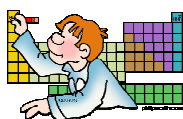


## Chemistry

Q1:  
What is the particle model used for?

Answer:  
To explain how particles move and are arranged.



## Chemistry

Q2:  
Describe the arrangement of particles in a solid, liquid and gas.

Answer:  
Solid: packed very closely together in a fixed position  
Liquid: close together but can move over each other  
Gas: particles are far apart and can move around quickly in any direction.



## Chemistry

Q3:  
Use the particle model to explain what happens when a solid dissolves in a liquid?

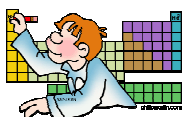
Answer:  
The particles of solid split up and mix with the particles of liquid to make a solution.



## Chemistry

Q4:  
What is filtration used for?

Answer:  
To separate an insoluble solid from a liquid.



## Chemistry

Q5:  
Describe the process of distillation?

Answer:  
It can be used to separate a solvent from a solution. The solution is heated, the solvent evaporates. The vapour rises and then condenses as it cools down.



## Chemistry

Q6:  
Use the particle model to explain diffusion.

Answer:  
Particles in liquids and gases are always moving. This means they bump randomly into each other and mix together. Eventually the particles are spread evenly.



## Chemistry

Q7:  
What is an indicator and what can they be used for?

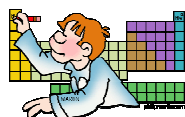
Answer:  
An indicator is a substance that changes colour when mixed with acids or alkalis. They can be used to work out the pH of a liquid.



## Chemistry

Q8:  
What method can be used to separate coloured dyes?

Answer:  
Chromatography



## Chemistry

Q9:  
What are elements, mixtures and compounds?

Answer:  
Elements are made up of only one type of atom.  
Compounds contain 2 or more elements joined together.  
Mixtures contain 2 or more elements/compounds that are not joined together and can be easily separated.



## Chemistry

Q10:  
What are the signs that a chemical reaction has taken place?

Answer:  
A change in colour  
Fizzing (gas produced)  
Change in temperature  
A new solid is formed



## Chemistry

Q11:  
What is the general word equation for the reaction between an acid and a base?

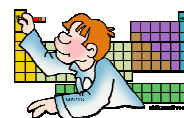
Answer:  
 $\text{acid} + \text{base} \rightarrow \text{salt} + \text{water}$



## Chemistry

Q12:  
What is an alloy?

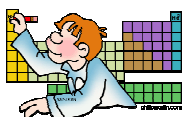
Answer:  
A mixture of metals or of a metal and carbon.



## Chemistry

Q13:  
Why does painting iron railings stop them from becoming rusty?

Answer:  
Painting prevents oxygen and water reacting with the iron.



## Chemistry

Q14:  
What is the periodic table?

Answer:  
A way of classifying elements according to their properties. They are arranged in order of increasing mass of atom.



## Chemistry

Q15:  
Where are non-metals found on the periodic table?

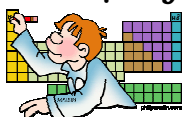
Answer:  
On the right hand side.



## Chemistry

Q16:  
Sodium, Potassium and Lithium are all metals that react with water. What is the general word equation for the reaction?

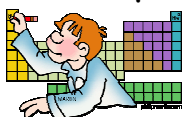
Answer:  
 $\text{metal} + \text{water} \rightarrow \text{metal hydroxide} + \text{hydrogen}$



## Chemistry

Q17:  
When metals react with acid which gas is produced and how could you test for it?

Answer:  
Hydrogen  
It will produce a squeaky pop with a lit splint.



## Chemistry

Q18:  
What is meant by an irreversible reaction?

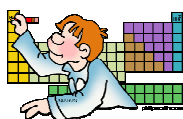
Answer:  
A permanent change that can't be reversed.



## Chemistry

Q19:  
What is a fuel?

