Using Properties of Matter
Pg 19

Matter can be grouped into metals and nonmetals.

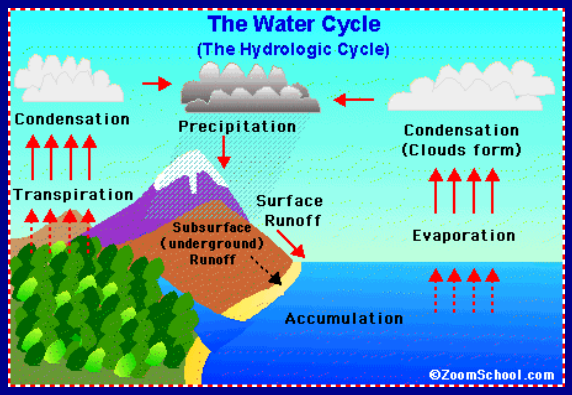
Metals are often used because of their special properties.

Mixtures of metals, called **alloys**, are used in making steel, dental braces and jewelery.

Example: The percent gold in a 9 karat ring is 38%, while a 22 K ring has 92%. An average gold ring (10-14K) has between 42- 58% gold in it. Other metals like nickel and copper make up the rest.

Physical Change

The original substance stays the same, but it may take a different form. This is a physical change.



- "ing"

- Many are easy to reverse
  - Boiling, freezing, evaporating
  - Others are more difficult – irreversible
  - Smashing, cutting, grinding

Chemical Change

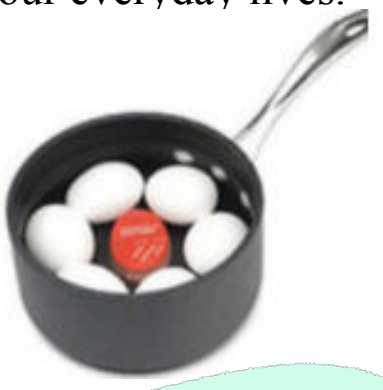
- **Original substance is converted into a new substance with new properties**
- **Most are not reversible**
- **Examples include cooking, burning and rusting**

Physical and Chemical Change
Section 1.7 Page 28-30

There are many ways matter changes in our everyday lives.

For example:

applying heat to cook an egg
burning gasoline in your car
freezing water.



Corrosion
Chemical Change

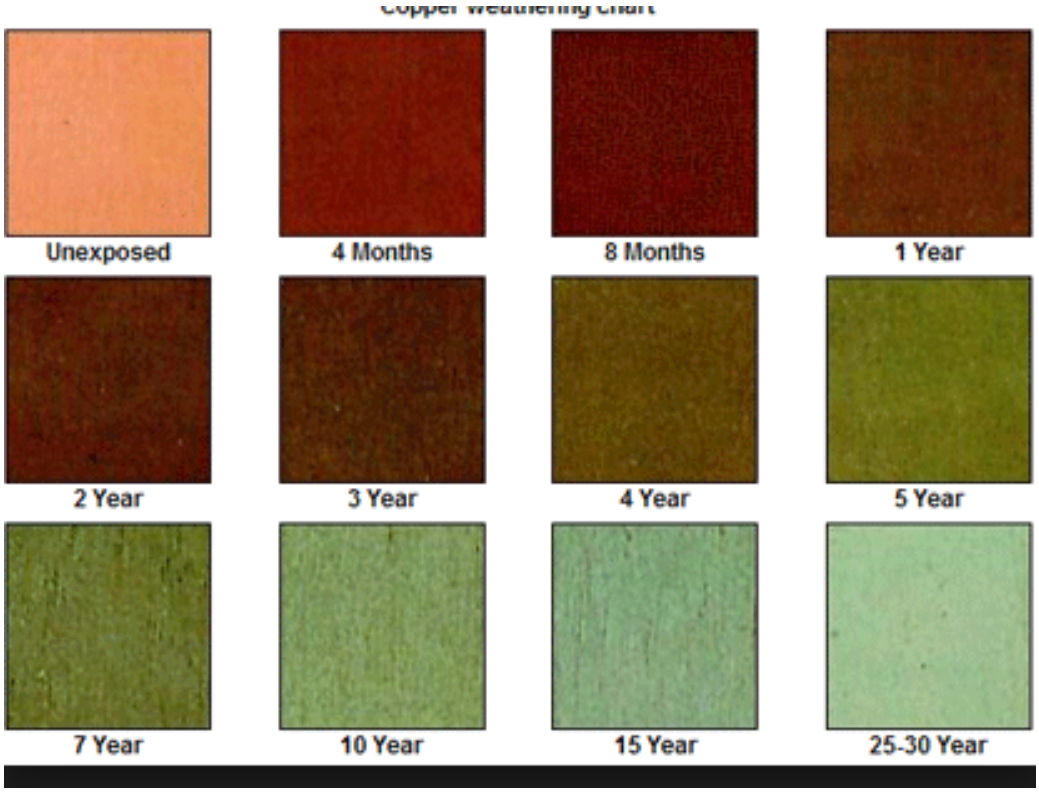
One of the chemical properties of metal is the tendency of a substance to undergo **corrosion**

