

Year 7 AP 1 – Science

How to revise Science:

Memorise the facts

- Make flash cards
- Produce mind maps
- Write the information in a book

Practice answering questions

- Use online tests
- Use Tassomai
- Use BBC bitesize multichoice tests at the end of units

Additional Information:

You will be assessed on the science knowledge and the science skills

Revision list:

The Particle Model

1. Particles in particle diagrams are represented as spheres but they may not be spherical in shape.
2. Atoms and molecules are very small particles.
3. Solids are arranged in a regular pattern. Liquids are not.
4. Solid particles vibrate in their positions but cannot move around.
5. Materials in the solid or liquid states are incompressible as the particles are very closely packed together.
6. Solid ice is less dense than liquid water. Ice floating on water is an anomaly.
7. Substances in the gas state are less dense than the solid and liquid states.
8. Gases are fairly easy to compress as most of the particles are far from each other.
9. Substances in the gas state spread out to fill the whole space they are in.
10. Gaseous particles move around rapidly in all directions and most of the particles are too far apart to exert any force on each other.
11. A chemical change is when the atoms within a particle are rearranged to form a new product.

Changing Shape

1. Forces act as pushes or pulls.
2. Contact forces are tension, friction, air resistance, upthrust, thrust and normal reaction force.
3. Non-contact forces are magnetic force, electrostatic force, gravitational force.
4. Forces act in pairs.
5. Forces can be represented using arrows. These arrows have both direction and magnitude.
6. The unit for force is Newtons

The Atom

1. John Dalton suggested that atoms are spherical and have a definitive size and mass.
2. An element is made of one type of atom only which has the same size and mass.
3. A molecule is when two or more atoms are chemically combined.
4. A compound is a particle that contains two or more different elements that are chemically combined.
5. Substances have different properties because of the elements they contain.
6. A compound has a fixed melting and boiling point (Water 0°C / 100°C).
7. Each element is represented by an assigned name and symbol. (H, O, C, S, Cl, Mg, Na, Fe, Cu)
8. The names and quantities of atoms in a chemical compound can be derived from its formula. (H₂O, O₂, H₂, CO₂, NaCl, MgO)
9. The following chemical symbols of elements can be used to create chemical formula. (H, O, C, Cl, Mg, Na, Fe, S, Cu)
10. Write chemical formula based on the number of each atom for the following elements and compounds (H₂O, O₂, H₂, CO₂, NaCl, MgO)
11. Atoms are not created or destroyed during chemical reactions they are rearranged to form new products.

Astrophysicists

1. A planet is a large, almost spherical object that orbits a star.
2. The inner planets are rocky planets; the outer planets are gas planets.
3. *A moon is an object that orbits a planet or another celestial body that is not a star.*
4. An asteroid is a small rock orbiting the sun.
5. A comet is a celestial object that is made of ice and dust.
6. A star is a luminous object - it produces its own light.
7. The Sun is the star at the centre of our solar system.
8. A galaxy is a system of millions or billions of stars, together with gas and dust.
9. Our galaxy is called the Milky Way.

7. When forces acting on an object are unbalanced, the object's motion, direction or shape will change.
8. Equilibrium describes when opposing forces are equal or balanced.
9. When a force is placed on a material, that material may stretch or be compressed.
10. Elastic materials can return to their original shape when the force is removed.

Animal Cells

1. The function of the cell membrane is to control the movement of substances into and out of the body
2. The cytoplasm is the jelly-like substance found in cells where reactions happen
3. The nucleus is the part of the cell that stores the genetic material of the cell
4. The function of the mitochondria is to transfer energy.
5. A group of similar cells working together form tissues, tissues work together to form organs, many organs working together form organ systems and all of the organ systems form organisms.
6. *A light microscope can be used to view objects that are too small to see with the naked eye*
7. *Identify the key parts of the microscope to include the: stage, eyepiece lens, objective lens, focussing wheel.*
8. The three main functions of the human skeleton are protection, production of blood cells and support
9. The place where two bones meet is called a joint
10. Muscles are attached to bones with tendons to help them move
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