Year 7 Science

You have been taught all this during the year!

Are you able to answer all these questions?

If not…….revise some more!

Chemistry

- Describe the position of the air-hole of a Bunsen burner in order to : a) light it b) use it for gentle warming c) for vigorous heating. Where is the hottest part of the flame ? Where is it not hot?

- What are the three **states of matter** ? What is happening to the **atoms/molecules** of a substance when they are heated or cooled? Can you describe the properties of each state?

- Can you explain, and give an example in each case , the following terms : **melting, freezing, boiling, condensation, evaporation, solution, solvent, solute, insoluble, dissolving, sublimation, diffusion**?

- What is an **element**? What is the **Periodic Table**? What is a **compound**? Can you explain the difference between a compound and a **mixture**?

- What is the difference between a metal and a non-metal?

- How would you **separate**: sand and gravel, iron filings and sand, chalk and water, salt from water, water from salt (not the same thing!), alcohol from beer, colours in ink?

- Can you recognise and draw the following pieces of **equipment** : gauze, a tripod, a retort stand, a crucible, filter funnel, liebig condenser, an evaporating basin.

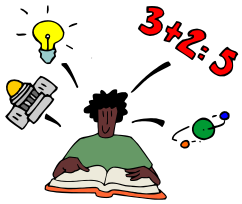
- What are the percentages of the main different **gases in air**, can you name two of the minority gases also present? What use is pure oxygen commercially?

- What is given off when a **candle burns** and how do you **test** for those substances? What is the word equation?

- What conditions are required before iron will **rust**? Give the word equation. How can you prevent rusting?

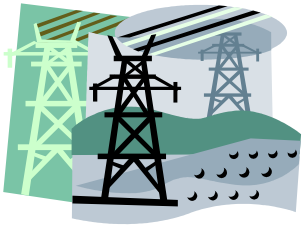
- What is **density**? What **unit** is it measured in? What equation do you need in order to calculate it? How would you find the density of an **irregular** solid? Can you describe how to find the density of a liquid? What about a gas?
- What happens to the following substances when you burn them in **oxygen**? (ie any **change** at all? - if so, is it in mass, colour, appearance ?): **carbon , sulphur, iron, magnesium, copper, zinc**.

- Name three **metal** elements and three **non-metal** elements. Describe three common differences in their physical **properties**. What is the difference between their **oxides**?
- What is the most common **solvent**? Name another two
- What is **pH**? Name three common **indicators**. What would be the pH of a weak acid? What pH would you expect if carbon dioxide was dissolved in water?
- What happens when acids **react** with metals? What happens when acids **react** with alkalis?



PHYSICS

- Can you describe the difference between solids, liquids, and gases by referring to their **properties** eg compressibility, density, ease of flow, maintenance of shape and volume?
- What **equation** is needed in order to calculate **density**?



- Where do all of the energy resources on Earth come from **ultimately**? Which energy resources are **renewable**? Which are not? What energy resources can be used to generate electricity? Can you name nine different types of energy? What **unit** is energy measured in? What is meant by the **Law of Conservation of Energy?**
- What are the **three** ways in which HEAT energy can travel? Can you give an example of each? Can you draw diagrams to illustrate **energy changes** when they occur eg when a girl picks up a tennis ball and throws it across a court? Where does most wasted energy go **to** ? Can you explain the processes required to **generate** electricity?
- What is a **force**? Can you name six different forces ? What **unit** is force measured in?
- What force is acting on each kg on Earth?
- What appliance can be used in the laboratory to measure small forces? What happens if you overstretch a spring? What happens to the extension of a spring if the force applied to it is then shared by another equal spring in **series**? What happens if the second spring is in **parallel**?
- What is the **relationship** between speed, distance and time? Can you use the equation to calculate **different** quantities eg if a car is travelling at 90 Km/hr for 1 hour 30 minutes, what distance did it cover? Can you describe an experiment that would allow you to time a moving body over different surfaces to compare their relative speeds? If a ball is rolled down a slope what (two)forces cause it to stop eventually?
- What uses can **levers** have? What happens on a centrally balanced lever if the distance of one force from the pivot is changed? What is the "**principle of moments**"?
- Why is it easy to cut cheese with a very thin wire? Why should rescue workers use a ladder to crawl over ice? What is the **unit** used to measure **pressure**? If a block of wood 3 x 4 x 5 cm, mass 200g was placed on one of its larger ends onto a smooth surface can you calculate the pressure applied?

BIOLOGY

(to be taught in the summer term)

- Can you label the organs in a **flowering plant** and describe their function?

- Can you draw and label a **typical plant cell** and a **typical animal cell**? Do you know what each part **does**? What are the **differences** between an animal cell and a plant cell? How are specialised cells (eg root hair cells, nerve cells, sperm cells) adapted to their function? What is a **tissue** ? What is an **organ**?
- Where are **genes** found and what effect do they have? What are the causes of **variation** within species?
- Can you use a key to identify different organisms?
- Can you place an organism into its correct group based on its **characteristics**? (eg What are the characteristics of a mammal? What are the characteristics of an insect? What are the characteristics of fungi?)
- What is a **habitat**? What **factors** can **affect** the size of a population?
- What do all food chains **begin** with? What is **a primary consumer, a carnivore, a herbivore, an omnivore, a producer, a predator, a scavenger ?**
- Can you describe how some organisms are **adapted** to survive daily and seasonal changes in their habitats? **eg** a frog, a pond snail, a daisy plant