

Fun of learning

Syllabus/Curriculum

(Domains of Development)

- *Sensory Development* (sight, hearing, touch, taste, smell, control, location, relationship)

Book (G.K., Computer, Social Science)

- *Language Development* (listening, communication, conversation, read, write, print, sentence, recognition, differentiate sounds)

*Book (English Literature/Reader/Grammar)
(Hindi Reader/Grammar)*

- *Academics Development*
(Mathematics/Science) (know, change, look, feel, objects, events, people classification, space, quantity, length, counting, observing, reasoning, problem solving, explore physical, natural, predictions, generalization)

Book (Mathematics, Science, Reasoning, Computer)

- *Creative Development* (objects, events, ideas, in the form of drawing/music/dance)

Book (Drawing/Art and Craft/Music)

- *Personal (social and emotional)*
Development (Self concept, self control, self help, initiative, curiosity, independence, behaviour, attention span, friendship with peers, cooperation, empathy)

Book (Social Science/Values/Computer)

- *Physical, Health and Motor*
Development (muscles, strength, body parts, nutrition , sound, health, hygiene, safety)

Book (Physical Education/Games/Exercise)

A child is every person under the age of 18 years. Parents have the primary responsibility for the upbringing and development of the child. Suraj School will respect and ensure the rights of the child.

Dignity and Expression

- I have the right to know about my Rights
- I have rights being a child and no matter who I am where I live, what my parents do, what language I speak, what religion I follow, whether I am a boy or a girl, what culture I belong to, whether I am disabled, whether I am rich or poor. I should not be treated unfairly on any basis. Everyone has the responsibility to know this.
- I have the Right to express my views freely which should be taken seriously, and everyone has the Responsibility to listen to others.
- I have the Right to make mistakes, and everyone has the Responsibility to accept we can learn from our mistakes.
- I have the Right to be included whatever my abilities, and everyone has the Responsibility to respect others for their differences.

Development

- I have the Right to a good education, and everyone has the Responsibility to encourage all children to go to school.
- I have the Right to good health care and everyone has the Responsibility to help others get basic health care and safe water.
- I have the Right to be well fed and everyone has the Responsibility to prevent people starving.
- I have the Right to a clean environment, and everyone has the Responsibility not to pollute it.
- I have the Right to play and rest.

Care & Protection

- I have the Right to be loved and protected from harm and abuse, and everyone has the Responsibility to love and care for others.
- I have the Right to a family and a safe and comfortable home and everyone has the Responsibility to make sure all children have a family and home.
- I have the Right to be proud of my heritage and beliefs, and everyone has the Responsibility to respect the culture and belief of others.
- I have the Right to live without violence and corporal punishment (verbal, physical, emotional), and everyone has the Responsibility not to be violent to others.
- I have the Right to be protected from economic exploitation and sexual and everyone has the Responsibility to ensure that no child is forced to work and is given a free and secure environment.
- I have the Right to protection from any kind of exploitation and everyone has the Responsibility to ensure that I am not being subjected to be taken advantage in any manner.

IN ALL ACTION CONCERNING CHILDREN THE BEST INTERESTS OF THE CHILD SHALL BE A PRIMARY CONSIDERATION.

My Name
My Father's Name
My Mother's Name.
My School Name.....
Admission No. Class/Section
Contact No. (Father)
Contact No. (Mother)
Contact No. (Home)

Photo



I Pledge

I am proud to be a student of SURAJ SCHOOL. The great heritage and culture of my school always influence and give me direction.

*I will not tolerate any type of **abusive activities** that occur anywhere against me as well as against other children who are my sisters and brothers.*

*I will always be in the forefront to report any such instances to the **parents and authorities** of school. This is my duty and **responsibility**. Since an abuse and **exploitation free childhood** and world is necessary for my future.*

“I solemnly affirm that I will always stand for the same.”

Signature of Student

MATHEMATICS

1. To understand identity $(a+b)^2 = a^2 + 2ab + b^2$
2. To understand identity $(a-b)^2 = a^2 - 2ab + b^2$
3. To understand identity $a^2 - b^2 = (a+b)(a-b)$
4. To understand squares
5. To understand cubes
6. To understand sum of rational numbers with the help of strips
7. To understand subtraction of rational numbers with the help of paper folding
8. To understand linear equation.
9. To understand percentage with the help of grid paper.
10. To understand concept of volume.
11. To understand convex and concave polygons by paper folding.
12. To verify sum of interior angles of quadrilateral is 360° by paper cutting.
13. To verify sum of exterior angles of any polygon is 360° by paper cutting.
14. To verify diagonals of square and rectangles are equal but rhombus and parallelogram are unequal with the help of threads.
15. To verify opposite angles of Rhombus and parallelogram are equal with help of paper cutting.
16. To verify sum of adjacent angles of Rhombus, rectangle, square and parallelogram is 180° .
17. To show sum of integers with the help of buttons.
18. Sum of all angles along a straight line is 180° (Linear pair Angles).
19. Playing with numbers (number pattern)
20. To prove Pythagoras theorem.

SOCIAL STUDIES

1. Explain Ryotwari settlement, Permanent settlement, Mahalwari settlement also point out the places on map where these settlements were practiced.
2. Mark the tribal groups of India. (use map).
3. There were several leaders of the 1857 revolt who contributed in it. Explain at least 5 of them.
4. Make a report on the urbanization process – Noida, Faridabad, Gurgaon, Navi Mumbai. (any one). with their location on map?
5. Explain wood's dispatch and its features.
6. Describe the 1st painting of Bharat Mata (include painters name, different symbols used in this painting) How this painting contributed in National movement of India?
7. Make the list of moderate and extremist leader. Write difference between their ideology.
8. Describe Satyagraha Movement launched by Mahatma Gandhi.
9. What are 5 years plans. Give information about all. (include year and aim).
10. Collect the sample of different types of soil and write about their characteristics.
11. Major river project. (Locate on map)
12. Endangered and extinct animals in India. (Make a report at least 5.)
13. Explain SEZ'S all the SEZ'S in India.
14. Draw a pie chart distribution of population (Most populated states, 5 factor responsible for thick population).
15. Explain Rajya Sabha and Lok Sabha. (Any one according to Roll No.)
16. What do you mean by National Parties. Explain 6 National Parties with symbols, founders, establishment year.
17. Find information about the Shulabh toilet scheme.
18. Explain Natural Disasters. Write precautions during Earthquake and flood.
19. Explain the transport system of India.
20. Explain the physical environment of India.

SCIENCE

1. To show germination of seed.
2. To show nitrogen cycle.
3. To observe micro organism in water under microscope.
4. To show absorption of water by fibers.
5. To show reaction between dilute acid and metal.
6. To show displacement reaction. (iron and copper sulphate solution).
7. To show conditions needed for combustion.
8. To show structure of candle flame.
9. Gather data on endangered species of animal and plant.
10. To observe basic components of a cell under microscope.
11. To explain the net force activity on a body.
12. To show relation between force and area.
13. To show rolling friction is less than sliding friction.
14. To show that like charges repel and unlike charges attract each other. (magnet)
15. To make a tester for conductor and insulator.
16. To observe chemical effect of electric current on water.
17. To make a galvanic cell.
18. To make a kaleidoscope.
19. To show spectrum (dispersion) of light.
20. To filter muddy water.

