Class 10 Science: Complete Revision Pack

Everything from the Science videos in one place

Contents

SECTION	PAGE
Science roadmap: chapters, marks and tick boxes	p. 2
Marks blueprint: where the marks are	p. 4
Chapterwise important questions (all 16 chapters)	p. 6
Repeated in all 3 papers, Part 1	p. 11
Repeated in all 3 papers, Part 2	p. 14
Electricity: formulas and solved questions	p. 17

HOW TO USE

Start with the roadmap, tick topics as you finish them, then practise the repeated questions.

REMEMBER

Objective and descriptive parts must each be passed separately.

Made by Trident Academy, Rampur. Marks are from the SEBA blueprint (HSLC 2023 pattern) and the 2024 to 2026 question papers. Verify dates and pattern on sebaonline.org.

Class 10 Science Roadmap

All 16 chapters, marks for each, and a tick box to track your revision

TOTAL
100 marks: 90 theory + 10 internal

SCIENCE PAPER
12 March 2027, 9 AM to 12 noon

PATTERN
45 objective + 45 descriptive

PASS RULE
Objective and descriptive parts must each be passed separately

PRACTICALS
27 Jan to 2 Feb 2027 (your school fixes the day)

Chemistry · 29 marks

	CH	TOPIC	MARKS
☐	Ch 1	Chemical Reactions & Equations	6
☐	Ch 2	Acids, Bases & Salts	6
☐	Ch 3	Metals & Non-metals	7
☐	Ch 4	Carbon & its Compounds	6
☐	Ch 5	Periodic Classification	4

Biology · 24 marks

	CH	TOPIC	MARKS
☐	Ch 6	Life Processes	8
☐	Ch 7	Control & Coordination	6
☐	Ch 8	How do Organisms Reproduce	5
☐	Ch 9	Heredity & Evolution	5

Physics · 28 marks

	CH	TOPIC	MARKS
☐	Ch 10	Light: Reflection & Refraction	8
☐	Ch 11	Human Eye & Colourful World	5
☐	Ch 12	Electricity	6
☐	Ch 13	Magnetic Effects of Electric Current	5
☐	Ch 14	Sources of Energy	4

Environment · 9 marks

	CH	TOPIC	MARKS
☐	Ch 15	Our Environment	4
☐	Ch 16	Management of Natural Resources	5

Tick each box when you finish a topic. Total = 90 theory marks.

Blueprint: HSLC 2023 pattern. Dates from the SEBA HSLC 2027 programme. Verify on sebaonline.org before the exam. Trident Academy, Rampur.

Class 10 Science Marks Blueprint

Marks per chapter from the SEBA blueprint: study the heavy chapters first

THEORY
90 marks, 3 hours

QUESTIONS
45 MCQ/VSA (1m) · 18 short (2m) · 3 short (3m)

PASS RULE
Objective and descriptive parts must each be passed separately

Where the marks are (highest first)

CH	CHAPTER	MARKS
Ch 6	Life Processes	8
Ch 10	Light: Reflection & Refraction	8
Ch 3	Metals & Non-metals	7
Ch 1	Chemical Reactions & Equations	6
Ch 2	Acids, Bases & Salts	6
Ch 4	Carbon & its Compounds	6
Ch 7	Control & Coordination	6
Ch 12	Electricity	6
Ch 8	How do Organisms Reproduce	5
Ch 9	Heredity & Evolution	5
Ch 11	Human Eye & Colourful World	5
Ch 13	Magnetic Effects of Electric Current	5
Ch 16	Management of Natural Resources	5
Ch 5	Periodic Classification	4
Ch 14	Sources of Energy	4
Ch 15	Our Environment	4

By subject area

AREA	CHAPTERS	MARKS
Chemistry	1 to 5	29
Biology	6 to 9	24
Physics	10 to 14	28
Environment	15 and 16	9

Blueprint: HSLC 2023 pattern. Dates from the SEBA HSLC 2027 programme. Verify on sebaonline.org before the exam. Trident Academy, Rampur.

Science: Chapterwise Important Questions

One repeated question for each of the 16 chapters, with marks for 2024, 2025 and 2026.

