

Prescribed science experiments and Prayoga coverage

Karnataka state syllabus · Class 10 (SSLC) and Class 9 · Physics, Chemistry and Biology · updated 16 October 2026

Which list this is

- Karnataka's Class 10 science textbook has the same 16 chapters as the NCERT Class 10 science book, and the Class 9 book follows NCERT in the same way. KSEAB does not publish a separate list of practicals online that I could find; the SSLC practical work is assessed inside the 20-mark internal assessment.
- So this document uses the **official NCERT/CBSE list of prescribed practicals** for the same chapters (CBSE Science curriculum 2025–26 for Class 10; 2024–25 for Class 9). It is the closest published list for Karnataka state-syllabus schools.
- **Before the pitch, confirm with your partner schools** which practicals they actually record in the SSLC practical book, and add any Karnataka-specific ones. That check also makes good pitch evidence.
- Classes 6–8 have no prescribed practical list: experiments are activities inside the textbook chapters. They are listed briefly at the end.

How to read the “Prayoga?” column

- **Yes:** there is a Prayoga worksheet for this practical, and Prayoga measures what can be measured. Steps the textbook asks to do by the senses (smell, gas tests, litmus) stay in the worksheet.
- **Partly:** Prayoga adds a live measurement or picture, but the main prescribed method stays the same, or there is no worksheet yet.
- **No:** Prayoga does not help; do it with the usual lab apparatus. This is the honest answer for jury questions on limitations.

Summary

Class and subject	Prescribed	Yes (done with Prayoga)	Partly (Prayoga adds a measurement)	No (usual lab method)	Coverage (Yes + Partly)
Class 10 Physics	5	2	0	3	2 of 5
Class 10 Chemistry	9	4	0	5	4 of 9
Class 10 Biology	4	4	0	0	4 of 4
Class 10 total	18	10	0	8	10 of 18
Class 9 Physics	4	2	0	2	2 of 4
Class 9 Chemistry	5	3	0	2	3 of 5
Class 9 Biology	2	2	0	0	2 of 2
Class 9 total	11	7	0	4	7 of 11

Prayoga is strongest in electricity, heat and temperature, pH and microscopy. It does not replace pin-tracing optics, balances and spring balances, or reactions that are judged by eye.

Class 10 (SSLC): prescribed experiments

Physics (5 prescribed: 2 yes, 0 partly, 3 no)

No.	Prescribed experiment	Chapter	Prayoga?	Comment: what Prayoga does
14	Focal length of a concave mirror and a convex lens using a distant object	Ch 9 Light: Reflection and Refraction	No	Done with mirror, lens and screen. Not covered by Prayoga.
15	Path of a ray through a rectangular glass slab at different angles of incidence	Ch 9	No	Done by tracing with pins. Prayoga's "light through glass" worksheet measures how much light passes, a different idea.
16	Path of rays through a glass prism	Ch 10 Human Eye and the Colourful World	No	Done by tracing with pins. Related only: Prayoga's spectrum worksheet (Physics 10) shows dispersion.
17	Dependence of potential difference on current; resistance; V-I graph	Ch 11 Electricity	Yes	Core Prayoga experiment: the voltage/current sensor replaces ammeter and voltmeter and draws the V-I graph live. Physics worksheet 1; students also take one multimeter reading.
18	Equivalent resistance of two resistors in series and in parallel	Ch 11	Yes	Voltage/current sensor measures V and I for each circuit and gives R. Physics worksheet 3.