ENGLISH

1. Content names of sections and chapters.
2. The sentences. (Make 20 sentences on present Political condition of India)
3. Countable and uncountable nouns. (Chart)
4. Adjectives. (Scrapbook)
5. Prepositions. (Chart)
6. The complement. (scrapbook)
7. Different dance form of India. (On chart paper)
8. Famous Indian artist. (Scrapbook)
9. Your favourite adventure sports. (Write article)
10. Latest inventions and discoveries. (Write any 10)
11. Conjunctions. (in scrapbook)
12. Affixation (prefix and suffix).
13. Homophones. (On chart paper)
14. British and American English. (Difference in scrapbook)
15. Story making by the help of the picture. (by seeing the picture).
16. Poster. (on given topic)
17. The palindrome. (Make short summary)
18. Flora and Fauna. (Write article)
19. Ashoka, the messenger of peace. (play or drama group activity)
20. Debate on "All Weapons Must Be Destroyed To Save Humankind".

ACTIVITY PLANNER

Sr.	Activities	Remarks
1	Orientation of new students	
2	Baisakhi Celebration	
3	Clay Modelling	
4	Green Colour Day (NLU)	
5	Earth Day Celebration	Tree Plantation by Students
6	Mother's Day	Kurta Painting activity
7	Card Making	With ice cream spoon
8	Talk Show	
9	Labour Day Celebration	
10	Fruits and Vegetable Day	Fruit chat and salad decoration
11	Tearing and Pasting Competition	
<u>AFTER SUMMER BREAK</u>		
12	Holiday Homework Exhibition	
13	Yellow Colour Day (NLU)	
14	Young Chef activity	NimbuPani
15	Colouring Competition	
16	Nature Walk	
17	Sowing of seeds	How a baby plant grows
18	Hindi recitation competition	
19	Show and Tell Competition	
20	Collage Making Competition	
21	Eid Celebration	
22	Healthy Tiffin	
23	Kite Making Competition	
24	Raksha Bandhan Special Assembly	
25	Rakhi Making activity	
26	Janamashtami Celebration	
27	Mukut Decoration Competition	
28	Paper Plate activity	
29	Literacy Day Celebration	
30	Short Course of Dinning Manners	
31	Drawing Competition	
32	Thumb Printing activity	
33	Wild Animal's Week Competition	
34	Letter Drafting	
35	Visit to Post Office	
36	Orange Colour Day Competition	
37	Gandhi Jayanti Competition	
38	English Recitation Competition	
39	Matchsticks activity	
40	Dussehra Celebration	
41	Hindi Calligraphy Competition	
42	Sports Meet	Yoga, Drill & PT

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Sr.	Activities	Remarks
43	Diya Making activity	
44	Rangoli Making Competition	
45	Spray Printing	
46	Garden of Five senses	
47	English Calligraphy Competition	
48	Shlok Recitation Competition	
49	Santa Claus Cap Making activity	
50	X-Mas related activities	
51	Vegetable Printing	
52	Origami activity	Paper folding
53	Book Mark Making activity	
54	Paper Bag Activity	Say NO to Polybags
55	Pista Shell Activity	
56	Pencil Peel activity	
57	Red and White Colour Day	
58	Table Mat Making activity	
59	Cut and Paste activity	
60	Spell Well Competition	
61	Fancy Dress Competition	
62	Basant Panchami Competition	
63	What I want to be – Extempore	
64	Blue Colour Day activity (NLU)	
65	Story Telling Competition	
66	The 1st Whirlpool - Inter School Skating Championship	
EXCURSIONS		
67	Visit to Temple	
68	Visit to Aquarium	
69	Visit to Gurudwara	
70	Visit Air Force Station	
71	Mcdonalds Visit	
72	Church visit	
73	Visit to Hotel	
OTHER CELEBRATION		
74	Grandparent's Day Celebration	
75	Sports Day	
76	Making of First Aid Box	

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Sr.	Activities	Remarks
77	Class Decoration Competition (1-5)	
78	Inter house dance competition	
79	Inter house Kabaddi match (4-5)	
80	1 st inter house wall magazine contest (1-5)	
81	Inter house group song competition (1-8)	
82	Spin a yarn story telling competition (1-3)	
83	Inter house skating competition (1-5)	
84	Mental math quiz (1-5)	
85	Cyber quiz competition (4-8)	
86	2 nd wall magazine competition (6-8)	
87	Independence Day celebration (1-5)	
88	Investiture ceremony	
89	Special assembly on Janamashtmi (1-5)	
90	Character enactment competition (1-3)	
91	Calligraphy competition (1-8)	
92	Handwriting competition (1-3)	
93	Spell- bee competition (1-3)	
94	Mask making competition (4-5)	
95	Paragraph reading competition (1-3)	
96	Newspaper reading (1-8)	
97	One act play class activity (4-5)	
98	Christmas tree decoration (1-5)	
99	Republic day competition	
100	Nukkad Natak on Swacch Bharat Abhiyan (9-12)	
101	Activity on save mother earth (1-3)	
102	Mother day celebration(1-3)	
103	Summer camp(1-5)	
104	Graduation day(kinder garden)	
105	Picnic(1-3) (Under 50 K.M. Radius)	
106	English Debate for classes IX-X	
107	Inter house skating	
108	Inter –house patriotic song competition	
109	Special Assembly on Independence	
110	Teachers day celebration	
111	Special assembly on Gandhi Jayanti	
112	Japanese poetry & snacks	
113	Poster making	
114	Hindi Extempore	
115	Workshop on staff development	
116	One act play	
117	Special assembly on Guru Nanak Jayanti	
118	English carol singing	
119	Special assembly on Republic Day	

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Sr.	Activities	Remarks
120	CBSE Quiz	
121	Guinness world Record	
122	Science Competition	
123	Children's Day Celebration	
124	Workshop on waste material management	
125	Annual Athletics Meet	
126	Inter active Session of class X students.	
127	Painting competition	
128	Inter school cricket	
129	Mathematics Quiz and Science Quiz	
130	Visit to adopted Village	
131	Quizzes(CBSE Heritage India Quiz, Pearson Quiz, Britannica Quiz by Bournvita Quiz)	
132	Brochure Making	
133	Participation in National Level CBSE Science Exhibition	
134	Designing of Greeting Cards	
135	Finding of area and perimeter of tiles and other things outside the classroom – A mathematical Activity	
136	Workshop for teachers	
137	Wall Painting	
138	Bharat Vikas Parishad (School Level)	
139	Annual Alumni Meet	
140	Graduation Ceremony	

प्रकाशमय कल के लिए

Mathematics 8

Number System (50 hrs) (i) *Rational Numbers:*

- Properties of rational numbers. (including identities). Using general form of expression to describe properties
- Consolidation of operations on rational numbers.
- Representation of rational numbers on the number line
- Between any two rational numbers there lies another rational number (Making children see that if we take two rational numbers then unlike for whole numbers, in this case you can keep finding more and more numbers that lie between them.)
- Word problem (higher logic, two operations, including ideas like area)

(ii) *Powers*

- Integers as exponents.
- Laws of exponents with integral powers

(iii) *Squares, Square roots, Cubes, Cube roots.*

- Square and Square roots
- Square roots using factor method and division method for numbers containing (a) no more than total 4 digits and (b) no more than 2 decimal places
- Cubes and cubes roots (only factor method for numbers containing at most 3 digits)
- Estimating square roots and cube roots. Learning the process of moving nearer to the required number.

(iv) *Playing with numbers*

- Writing and understanding a 2 and 3 digit number *in generalized form* ($100a + 10b + c$, where a, b, c can be only digit 0-9) and engaging with various puzzles concerning this. (Like finding the missing numerals represented by alphabets in sums involving any of the four operations.) Children to solve and create problems and puzzles.
- Number puzzles and games
- Deducing the divisibility test rules of 2, 3, 5, 9, 10 for a two or three-digit number expressed in the general form.

