200 Science Project Ideas for Class 7

Welcome! This article is a complete, ready-to-use collection of **science project ideas for class 7** — perfect for students, teachers, and parents.

Inside you'll find 200 easy-to-follow project ideas across physics, chemistry, biology, environment, earth & space, electronics, and fun STEM activities.

Each idea is written simply so a class 7 student can understand the aim, required materials, a short procedure, and the expected result.

These projects are chosen to spark curiosity, encourage hands-on learning, and build basic scientific skills: observing, measuring, hypothesizing, experimenting, and concluding.

Some projects are quick demos you can do in one class, while others are small investigations that may take several days. Before starting, read the aim and materials carefully, plan your steps, and always follow safety rules.

If an experiment uses heat, sharp objects, strong chemicals, or open flames, adult supervision is required.

How to use this list: pick a project that interests you, gather materials, follow the steps, record observations (notes, photos, or charts), and finish with a short conclusion that answers the aim.

If you need, you can turn any of these into a full lab report, poster, or PowerPoint—just tell me which idea(s) and I'll expand them for you. Ready to explore? Let's make science fun and simple!

Must Read: 200 English Project Ideas for Kids — Fun & Easy Projects

How to use this list

- Pick a project that interests you.
- Read the materials and steps. Test on small scale first.
- Record observations, take photos, and prepare a short report with aim, method, results, and conclusion.
- Add diagrams, charts, or simple graphs if possible.

200 Science Project Ideas for Class 7

Physics — Motion, Forces, Light & Electricity

1. **Friction vs. Surface**
   - Objective: Test how different surfaces affect friction.
   - Materials: Wooden block, sandpaper, cloth, table, spring scale.
   - Procedure: Pull the block across surfaces with spring scale, record force.
   - Expected result: Rougher surfaces need larger pull force; discuss friction coefficient.
2. **Ramp and Speed**
   - Objective: See how ramp height affects speed of a toy car.
   - Materials: Ramp (cardboard), toy car, stopwatch, ruler.
   - Procedure: Release car from different heights, time travel over fixed distance.
   - Expected result: Higher ramps → greater speed; relate to potential and kinetic energy.

3. **Egg Drop Cushion Design**
   - Objective: Build a cushion to protect an egg from a fall.
   - Materials: Egg, foam, straws, tape, cardboard.
   - Procedure: Design containers, drop from fixed height, check egg.
   - Expected result: Good designs absorb impact energy and protect the egg.
4. **Ball Bounce & Surface**
   - Objective: Compare bounce height on different surfaces.
   - Materials: Ball, measuring tape, concrete/wood/carpet.
   - Procedure: Drop ball from same height, measure rebound.
   - Expected result: Harder surfaces give higher bounce; energy loss to deformation.
5. **Center of Gravity with Paper Clips**
   - Objective: Find center of gravity of shapes.
   - Materials: Cardboard shapes, paper clips, string, pin.
   - Procedure: Hang shapes, mark plumb line intersections.
   - Expected result: Intersection point is center of gravity; show balance.
6. **Homemade Barometer**
   - Objective: Make a simple barometer to measure pressure changes.
   - Materials: Glass jar, balloon, rubber band, straw, paper scale.
   - Procedure: Stretch balloon over jar, attach straw, calibrate; observe changes.
   - Expected result: Straw moves with pressure; demonstrates air pressure changes.
7. **Static Electricity — Balloon Hair**
   - Objective: Show static electricity and attraction.
   - Materials: Balloon, wool cloth, small paper bits.
   - Procedure: Rub balloon on wool and bring near paper/hair.
   - Expected result: Balloon attracts paper/hair due to transferred electrons.
8. **Solar Oven**
   - Objective: Build an oven that cooks using sunlight.
   - Materials: Cardboard box, aluminum foil, black paper, cling film.
   - Procedure: Line box with foil, place black tray inside, cover with film; place in sun.
   - Expected result: Sun's radiation heats tray; demonstrate solar energy use.
9. **Electromagnet**
   - Objective: Create a magnet using a battery and wire.
   - Materials: Iron nail, insulated copper wire, battery, paper clips.
   - Procedure: Coil wire around nail, connect battery, pick up clips.
   - Expected result: Current creates magnetic field; learn electromagnetism.
10. **Floating Paper Clip (Surface Tension)**
    - Objective: Show water's surface tension holds objects.
    - Materials: Small paper clips, bowl, water, tissue.
    - Procedure: Carefully place clip on water using tissue, observe float.
    - Expected result: Surface tension supports clip until broken by disturbance.

11. **Refraction with Glass and Water**
    - Objective: Demonstrate light bending in water.
    - Materials: Glass, water, pencil.
    - Procedure: Put pencil in glass of water and view from side.
    - Expected result: Pencil appears bent; explains refraction.
12. **Build a Simple Motor**
    - Objective: Make a basic electric motor.
    - Materials: Battery, copper wire, magnets, paper clips.
    - Procedure: Create coil, mount on supports with magnets, connect battery briefly.
    - Expected result: Coil spins when current flows; shows motor principles.
13. **Pendulum Period Study**
    - Objective: Measure how length affects pendulum period.
    - Materials: String, weight, stopwatch, ruler.
    - Procedure: Make pendulums of different lengths, time oscillations.
    - Expected result: Longer pendulum = longer period; demonstrates simple harmonic motion.
14. **Sound Wave Visualization (Tuning Fork & Water)**
    - Objective: Show sound waves moving through water.
    - Materials: Tuning fork, bowl of water.
    - Procedure: Strike fork, touch water, observe ripples.
    - Expected result: Vibrations create ripples; link to wave energy.
15. **Lens Image Formation**
    - Objective: Study image produced by a convex lens.
    - Materials: Convex lens, screen (paper), object (candle or LED).
    - Procedure: Move lens between object and screen to focus image.
    - Expected result: Real inverted image at focal length; explain magnification.
16. **Make a Periscope**
    - Objective: Learn reflection using mirrors.
    - Materials: Cardboard tubes, two small mirrors, tape.
    - Procedure: Fix mirrors at 45° inside tube opposite each other.
    - Expected result: You can see around corners via reflections.
17. **Water Pressure vs Depth**
    - Objective: Measure how pressure increases with depth.
    - Materials: Tall container, syringe or bottle with holes, water.
    - Procedure: Make holes at different heights and observe flow.
    - Expected result: Lower holes have stronger flow; pressure increases with depth.
18. **Magnetic Field Lines with Iron Filings**
    - Objective: Visualize magnetic field lines.
    - Materials: Bar magnet, paper, iron filings.
    - Procedure: Place magnet under paper, sprinkle filings, tap gently.

