the ones you want to do in order to achieve the points required. Each item is worth 5 points.
    a. Groups of two (2) must attempt 100 points (20 items) from the hunt.
    Groups of three (3) must attempt 130 points (26 items). These numbers do not include the title slide.
    Note that there are additional points for meeting other requirements (see attached rubric).
    b. Note: You do not have to work with someone from the same class period, but if you work with a student who has another teacher, share the final product with both teachers.
    c. A substance may be used a maximum of two (2) times to satisfy items on the list. (Note: No flammable or explosive items such as gasoline, paint thinner, etc. are permitted. No carcinogenic or otherwise hazardous materials may be used.)

2) You will prepare a Google Slides presentation (or Power Point presentation) that includes the following.
    a. **Title slide:** Lists all partners and a picture of all partners together.
    b. **Each of the following slides must include the following:**
        i. The **Item Number** in the upper left hand corner.
        ii. **The requirements** for the item **verbatim (the <u>entire</u> description copied <u>exactly</u>, not just the first sentence)**. An electronic version of this file is available in the shared folder, and you can copy the requirements from that file and paste them into your presentation.
        iii. **The required information/explanation** based on the item. For slides like item #1, provide an explanation of why/how the substance in the picture fits the description. For slides like item #2, be sure to do all that it asks you to do.
        iv. **A picture**. The picture must include at least one partner's face with the sample. All of these pictures should be distributed evenly between all partners. You must have **at least 3 pictures with all partners** in them.
    c. The items you pick must be presented in numerical order in your presentation. For example, if your first two items are numbers 1 and 4, skipping items 2 and 3, your first slide must be for item number 1 and your second slide must be for item number 4.

3) You will have more than 5 weeks to complete this hunt, with a draft due partway through.
    a. The PowerPoint/Google Slides should be emailed or shared with your teacher.
    b. **Due Dates:**
        i. **Tuesday, April 30th** – first draft due (minimum of 10 items) = 1 test grade
        ii. **Moday, May 13th** – final product due, beginning of class = 2 test grades
        iii. Note: The due dates are firm, so make sure that the project is shared with the teacher, whether the partners are in class or not.

On your mark, get set…Let's go hunting!!

Example of the Rubric:
Name(s)_____ Scavenger Hunt Score Card

_____ Title Slide (5)
_____ Ordered correctly (6)
_____ Three pictures with all members (9)

Points earned _____

Points possible _____

Final percentage score: _____

Slide scoring break down.

Slide # after Title Slide	Item# and Description (1)	Information (3) Correct? Complete?	Picture (must include at least 1 partner's face) (1)	Total Points earned for the item
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

1. An item containing an element with exactly 29 protons. Explain why your chosen object fits this description.
2. A sample of a hydrated crystal. Identify its common name and chemical name. **Include APA citation.**
3. A sample that contains exactly 6.022×10^{23} of something. Identify the name of this substance. Calculations required for credit.
4. One face of a cubic box made of sturdy material (cardboard is sufficient) with a total volume to accommodate 0.10 mole of hydrogen gas at STP. Include the dimensions of the box. Calculations are required. (no work, no credit, no kidding☺)
5. A small sample of a heterogeneous mixture. Identify the ingredients in the mixture.
6. A small sample of a homogeneous mixture. Identify the ingredients in the mixture.
7. An item containing an element with exactly 79 protons. Explain why your chosen object fits this description.
8. A household product containing an ingredient with a polyatomic ion. Please include a picture of the package and include the name and formula of the polyatomic ion.

9. A sample of any element or compound with a density greater than one g/mL. State the density, chemical name, and chemical formula of the substance. (Be sure it's an element or compound)
10. A sample of iron (III) oxide (sample need not be pure). Common name and alternate chemical name required. **Include APA citation.**
11. A small sample of a noble gas. Chemical name, chemical formula and atomic mass required.
12. Small sample of a compound containing ionic bonds; another sample of a compound containing covalent bonds. Be sure to label each sample in the picture with the substance it represents. Chemical formulas, common names, and chemical names are required.
13. A small sample of dilute acetic acid. Common name and chemical formula required.
14. A small sample of SiO_2. Common name and chemical name required. **Include APA citation.**
15. A small sample of a polar molecule. Common name, chemical name, and chemical formula required.
16. A small sample of a metalloid (need not be a pure sample; can be found as part of something else.) Common name, chemical name, chemical formula of metalloid required. **Include APA citation.**
17. An item or substance that would react with hydrochloric acid in a single replacement reaction. Identify what is in the item or substance that will react with the acid. Write a balanced chemical equation.
18. A sample of a compound composed of an alkali metal and a halogen. Common name, chemical name, and chemical formula required.
19. A sample of a mixture which could be separated using paper chromatography. Define paper chromatography. Common name of mixture required.
20. A paper chromatograph of your substance in item 19.
21. Something containing a transition element from period 4. Identify the transition element and its atomic number.
22. A small sample of a nonmetallic element (must be an element, not in a compound). Common name and chemical formula required.
23. An edible substance that is also an electrolyte. Define electrolyte and describe a test to confirm that the substance is an electrolyte.

24. A small sample of the solid product of the reaction between aqueous solutions of calcium chloride and sodium carbonate. Balanced equation, chemical formula and common name required. (Note: Do not perform the reaction just find a real world sample of the product.)
25. The common name, chemical name and chemical formula of the salt produced when magnesium hydroxide reacts with sulfuric acid. Balanced equation is also required.
26. A picture of you (or your partner) posing with a person whose career is related to chemistry (cannot be a science teacher or tutor). Please include this person's name, job title, place of employment, relationship to you and contact phone number.
27 . Ask the person in #26 about the science of their job (Don't forget to include another picture!). Type up three (3) questions and include these and the answers.
28. Pictures or videos of an exothermic and an endothermic change (physical or chemical).
29. Find a faculty member (not in the science department) who took organic chemistry in college. Take a picture with them.

30. A substance that contains an ester. Give the definition of an ester, plus the name and chemical formula of the particular ester in your example substance. **Include APA citation.**
31. A sample of a substance that contains sodium fluoride. Give the name of the substance.
32. A sample of a common emulsion. Define emulsion, and give the name of the substance. **Include APA citation.**
33. A sample with the mass of NaCl that can be produced from 10g of sodium hydroxide with excess hydrochloric acid. Show the balanced equation and your calculations. (Do not perform the reaction.)
34. A label from a household chemical that has a pH greater than 7. Provide the chemical name, common name, and chemical formula for the ingredient responsible for the pH.
35. A sample of dihydrogen monoxide. Include its common name, chemical formula, and molar mass.
36. A picture of you (or your partner) holding an item that contains a transition (or inner-transition) element from period 6. Identify the element and explain how that element is instrumental to the function of the item. **Include APA citation if look something up.**
37. A sample of a substance that contains a natural acid-base indicator. What color is this indicator in a base? **Include APA citation.**
38. A sample of a diatomic element (need not be pure). Give the name and chemical formula of the diatomic element. Define diatomic element.
39. A household product whose package demonstrates a measurement with 3 significant figures. Include a picture of the package with the appropriate number marked in some way.
40. Pictures or video of you (or your partner) performing or observing a chemical change (not at PDS). Describe the evidence you have to support that a chemical change occurred.