Algebra (20 hrs) (i) *Algebraic Expressions*

- Multiplication and division of algebraic exp. (Coefficient should be integers)
- Some common errors (e.g. $2 + x \neq 2x$, $7x + y \neq 7xy$)
- Identities $(a \pm b)^2 = a^2 \pm 2ab + b^2$, $a^2 - b^2 = (a - b)(a + b)$ Factorisation (simple cases only) as examples the following types $a(x + y)$, $(x \pm y)^2$, $a^2 - b^2$, $(x + a)(x + b)$
- Solving linear equations in one variable in contextual problems involving multiplication and division (word problems) (avoid complex coefficient in the equations)

Ratio and Proportion (25 hrs)

- Slightly advanced problems involving applications on percentages, profit & loss, overhead expenses, Discount, tax.
- Difference between simple and compound interest (compounded yearly up to 3 years or half-yearly up to 3 steps only), Arriving at the formula for compound interest through patterns and using it for simple problems.
- Direct variation – Simple and direct word problems
- Inverse variation – Simple and direct word problems
- Time & work problems – Simple and direct word problems

Geometry (40 hrs) (i) Understanding shapes:

- Properties of quadrilaterals – Sum of angles of a quadrilateral is equal to 360° (By verification)

- Properties of parallelogram (By verification)

(i) Opposite sides of a parallelogram are equal,

(ii) Opposite angles of a parallelogram are equal,

(iii) Diagonals of a parallelogram bisect each other. [Why (iv), (v) and (vi) follow from (ii)]

(iv) Diagonals of a rectangle are equal and bisect each other.

(v) Diagonals of a rhombus bisect each other at right angles.

(vi) Diagonals of a square are equal and bisect each other at right angles.

(ii) Representing 3-D in 2-D

- Identify and Match pictures with objects [more complicated e.g. nested, joint 2-D and 3-D shapes (not more than 2)].
- Drawing 2-D representation of 3-D objects (Continued and extended)
- Counting vertices, edges & faces
& verifying Euler's relation for 3-D figures with flat faces (cubes, cuboids, tetrahedrons, prisms and pyramids)

(iii) Construction: Construction of Quadrilaterals:

- Given four sides and one diagonal
- Three sides and two diagonals
- Three sides and two included angles
- Two adjacent sides and three angles

Mensuration (15 hrs)

(i) Area of a trapezium and a polygon.

(ii) Concept of volume, measurement of volume using a basic unit, volume of a cube, cuboid and cylinder

(iii) Volume and capacity (measurement of capacity)

(iv) Surface area of a cube, cuboid, cylinder.

Data handling (15 hrs)

(i) Reading bar-graphs, ungrouped data, arranging it into groups, representation of grouped data through bar-graphs, constructing and interpreting bar-graphs.

(ii) Simple Pie charts with reasonable data numbers

(iii) Consolidating and generalising the notion of chance in events like tossing coins, dice etc. Relating it to chance in life events. Visual representation of frequency outcomes of repeated throws of the same kind of coins or dice.

Throwing a large number of identical dice/coins together and aggregating the result of the throws to get large number of individual events. Observing the aggregating numbers over a large number of repeated events. Comparing with the data for a coin. Observing strings of throws, notion of randomness

Introduction to graphs (15 hrs) PRELIMINARIES:

(i) Axes (Same units), Cartesian Plane

(ii) Plotting points for different kind of situations (perimeter vs length for squares, area as a function of side of a square, plotting of multiples of different numbers, simple interest vs number of years etc.)

(iii) Reading off from the graphs

- Reading of linear graphs
- Reading of distance vs time graph

Science (Class – 8)

Questions	Key Concepts	Resources	Activities/ Processes
<p>1. Food</p> <p><i>Crop production</i></p> <p>Crop production: How are different food crops produced?</p> <p>What are the various foods we get from animal sources?</p> <p><i>Micro-organisms</i></p> <p>What living organisms do we see under a microscope in a drop of water? What helps make curd? How does food go bad? How do we preserve food?</p> <p>2. Materials</p> <p><i>Materials in daily life</i> Are some of our clothes synthetic? How are they made? Where do the raw materials come from? Do we use other materials that are synthetic?</p> <p>Do we use cloth (fabric) for purposes other than making clothes to wear? What kind of fabric do we see around us? What are they used for?</p> <p><i>Different kinds of materials and their reactions.</i></p> <p>Can a wire be drawn out of wood?</p> <p>Do copper or aluminium also rust like iron?</p> <p>What is the black material inside a pencil?</p> <p>Why are electrical wires made of aluminium or copper?</p>	<p>Crop production: Soil preparation, selection of seeds, sowing, applying fertilizers, irrigation, weeding, harvesting and storage; nitrogen fixation, nitrogen cycle.</p> <p>Micro organisms – useful and harmful.</p> <p>Synthetic clothing materials.</p> <p>Other synthetic materials, especially plastics; usefulness of plastics and problems associated with their excessive use. There are a variety of fibrous materials in use. A material is chosen based on desired property</p> <p>Metals and non-metals. Combustion, flame</p> <p>All fuels release heat on burning. Fuels differ in efficiency, cost etc. Natural resources are limited. Burning of fuels leads to harmful by products.</p>	<p>Interaction and discussion with local men and women farmers about farming and farm practices; visit to cold storage, go- downs; visit to any farm/ nursery y/ garden.</p> <p>Microscope, kit materials; information about techniques of food preservation.</p> <p>Sharing of prior knowledge, source materials on petroleum products.</p> <p>Collection of material from neighbourhood or should be part of the kit items</p>	<p>(Periods - 22)</p> <p>Preparing herbarium specimens of some crop plants; collection of some seeds etc; preparing a table/chart on different irrigation practices and sources of water in different parts of India; looking at roots of any legume crop for nodules, hand section of nodules.</p> <p>Making a lens with a bulb; Observation of drop of water, curd, other sources, bread mould, orange mould under the microscope; experiment showing fermentation of dough – increase in volume (using yeast) – collect gas in balloon, test in lime water.</p> <p>Periods - 26)</p> <p>Survey on use of synthetic materials.</p> <p>Discussion.</p> <p>Testing various materials – for action of water, reaction on heating, effect of flame, electrical conductivity, thermal conductivity, tensile strength.</p>

Questions	Key Concepts	Resources	Activities/ Processes
<p>How things change/ react with one another</p> <p>What happens to the wax when a candle is burnt? Is it possible to get this wax back? What happens to kerosene/natural gas when it is burnt? Which fuel is the best? Why?</p> <p>3. The World of the Living</p> <p>Why conserve</p> <p>What are reserve forests/sanctuaries etc? How do we keep track of our plants and animals? How do we know that some species are in danger of disappearing? What would happen if you continuously cut trees?</p> <p>The cell</p> <p>What is the internal structure of a plant – what will we see if we look under the microscope? Which cells from our bodies can be easily seen? Are all cells similar?</p> <p>How babies are formed</p> <p>How do babies develop inside the mother? Why does our body change when we reach our teens? How is the sex of the child determined? Who looks after the babies in your homes? Do all animals give birth to young ones?</p>	<p>Conservation of biodiversity/wild life/plants; zoos, sanctuaries, forest reserves etc. flora, fauna endangered species, red data book; endemic species, migration.</p> <p>Cell structure, plant and animal cells, use of stain to observe, cell organelles – nucleus, vacuole, chloroplast, cell membrane, cell wall.</p> <p>Sexual reproduction and endocrine system in animals, secondary sexual characters, reproductive health; internal and external fertilisation.</p>	<p>“The Chemical History of a Candle”, by M. Faraday, 1860.</p> <p>Collecting information from home and other sources.</p> <p>Films on wild life, TV programmes, visit to zoo/ forest area/sanctuaries etc.; case study with information on disappearing tigers; data on endemic and endangered species from MEF, Govt. of India, NGOs .</p> <p>Microscope, onion peels, epidermal peels of any leaves, petals etc, buccal cavity cells, <i>Spirogyra</i>; permanent slides of animal cells.</p> <p>Counselors, films, lectures.</p>	<p>Experiments with candles.</p> <p>Collecting information. Discussions involving whole class</p> <p>(Periods - 44)</p> <p>Discussion on whether we find as many diverse plants/ animals in a ‘well kept area’ like a park or cultivated land, as compared to any area left alone. Discussion on depletion of wild life, why it happens, on poaching, economics.</p> <p>Use of a microscope, preparation of a slide, observation of onion peel and cheek cells, other cells from plants e.g. <i>Hydrilla</i> leaf, permanent slides showing different cells, tissues, blood smear; observation of T.S. stem to see tissues; observing diverse types of cells from plants and animals (some permanent slides).</p> <p>Discussion with counselors on secondary sexual characters, on how sex of the child is determined, safe sex, reproductive health; observation on eggs, young ones, life cycles.</p> <p>Discussion on Gender issues and social taboo’s</p>