Answer:  
Anything that stores energy that can be converted into heat energy.



## Chemistry

Q20:  
What is the chemical term for burning?

Answer:  
Combustion



## Chemistry

Q21:  
What are fossil fuels and why are they non-renewable?

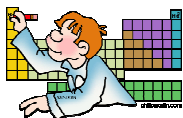
Answer:  
Coal, oil and natural gas. Formed from the remains of dead plants/animals. They take millions of years to form



## Chemistry

Q22:  
What is a biofuel and why are they renewable? Give an example.

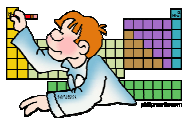
Answer:  
A fuel made from plants. They are renewable because crops can be planted to replace the raw materials. Examples: wood, oil from plant seeds & ethanol produced from fermenting plants.



## Chemistry

Q23:  
What is the general equation for the reaction between a metal and oxygen in the air?

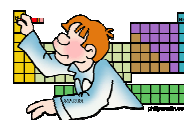
Answer:  
 $\text{metal} + \text{oxygen} \rightarrow \text{metal oxide}$



## Chemistry

Q24:  
What is the reactivity series?

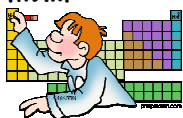
Answer:  
A list of metals in order of reactivity, with the most reactive at the top.



## Chemistry

Q25:  
Although reactive metals can burn to produce large amounts of energy, why are they not commonly used as fuels?

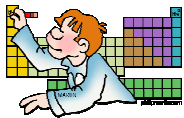
Answer:  
It takes a more energy to extract them from their ores than you would produce by burning them.



## Chemistry

Q26:  
What gases make up the atmosphere?

Answer:  
Nitrogen (78%), Oxygen (21%), Argon (0.9%), carbon dioxide 0.04%.



## Chemistry

Q27:  
Why was the atmosphere different in the past?

Answer:  
Before the production of oxygen the gases came from volcanoes - carbon dioxide, sulphur dioxide, ammonia, nitrogen and methane.



## Chemistry

Q28:

Where did the oxygen in the atmosphere come from?

Answer:

The oxygen in the atmosphere has been produced by algae and plants using photosynthesis.



## Chemistry

Q29:

Why could human activity be changing the atmosphere?

Answer:

Human activity (burning fossil fuels, deforestation) is causing the level of carbon dioxide in the atmosphere to increase.



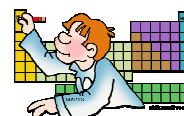
## Chemistry

Q30:

What is the carbon cycle?

Answer:

A model showing how carbon is cycled between living things and the air.



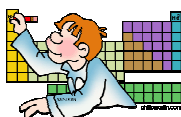
## Chemistry

Q31:

Which processes remove carbon dioxide from the air?

Answer:

Photosynthesis  
Dissolving in oceans



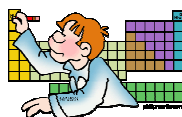
## Chemistry

Q32:

Why do carbon dioxide levels fall during the summer?

Answer:

There is more photosynthesis during summer months.



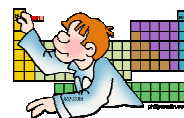
## Chemistry

Q33:

What is the greenhouse effect?

Answer:

The trapping of the Sun's energy by gases in the atmosphere, which helps to keep the Earth warm.



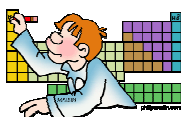
## Chemistry

Q34:

What do most people believe is the cause of global warming?

Answer:

Increasing amounts of carbon dioxide in the atmosphere.



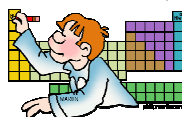
## Chemistry

Q35:

Why do some scientists disagree about the causes of global warming?

Answer:

Some scientists believe that there is not enough evidence and others believe that the evidence has not been interpreted correctly.



## Chemistry

Q36:

What is the rock cycle?

