

MODERN MARVELS: METALS

1. List several characteristics of metals that make them so useful to man:

- a.) conduct heat / electricity b.) resist cracking or breaking
c.) ductile / malleable / luster d.) ↑ strength when combined

2. Name 2 places that Calcium is found in our body: teeth & bones

3. Silicon is a major component (part) of glass

4. What can elements do to imitate Noble Gases? gain / lose electrons

5. Fe (iron) + O₂ (oxygen) → (forms) iron oxide / rust

6. What was probably the first metal to undergo human manipulation? Copper

7. Metal + Rock → ORE

8. Copper (Cu) + Tin (Sn) → BRONZE

9. The Bronze Age was probably started by what 2 groups or area's of people?

China & Middle East

10. What metal replaced copper and ended the Bronze Age? Iron

11. Why is gold not used to make tools (knives, swords etc?) too soft

12. Why is gold perfect to use as a decoration or for coins?

a.) does not oxidize b.) malleable

c.) low melting point

13. What were scientists called that tried to change substances into gold? Alchemists

14. What is one major factor that makes gold very useful in the space craft & satellites industry?

resistance to oxidation

15. Blacksmiths work with black metals such as iron

16. Whitemsmiths work with white metals such as tin

17. What is the alloy that is stronger than iron and is made up of Fe + C? steel

18. What is the most recycled material each year? steel
19. Name some major products made out of steel: buildings/bridges/RR/ships
cars, beds & farm equip. & mattresses, ~~shoes~~
20. Metal of the 19th Century steel
21. Metal of the 20th Century Aluminium
22. Clay that contains aluminum is called bauxite
23. Why is aluminum so useful? lightweight, malleable,
conducts elect, & bonds easily w/ other elements
24. Name the 3 areas of the world where major mining for aluminum is done
Caribbean & Australia & Africa
25. What is required to "unlock" aluminum from the bauxite rocks? electricity
26. Why can aluminum be used to store food? inert
27. Why is aluminum used in airplanes? lightweight & strong
28. Why are aluminum cars easier to stop quickly than steel cars? lighter, ↓ weight
29. What metal is as strong as steel but lighter and used in missiles and rocket parts and even in golf clubs?
Titanium
30. When Cr & Mo are added to steel it increases steels melting point to over 1000°F and may make buildings even more resistant to collapsing during fires.