Questions	Key Concepts	Resources	Activities/ Processes
<p>Pressure</p> <p>Why are needles made pointed? Why does a balloon burst if too much air is blown into it? Why does an inverted glass/ bottle/pitcher resist being pushed down into water? How can air/liquids exert pressure?</p>	<p>Idea of pressure; pressure exerted by air/liquid; atmospheric pressure.</p>	<p>Daily-life experiences; Experimentation - improvised manometer and improvised pressure detector.</p>	<p>Observing the dependence of pressure exerted by a force on surface area of an object. Demonstrating that air exerts pressure in a variety of situations. Demonstrating that liquids exert pressure. Designing an improvised manometer and measuring pressure exerted by liquids. Designing improvised pressure detector and demonstrating increase in pressure exerted by a liquid at greater depths.</p>
<p>Sound</p> <p>How do we communicate through sound? How is sound produced? What characterises different sounds?</p>	<p>Various types of sound; sources of sound; vibration as a cause of sound; frequency; medium for propagation of sound; idea of noise as unpleasant and unwanted sound and need to minimise noise.</p>	<p>Daily-life experiences; kit items; musical instruments</p>	<p>Demonstrating and distinguishing different types (loud and feeble, pleasant/ musical and unpleasant / noise, audible and inaudible) of sound. Producing different types of sounds. using the same source. Making a ‘Jal Tarang’. Demonstrating that vibration is the cause of sound. Designing a toy telephone. Identifying various sources of noise. (unpleasant and unwanted sound) in the locality and thinking of measures to minimise noise and its hazards (noise-pollution).</p>

Questions	Key Concepts	Resources	Activities/ Processes
<p>5. How Things Work</p> <p><i>Electric current and circuits</i></p> <p>Why do we get a shock when we touch an electric appliance with wet hands?</p> <p>What happens to a conducting solution when electric current flows through it?</p> <p>How can we coat an object with a layer of metal?</p>	<p>Water conducts electricity depending on presence/absence of salt in it. Other liquids may or may not conduct electricity.</p> <p>Chemical effects of current.</p> <p>Basic idea of electroplating.</p>	<p>Rubber cap, pins, water, bulb or LED, cells, various liquids.</p> <p>Carbon rods, beaker, water, bulb, battery.</p> <p>Improvised electrolytical cell, CuSO_4</p>	<p>(Periods - 14)</p> <p>Activity to study whether current flows through various liquid samples (tap water, salt solution, lemon juice, kerosene, distilled water if available). Emission of gases from salt solution. Deposition of Cu from copper sulphate solution. Electric pen using KI and starch solution. Simple experiment to show electroplating.</p>
<p>6. Natural Phenomena</p> <p><i>Rain, thunder and lightning</i></p> <p>What is lightning? What safety measures should we take against lightning strikes?</p> <p><i>Light</i></p> <p>What are the differences</p> <p><i>Night sky</i></p> <p>What do we see in the sky at night? How can we identify stars and planets?</p>	<p>Clouds carry electric charge. Positive and negative charges, attraction and repulsion. Principle of lightning conductor.</p> <p>Laws of reflection. Alternative technology available.</p> <p>Role of nutrition in relation to blindness</p> <p>Idea about heavenly bodies/celestial objects and their classification – moon, planets, stars, constellations. Motion of celestial objects in space; the solar system.</p>	<p>Articles on clouds and lightning; kit items.</p> <p>Mirror, source of light,</p> <p>Observation of motion of objects in the sky during the day and at night; models, charts, role-play and games, planetarium.</p>	<p>(Periods - 26)</p> <p>Discussion on sparks. Experiments with comb and paper to show positive and negative charge. Discussion on lightning conductor. Exploring laws</p> <p>Observing and identifying the objects moving in the sky during the day and at night. Observing and identifying some prominent stars and constellations. Observing and identifying some prominent planets, visible to the naked eye, (Venus, Mars, Jupiter) in the night sky and their movement. Design and preparing models and charts of the solar system, constellations, etc. Role-play and games for understanding movement of planets, stars</p>

Questions	Key Concepts	Resources	Activities/ Processes
<p>Earthquakes</p> <p>What happens during an earthquake? What can we do to minimize its effects?</p>	Phenomena related to earthquakes.	Earthquake data; visit to seismographic centre.	Looking at structures/ large objects and guessing what will happen to them in the event of an earthquake; activities to explore stable and unstable structures. Narration and discussions.
<p>7. Natural Resources</p> <p>Man's intervention in phenomena of nature</p> <p>What do we do with wood? What if we had no wood? What will happen if we go on cutting trees/grass without limit?</p>	<p>Consequences of deforestation: scarcity of products for humans and other living beings, change in physical properties of soil, reduced rainfall. Reforestation; recycling of paper.</p>	Data and narratives on deforestation and on movements to protect forests.	Project- Recycling of paper.
<p>What do we do with coal and petroleum?</p> <p>Can we create coal and petroleum artificially?</p>	<p>Formation of coal and petroleum in nature. (fossil fuels?).</p> <p>Consequences of over extraction of coal and petroleum.</p>	Background materials, charts etc.	
<p>Pollution of air and water</p> <p>What are the various activities by human beings that make air impure?</p> <p>Does clear, transparent water indicate purity?</p>	<p>Water and air are increasingly getting polluted and therefore become scarce for use. Biological and chemical contamination of water; effect of impure water on soil and living beings; effect of soil containing excess of fertilizers and insecticides on water resources. Potable water.</p>	Description of some specific examples of extremely polluted rivers.	<p>Case study and discussion. Purification of water by physical and chemical methods including using sunlight.</p> <p>Discussion on other methods of water purification.</p>