Balancing equations

Ch 1: Chemical Reactions

2024	2025	2026
1 mark	3 marks	2 marks

REMEMBER

- $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + 2HCl$
- $2HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + 2H_2O$
- These two came in both 2025 and 2026

Acids, bases & salts

Ch 2: Acids, Bases & Salts

2024	2025	2026
6 marks	12 marks	2 marks

REMEMBER

- Baking soda $NaHCO_3$, washing soda $Na_2CO_3 \cdot 10H_2O$
- Quicklime CaO, slaked lime $Ca(OH)_2$
- pH 7 is neutral; tooth decay starts below 5.5

Thermite & displacement

Ch 3: Metals & Non-metals

2024	2025	2026
3 marks	2 marks	4 marks

REMEMBER

- $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$ + heat
- Aluminium is more reactive, so it displaces iron
- Molten iron welds railway tracks

Carbon & its compounds

Ch 4: Carbon & its Compounds

2024	2025	2026
5 marks	2 marks	10 marks

REMEMBER

- Catenation and tetravalency of carbon
- Covalent bonds: CH_3Cl, ethane has 7 bonds
- IUPAC names: propanal, propanoic acid

Periodic table trends

Ch 5: Periodic Classification

2024	2025	2026
4 marks	2 marks	6 marks

REMEMBER

- Across a period: size ↓, metallic character ↓
- Down a group: size ↑, metallic character ↑
- Effective nuclear charge and valency

Human heart diagram

Ch 6: Life Processes

2024	2025	2026
2 marks	3 marks	2 marks

REMEMBER

- Draw the L.S. of the heart and label it
- Show the blood flow with arrows
- Say what the valves do: stop back-flow

Neuron & reflex arc

Ch 7: Control & Coordination

2024	2025	2026
3 marks	2 marks	1 mark

REMEMBER

- Draw and label a neuron
- Impulse: dendrite → cell body → axon → synapse
- Reflex arc: receptor → sensory neuron → spinal cord → motor neuron → effector

Asexual reproduction

Ch 8: How do Organisms Reproduce

2024	2025	2026
3 marks	4 marks	6 marks

REMEMBER

- Binary fission: Amoeba. Multiple fission: Plasmodium
- Budding: yeast, Hydra. Spores: Rhizopus
- One parent, no gametes, so similar offspring

Homologous & analogous organs

Ch 9: Heredity & Evolution

2024	2025	2026
1 mark	2 marks	3 marks

REMEMBER

- Homologous: same origin, e.g. human arm and dog foreleg
- Analogous: same function, e.g. bird wing and bat wing
- Both are evidence of evolutionary relationship

Lenses & mirrors

Ch 10: Light

2024	2025	2026
5 marks	3 marks	4 marks

REMEMBER

- Power P = 1/f (f in metres), unit dioptre
- Lens and mirror formula with sign convention
- Ray diagrams: concave mirror, convex lens

Human eye & light

Ch 11: Human Eye & Colourful World

2024	2025	2026
8 marks	10 marks	4 marks

REMEMBER

- Myopia: concave lens. Hypermetropia: convex lens
- Red light scatters least: red sun at sunrise
- Power of accommodation, atmospheric refraction

Electricity numericals

Ch 12: Electricity

2024	2025	2026
9 marks	10 marks	9 marks

REMEMBER

- $V = IR \cdot P = VI = I^2R$
- Series: $R = R_1 + R_2 + R_3$
- Parallel: $1/R = 1/R_1 + 1/R_2 + 1/R_3$

Fleming's left-hand rule

Ch 13: Magnetic Effects

2024	2025	2026
1 mark	1 mark	1 mark

REMEMBER

- Thumb = force, forefinger = field, middle finger = current
- For a conductor or moving charge in a magnetic field
- A 1-mark MCQ in every paper

Energy sources

Ch 14: Sources of Energy

2024	2025	2026
5 marks	4 marks	4 marks

REMEMBER

- Conventional, non-renewable: coal, petroleum, gas
- Renewable: solar, wind, biomass
- Nuclear and geothermal are not from the Sun

Our environment

Ch 15: Our Environment

2024	2025	2026
4 marks	2 marks	2 marks

REMEMBER

- Ozone layer blocks UV radiation
- 10% law: energy flows one way, 10% to next level
- Decomposers; polythene is non-biodegradable

Natural resources

Ch 16: Management of Natural Resources

2024	2025	2026
3 marks	7 marks	6 marks

REMEMBER

- 3Rs: reduce, reuse, recycle
- Big dams: irrigation and power, but problems too
- Chipko, Amrita Devi Bishnoi, Narmada Bachao

Source: SEBA HSLC question papers 2024, 2025 and 2026. Marks are as seen in each paper. Trident Academy, Rampur.

Science: Repeated in All 3 Papers (Part 1)

10 topics that came in 2024, 2025 and 2026. Revise these first.