Corrosion is the slow chemical change that occurs when metal reacts with oxygen from the air to form a new substance called an oxide.

A type of corrosion is **rusting**.

Read on pg 34 on your text and record
1. What substances are involved in rusting.
2. Why is it so damaging?

A1. iron, oxygen, water, salt, minerals
A2. damaging because it is porous and as it takes layers away new layers are exposed to oxygen


Unexposed
4 Months
8 Months
1 Year
2 Year
3 Year
4 Year
5 Year
7 Year
10 Year
15 Year
25-30 Year

Preventing Corrosion

Three ways to prevent corrosion is to:

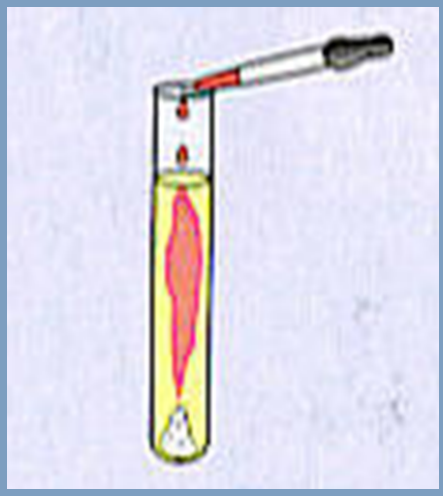
- Paint the surface of the metal
- Coat metal surface with oil
- Coat metal surface with other metals that will corrode easier

5 Clues that a chemical change has happened.

1) Heat or light is given off.

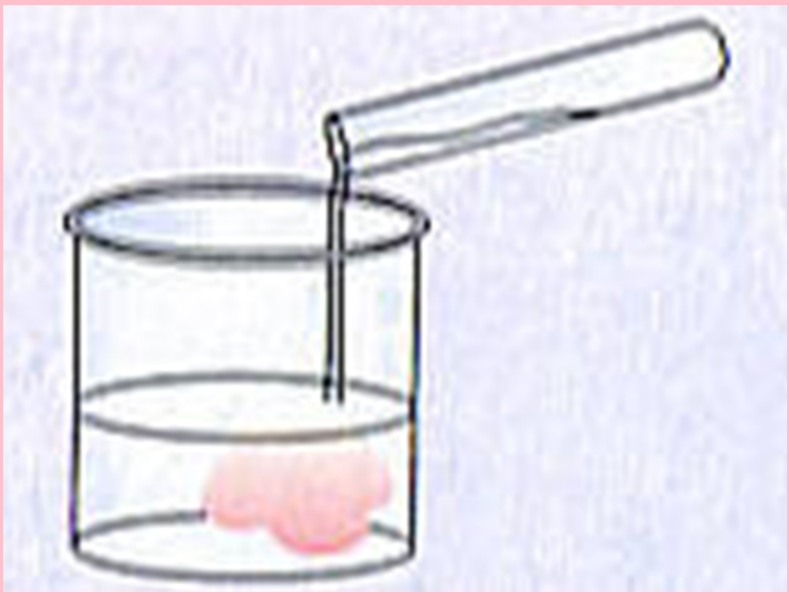
2) The Change is difficult to reverse.