Social Science - 8

Themes	Objectives
<p>Where, When, How</p> <p>(a) An overview of the period. (b) Introduction to the new geographical categories. (c) An outline of the time frame. (d) An introduction to the sources.</p> <p>The Establishment of Company Power</p> <p>(a) Mercantilism and trade-wars. (b) Struggle for territory, wars with Indian rulers. (c) The growth of colonial army and civilian administration. <i>Regional focus: Tamil Nadu.</i></p> <p>Rural Life and Society</p> <p>(a) Colonial agrarian policies; their effect on peasants and landlords. (b) Growth of commercial crops. (c) Peasant revolts: focus on indigo rebellions. <i>Regional focus: Bengal and Bihar. Some comparison with later developments in Punjab.</i></p> <p>Colonialism and Tribal Societies</p> <p>(a) Changes within tribal economies and societies in the nineteenth century. (b) Tribal revolts: focus on Birsa Munda. <i>Regional focus: Chotanagpur and North-East.</i></p> <p>Crafts and Industries</p> <p>(a) Decline of handicrafts in the nineteenth century. (b) Brief reference to growth of industries in the twentieth century. <i>Case-studies: textiles.</i></p> <p>The Revolt of 1857-58</p> <p>(a) The rebellion in the army and the spread of the movement. (b) The nature of elite and peasant participation. <i>Regional focus: Awadh.</i></p> <p>Education and British rule</p> <p>(a) The new education system – schools, syllabi, colleges, universities, technical training. (b) Changes in the indigenous systems. (c) Growth of ‘National education’. <i>Case-studies: Baroda, Aligarh.</i></p>	<p>(a) Introduce the changing nomenclature of the subcontinent and regions. (b) Delineate major developments within the time frame. (c) Suggest how the sources of study for this period are different to those of earlier periods.</p> <p>(a) Unravel the story of a trading company becoming a political power. (b) Show how the consolidation of British power was linked to the formation of colonial armies and administrative structures.</p> <p>(a) Provide a broad view of changes within rural society through a focus on two contrasting regions. (b) Show the continuities and changes with earlier societies. (c) Discuss how growth of new crops often disrupted the rhythms of peasant life and led to revolts.</p> <p>(a) Discuss different forms of tribal societies. (b) Show how government records can be read against the grain to reconstruct histories of tribal revolts.</p> <p>(a) Familiarise students with the processes of de-industrialisation and industrialisation. (b) Give an idea of the technologies of weaving and the lives of weavers. (a) Discuss how revolts originate and spread. (b) Point to the changes in colonial rule after 1857. (c) Illustrate how vernacular and British accounts can be read to understand the rebellion.</p> <p>(a) Show how the educational system that is seen as universal and normal today has a history. (b) Discuss how the politics of education is linked to questions of power and cultural identity.</p>

Themes	Objectives
<p>Women and reform</p> <p>(a) Debates around <i>sati</i>, widow remarriage, child marriage and age of consent.</p> <p>(b) Ideas of different reformers on the position of women and women's education.</p> <p><i>Regional focus: Maharashtra and Bengal.</i></p> <p>Challenging the Caste System</p> <p>(a) Arguments for caste reform. The ideas of Phule, Veerasalingam, Sri Narayana Guru, Periyar, Gandhi, Ambedkar.</p> <p>(b) Consequences and implications of the activities of the reformers.</p> <p><i>Region: Maharashtra, Andhra.</i></p> <p>Colonialism and Urban Change</p> <p>(a) De-urbanisation and emergence of new towns. (b) Implications of colonial policies and institutions – municipalities, public works, planning, railway links, police.</p> <p><i>Case-study: Delhi.</i></p> <p>Changes in the Arts: Painting, Literature, architecture</p> <p>(a) Impact of new technologies and institutions: art schools, printing press.</p> <p>(b) Western academic style and nationalist art.</p> <p>(c) Changes in performing arts – music and dance enter the public arena.</p> <p>(d) New forms of writing.</p> <p>(e) New architecture.</p> <p><i>Case-studies: Mumbai, Chennai.</i></p> <p>The Nationalist Movement</p> <p>(a) Overview of the nationalist movement from the 1870s to the 1940s.</p> <p>(b) Diverse trends within the movement and different social groups involved.</p> <p>(c) Links with constitutional changes.</p> <p><i>Case study: Khilafat to Non Cooperation.</i></p> <p>India after Independence</p> <p>(a) National and regional developments since 1947. (b) Relations with other countries.</p> <p>(c) Looking to the future.</p>	<p>(a) Discuss why so many reformers focused on the women's question, and how they visualised a change in women's conditions.</p> <p>(b) Outline the history of new laws that affect women's lives.</p> <p>(c) Illustrate how autobiographies, biographies and other literature can be used to reconstruct the histories of women.</p> <p>(a) Familiarize students with the biographies and writings of individuals who sought to criticize and reform the caste system.</p> <p>(b) Discuss why the question of caste was central to most projects of social reform.</p> <p>(a) Outline the nature of urban development in the 19th and 20th centuries.</p> <p>(b) Introduce students to the history of urban spaces through photographs.</p> <p>(c) Show how new forms of towns emerged in the colonial period.</p> <p>(a) Outline the major development in the sphere of arts.</p> <p>(b) Discuss how these changes are linked to the emergence of a new public culture.</p> <p>(c) Illustrate how paintings and photographs can be used to understand the cultural history of a period.</p> <p>(a) Outline the major developments within the national movement and focuses on a detailed study of one major event.</p> <p>(b) Show how contemporary writings and documents can be used to reconstruct the histories of political movements.</p> <p>(a) Discuss the successes and failures of the Indian democracy in the last fifty years.</p> <p>(b) Illustrate how newspapers and recent writings can be used to understand contemporary history.</p>

Themes	Objectives
Resources: resources and their types – natural and human. Natural resources: their distribution, utilisation and conservation, land and soil, water, natural vegetation, wildlife, mineral and power resources (world patterns with special reference to India). Agriculture: types of farming, major crops, food crops, fibres, beverages, agricultural development – two case studies – one from India and the other from a developed country/a farm in the US/ Netherlands/ Australia. Industries: classification of industries based on size, raw material, ownership; major industries and distribution; infrastructure and development. Iron and Steel (a comparative study of Jamshedpur and a centre in USA e.g., Detroit). Textile Industry (Ahmedabad and Osaka). Information Technology (Bangalore and Silicon Valley). Human Resources – composition, population change, distribution and density.	To know the meaning of resources their variety, location and distribution; (Periods-10) To understand the importance of resources in our life; To appreciate the judicious use of resources for sustainable development; To develop awareness towards resources conservation and take initiative towards conservation process; (Periods-14) Learn about various types of farming and agricultural development in two different regions. (Periods-15) To understand important forms of manufacturing industries. (Periods-14) To understand the role of human resources in development of nation's economy. (Periods-12)

Project/Activity

- Observe and report about local agricultural practices, crops grown/manufacturing industries.
- Collect information regarding some endangered plants and animal species of India.
- Visit to an industry/local agricultural farm.
- Prepare a chart showing difference between life style of farmers in the developed countries and India on basis of pictures collected from magazines, newspapers and the internet.

Note: Any similar activities may be taken up.

Themes	Objectives
<p>UNIT 1: The Constitution</p> <p>This unit focuses on the Constitution through first highlighting why there is a need for laws and then showing how the Constitution is the framework that determines the making of laws in this country. Aspects of secularism as well as economic justice are highlighted with respect to the Constitution.</p> <p>Section 1</p> <p>The Role of the Constitution and the Need for Laws</p> <ul style="list-style-type: none"> • On need for laws discussed through an example like dowry, • Role of Constitution in determining the authority/ legitimacy of the law, • Laws and Dissent: Salt Satyagraha and a post-1947 example such as anti-liquor agitation. <p>Section 2</p> <ul style="list-style-type: none"> • Vision set forth in the Indian Constitution with a focus on secularism. • On how an ideal of the Constitution translates into a law • On how ideals of secularism got translated into fundamental rights. • On Fundamental rights as human rights. • On Fundamental Duties. • On whether the fact that a law exists to secure certain rights mean that in effect these rights have been realised for all. This will be discussed with examples from current efforts of various marginalised communities to realise their rights. <p>UNIT 2: Parliamentary Government</p> <p>In this unit the functioning of parliamentary government and the roles and responsibilities of the various individuals involved in explained in context. In addition the workings of the central government are explained through the steps involved in passing a new law that arose out of people's struggles.</p>	<p>To enable students to:</p> <ul style="list-style-type: none"> • develop an understanding of the rule of law and our involvement with the law, • understand the Constitution as the primary source of all our laws, • understand laws as evolving and subject to change. • understand the vision and the values of the Constitution, • develop an appreciation of human rights guaranteed in the Constitution • appreciate our continuous involvement with the constitution as a living document <p>To enable students to:</p> <ul style="list-style-type: none"> • understand why India chose a parliamentary form of govt, • gain a sense\rationale of the essential elements of the parliamentary form of government, • analyse the role of people's agency in placing demands for legislation,

