

# Chemistry

## WS Hunting the Elements Video

(Segment: 31:00 - 60:00)

Name
Date

Answer each question while watching the video entitled "Hunting the Elements"

1. According to Theo Gray, what percentage of the elements on the periodic table are metals?
2. Theo Gray has samples of each element in its pure form, and also in their more familiar forms. What are the more familiar forms of the following elements?  
Calcium:  
Bismuth:  
Bromine:  
Uranium:
3. Mendeleev created the periodic table based on their atomic weight and family behavior. How did scientists of this time determine the atomic masses of the elements.
4. The group 18 elements are called the noble gasses. What is the defining feature of this family and why is it called "noble"?
5. How many electrons does an atom have to have in its outer shell in order to be "happy" and "satisfied"?
6. What do the halogens need to be "happy" and "satisfied"?
7. What do the alkali metals need to be "happy" and "satisfied"?
8. What chemical did Theo Gray and David Pogue make by combining deadly sodium with lethal chlorine? What did they do with the chemical after they made it?

9. **What reactive element was David Pogue investigating when he visited the Energetic Materials Research and Testing Center at New Mexico Tech? What does it need to be "happy" and "satisfied"?**
  
10. **What was the most notorious ANFO bomb ever detonated?**
  
11. **Christa Hockensmith used an ion chromatograph to determine that the car bomb was made from ammonium nitrate. What chemical process caused the rapid release of energy?**
  
12. **Name two examples of slow combustion reactions from everyday life.**
  
13. **Christa Hockensmith said that scientist could control the speed of an explosion by controlling the oxygen content of the explosive and how close the elements are to each other. List the following explosives from slowest to fastest: ammonium nitrate, C4 and gun powder.**
  
14. **Six elements form the basis for all living things from the most primitive bacterial to the largest creatures on earth. What are the six elements? What is the acronym for them?**
  
15. **Christine Thomas took David Pogue to the hardware store to buy the elements in the actual quantities that are in David. Identify the elements from the sources below:**  
**Charcoal:**  
**Water:**  
**Fertilizer:**  
**Matches:**
  
16. **Carbon is the backbone of life. What reason did Christine Thomas give for this?**