3)
- A solid material forms from two liquids



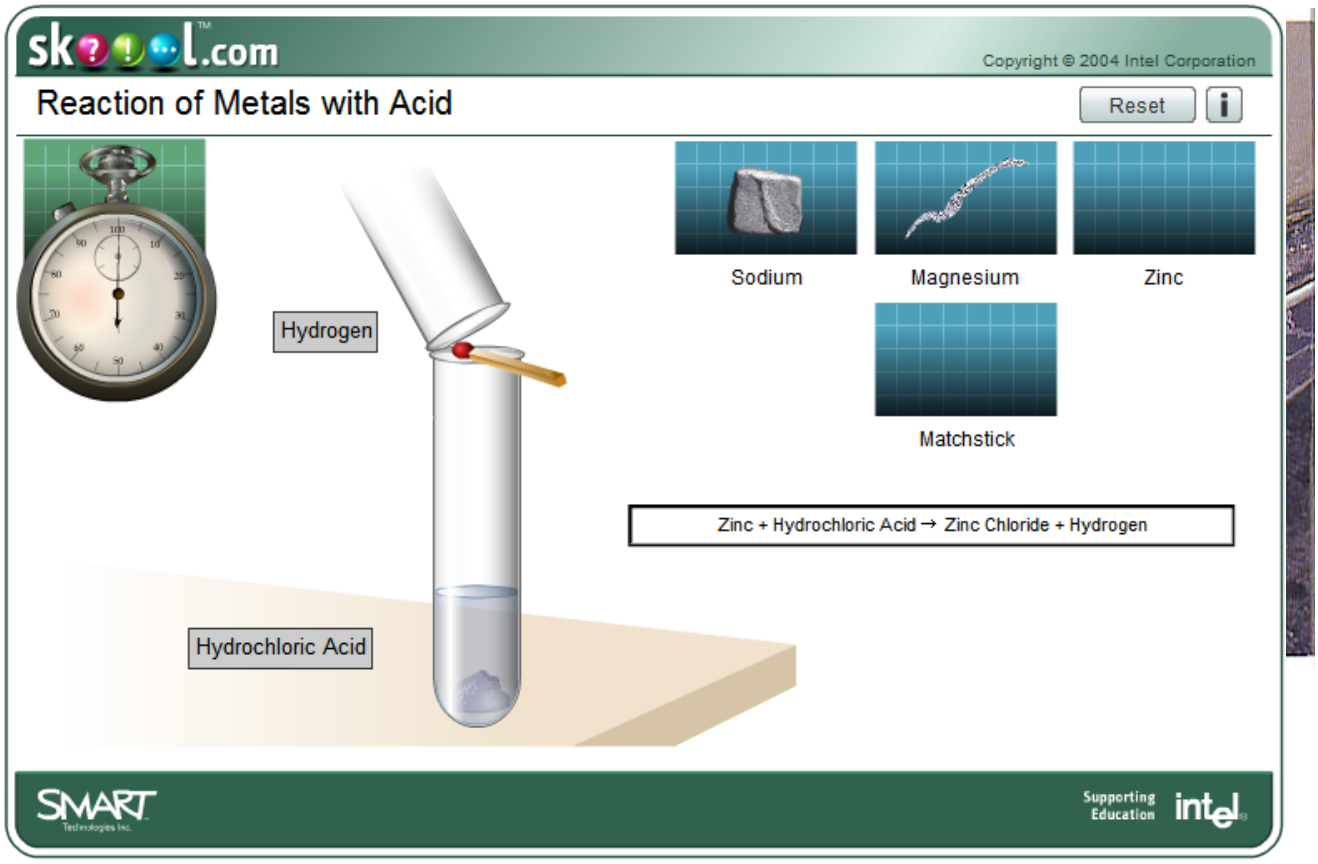
4)

- A new colour appears



5) Bubbles of gas may appear

Worksheet


skool.com
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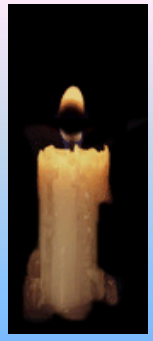
Reaction of Metals with Acid
Reset
Sodium
Magnesium
Zinc
Matchstick
Hydrogen
Hydrochloric Acid
Zinc + Hydrochloric Acid → Zinc Chloride + Hydrogen
SMART
Supporting Education
intel

Physical and Chemical Change
Section 1.7 Page 28-30



1) What are the physical properties of a candle?
2) Which physical properties do not change wax?
3) Which physical properties change wax?
4) Does the wax become something else when it is a solid liquid or gas? Why or why not?