- Expected result: Filings align along field lines; shows field shape.

19. **Build a Simple Circuit & Switch**
    - Objective: Make a working circuit with a switch.
    - Materials: Battery, bulb, wires, simple switch (paper clip).
    - Procedure: Connect components; use switch to open/close circuit.
    - Expected result: Bulb lights when circuit closed; teaches circuit basics.
20. **Make a Water Clock**
    - Objective: Measure time by flow of water.
    - Materials: Two bottles, tube, marker, water.
    - Procedure: Connect bottles, mark times as water flows at steady rate.
    - Expected result: Time related to constant flow; concept of rate.

Chemistry — Reactions, Acids & Bases, Separations

21. **Vinegar & Baking Soda Reaction**
    - Objective: Study gas production and speed of reaction.
    - Materials: Baking soda, vinegar, balloon, bottle.
    - Procedure: Mix in bottle, capture CO_2 in balloon.
    - Expected result: Balloon inflates; discuss gas production and reaction rate.
22. **pH Indicator from Red Cabbage**
    - Objective: Make natural indicator to test acids/bases.
    - Materials: Red cabbage, blender, filter paper, household acids/bases.
    - Procedure: Extract juice, dip samples, observe color changes.
    - Expected result: Colors indicate pH (acid = pink/red, base = green/blue).
23. **Rusting — Role of Water & Salt**
    - Objective: Compare rusting speed with salt and moisture.
    - Materials: Steel nails, water, salt, oil, containers.
    - Procedure: Place nails in different conditions, observe rust over days.
    - Expected result: Saltwater speeds rusting; oxygen + moisture cause corrosion.
24. **Electrolysis of Water**
    - Objective: Split water into hydrogen and oxygen.
    - Materials: Battery, water, salt, two pencils, test tubes.
    - Procedure: Use pencils as electrodes, collect gases in inverted test tubes.
    - Expected result: Bubbles of H_2 and O_2 appear; explain electrolysis.
25. **Chromatography of Ink**
    - Objective: Separate ink into components.
    - Materials: Filter paper, water/alcohol, markers, glass.
    - Procedure: Spot ink on paper, place tip in solvent, observe separation.
    - Expected result: Colors separate by solubility; shows mixture separation.
26. **Make a Volcano (Acid-Base Reaction)**
    - Objective: Create an erupting model volcano.

- Materials: Baking soda, vinegar, clay, coloring.
- Procedure: Shape volcano, mix chemicals in crater for eruption.
- Expected result: Foam eruption simulates volcanic flow due to CO_2.

27. **Corrosion Prevention Methods**
    - Objective: Test coatings that prevent rust.
    - Materials: Nails, paint, oil, zinc (galvanize), saltwater.
    - Procedure: Coat nails differently, expose to salt spray, observe.
    - Expected result: Coatings reduce rusting; discuss protective methods.
28. **Reaction Rates & Temperature**
    - Objective: See how temperature affects reaction speed.
    - Materials: Alka-Seltzer or yeast/vinegar, water at different temps.
    - Procedure: Time reaction at different temperatures.
    - Expected result: Higher temp → faster reaction (more collisions).
29. **Make Biodegradable Plastic (Starch-based)**
    - Objective: Create simple biodegradable plastic from starch.
    - Materials: Cornstarch, glycerin, vinegar, heat source.
    - Procedure: Mix and heat to form gel, cool to set.
    - Expected result: Forms flexible film; discuss polymers and biodegradability.
30. **Identify Unknown Powder (Solubility Tests)**
    - Objective: Identify samples using simple tests (vinegar, water, heat).
    - Materials: Unknown powders (chalk, salt, sugar), solvents, heat.
    - Procedure: Check solubility, reaction with vinegar, melting point.
    - Expected result: Deduce identity from test results.
31. **Soap vs Detergent — Cleaning Test**
    - Objective: Compare cleaning power in hard water.
    - Materials: Soap, detergent, hard water (add salt), dirty cloth.
    - Procedure: Wash identical stains, compare cleanliness and foam.
    - Expected result: Detergents better in hard water; soaps form scum.
32. **Make Slime & Study Polymers**
    - Objective: Create slime and explain polymer crosslinking.
    - Materials: Glue, borax solution (or contact lens solution), water.
    - Procedure: Mix to form slime.
    - Expected result: Glue polymers crosslink into stretchy slime.
33. **Electroplating (Copper on Nail)**
    - Objective: Plate a nail with copper using solution and battery.
    - Materials: Copper sulfate, battery, copper strip, nail.
    - Procedure: Connect electrodes to battery in solution, observe plating.
    - Expected result: Copper deposits on nail; shows redox and ion movement.
34. **Make a Natural Toilet Cleaner (Enzyme-based)**
    - Objective: Test enzyme cleaners vs chemical cleaners on stains.

- Materials: Enzyme cleaner or yeast solution, bleach, stained tile.
- Procedure: Apply cleaners, scrub, compare results.
- Expected result: Enzymes break organic stains effectively.

35. **Carbon Dioxide by Fermentation**
    - Objective: Measure CO_2 from yeast fermentation under sugar concentrations.
    - Materials: Yeast, sugar, bottles, balloons.
    - Procedure: Vary sugar amounts, capture gas, measure balloon size.
    - Expected result: More sugar → more CO_2 (until yeast limit).
36. **Acid Rain Simulation (Effect on Marble)**
    - Objective: See how acid affects limestone/calcium carbonate.
    - Materials: Marble chip, vinegar, water (control).
    - Procedure: Soak in vinegar, observe fizzing and mass loss.
    - Expected result: Acid dissolves carbonate; links to environmental effect.
37. **Salt Crystal Growing**
    - Objective: Grow and study salt crystals.
    - Materials: Table salt, hot water, string, bottle.
    - Procedure: Make saturated solution, suspend string, wait for crystals.
    - Expected result: Crystals form as solution cools/evaporates.
38. **Test Hardness of Water (Soap Test)**
    - Objective: Compare foam formation in different water samples.
    - Materials: Soap solution, water samples from different sources.
    - Procedure: Shake equal soap + water, compare lather.
    - Expected result: Hard water lathers less due to calcium/magnesium.
39. **Electrochemical Cell (Voltaic Cell)**
    - Objective: Build a cell from two different metals.
    - Materials: Copper, zinc, salt bridge (paper), voltmeter.
    - Procedure: Connect metals in electrolyte, measure voltage.
    - Expected result: Produce small voltage; shows redox reactions produce electricity.
40. **Make Indicator Paper from Beetroot**
    - Objective: Create pigment-based indicator and test pH sensitivity.
    - Materials: Beetroot juice, filter paper, acids/bases.
    - Procedure: Impregnate paper with juice, dry, test solutions.
    - Expected result: Color changes show pH or pigment stability.
41. **Separation by Filtration & Evaporation**
    - Objective: Separate sand, salt, and water mixture.
    - Materials: Sand, salt, water, filter paper, heating source.
    - Procedure: Filter sand, evaporate water to recover salt.
    - Expected result: Demonstrates physical separation techniques.
42. **Make a Simple Indicator from Turmeric**
    - Objective: Test turmeric as an indicator for base (turns red with base + O_2).