Chemistry (9 prescribed: 4 yes, 0 partly, 5 no)

No.	Prescribed experiment	Chapter	Prayoga?	Comment: what Prayoga does
1	Action of water on quicklime; classify the reaction	Ch 1 Chemical Reactions and Equations	Yes	Temperature probe shows the large temperature rise live, proving the reaction is exothermic. Chemistry worksheet 1 (teacher handles quicklime).
2	Action of heat on ferrous sulphate crystals; classify the reaction	Ch 1	No	Done by heating and watching colour change and smell; no sensor adds much. Do it in the usual way.
3	Iron nails in copper sulphate solution; classify the reaction	Ch 1	No	Colour change seen by eye. The phone camera can photograph before and after, but no worksheet yet.
4	Sodium sulphate with barium chloride solution; classify the reaction	Ch 1	No	Precipitate seen by eye. Possible future add-on: light sensor measures how cloudy the liquid becomes.
5	pH of dilute HCl, NaOH, ethanoic acid, lemon juice, water and sodium hydrogen carbonate (pH paper or universal indicator)	Ch 2 Acids, Bases and Salts	Yes	pH probe gives a pH number for each sample; students also use pH paper as prescribed. Chemistry worksheet 2. Needs the Full-kit pH probe.
6	Properties of HCl and NaOH with litmus, zinc and solid sodium carbonate	Ch 2	Yes	Litmus by hand plus a pH reading; the pressure sensor measures the gas from zinc and from sodium carbonate; gas tests (match, limewater) as prescribed. Chemistry worksheet 7. Needs pH probe (Full kit) and pressure sensor.

No.	Prescribed experiment	Chapter	Prayoga?	Comment: what Prayoga does
7	Action of Zn, Fe, Cu and Al on their salt solutions; arrange in order of reactivity	Ch 3 Metals and Non-metals	No	Displacement seen by eye. Prayoga's conductivity worksheet (Chemistry 5) covers a different property of metals.
8	Properties of ethanoic acid: odour, solubility, effect on litmus, reaction with sodium hydrogen carbonate	Ch 4 Carbon and its Compounds	Yes	Odour, solubility and litmus by hand; pH and conductivity show it is a weak acid compared with HCl; pressure sensor measures the CO ₂ . Chemistry worksheet 8.
9	Cleaning capacity of soap in soft and hard water	Ch 4	No	Not in the worksheets. Possible future add-on: conductivity probe shows which water has more dissolved salts (hardness).

Biology (4 prescribed: 4 yes, 0 partly, 0 no)

No.	Prescribed experiment	Chapter	Prayoga?	Comment: what Prayoga does
10	Temporary mount of a leaf peel to show stomata	Ch 5 Life Processes	Yes	Clip-on phone lens shows and photographs stomata; students count them. Biology worksheet 10. Needs the Full-kit lens.
11	Show that carbon dioxide is given out during respiration	Ch 5	Yes	The prescribed KOH set-up, sealed with the pressure sensor: the pressure falls as KOH absorbs the CO ₂ . Biology worksheet 2 (Basic kit).
12	Binary fission in Amoeba and budding in yeast and Hydra (prepared slides)	Ch 7 How do Organisms Reproduce	Yes	USB digital microscope plugged into the phone (one per school) shows and photographs the prepared slides. Biology worksheet 12.
13	Parts of a dicot seed embryo (pea, gram or red kidney bean)	Ch 7	Yes	Soaked seed opened by hand, photographed through the clip-on lens and labelled in the app. Biology worksheet 13.

Class 9: prescribed experiments

Physics (4 prescribed: 2 yes, 0 partly, 2 no)

No.	Prescribed experiment	Chapter	Prayoga?	Comment: what Prayoga does
7	Verify the laws of reflection of sound	Sound	Yes	Buzzer on the kit sends sound down one tube; the phone microphone measures loudness at each angle of the second tube. Physics worksheet 20.
8	Density of a solid using a spring balance and measuring cylinder	Gravitation / Floatation	No	Needs spring balance and cylinder. Not covered.
9	Loss in weight of a solid in tap water and salty water vs weight of water displaced	Gravitation / Floatation	No	Needs spring balance. Not covered.
10	Speed of a pulse along a stretched string or slinky	Sound / Waves	Yes	Two IR sensors on the kit time the pulse between them; students also time it with a stopwatch. Physics worksheet 21 (Full kit).

