

CBSE Classes VI–VIII — Science Short Notes

REVISION NOTES

NCERT Science quick revision · Atulya Defence Academy

Quick revision notes for NCERT Science (Classes VI–VIII). Read one block a day; tick ☐ when you can explain it without looking.

1. Food, nutrition & health

- **Nutrients:** carbohydrates & fats (energy), proteins (body-building), vitamins & minerals (protection), roughage (digestion), water.
- **Deficiency diseases:** vitamin A – night blindness; vitamin C – scurvy; vitamin D – rickets; iron – anaemia; iodine – goitre; protein – kwashiorkor.
- **Food tests:** iodine → blue-black (starch); copper sulphate + caustic soda → violet (protein); oily patch on paper (fat).
- **Photosynthesis:** carbon dioxide + water → (sunlight, chlorophyll) → glucose + oxygen. Happens mainly in leaves.
- **Microorganisms:** bacteria, fungi, protozoa, algae, viruses. Useful: curd (*Lactobacillus*), bread (yeast), antibiotics. Harmful: cholera, typhoid (bacteria); malaria (protozoan, carried by female *Anopheles* mosquito).

2. The living world

- **Cell:** the basic unit of life. Plant cells have a cell wall, chloroplasts and a large vacuole; animal cells do not.
- **Human body:** heart pumps blood; arteries carry blood away from the heart, veins bring it back; kidneys filter blood; lungs exchange gases.
- **Reproduction in plants:** asexual (vegetative – potato, rose; budding – yeast; spores – fungi) and sexual (flower → pollination → fertilisation → seed).
- **Adolescence:** hormones from endocrine glands bring changes at puberty; balanced diet, exercise and hygiene matter.
- **Conservation:** biosphere reserves, national parks, sanctuaries; endangered species; deforestation causes soil erosion and floods.

3. Materials & chemistry

- **Separation:** handpicking, winnowing, sieving, sedimentation–decantation, filtration, evaporation, distillation.
- **Changes:** physical (reversible, no new substance – melting ice) vs chemical (new substance – rusting, burning).
- **Rusting:** iron + oxygen + water → iron oxide. Prevent by painting, oiling, galvanising (zinc coating).
- **Acids & bases:** acids taste sour, turn blue litmus red; bases are bitter/soapy, turn red litmus blue. Neutralisation: acid + base → salt + water.
- **Metals vs non-metals:** metals are lustrous, malleable, ductile, good conductors, sonorous. Non-metals are dull and brittle (except graphite conducts).
- **Combustion:** needs fuel, oxygen and ignition temperature. Fire extinguishers remove one of these.

4. Physics: motion, force, energy

- **Speed** = distance ÷ time (m/s or km/h). 1 km/h = 5/18 m/s.
- **Force** can change speed, direction or shape. Friction opposes motion; reduced by lubricants, ball bearings, streamlining.
- **Pressure** = force ÷ area. Liquids exert pressure that increases with depth.
- **Sound** needs a medium; it cannot travel in vacuum. Faster in solids than in liquids than in gases. Human hearing ≈ 20 Hz – 20,000 Hz.
- **Light** travels in straight lines. Plane mirror image: same size, erect, laterally inverted, as far behind as the object is in front.
- **Electricity**: current flows in a closed circuit. Conductors: metals; insulators: rubber, plastic, wood. Heating effect – heater, fuse; magnetic effect – electromagnet, electric bell.
- **Magnets**: like poles repel, unlike attract; a freely suspended magnet points north-south.

5. Earth & space

- **Solar system**: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune. Jupiter is the largest planet; Venus is the hottest.
- **Moon**: Earth's natural satellite; phases repeat about every 29.5 days.
- **Air**: nitrogen $\approx 78\%$, oxygen $\approx 21\%$, others $\approx 1\%$ (argon, carbon dioxide, water vapour).
- **Water cycle**: evaporation → condensation → precipitation → collection.
- **Natural phenomena**: lightning is an electric discharge between clouds; earthquakes are caused by movement of tectonic plates.
- **Pollution**: air (CO, SO₂, NO₂, smoke – acid rain, smog); water (sewage, chemicals). Save by reducing, reusing, recycling.

Self-test: 1) Why do we see lightning before we hear thunder? 2) Name two ways to prevent rusting. 3) Which vitamin prevents scurvy? 4) Why is a plant cell more rigid than an animal cell? 5) Convert 72 km/h to m/s.

Answers: 1) light travels much faster than sound; 2) painting, galvanising; 3) vitamin C; 4) the cell wall; 5) 20 m/s.