- Materials: Turmeric, ethanol (or water), acids/bases.
- Procedure: Prepare turmeric extract, add solutions, observe color.
- Expected result: Color change indicates basic conditions with oxidizer.

43. **Test for Starch in Food (Iodine Test)**
    - Objective: Detect starch in foods.
    - Materials: Iodine solution, potato, bread, apple.
    - Procedure: Add iodine drop to sample, observe color change (blue-black).
    - Expected result: Starch presence turns iodine blue-black.
44. **Photosynthesis — Oxygen Production (Water Plant)**
    - Objective: Measure oxygen release from aquatic plants under light.
    - Materials: Elodea (or aquatic plant), test tube, water, light source.
    - Procedure: Invert tube over plant, count bubbles under different light intensities.
    - Expected result: More light → more bubbles (oxygen) from photosynthesis.
45. **Test Solubility vs Temperature**
    - Objective: See how solubility of salt/sugar changes with temperature.
    - Materials: Salt/sugar, water, heater, measuring spoons.
    - Procedure: Dissolve fixed amount at varying temps, record max dissolved.
    - Expected result: Solubility increases with temperature for many solids.
46. **Make Hydrogen Gas from Metal & Acid (Safety: Adult Supervision)**
    - Objective: Produce hydrogen using zinc and acid (small scale).
    - Materials: Zinc piece, dilute hydrochloric acid (or vinegar for safe), test tube.
    - Procedure: Add metal to acid, collect gas carefully; test with pop (adult).
    - Expected result: H_2 evolution; explain metal-acid reaction.
47. **Saponification (Make Soap from Oils)**
    - Objective: Make simple soap via reaction of oil and lye (use safe substitutes).

    - Materials: Vegetable oil, sodium hydroxide (careful) or potash, moulds.
    - Procedure: Mix carefully following safety, pour into moulds, cure.
    - Expected result: Soap forms by converting fats to salt of fatty acids.

48. **Test Effect of Catalysts (Decomposition of Hydrogen Peroxide)**
    - Objective: Show catalysts speed decomposition of H_2O_2.
    - Materials: Hydrogen peroxide, yeast or manganese dioxide, dish.
    - Procedure: Add catalyst to peroxide, observe rapid bubbling.
    - Expected result: Catalyst increases rate without being consumed.
49. **Make a pH Curve for Citrus Fruits**
    - Objective: Compare pH of lemon, orange, grapefruit, etc.
    - Materials: pH strips or indicator, juices, pipette.
    - Procedure: Test each juice and record pH values.
    - Expected result: Different acids have slightly different pH; relate to taste.

50. **Test Oxidation of Fruit (Prevent Browning)**
    - Objective: Test treatments that prevent apple browning.
    - Materials: Apple slices, lemon juice, salt water, sugar water.
    - Procedure: Treat slices differently, observe browning over time.
    - Expected result: Acid or antioxidant treatments slow enzymatic browning.

Biology — Plants, Animals, Microbiology

51. **Germination Conditions**
    - Objective: Study seed germination with light vs dark, moist vs dry.
    - Materials: Seeds, cotton, petri dishes, light source.
    - Procedure: Place seeds under different conditions, record germination rate.
    - Expected result: Moisture required; light sensitivity varies by seed.
52. **Plant Tropism (Light Response)**
    - Objective: Observe how plants bend toward light.
    - Materials: Potted seedlings, box with a hole for light.
    - Procedure: Cover plant, allow light through hole, observe bending.
    - Expected result: Plant grows toward light due to auxin distribution.
53. **Transpiration Rate (Leaf Potometer)**
    - Objective: Measure rate of water loss from leaves.
    - Materials: Plastic bottle, cut twig, water, marker.
    - Procedure: Fit twig in water bottle, measure water level drop over time.
    - Expected result: Higher temp/light → more transpiration.
54. **Effect of Soil Types on Plant Growth**
    - Objective: Compare plant growth in sand, clay, loam.
    - Materials: Pots, different soils, same seeds.
    - Procedure: Plant seeds in each soil, keep same water/light, measure growth.
    - Expected result: Loam usually supports better growth.
55. **Make Yogurt & Study Bacteria**
    - Objective: Convert milk to yogurt using bacteria.
    - Materials: Milk, yogurt starter, warm container.
    - Procedure: Heat milk, add starter, keep warm to incubate.
    - Expected result: Milk thickens; fermentation by bacteria produces lactic acid.
56. **Observe Microorganisms in Pond Water**
    - Objective: Find microorganisms under a microscope.
    - Materials: Pond water, microscope slides, microscope.
    - Procedure: Place drop, view under microscope; sketch microbes.
    - Expected result: See protozoa, algae; discuss biodiversity.
57. **Ant Farm Observation**
    - Objective: Study ant behavior and tunnel building.
    - Materials: Transparent container, soil/sand, ants (ethical collection).

- Procedure: Set up colony, feed, observe patterns.
- Expected result: Ants build tunnels and show social behavior.