Chemistry (5 prescribed: 3 yes, 0 partly, 2 no)

No.	Prescribed experiment	Chapter	Prayoga?	Comment: what Prayoga does
1	Prepare a true solution, a suspension and a colloid; distinguish them (transparency, filtration, stability, Tyndall effect)	Is Matter Around Us Pure	Yes	Torch beam (Tyndall) and filtering as prescribed, plus a conductivity reading for each. Chemistry worksheet 11.
2	Mixture and compound of iron filings and sulphur	Is Matter Around Us Pure	No	Magnet, solvent and heating tests by eye. Not covered.
3	Reactions classified as physical or chemical changes (iron + copper sulphate, burning magnesium, zinc + dilute sulphuric acid, heating copper sulphate, sodium sulphate + barium chloride)	Matter / Chemical changes	Yes	Each change gets measured evidence: heat (temperature probe), gas (pressure sensor), colour fading and precipitate (light sensor in the LED holder), magnesium flash (light sensor). Chemistry worksheet 12.
6	Melting point of ice and boiling point of water	Matter in Our Surroundings	Yes	Temperature probe records the whole heating curve, with flat parts at melting and boiling. Chemistry worksheet 9.
11	Law of conservation of mass in a chemical reaction	Atoms and Molecules	No	Needs a balance. Not covered.

Biology (2 prescribed: 2 yes, 0 partly, 0 no)

No.	Prescribed experiment	Chapter	Prayoga?	Comment: what Prayoga does
4	Stained temporary mounts of onion peel and human cheek cells; labelled diagrams	The Fundamental Unit of Life	Yes	Clip-on lens shows and photographs both. Biology worksheets 7 and 8. Needs the Full-kit lens; cheek cells are small, so the image is basic.
5	Plant tissues (parenchyma, collenchyma, sclerenchyma) and animal tissues from prepared slides	Tissues	Yes	USB digital microscope on the phone shows and photographs each prepared slide. Biology worksheet 9.

Numbers follow the order in the CBSE Class 9 list, so they jump between subjects.

Prayoga experiments beyond the prescribed list

These Prayoga worksheets are not on the prescribed practical list. They match textbook chapters and activities, and give schools hands-on work for chapters that have no practical at all (magnetic effects, sources of energy, our environment).

Subject	Class	Prayoga worksheets
Physics	Class 10	Resistance and wire length; heating effect of current; magnetic field of a wire; solenoid; induction; light and distance; light through glass and water; spectrum; why the sky is blue; solar cell; solar cooker
Physics	Class 9	Trolley acceleration; force and mass; g with a pendulum; energy in a pendulum; frequency and pitch; speed of sound by echo
Chemistry	Class 10	Neutralisation curve; red cabbage indicator; which materials conduct; salt and sugar water
Chemistry	Class 9	Evaporation causes cooling
Biology	Class 10	Germinating seeds give off heat; pollen grains; reaction time; soil and water tests; yeast fermentation; photosynthesis and light; pulse rate; plants bend to light; compost
Biology	Class 9	Soil for crops
All subjects	Classes 6–8	12 worksheets matched to textbook activities (heat, light, circuits, magnets, sound, solar cells, acids and bases, plants, microorganisms, mould)

What this means for the pitch

- Of 18 prescribed Class 10 practicals, Prayoga fully covers 10 and adds to 0 more. Of 11 prescribed Class 9 practicals, it fully covers 7 and adds to 0.
- Say clearly: Prayoga complements the lab, especially for schools without one. It covers the measurement-heavy practicals and adds 44 more hands-on worksheets for chapters with no practical.
- The remaining “No” rows need apparatus Prayoga does not replace: mirrors, lenses and pins for optics, balances and spring balances, and reactions judged by eye. Schools keep using their usual apparatus for these.

Sources

- [CBSE Class 10 Science \(086\) syllabus 2025–26, list of practicals \(via edustud.nic.in\)](#)
- [CBSE Secondary Science curriculum 2024–25, Class IX practicals](#)
- [Karnataka SSLC science syllabus: chapter list \(Aakash\)](#)
- [Karnataka SSLC exam pattern: 80 theory + 20 internal assessment \(PW\)](#)