Human heart diagram

Ch 6: Life Processes

2024	2025	2026
2 marks	3 marks	2 marks

REMEMBER

- Draw the L.S. of the heart and label it
- Show the blood flow with arrows
- Say what the valves do: stop back-flow

Plant hormones

Ch 7: Control & Coordination

2024	2025	2026
1 + 3 marks	1 + 2 marks	1 + 2 marks

REMEMBER

- Promoters: auxin, gibberellin, cytokinin
- Inhibitor: abscisic acid
- Know one function of each hormone

Neuron & reflex arc

Ch 7: Control & Coordination

2024	2025	2026
3 marks	2 marks	1 mark

REMEMBER

- Draw and label a neuron
- Impulse: dendrite → cell body → axon → synapse
- Reflex arc: receptor → sensory neuron → spinal cord → motor neuron → effector

Balancing equations

Ch 1: Chemical Reactions

2024	2025	2026
1 mark	3 marks	2 marks

REMEMBER

- $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + 2HCl$
- $2HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + 2H_2O$
- These two came in both 2025 and 2026

Periodic table trends

Ch 5: Periodic Classification

2024	2025	2026
4 marks	2 marks	6 marks

REMEMBER

- Across a period: size ↓, metallic character ↓
- Down a group: size ↑, metallic character ↑
- Effective nuclear charge and valency

Human eye & light

Ch 11: Human Eye & Colourful World

2024	2025	2026
8 marks	10 marks	4 marks

REMEMBER

- Myopia: concave lens. Hypermetropia: convex lens
- Red light scatters least: red sun at sunrise
- Power of accommodation, atmospheric refraction

Lenses & mirrors

Ch 10: Light

2024	2025	2026
5 marks	3 marks	4 marks

REMEMBER

- Power P = 1/f (f in metres), unit dioptre
- Lens and mirror formula with sign convention
- Ray diagrams: concave mirror, convex lens

Electricity numericals

Ch 12: Electricity

2024	2025	2026
9 marks	10 marks	9 marks

REMEMBER

- $V = IR$ · $P = VI = I^2R$
- Series: $R = R_1 + R_2 + R_3$
- Parallel: $1/R = 1/R_1 + 1/R_2 + 1/R_3$

Fleming's left-hand rule

Ch 13: Magnetic Effects

2024	2025	2026
1 mark	1 mark	1 mark

REMEMBER

- Thumb = force, forefinger = field, middle finger = current
- For a conductor or moving charge in a magnetic field
- A 1-mark MCQ in every paper

Energy sources

Ch 14: Sources of Energy

2024	2025	2026
5 marks	4 marks	4 marks

REMEMBER

- Conventional, non-renewable: coal, petroleum, gas
- Renewable: solar, wind, biomass
- Nuclear and geothermal are not from the Sun

Source: SEBA HSLC question papers 2024, 2025 and 2026. Marks are as seen in each paper. Trident Academy, Rampur.

Science: Repeated in All 3 Papers (Part 2)

10 more topics that came in 2024, 2025 and 2026.

Thermite & displacement

Ch 3: Metals & Non-metals

2024	2025	2026
3 marks	2 marks	4 marks

REMEMBER

- $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe + heat$
- Aluminium is more reactive, so it displaces iron
- Molten iron welds railway tracks

Acids, bases & salts

Ch 2: Acids, Bases & Salts

2024	2025	2026
6 marks	12 marks	2 marks

REMEMBER

- Baking soda $NaHCO_3$, washing soda $Na_2CO_3 \cdot 10H_2O$
- Quicklime CaO, slaked lime $Ca(OH)_2$
- pH 7 is neutral; tooth decay starts below 5.5

Carbon & its compounds

Ch 4: Carbon & its Compounds

2024	2025	2026
5 marks	2 marks	10 marks

REMEMBER

- Catenation and tetravalency of carbon
- Covalent bonds: CH_3Cl, ethane has 7 bonds
- IUPAC names: propanal, propanoic acid

Xylem, phloem & transpiration

Ch 6: Life Processes

2024	2025	2026
3 marks	3 marks	1 mark

REMEMBER

- Xylem carries water; phloem does translocation
- Transpiration pulls water and minerals upward
- Stomata open by day and close to save water

Aerobic respiration

Ch 6: Life Processes

2024	2025	2026
1 mark	1 mark	1 mark

REMEMBER

- Pyruvate → CO_2 + water + energy
- This happens in the mitochondria
- ATP is the energy currency of the cell

Asexual reproduction

Ch 8: How do Organisms Reproduce

2024	2025	2026
3 marks	4 marks	6 marks

REMEMBER

- Binary fission: Amoeba. Multiple fission: Plasmodium
- Budding: yeast, Hydra. Spores: Rhizopus
- One parent, no gametes, so similar offspring

Human reproductive system

Ch 8: How do Organisms Reproduce

2024	2025	2026
1 mark	1 mark	1 mark

REMEMBER

- Female: ovary, fallopian tube, uterus
- Vas deferens is NOT female: it is male
- Unfertilised egg lives about one day

Homologous & analogous organs

Ch 9: Heredity & Evolution

2024	2025	2026
1 mark	2 marks	3 marks

REMEMBER

- Homologous: same origin, e.g. human arm and dog foreleg
- Analogous: same function, e.g. bird wing and bat wing
- Both are evidence of evolutionary relationship

Our environment

Ch 15: Our Environment

2024	2025	2026
4 marks	2 marks	2 marks

REMEMBER

- Ozone layer blocks UV radiation
- 10% law: energy flows one way, 10% to next level
- Decomposers; polythene is non-biodegradable

Natural resources

Ch 16: Management of Natural Resources

2024	2025	2026
3 marks	7 marks	6 marks

REMEMBER

- 3Rs: reduce, reuse, recycle
- Big dams: irrigation and power, but problems too
- Chipko, Amrita Devi Bishnoi, Narmada Bachao

Source: SEBA HSLC question papers 2024, 2025 and 2026. Marks are as seen in each paper. Trident Academy, Rampur.