58. **Bread Mold Growth Conditions**
    - Objective: See how humidity/temp affect mold growth.
    - Materials: Bread slices, plastic bags, different conditions.
    - Procedure: Expose bread to conditions, observe mold over days.
    - Expected result: Warm, moist conditions encourage mold.
59. **Enzymes & Temperature (Potato & Hydrogen Peroxide)**
    - Objective: Test how temperature affects catalase activity in potato.
    - Materials: Potato pieces, H_2O_2, water baths at different temps.
    - Procedure: Measure bubble formation at temps.
    - Expected result: Enzyme activity peaks at an optimum temp, then falls.
60. **Observe Mitosis in Onion Root Tip**
    - Objective: See cell division stages.
    - Materials: Onion root tips, microscope, stain (acetic-orcein).
    - Procedure: Stain root tips and observe cells under microscope.
    - Expected result: Identify interphase, prophase, metaphase, anaphase, telophase.
61. **Water Filtration with Natural Materials**
    - Objective: Build a filter using sand, charcoal, gravel.
    - Materials: Bottles, sand, charcoal, gravel, dirty water.
    - Procedure: Layer materials in bottle, pour dirty water, collect filtered water.
    - Expected result: Water appears clearer but may still need disinfection.
62. **Make a Simple DNA Model**
    - Objective: Build a physical model of DNA structure.
    - Materials: Colored clay/foam balls, sticks, labels.
    - Procedure: Assemble base pairs and backbone into helix shape.
    - Expected result: Visualize double helix and base pairing.
63. **Effect of Pollution on Plant Growth**
    - Objective: Test plant growth with polluted vs clean water.
    - Materials: Plants, water mixed with small safe pollutant (e.g., soap), control.
    - Procedure: Water plants with different samples and compare.
    - Expected result: Polluted water often reduces growth/health.
64. **Study Earthworm Behavior**
    - Objective: Observe earthworm reaction to light/moisture.
    - Materials: Earthworms, tray with soil, light source.
    - Procedure: Expose worms to light or dry soil, note movement.
    - Expected result: Worms avoid light and dry conditions.
65. **Test Vitamin C in Fruits**
    - Objective: Compare vitamin C content using DCPIP indicator.
    - Materials: DCPIP solution (or vitamin C test strips), fruit juices.

- Procedure: Titrate juice until indicator changes; compare volumes.
- Expected result: Citrus typically has higher vitamin C.

66. **Make a Terrarium Ecosystem**
    - Objective: Build a small self-contained plant ecosystem.
    - Materials: Glass jar, soil, small plants, pebbles.
    - Procedure: Layer pebbles, soil, plant, seal jar; observe water cycle.
    - Expected result: Condensation and evaporation cycle visible; closed ecosystem.
67. **Mold & Temperature Study**
    - Objective: See how temperature affects mold growth speed.
    - Materials: Bread or fruit, incubators or warm/cool spots.
    - Procedure: Place samples at different temps, check mold daily.
    - Expected result: Warm, humid temps speed growth.
68. **Study Leaf Stomata Density**
    - Objective: Compare stomata count on top vs bottom leaf surfaces.
    - Materials: Leaves, nail varnish, tape, microscope.
    - Procedure: Make peel with varnish, view under microscope, count stomata.
    - Expected result: Many leaves have more stomata on the underside.
69. **Build a Seed Dispersal Model**
    - Objective: Model dispersal methods (wind, water, animal).
    - Materials: Seeds (or paper models), fan, water basin, sticky surfaces.
    - Procedure: Test how each seed moves by method simulation.
    - Expected result: Seeds shaped for their dispersal strategy travel accordingly.
70. **Study Digestive Enzyme (Pepsin) — Model (Controlled)**
    - Objective: Model digestion with an enzyme substitute (use safer substitutes like pineapple/bromelain on gelatin).
    - Materials: Gelatin, pineapple juice (bromelain), control.
    - Procedure: Add juice to gelatin and observe breakdown.
    - Expected result: Enzymes break proteins; gelatin liquefies with active enzyme.
71. **Effect of Light on Algae Growth**
    - Objective: Test algae growth in aquarium under varying light durations.
    - Materials: Small containers with water and algae, lamp.
    - Procedure: Expose samples to different light hours, measure turbidity.
    - Expected result: More light often increases algae growth until limited by nutrients.
72. **Build a Simple Microscope Slide Gallery**
    - Objective: Prepare slides of onion skin, cheek cells, algae, etc.
    - Materials: Microscope, slides, stains, samples.
    - Procedure: Prepare slides, label, and observe structure differences.
    - Expected result: Learn cell variety and organelles visibility.
73. **Observe Blood Flow (Model with Syringe)**
    - Objective: Model valves and flow in veins/arteries.

- Materials: Syringe, tubing, clamps, coloured water.
- Procedure: Create one-way flow and show valve action with clamps.
- Expected result: Valves help maintain directional flow; useful for heart/vein study.

74. **Insect Observation & Classification**
    - Objective: Collect and classify local insects by group.
    - Materials: Magnifying glass, collection jars (temporary), notebook.
    - Procedure: Carefully collect and identify features (legs/wings/antennae).
    - Expected result: Classify into orders like Coleoptera, Lepidoptera, etc.
75. **Study Beneficial Bacteria in Soil (Nitrogen Fixers)**
    - Objective: Show presence of nitrogen-fixing bacteria via plant growth.
    - Materials: Legume seeds, sterile soil, control plants.
    - Procedure: Grow legumes and non-legumes, compare growth in poor soil.
    - Expected result: Legumes improve soil fertility via symbiotic bacteria.
76. **Model Human Lungs (Balloon Model)**
    - Objective: Demonstrate how lungs inflate/deflate.
    - Materials: Two balloons, bottle, rubber sheet, straw.
    - Procedure: Build model showing diaphragm movement via pulling sheet.
    - Expected result: Balloons inflate when diaphragm pulled down; shows breathing mechanics.
77. **Study Effect of Salt on Plant (Osmosis/Water Stress)**
    - Objective: Test plant health with varying salt concentrations.
    - Materials: Plants, salt solutions of different strengths.
    - Procedure: Water plants with solutions and record growth/leaf turgor.
    - Expected result: Higher salt causes water stress and decreased growth.
78. **Make a Simple ELISA Model (Color Change Reaction Model)**
    - Objective: Model antibody-antigen binding using color change (safe substitutes).
    - Materials: Dyes, labeled papers, markers for binding simulation.
    - Procedure: Use labeled spots to represent binding and color change.
    - Expected result: Demonstrates concept of specific binding leading to signal.
79. **Observe Seedling Phototropism with Different Wavelengths**
    - Objective: Test how red vs blue light affects seedling growth direction.
    - Materials: LED red/blue lights, seedlings, boxes.
    - Procedure: Expose seedlings to different colors and watch growth.
    - Expected result: Blue light strongly affects phototropic response in many plants.
80. **Yeast Respiration Rate (CO_2 Measurement)**
    - Objective: Measure CO_2 production by yeast using sugar types.
    - Materials: Yeast, different sugars, balloons, bottles.
    - Procedure: Add sugars, seal with balloon, measure inflation.
    - Expected result: Some sugars produce more CO_2 depending on yeast enzyme preference.