Answer:

A model used to understand the formation of different rocks.



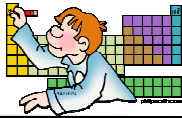
## Chemistry

Q37:

How are sedimentary rocks formed?

Answer:

Layers of sediment are deposited. Over time, their weight squeezes out water and the particles become cemented together.



## Chemistry

Q38:

How are igneous rocks formed?

Answer:

Molten magma is released from volcanoes as lava. As this cools, igneous rocks are formed.



## Chemistry

Q39:

How are metamorphic rocks formed?

Answer:

Metamorphic rocks are formed by the intense heat and pressure below the surface of the Earth.



## Chemistry

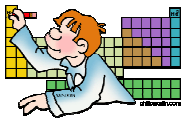
Q40:

What is the difference between magma and lava?

Answer:

Magma is molten rock beneath the surface of the Earth.

Lava is molten rock that runs out of volcanoes.



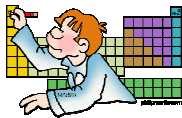
## Chemistry

Q41:

What is biological weathering?

Answer:

When rocks are worn away or broken up due to the activities of living things.



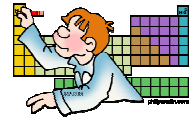
## Chemistry

Q42:

What is physical weathering?

Answer:

When rocks are worn away or broken up by physical processes such as changes in temperature.



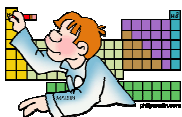
## Chemistry

Q43:

Limestone can be attacked by acid rain because it is mostly calcium carbonate. What type of weathering is this?

Answer:

Chemical weathering



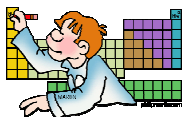
## Chemistry

Q44:

What is erosion?

Answer:

The movement of loose and weathered rock.



## Chemistry

Q45:

What causes igneous rocks to form with either small or large crystals?

Answer:

It depends on how quickly they cool. If it cools quickly the crystals are small, slow cooling results in larger crystals.



## Chemistry

**Q46:**  
What are the general properties of metals?

**Answer:**  
They are shiny solids at room temperature.  
Good conductors of heat and electricity.



## Chemistry

**Q47:**  
What are the general properties of non-metals?

**Answer:**  
Not shiny.  
Half of them are gases at room temperature.  
Poor conductors of heat and electricity.



## Chemistry

**Q48:**  
What is a solute?

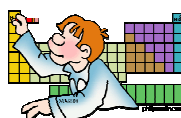
**Answer:**  
A substance that dissolves in a solvent to produce a solution.



## Chemistry

**Q49:**  
What is a solvent?

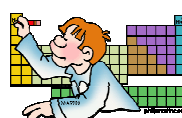
**Answer:**  
A liquid that is used to dissolve things.



## Chemistry

**Q50:**  
What factors can affect solubility?

**Answer:**  
Temperature of the solvent  
Mass of solute  
Type of solvent



## Chemistry

**Q51:**  
How can filtration and evaporation be used to separate substances?

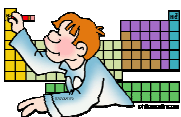
**Answer:**  
Filtration separates an insoluble solid from a liquid.  
Evaporation can separate a soluble solid from a solution.



## Chemistry

**Q52:**  
What is a displacement reaction?

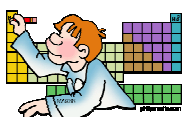
**Answer:**  
A reaction where a more reactive metal takes the place of a less reactive metal in a compound.



## Chemistry

**Q53:**  
What is the pH scale for?

**Answer:**  
It measures the acidity, alkalinity or neutrality of a solution.



## Chemistry

**Q54:**  
What kind of salts would be produced if you carried out a reaction with  
a) Hydrochloric acid  
b) Sulfuric acid

**Answer:**  
a) Chloride  
b) Sulfate