Themes	Objectives
<p>Section 1</p> <ul style="list-style-type: none"> • Reasons why parliamentary form chosen in India. • Main features of composition of parliament and its role in debating a bill. • Accountability of the government to the parliament. • Role of President, PM and the Council of Ministers. <i>Case Study</i>: Debate between Nehru and Rajendra Prasad on the real powers of the President. <p>Section 2</p> <p>Understand central government through issue of minimum wages or other struggles keeping following in mind:</p> <ul style="list-style-type: none"> - Translation of felt need into law and the critical features of the legislation. - Implication of law. <p>UNIT 3: The Judiciary</p> <p>This unit focuses on understanding the judiciary through tracing a case from the lower to the higher courts. It also examines the difference between civil and criminal cases and the difference between the police and the courts as well as provides information on an FIR. Section 1</p> <ul style="list-style-type: none"> • The structure and process followed by the judiciary: Trace a case from lower to higher courts. • Distinguish between civil and criminal cases. • Indicate the rationale of the process <p>Section 2</p> <p>Difference between the roles of the police and that of the courts.</p> <ul style="list-style-type: none"> • Role of the Public Prosecutor. • On an FIR: filing one, on the illegality of the police not accepting an FIR and the Supreme Court's directive on this. <p>UNIT 4: Social Justice and the Marginalised</p> <p>This unit focuses on issues of social justice and the marginalised. It first provides an understanding of what is meant by 'marginalised' groups. It then discusses in- depth the issue of untouchability and reservations. Section 1</p> <p>A brief explanation of what is meant by marginalised. Include how various communities (SC, ST, OBC, minorities) fit in.</p> <ul style="list-style-type: none"> • Forms of social inequality – Constitutional provisions relating to social justice. • Effect of social inequalities on economic inequalities. • On Reservations. 	<ul style="list-style-type: none"> • understand the ways in which the government and other groups respond to such issues. <p>To enable students to:</p> <ul style="list-style-type: none"> • understand the main elements of our judicial structure, • appreciate the need for the processes followed, • understand what an FIR is and how to file one. <p>To enable students to:</p> <ul style="list-style-type: none"> • understand what is meant by marginalised, • gain a critical understanding of social and economic injustices, • develop skills to analyse an argument from the marginalised point of view. <p>To enable students to:</p> <ul style="list-style-type: none"> • think about the role of government in the economic sphere, • see some links between people's aspirations\ needs and role of government.

English - 8

Objectives The general objectives at this stage are:

- to negotiate their own learning goals and evaluate their own progress, edit, revise, review their own work
- to understand, enjoy and appreciate a wide range of texts representing different cultures, ways of living
- to be able to articulate individual/personal responses effectively
- to use language and vocabulary appropriately in different contexts and social encounters
- to be able to organise and structure thoughts in writing/speech
- to develop production skills (fluency and accuracy in speaking and writing)
- to use dictionary suitable to their needs
- to understand and enjoy jokes, skits, children's films, anecdotes and riddles

At the end of this stage learners will be able to do the following:

- understand the central idea and locate details in the text (prescribed and non-prescribed)
- use his/her critical/thinking faculty to read between the lines and go beyond the text
- narrate simple experiences, describe objects and people, report events to peers
- speak accurately with appropriate pauses and clear word/sentence stress to be intelligible in familiar social contexts
- write simple messages, invitations, short paragraphs, letters (formal and informal) applications, simple narrative and descriptive pieces, etc.
- use his/ her proficiency in English to explore and study other areas of knowledge through print and non-print media
- to undertake small projects on a regular basis

In addition to consolidating the items learnt earlier, the following will be introduced and recycled through the upper primary stage.

- determiners
- passivisation
- linking words
- adjectives (comparative and superlative forms)
- adverbs (place and types)
- modal auxiliaries
- tense forms
- word order in sentence types
- clauses
- reported speech

Methods and Techniques Classroom interaction would be such as to promote optimal learner participation leading to an urge to use language both in speech and writing. The selection of actual classroom procedures is left to the discretion of the teacher. However, the following are recommended:

- Role play
- Dramatization
- Reading aloud
- Recitation of rhymes, poems and making observations on a given topic/theme
- Telling and retelling stories, anecdotes, and jokes
- Discussion, debate
- Simple projects
- Interpreting pictures, sketches, cartoons
- Activities, tasks, and language games
- Pair work, group work, and short assignments both individual and group
- Exploring the electronic media

Syllabus Distribution _ 2021-22 (Class 8th)

SUBJECTS		October 1 – 25	November 1 – 25	December 1 – 25
ENGLISH	B	L-10 – Dear Dad L-11 – The cookie thief	L-12 - Raymond's Run L-13 – Prayer of a sportsman	L-14 – Sonam Wangchuk L-15 – Mother nature's treasures
	G	L- 13 Conjunctions L-14 Phrases & Clauses L-15 Relative Clauses L-28 Posters & Slogans	L-16 Synthesis of sentences L-17 Direct & Indirect Speech L-18 Punctuations & Capital Letters\ L-19 Reading Comprehensive L-25 Report Writing	L-20 Listening Comprehensive L-21 Message Writing L-23 Paragraph Writing L-27 Writing Letters & Emails
HINDI	B	पाठ : 12 पाठ : 13 पाठ : 14	पाठ : 15 पाठ : 16 पाठ : 17	पाठ : 18
	G	पाठ : 16 पाठ : 17 पाठ : 18 पाठ : 19	पाठ : 20 पाठ : 21 पाठ : 22 पाठ : 23	कहानी लेखन पत्र लेखन निबंध लेखन
MATHS		L-13 – Time & work L-14 – Polygons L-15 – Quadrilaterals	L-16 – Parallelogram L-17 – Construction of quadrilaterals L-18 – Area of a trapezium and a polygon L-19 – Three dimensional figures	L-20 – Volume and surface of solids L-21 – Data handling L-22 – Introduction to coordinate geometry L-23 – Line graphs and linear graphs
Science		L-10 – Reaching the age of adolescence L-11 – Force & Pressure L-12 – Friction	L-13 – Sound L-14 – Chemical effects of electric current L-15 – Some natural phenomena	L-16 - Light L-17 – Stars and the solar system L-18 – Pollution of air and water
Social Science	H	L-7 - Civilising the Native, educating the nation	L-8 – Women, caste and reform	L-9 - The making of the national movement – 1870-1947 L-10 - Dec- India after independence
	G	L-4 – Agriculture	L-5 – Industries	L-6 – Human resources
	C	L-6 – Understanding our criminal justice system	L-7 – Understanding marginalization L-8 – Confronting marginalization	L-9 – Public facilities L-10 – Law & social justice
Computer		L-5 – More on HTML L-6 – Introduction to photoshop L-7 – More on photoshop CC	L-8 – More on python L-9 – Loop in Python	Robotics and AI Periodic assessment – 4 Test Sheet- 2 Project OGO cyber sample questions

Important Dates

Monthly Evaluation Test	26 th to 30 th of Every Month
First Term Exams	1 st September onwards
Second Term Exams	26 th November onwards

Syllabus Distribution _ 2020-21 (Class 8th)

SUBJECTS		AUG 1 – 25	SEPT 1-25	October
ENGLISH	B	Revision	Revision	Revision
	G	Revision	Revision	Revision
HINDI	B			
	G			
MATHS		L-24 – Pie chart L-25 – Probability Revision (1-5)	Revision	Revision
Science		Revision	Revision	Revision
Social Science	H	Revision	Revision	Revision
	G	Revision	Revision	Revision
	C	Revision	Revision	Revision
Computer		Revision	Revision	Revision

Important Dates

<u>Monthly Evaluation Test</u>	<u>26th to 30th of Every Month</u>
<u>First Term Exams</u>	<u>1st September onwards</u>
<u>Second Term Exams</u>	<u>26th November onwards</u>

ACTIVITY 8.1 Do plants need manures and fertilizers for better growth?