Environment & Ecolog

81. **Build a Compost Bin & Measure Decomposition**
    - Objective: Study rate of organic waste decomposition.
    - Materials: Small bin, kitchen waste, thermometer, moistening spray.
    - Procedure: Layer waste, track temperature and breakdown over weeks.
    - Expected result: Microbial activity raises temp; waste reduces over time.
82. **Measure Local Air Quality with Simple Dust Traps**
    - Objective: Compare particulate matter at different locations.
    - Materials: Sticky tape on cardboards, exposed outdoors, microscope.
    - Procedure: Expose cards, collect particles, compare under magnification.
    - Expected result: Busy roads show more particles; discusses pollution sources.
83. **Effect of Oil on Water Surface Tension & Aquatic Plants**
    - Objective: Observe oil impact on water surface and plants.
    - Materials: Water tray, small oil, aquatic plants.
    - Procedure: Add oil layer, observe plant distress and surface behavior.
    - Expected result: Oil reduces oxygen exchange, harms plants.
84. **Noise Pollution Mapping in Neighborhood**
    - Objective: Measure and map noise levels at different times/places (use phone DB app).
    - Materials: Phone sound meter app, notebook.
    - Procedure: Take readings across locations/times, create map.
    - Expected result: High traffic/industrial areas show higher dB readings.
85. **Study Effect of Litter on Soil Organisms**
    - Objective: Compare soil health under littered vs cleaned areas.
    - Materials: Soil samples, magnifier, pitfall traps for insects.
    - Procedure: Sample organisms and compare diversity.
    - Expected result: Litter affects organism presence; link to ecosystem health.
86. **Rainwater Harvesting Model**
    - Objective: Build a miniature rainwater catchment and storage.
    - Materials: Roof model, gutters, small tank.
    - Procedure: Simulate rain and collect water; measure volume.
    - Expected result: Demonstrates collection efficiency and conservation.
87. **Study Microplastics in Local Water (Visual Filter Test)**
    - Objective: Capture visible plastic particles from water samples.
    - Materials: Fine mesh filters, syringes, microscope.
    - Procedure: Filter water samples and examine residues.
    - Expected result: Detect microplastic fragments; discuss environmental impact.
88. **Planting Native vs Non-Native Plants — Biodiversity Test**
    - Objective: See how native plants support local insects.
    - Materials: Native and non-native plant pots, insect observation.

- Procedure: Count visiting insects to each plant type.
- Expected result: Native plants often attract more native insects.

89. **Build a Model Wetland Filter**
    - Objective: Use plants & gravel to purify greywater.
    - Materials: Containers, gravel, sand, aquatic plants.
    - Procedure: Run dirty water through layers and plant roots, compare input/output.
    - Expected result: Water clarity improves; roots and bacteria help filtration.
90. **Study Erosion with Sand and Water Flow**
    - Objective: Show how plants reduce soil erosion.
    - Materials: Two trays with sand, one planted, one bare, water pourer.
    - Procedure: Pour water, observe displacement.
    - Expected result: Planted tray retains more soil.
91. **Carbon Footprint Audit of School/Household**
    - Objective: Calculate simple carbon footprint from energy use.
    - Materials: Utility bills, notebook, calculator.
    - Procedure: List major emissions sources and estimate using simple factors.
    - Expected result: Identify major contributors and suggest reductions.
92. **Test Water pH and Health of Aquatic Life**
    - Objective: Correlate pH of local pond with organism presence.
    - Materials: pH strips, pond samples, notebook.
    - Procedure: Test pH in spots, observe life abundance.
    - Expected result: Extreme pH harms biodiversity.
93. **Solar vs Coal Energy Comparison Model**
    - Objective: Compare outputs and environmental impact in a chart/model.
    - Materials: Research data, poster board, small solar panel for demo.
    - Procedure: Build chart showing pros/cons and simple demo with solar panel powering LED.
    - Expected result: Solar cleaner; discuss intermittency and costs.
94. **Make a Mini Greenhouse & Measure Temperature**
    - Objective: Observe greenhouse effect in small enclosure.
    - Materials: Transparent box, thermometer, soil, small plant.
    - Procedure: Put plant in box, measure temp vs outside.
    - Expected result: Inside temperature higher due to trapped radiation.
95. **Study Seasonal Leaf Litter Breakdown**
    - Objective: Compare decomposition speed of leaves at different seasons.
    - Materials: Leaf bags, outdoor locations, periodic checks.
    - Procedure: Bury or place leaves in mesh bags, retrieve after intervals.
    - Expected result: Warmer/wetter seasons speed decomposition.
96. **Test Biogas Production from Kitchen Waste (Small Scale)**

- Objective: Demonstrate methane production by anaerobic digestion (small safe setup).
- Materials: Airtight jar, cow dung/compost starter, plastic tubing, small gas bag.
- Procedure: Mix waste, seal, wait weeks, observe gas collection (adult supervision).
- Expected result: Small biogas amount; discuss renewable energy.

97. **Map Sunlight Hours Across Garden (Microclimate Study)**
    - Objective: Record sun exposure in different garden spots.
    - Materials: Sun chart, notebook, timer.
    - Procedure: Note sunny/shaded hours over several days.
    - Expected result: Helps plan planting based on microclimate.
98. **Test Effectiveness of Different Mulches**
    - Objective: Compare moisture retention and weed suppression.
    - Materials: Pots with different mulch types, soil moisture meter or weight.
    - Procedure: Water equally, measure moisture retention over days.
    - Expected result: Organic mulches retain moisture and reduce weeds.
99. **Study Local Biodiversity — Create Field Guide**
    - Objective: Document local plants/insects/birds in a booklet.
    - Materials: Camera, notebook, field visits.
    - Procedure: Photograph and note species, compile guide.
    - Expected result: Awareness of local biodiversity and species identification.
100. **Test Household Chemical Effects on Soil pH**

- Objective: See how detergents/pesticides change soil pH.
- Materials: Soil samples, mild household chemical solutions, pH strips.
- Procedure: Mix soil with solutions, measure pH over days.
- Expected result: Some chemicals raise or lower pH, affecting plant growth.