A1) colour, texture, density, boiling point, melting point , hardness
A2) colour, texture and density
A3) melting point, boiling point
A4) No, the wax is still the same no matter what form it is in.

Physical and Chemical Changes

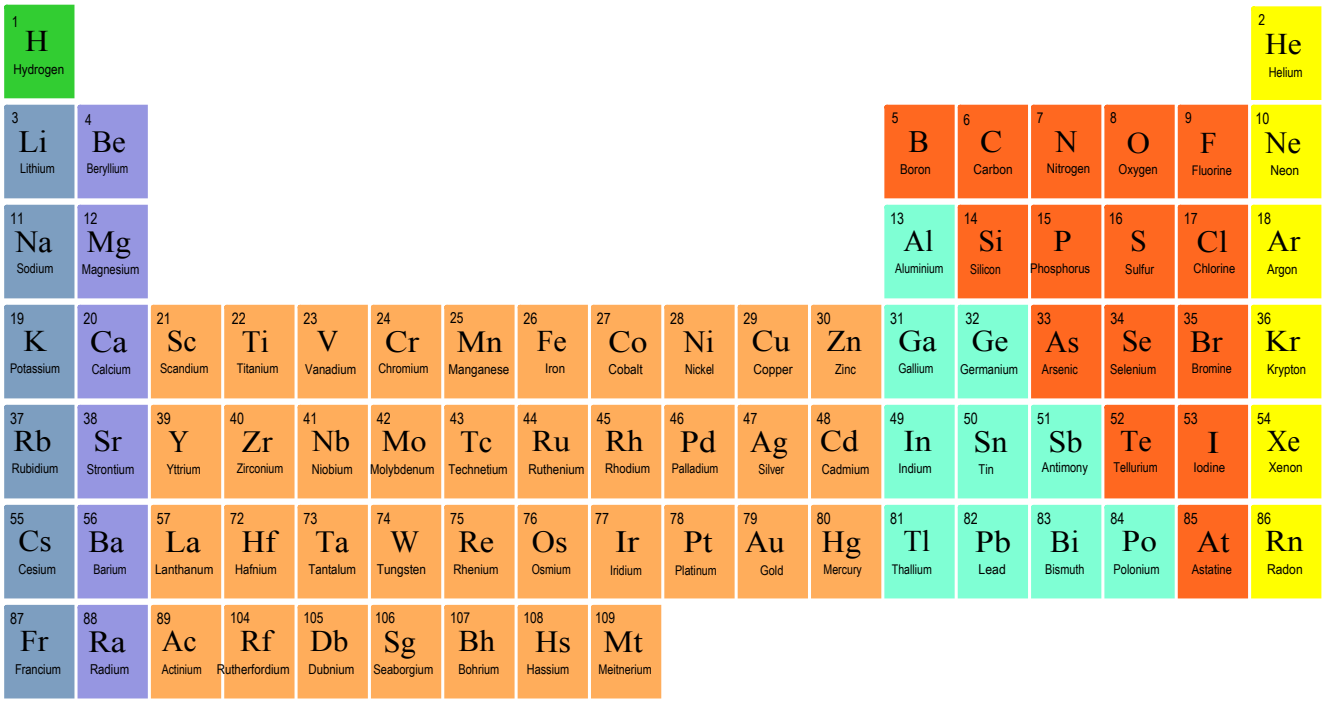
5) Which chemical property affects a change in the wax of a burning candle?
6) What does the wax react with to make a new substance?
7) What is produced when wax combines with oxygen?

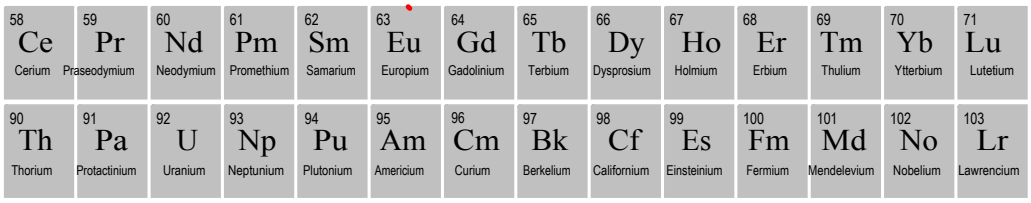
A5) combustibility
A6) oxygen
A7) water vapour, carbon dioxide gas, heat and light.