What is required?

few seedlings of moong/gram or any other commonly occurring plants, 3 pots with soil, manure and urea .

What have you learnt?

- 1.. Plants in all the pots do not show similar growth.
2. Plants in pots A and B show faster growth compared to plant in pot C.
3. Compare the growth of plants in pots A and B.
4. Manures improve the soil texture and water



How will you proceed?

1. Select three seedlings of equal size of moong or gram.
2. Take three empty pots and mark them
3. To pot 'A' add a little amount of soil mixed with a little cow dung manure.
4. To pot 'B' put the same amount of soil mixed with few crystals of urea.
5. Take the same amount of soil in pot 'C' without adding anything.
6. Now plant the seedlings in them and pour the same amount of water in each pot.
7. Keep them in a safe open place and water them daily.
8. After 7 to 10 days observe their growth.

ACTIVITY 8.2 Where do microorganisms live?

What is required?

Beakers, moist soil, pond water, tap water, glass slides, droppers, cover slips, brush, scalpel and microscope.

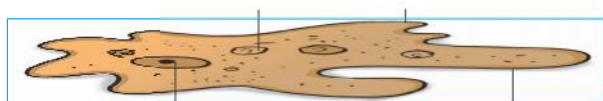
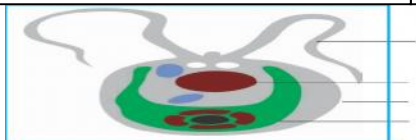
What have you learnt?

The slides show tiny organisms. Does it mean that water and soil are always full of microorganisms?

Do they have any significance?

How will you proceed?

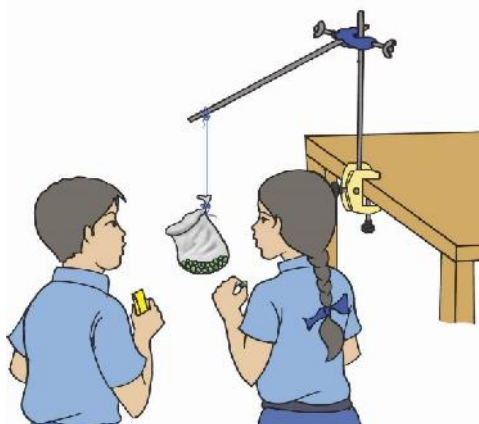
1. Collect some moist soil from the field in a beaker.
2. Add water to it and let the soil particles settle down
3. Take a drop of water from the beaker and place it on a clean glass slide.
4. Put a cover slip over it and observe under the microscope. Are you able to see any moving organisms?
5. Now, prepare another slide in the same way by placing a drop of pond water on it. You can collect water in a beaker from the pond in your locality.



ACTIVITY 8.3 Do all threads have the same strength?

What is required?

Iron stand, clamp, cotton thread, weights or marbles, any other available thread, polythene bag.



How will you proceed?

1. Take an iron stand with a clamp.
2. Tie a cotton thread of about 30 cm length so that it hangs freely from the clamp.
3. At the free end of the thread, tie a small polythene bag.
4. Place the weights or marbles gently one by one into the bag, till the thread breaks.
5. Note the weights, or number of marbles required to break the cotton thread and record it in the table given below.
6. Repeat steps 1 to 5 with different types of available threads of same thickness and record your observations in the table given below.

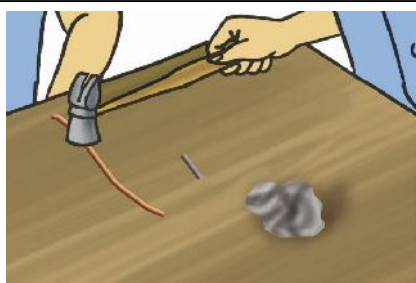
What have you learnt?

The weights/number of marbles required to break the thread indicate the strength of the fibre. Which thread/fibre did you observe to be strongest?

ACTIVITY 8.4 What happens when materials are hammered?

What is required?

Copper wire, coal piece, pencil lead, zinc granules, aluminum wire and hammer.



How will you proceed?

1. Take each of the given materials and beat them with a hammer one by one.
2. What do you observe?
3. Write your observations.

What have you learnt?

1. Materials like copper and zinc can be spread into sheets when hammered. Thus, they are metals.
2. Materials like coal and pencil lead break up into pieces when hammered. Thus, they are non-metals.
3. This property of metals by which they can be beaten into thin sheets is known as malleability.

ACTIVITY 8.5 Are all substances around us combustible?

What is required?

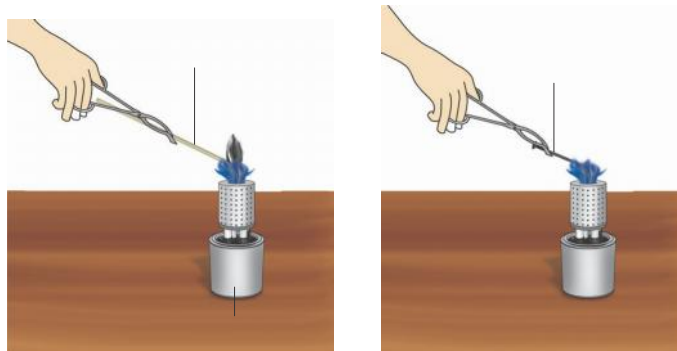
Straw, matchstick, wood, paper, iron nail, stone piece, glass, charcoal, a pair of tongs, a glass rod, kerosene burner.

What have you learnt?

1. Substances like wood, paper, straw etc. burn rapidly in oxygen to give out heat and light and are combustible substances.
2. Substances like stone and glass do not produce heat and light when heated in oxygen and are known as non-combustible substances.

How will you proceed?

1. Light the kerosene burner.
2. Using a pair of tongs, hold a piece of straw over the flame.
3. What happens to the straw?
4. Record your observations
5. Repeat the above procedure with other materials and record your observations in the table given below.



ACTIVITY 8.6 How to observe Amoeba Paramecium and yeast under a microscope?

What is required?

Permanent slides of Amoeba, Paramecium and yeast and microscope.

What have you learnt? Amoeba does not have any definite shape and looks irregular. Whereas, Paramecium looks slipper-shaped and has a definite shape. Yeasts, on the other hand, may show some bulges on their body. Do you know what these are? Recall from the activity performed on yeasts in Class VII.

How will you proceed?

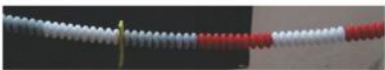

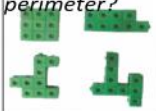
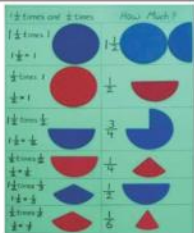
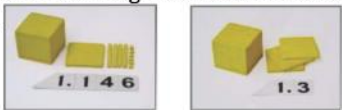

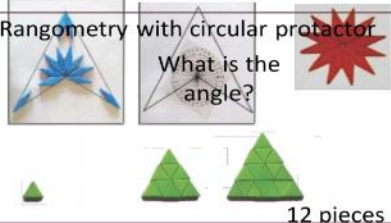

1. Take a permanent slide of *Amoeba* from the biology laboratory of your school.
2. Study the slide under the microscope. If required, you can adjust the view through the knob present on the microscope.
3. Now, in a similar way, study the permanent slides of *Paramecium* and yeast.
4. Do they have shape similar to *Amoeba*? If not, what do they look like?
5. Observe all the slides carefully and draw their sketches in your notebook.