Earth & Space, Weather

101. **Make a Rain Gauge & Record Rainfall**

- Objective: Measure rainfall amount over weeks.
- Materials: Plastic bottle graduated, ruler, marker.
- Procedure: Place outdoors, record water level after rains.
- Expected result: Track rainfall pattern; basic meteorology skill.

102. **Cloud Observation Journal**

- Objective: Identify cloud types and weather they predict.
- Materials: Notebook, cloud identification chart.
- Procedure: Observe daily clouds, note time and weather changes.

- Expected result: Cumulonimbus often predicts storms; stratocumulus for overcast.

103. **Construct a Hygrometer (Humidity Meter)**

- Objective: Measure relative humidity using human hair or wet/dry bulb model.
- Materials: Human hair, thread, scale, index card.
- Procedure: Attach hair to pointer; humidity changes hair length slightly.
- Expected result: Hair length correlates with humidity changes.

104. **Model of Tectonic Plates & Earthquakes**

- Objective: Show plate boundary movement with clay layers.
- Materials: Clay, sand, cardboard, small weights.
- Procedure: Push clay plates and observe folding/faulting.
- Expected result: Simulate earthquake and mountain building processes.

105. **Measure Wind Speed with Homemade Anemometer**

- Objective: Record wind speed using cups and protractor/time.
- Materials: Paper cups, pins, shaft, stopwatch.
- Procedure: Count rotations per minute, convert to speed.
- Expected result: More rotations = higher wind speed.

106. **Study Moon Phases (Observation Log)**

- Objective: Record moon phases over a month.
- Materials: Notebook, sky chart, calendar.
- Procedure: Observe nightly or every few nights, sketch phase.
- Expected result: Recognize cycle from new to full moon.

107. **Model Solar System at Scale (Relative Distances)**

- Objective: Compare distances to scale on a football field or long corridor.
- Materials: Measuring tape, printed planet sizes, field.
- Procedure: Place planet markers to scale distance; note emptiness.
- Expected result: Shows vast distances between planets.

108. **Make a Sundial & Tell Time**

- Objective: Use sun shadow to tell time.

- Materials: Stick (gnomon), flat base, compass.
- Procedure: Set up, mark shadow positions over day.
- Expected result: Shadow angle correlates to time; shows earth rotation.

109. **Build a Simple Spectroscope**

- Objective: Observe spectra from sunlight and light bulbs.
- Materials: CD, cardboard, slit, tape.
- Procedure: Make slit, view light through CD to see spectra.
- Expected result: See continuous and line spectra; learn about light sources.

110. **Make a Water Cycle Model (Evaporation)**

- Objective: Demonstrate evaporation, condensation, precipitation in a closed jar.
- Materials: Jar, water, plastic wrap, heat lamp/sun.
- Procedure: Evaporate water, watch condensation on lid, drip back.
- Expected result: Small-scale water cycle visible.

111. **Measure Soil Moisture with DIY Sensor**

- Objective: Compare wet and dry soils with resistance method.
- Materials: Two nails, battery, LED or multimeter.
- Procedure: Insert nails into soil, measure current/brightness variation with moisture.
- Expected result: Wet soil conducts better; LED brighter.

112. **Compare Insulation Materials for a Habitat Model**

- Objective: Test which material keeps a box warmest.
- Materials: Small boxes, insulation types (cotton, foam), thermometer.
- Procedure: Place warm water bottle, measure temp loss over time.
- Expected result: Better insulators slow heat loss.

113. **Meteorite vs Earth Rock Identification (Simple Tests)**

- Objective: Learn features distinguishing meteorites (density, magnetism).
- Materials: Samples (or simulate), magnet, density test.
- Procedure: Test magnetism and compare density.
- Expected result: Meteorites often magnetic and dense.

114. **Model Cause of Seasons (Tilted Globe Demo)**

- Objective: Show earth's tilt causes seasons.
- Materials: Globe, lamp as sun, markers.
- Procedure: Tilt globe and rotate around lamp, observe light distribution.
- Expected result: Hemisphere tilting toward sun gets more direct light → summer.

115. **Construct a Simple Weather Station**

- Objective: Combine rain gauge, wind vane, thermometer to log weather.
- Materials: Various simple instruments and logbook.
- Procedure: Install outdoors and record daily.
- Expected result: Learn local weather patterns.

116. **Observe Shadow Length vs Time of Day**

- Objective: Measure shadow length to show sun angle changes.
- Materials: Stick, ground, measuring tape, clock.
- Procedure: Mark shadow length hourly.
- Expected result: Shorter at noon; shows sun's altitude variation.

117. **Simulate Greenhouse Gas Effect with Glass Jars**

- Objective: Compare temperature changes with CO_2 rich jar vs normal.
- Materials: Two jars, thermometers, small CO_2 source (baking soda+vinegar) for demo.
- Procedure: Add equal light, measure temp difference.
- Expected result: Higher CO_2 jar may show slightly higher temp; discuss greenhouse gases.

118. **Model Lunar Eclipse with Balls & Lamp**

- Objective: Demonstrate how Earth's shadow blocks sunlight from moon.
- Materials: Lamp, earth ball, smaller moon ball.
- Procedure: Align to produce shadow on moon ball.
- Expected result: Visualize eclipse geometry.

119. **Study Albedo — Light Reflection of Surfaces**

- Objective: Measure temperature change on black vs white surfaces under sun.
- Materials: Black & white cards, thermometers.
- Procedure: Expose both to sun, record temp.
- Expected result: Dark surface heats more due to lower albedo.

120. **Make a Simple Barometer & Link to Weather Changes**

- Objective: Correlate barometer reading to weather over days.
- Materials: Jar, balloon, straw indicator, logbook.
- Procedure: Record indicator position vs upcoming weather.
- Expected result: Falling pressure often precedes rain/storms.

Electronics, Robotics & Computer Science

121. **Build a Simple Alarm Circuit**

- Objective: Make circuit that sounds when switch opens.
- Materials: Buzzer, battery, switch, wires.
- Procedure: Wire circuit so buzzer activates when circuit closed/open.
- Expected result: Demonstrates circuit logic and sensors.