Electricity: Formulas and Solved Questions

The whole chapter: formulas, units and past-paper style numericals, solved step by step

WHY IT MATTERS
9 to 10 marks every year from Electricity

PAPERS
2024, 2025, 2026

Formula sheet

ELECTRIC CURRENT
$I = Q \div t$

OHM'S LAW
$V = I \times R$

RESISTANCE OF A WIRE
$R = \rho I \div A$

RESISTORS IN SERIES
$R = R_1 + R_2 + R_3$

RESISTORS IN PARALLEL
$1/R = 1/R_1 + 1/R_2 + 1/R_3$

ELECTRIC POWER
$P = V I = I^2 R = V^2 \div R$

FUSE AND BULBS
I (one bulb) = P ÷ V

Past-paper questions, solved

Electric current · 2024 · 1 mark

Charge, time and current

$$I = Q \div t$$

Q in coulomb (C) · t in second (s) · I in ampere (A)

A bulb draws 0.5 A for 10 minutes. Find the charge.

1. t = 10 min = 600 s
2. Q = I × t
3. Q = 0.5 × 600 = 300 C

Ohm's law · 2025 · 2 marks

Voltage, current and resistance

$$V = I \times R$$

V in volt · R in ohm (Ω) · V–I graph is a straight line

A heater draws 4 A at 60 V. Current at 120 V?

1. R = V ÷ I = 60 ÷ 4 = 15 Ω
2. I = V ÷ R = 120 ÷ 15
3. I = 8 A (double V, double I)

Resistance of a wire · 2024 · 2 marks

Length, area and material

$$R = \rho l \div A$$

Longer wire: R up · Thicker wire: R down · ρ = resistivity

Copper wire, diameter 0.5 mm, ρ = 1.6 × 10^{-8} Ω m. Length for R = 10 Ω?

1. $A = \pi r^2 = 22/7 \times (0.25\times10^{-3})^2 \approx 1.96\times10^{-7}$ m^2
2. $l = R\,A \div \rho = 10 \times 1.96\times10^{-7} \div 1.6\times10^{-8}$
3. l ≈ 122.7 m

Resistors in series · 2026 · 2 marks

One path, same current

$$R = R_1 + R_2 + R_3$$

Same current everywhere · voltage divides

100 Ω, 200 Ω and 300 Ω in series across 12 V. Find the current.

1. R = 100 + 200 + 300 = 600 Ω
2. I = V ÷ R = 12 ÷ 600
3. I = 0.02 A through each resistor

Resistors in parallel · 2024 · 3 marks

Many paths, same voltage

$$1/R = 1/R_1 + 1/R_2 + 1/R_3$$

Same voltage across each · current divides

5 Ω, 10 Ω and 30 Ω in parallel across a 12 V battery.

1. 1/R = 1/5 + 1/10 + 1/30 = 10/30 → R = 3 Ω
2. Total I = 12 ÷ 3 = 4 A
3. Branches: 2.4 A, 1.2 A and 0.4 A

Electric power · 2024 · 3 marks

Rate of using energy

$P = V I = I^2 R = V^2 \div R$

P in watt · 1 kWh = 3.6×10^6 J · double I, power × 4

A heater of 8 Ω draws 15 A. At what rate is heat produced?

1. $P = I^2 R$
2. $P = 15 \times 15 \times 8$
3. P = 1800 W (1800 J every second)

Fuse and bulbs · 2026 · 2 marks

How many bulbs on one fuse

I (one bulb) $= P \div V$

Bulbs in parallel add up their currents · fuse melts above its rating

5 A fuse. How many 100 W, 220 V bulbs can run in parallel?

1. One bulb: $I = 100 \div 220 = 5/11$ A
2. $n = 5 \div (5/11)$
3. n = 11 bulbs

Earthing and safety · 2025 · 2026

Came in 2025 and 2026

Earth wire → no shock

1 mark every time

Why is the earth wire joined to a metal-body appliance?

1. Fridge, iron, heater: metal bodies need an earth wire
2. Leaked current flows to the ground, so no shock
3. Fuse cuts the circuit when current is too high

Source: SEBA HSLC question papers 2024, 2025 and 2026. Marks are as seen in each paper. Trident Academy, Rampur.