Understanding Concepts

Do questions
1, 2 a-f, 3 page 30

If not complete this is your homework


1 H Hydrogen
2 He Helium
3 Li Lithium
4 Be Beryllium
5 B Boron
6 C Carbon
7 N Nitrogen
8 O Oxygen
9 F Fluorine
10 Ne Neon
11 Na Sodium
12 Mg Magnesium
13 Al Aluminium
14 Si Silicon
15 P Phosphorus
16 S Sulfur
17 Cl Chlorine
18 Ar Argon
19 K Potassium
20 Ca Calcium
21 Sc Scandium
22 Ti Titanium
23 V Vanadium
24 Cr Chromium
25 Mn Manganese
26 Fe Iron
27 Co Cobalt
28 Ni Nickel
29 Cu Copper
30 Zn Zinc
31 Ga Gallium
32 Ge Germanium
33 As Arsenic
34 Se Selenium
35 Br Bromine
36 Kr Krypton
37 Rb Rubidium
38 Sr Strontium
39 Y Yttrium
40 Zr Zirconium
41 Nb Niobium
42 Mo Molybdenum
43 Tc Technetium
44 Ru Ruthenium
45 Rh Rhodium
46 Pd Palladium
47 Ag Silver
48 Cd Cadmium
49 In Indium
50 Sn Tin
51 Sb Antimony
52 Te Tellurium
53 I Iodine
54 Xe Xenon
55 Cs Cesium
56 Ba Barium
57 La Lanthanum
72 Hf Hafnium
73 Ta Tantalum
74 W Tungsten
75 Re Rhenium
76 Os Osmium
77 Ir Iridium
78 Pt Platinum
79 Au Gold
80 Hg Mercury
81 Tl Thallium
82 Pb Lead
83 Bi Bismuth
84 Po Polonium
85 At Astatine
86 Rn Radon
87 Fr Francium
88 Ra Radium
89 Ac Actinium
104 Rf Rutherfordium
105 Db Dubnium
106 Sg Seaborgium
107 Bh Bohrium
108 Hs Hassium
109 Mt Meitnerium


58 Ce Cerium
59 Pr Praseodymium
60 Nd Neodymium
61 Pm Promethium
62 Sm Samarium
63 Eu Europium
64 Gd Gadolinium
65 Tb Terbium
66 Dy Dysprosium
67 Ho Holmium
68 Er Erbium
69 Tm Thulium
70 Yb Ytterbium
71 Lu Lutetium
90 Th Thorium
91 Pa Protactinium
92 U Uranium
93 Np Neptunium
94 Pu Plutonium
95 Am Americium
96 Cm Curium
97 Bk Berkelium
98 Cf Californium
99 Es Einsteinium
100 Fm Fermium
101 Md Mendelevium
102 No Nobelium
103 Lr Lawrencium

The following questions are due: _____. The answers can be found using the following pages. Please answer the questions with a complete sentence. We will be going over the questions_____. Have them completed. Once you are done, you may study the WHMIS symbol which you may be quizzed on.

Physical and Chemical Changes (Pages 28-30)

Matter can be grouped as metals and nonmetals. When different metals are mixed together, it is called an alloy.

1. Give two examples of how matter changes.
2. What is physical change and give 2 examples?
3. Describe the different changes of state.
4. Are physical changes easy to reverse? Give an example.
5. What is a chemical change? Give 2 examples.
6. Are chemical changes easy to reverse? Give an example.
7. What are some clues as to whether a chemical change has occurred? If one of the clues is present, does it mean that a chemical change has definitely taken place?
8. Do question 2 on page 30.

Corrosion (Pages 34-35)

9. What is corrosion?
10. Is corrosion an example of a chemical or a physical change? Explain.
11. Describe rusting.
12. How can corrosion be prevented? Give 2 ways.
13. How is an oxide formed?

Combustion (Pages 38-39)

14. What is combustion?
15. What are the three things needed for combustion?
16. What are fossil fuels and give 2 examples?
17. How did fossil fuels form?
18. Describe the word equation of fossil fuels. In this equation, what are the reactants and what are the products?
19. What do we mean by hydrocarbons?
20. Why should you never operate a gas or charcoal barbecue inside a building?
21. Question 3 page 39.

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Attachments

Fireworks.avi