122. **Line-Following Robot Model (Basic)**

- Objective: Make a robot that follows a dark line (using kit or simple sensors).
- Materials: Small chassis kit or Arduino, IR sensors, motors.
- Procedure: Program motors to follow sensor input.
- Expected result: Robot follows path; introduces sensors and programming.

123. **Remote-Controlled Paper Boat (Simple Electronics)**

- Objective: Make tiny RC motorized boat.
- Materials: Motor, battery, propeller, lightweight boat.
- Procedure: Attach motor and battery, waterproof carefully, test in water.
- Expected result: Boat moves when motor on; basic electrical power to motion.

124. **Make a Simple LED Traffic Light Circuit**

- Objective: Sequence LEDs to mimic traffic lights.
- Materials: LEDs (red/yellow/green), resistors, battery, timer IC or Arduino.
- Procedure: Wire sequence with timer or program microcontroller.
- Expected result: Learn timing and sequencing electronics.

125. **Measure Light Intensity with LDR**

- Objective: Use Light Dependent Resistor to see light changes.
- Materials: LDR, resistor, battery, LED or multimeter.

- Procedure: Build simple circuit and record LED brightness or resistance.
- Expected result: LDR resistance decreases with more light.

126. **Build a Temperature Alert System**

- Objective: Make alarm when temperature exceeds set value.
- Materials: Thermistor, buzzer, comparator circuit or microcontroller.
- Procedure: Calibrate threshold and test in hot/cold environments.
- Expected result: Alarm triggers at high temperature; shows sensor thresholds.

127. **Create a Simple Website About Your Project**

- Objective: Publish your project report online.
- Materials: Computer, basic HTML template, images.
- Procedure: Create pages for aim, method, results, conclusion.
- Expected result: Online presentation skills and basic web design.

128. **Programmable LED Pattern with Microcontroller**

- Objective: Create blinking patterns to learn coding basics.
- Materials: Arduino or microcontroller, LEDs, wires.
- Procedure: Write simple looped code to change LED patterns.
- Expected result: Learn programming logic and hardware control.

129. **Build a Water Level Indicator**

- Objective: Detect and indicate water level using sensors.
- Materials: Probes, LEDs, buzzer, battery.
- Procedure: Place probes at levels; circuit lights LEDs accordingly.
- Expected result: Shows how sensors can automate simple tasks.

130. **Simple Motion Detector with PIR Sensor**

- Objective: Detect movement and light an LED or sound buzzer.
- Materials: PIR sensor module, microcontroller or simple circuit, LED.
- Procedure: Connect sensor output to indicator and test.
- Expected result: Sensor triggers when it detects motion; discuss applications.

131. **Make a Morse Code Transmitter (Light/Buzzer)**

- Objective: Send messages via Morse code using light or sound.
- Materials: LED or buzzer, switch, battery, key chart.
- Procedure: Tap message using dots and dashes, receiver decodes.
- Expected result: Demonstrates communication encoding.

132. **Simple Calculator Using Logic Gates (Model)**

- Objective: Build addition of two bits using breadboard logic.
- Materials: LEDs, switches, basic ICs (XOR, AND), breadboard.
- Procedure: Wire half-adder circuit and test input combinations.
- Expected result: See binary addition result in LEDs.

133. **Make a Solar-Powered Charger Demo**

- Objective: Show solar panel charging small battery or phone.
- Materials: Small solar panel, diode, rechargeable battery or phone cable.
- Procedure: Connect with proper diode and measure voltage/current in sun.
- Expected result: Solar panel produces power under sunlight.

134. **Create an Animated Presentation (Computer Science + Design)**

- Objective: Use presentation software to animate project steps and data.
- Materials: Computer, presentation tool (PowerPoint/Google Slides).
- Procedure: Create slides with images, animations, and graphs.
- Expected result: Improved communication and design skills.

135. **Build an Optical Encoder Model for Speed Measurement**

- Objective: Use a disk with slots and an LED/photodiode to count rotations.
- Materials: Cardboard disk, LED, photodiode, multimeter or microcontroller.
- Procedure: Rotate disk, count pulses to measure speed.
- Expected result: Learn about encoders in robotics.

136. **Make a Simple Solar Tracker (Photoresistors)**

- Objective: Build circuit to tilt panel toward brightest light.
- Materials: Two LDRs, small motor, lever, battery, comparator.
- Procedure: Use difference in LDR readings to move motor.
- Expected result: Panel aligns with brightest light; demonstrates feedback control.

137. **Build a Sound-Activated Light (Clap Switch)**

- Objective: Turn light on/off using loud sound or clap.
- Materials: Microphone module, transistor, relay/LED.
- Procedure: Amplify mic signal and trigger switch when above threshold.
- Expected result: Light toggles with sound; shows signal processing.

138. **Create a Simple Data Logger (Temperature Over Time)**

- Objective: Record temperature periodically to produce graph.
- Materials: Microcontroller, temperature sensor, SD card module, battery.
- Procedure: Program periodic reads and store data; plot later.
- Expected result: Time-series data shows trends, teaches data collection.

139. **Bluetooth-Controlled Toy (Basic)**

- Objective: Control motor speed/direction via phone app.
- Materials: Bluetooth module, microcontroller, motor driver, motors.
- Procedure: Program controller to accept commands and drive motors.
- Expected result: Learn wireless control basics.

140. **Make a Simple Sensor Network Demo (Multiple Sensors)**

- Objective: Collect environmental data from multiple sensors to one hub.
- Materials: Multiple sensor modules, microcontroller hub, wires.
- Procedure: Read sensors sequentially and display results.
- Expected result: Understand how multiple inputs are combined for monitoring.

Miscellaneous, Models, Math & Fun Science

141. **Build an Arch Bridge Model (Stress Test)**

- Objective: Compare strength of arch vs flat bridge.
- Materials: Popsicle sticks, glue, weights.
- Procedure: Build both and add weights until failure.
- Expected result: Arch distributes load better; holds more weight.

142. **Make a Weather Balloon Model (Altitude Effects)**

- Objective: Show pressure/temperature change with altitude using sealed bottle and heating/cooling.

- Materials: Balloon, bottle, freezer/warm water for simulation.
- Procedure: Inflate balloon, place in cold vs warm to show shrink/expand.
- Expected result: Pressure/temp affect balloon size; simulate altitude effect.

143. **Build a Model of Human Teeth with Different Diets**

- Objective: Show how sugar/acid affects simulated tooth enamel (eggshell).
- Materials: Eggshells, soda, water, vinegar.
- Procedure: Soak shells in different liquids, observe erosion.
- Expected result: Acidic drinks erode shell faster; relate to dental health.

