

NOVA Video Questions: <i>Hunting the Elements</i>	Name: Per: Seat #:
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<http://www.pbs.org/wgbh/nova/physics/hunting-elements.html>

The questions are in chronological order.

Times are estimates. You do not need full sentences.

- 1) Where does an element take its identity from?
- 2) How much gold (Au) is extracted per ton of rock ore?
- 3) How much does a gold (Au) bar weigh and how much is it worth?
- 4) Why is copper (Cu) so widely sought on the world market and New York Mercantile Exchange?
- 5) What is copper (Cu) combined with to make bronze?
- 6) What makes metals like Copper (Cu) conductive to electricity?
- 7) Bronze is an alloy. What is an alloy and why are they preferable at times?
- 8) How does the atomic arrangement of atoms lead to its crystal structure like was seen in the sample of bronze with gold (Au) and tin (Sn) atoms?
- 9) What is the atomic number and what does the atomic number indicate?
- 10) Most of the periodic table is made of what type of elements?
- 11) How did early chemists like Mendeleev classify the elements?
- 12) How is the periodic table structured with regard to elements with similar properties?
- 13) What makes noble gases stable?

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- 14) Why is an alkali metal element like Sodium (Na) so reactive?
- 15) What does chlorine (Cl⁻) do for sodium (Na⁺)? What tasty substance is produced when this happens?
- 16) What powers explosions and fire?
- 17) What elements are basic to all living things?
- 18) Why is Carbon (C) so good for forming the structure of life?
- 19) What are at least three (3) other elements that are used for life functions and what are their uses?
- 20) Why are cyanobacteria from places like volcanic pools so important for the production of oxygen in our atmosphere?
- 21) What was the original element formed moments after the Big Bang? What then created higher order elements?
- 22) How does silicon shape our technological reality?
- 23) How are rare earth elements like neodymium (Nd) important to our technological world?
- 24) What is an isotope like Carbon-14
- 25) How can an isotope like Carbon-14 be used to date dead organisms?
- 26) What is an unstable radioactive isotope?
- 27) Why don't the man-made radioactive elements exist for very long?

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