144. **Optical Illusions Study (Perception Test)**

- Objective: Test how people perceive illusions and make survey.
- Materials: Printed illusion images, volunteers, questionnaire.
- Procedure: Show images, record answers, analyze differences by age.
- Expected result: Perception varies; discuss brain interpretation.

145. **Build a Model of Human Ear (Sound Transmission)**

- Objective: Demonstrate how sound travels through ear parts.
- Materials: Balloons, tube, membrane to simulate eardrum.
- Procedure: Transmit sound through model and observe membrane vibrations.
- Expected result: Visualize mechanical transmission of sound.

146. **Sundial & Latitude Experiment (Angle vs Latitude)**

- Objective: See how sundial gnomon angle equals local latitude.
- Materials: Protractor, stick, compass, sun.
- Procedure: Set gnomon at latitude angle and observe shadow.
- Expected result: Correct angle makes sundial accurate.

147. **Model Hydraulic Lift (Pascal's Law)**

- Objective: Show force multiplication with fluid pressure.
- Materials: Syringes of different sizes connected by tubing, water.
- Procedure: Press one syringe and observe movement of the other.
- Expected result: Small force on larger area produces larger force.

148. **Study Symmetry in Nature (Photo Collection & Analysis)**

- Objective: Collect examples of bilateral/radial symmetry in plants/animals.
- Materials: Camera, notebook.
- Procedure: Photograph and classify symmetry types.
- Expected result: Many organisms show clear symmetry patterns.

149. **Model of Circulatory System Flow (Colored Water)**

- Objective: Demonstrate systemic vs pulmonary circulation paths.
- Materials: Tubing, colored water, pump.
- Procedure: Build loop to represent heart-lung-body flow and observe.
- Expected result: Understand flow direction and oxygenation cycle.

150. **Science of Taste — Taste Bud Map Test**

- Objective: Test whether parts of tongue detect different tastes.
- Materials: Salt, sugar, lemon, bitter solution, volunteers.
- Procedure: Apply small safe samples to different tongue areas, record taste detection.
- Expected result: Modern science shows tastes are across tongue, not strict map.

Must Read: 199+ Computer Project Ideas for Kids — Fun & Easy Projects

Conclusion

Thank you for exploring this huge collection of **science project ideas for class 7**! Pick a project that excites you, plan carefully, and keep a clear record of your aim, materials, procedure, observations, results, and conclusion. Remember — a careful log and neat presentation often score higher than a perfect result.

Safety first: always use adult supervision for experiments involving heat, sharp tools, electricity, strong chemicals, or flames. Wear safety gear (goggles, gloves) when needed and work in a well-ventilated area.

If a project doesn't work as expected, don't worry — that's real science. Note what changed, why you think it happened, and how you would try again. Those thoughtful observations make your report stronger.

Education, Project Ideas

‹ 200 English Project Ideas for Kids — Fun & Easy Projects

SKS TEAM

With years of experience, I work alongside a passionate group of educators and professionals to create a welcoming and supportive environment. At SKS International Gurukul, we focus on helping students grow both academically and personally, ensuring they have everything they need to succeed.

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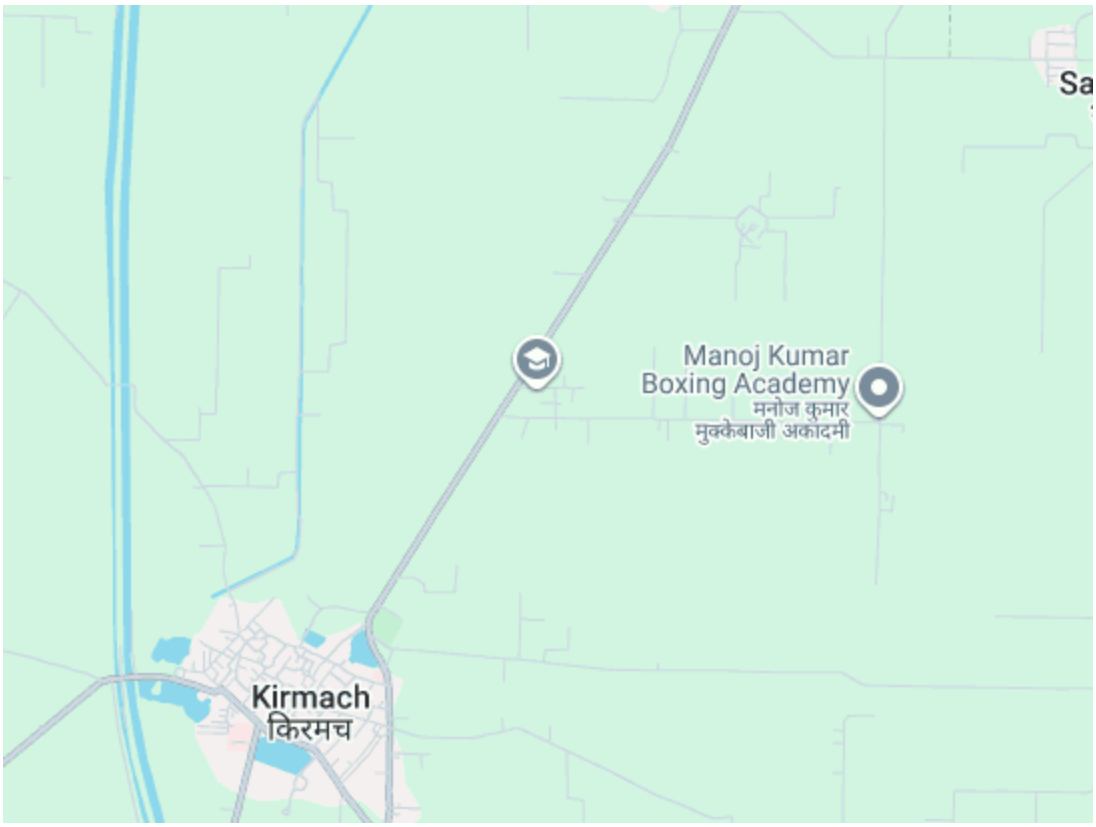

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SKS International Gurukul - Kirmach Kurukshetra

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SKS International Gurukul, the best school in Kurukshetra, provides modern facilities, dedicated teachers, and engaging activities for Pre-nursery to 12th grade students.

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