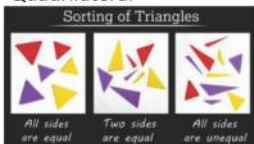
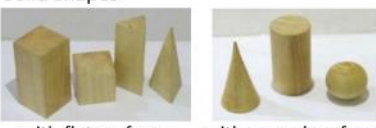




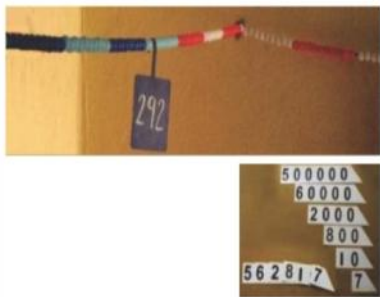
Multiplication Table - 25x25

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147	154	161	168	175
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180	189	198	207	216	225
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
11	11	22	33	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220	231	242	253	264	275
12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260	273	286	299	312	325
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336	350
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360	375
16	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400
17	17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340	357	374	391	408	425
18	18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360	378	396	414	432	450
19	19	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	399	418	437	456	475
20	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500
21	21	42	63	84	105	126	147	168	189	210	231	252	273	294	315	336	357	378	399	420	441	462	483	504	525
22	22	44	66	88	110	132	154	176	198	220	242	264	286	308	330	352	374	396	418	440	462	484	506	528	550
23	23	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391	414	437	460	483	506	529	552	575
24	24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504	528	552	576	600
25	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625

Math learning tools 6, 7, 8

Teaching Learning Material	Concepts	Description	Grades
Integer Ganitmala set 	Negative Numbers: Addition, subtraction, multiplication and division of integers. Understanding sign rules including 'minus times minus'.	Visualise the extended number line including negative numbers by doing activities on the integer Ganitmala. Addition and subtraction of integers is consolidated through games using a set of specially designed dice. Integer Ganitmala used along with the context of loan and cash can help children to grasp the sign rules.	6, 7, 8
Tessellations 	Space-filling patterns Spatial reasoning Properties of regular and irregular polygons. Symmetry	Exploring which shapes come together to fill up space i.e. tessellate, is not only a fun, creative activity, but also involves understanding angles in shapes. Children can explore homogeneous and non-homogeneous tessellations. Explore rotational and other forms of symmetry in tessellations.	6, 7, 8
Jodo Blocks <i>Visualising $(a+b)^3$ All have the same area! But do they have the same perimeter?</i> 	Area, perimeter, volume Commutativity, distributivity Understanding squares and cubes geometrically and in terms of numbers. Algebraic identities Factors, prime numbers, HCF, LCM Patterns	"What are the different (flat or 2-D) shapes than can be made with a given number of blocks and what is the perimeter of each of these shapes?" In this way, children see that even when the area is the same, the perimeter can change which helps clear the confusion between area and perimeter. Jodo blocks can also be used to investigate various algebraic identities. By exploring which numbers of blocks make rectangles, children can develop an idea of prime numbers.	6, 7, 8
Fractions set 	Fractions Quantity sense equivalence Addition and subtraction Multiplication Division	Fraction kit can help develop quantity sense for fractions and connect it to symbols. This can prevent the development of common misconceptions like $1/8$ being bigger than $1/2$. Equivalence of fractions like $1/4 = 2/8 = 3/12$...becomes intuitively obvious through activities and games with the fraction kit. By understanding $1 \frac{1}{2}$ times a fraction children can understand $1/2$ times, $1/3$ times etc. With the kit this helps to visualize how multiplication by fractions can lead to reduction of quantity.	6, 7, 8
Decimal set along with Decimal Maan card  <i>Which is bigger?</i>	Decimals- Notation, addition, subtraction Connecting with fractions Place value	Children have a tendency to confuse decimals with whole numbers. The decimal kit with an appropriate context can help children understand the decimal notation and the related place value. The material can be used for representing decimals using Decimal Maan cards and for doing addition and subtraction.	6, 7, 8
Dienes Block (plastic)  Rubber based Dienes block is also available for place value and algebra related activities	Algebraic Identities and factorization Measurement Area Volume Weight Place Value	Algebraic multiplications of the form $(ax+b) \times (cx+d)$ can be done using Dienes Block, by taking the length of a rod of ten as x , the plate as x^2 and the smaller dimension as of length. Children can start discovering the rectangles hidden in algebraic expressions of degrees 1 and 2 and the cuboids hidden in algebraic expressions of degree 3 in x . Looking at the dimensions of the figures they get they can find the factors of the given expression. These blocks can also be used in activities on length, area, volume and weight measurement since it is of length 1 cm, area 1cm^2 and weight 1g.	6, 7, 8
Rangometry with circular protractor  What is the angle? 12 pieces	Angles Shapes Patterns Geometrical problem solving	Activities like fitting together pieces to cover a point, seriating shapes according to angles and making shapes from shapes (triangle from triangles, hexagons from hexagons) are some possibilities. Can be used for determining angles of shapes and can also lead to discussions on patterns in numbers!	6, 7, 8
Jodo Straws  5 Platonic solids	Polyhedra Polygons Congruency and similarity Problem solving in 2D-3D geometry Archimedean and Platonic solids	Activities for exploring different (types of) triangles, quadrilaterals and polygons. Seeing how shapes change when angles or lengths of edges are changed. Understanding notions like congruency and similarity. Activities for exploring 3-D geometry, for instance Euler's formula for polyhedra.	6, 7, 8

<p>Balance</p>  <p>1 tomato + 1 plum = 6 blocks + 4 small cubes</p>	<ul style="list-style-type: none"> Understanding equations Measurement (weight) 	<p>Activities with a balance can help in seeing the “=” sign as denoting the relationship between two quantities and a linear equation as balancing different quantities. This can help understand what happens when a term in an equation 'goes from one side to the other'.</p>	6, 7, 8
<p>Volume Measuring Set</p> 	<ul style="list-style-type: none"> Cubic centimeter Milliliter, liter Estimation and problem solving with volume 	<p>Children can develop an understanding of volume measurement by first working with informal units and then introducing litre as a formal unit using the measuring cylinder and beaker. Similarly, children can compare volumes of boxes using Dienes cubes and then come to an understanding of cubic centimeter. Later, they can explore the relationship between litre and cubic centimeter.</p>	6, 7, 8
<p>Geo Board</p> 	<ul style="list-style-type: none"> Circles, triangles, quadrilaterals Parallel lines Properties of quadrilaterals Linear equations Problem solving 	<p>Can be used to further develop understanding of angles, lengths, congruency, similarity etc. What happens to the area and perimeter when a vertex of a shape is changed? Finding areas of different shapes can help understand their formulae. The circular frame at the back can be used to investigate various circle theorems, like angles of inscribed polygons.</p>	6, 7, 8
<p>Sorting Kits</p> <p>-Triangle</p> <p>-Quadrilateral</p> 	<ul style="list-style-type: none"> Properties and classification of triangles Properties and classification of Quadrilaterals Angle sum properties Congruence and similarity 	<p>Classifying the 13 different triangles and making different shapes with them help to explore the relationships between the angles and develop an intuitive sense. When tessellations are made using the same triangle it helps to discover relationships of alternate angles corresponding and so on. Similarly exploratory activities with quadrilaterals leads to understanding intuitively its properties.</p>	6, 7, 8
<p>Solid shapes</p>  <p>with flat surfaces with curved surfaces</p>	<ul style="list-style-type: none"> Cube, Cuboid, Sphere, Cone, Cylinder, Prism and Pyramid Polyhedra Vertices, edges and faces Surface area, height and slant height 	<p>Exploring and understanding solid shapes in terms of type of surface (flat or curved), tracing flat surfaces to connect the 3-d and 2-d figures. Children can analyse them according to their faces, edges or vertices. Understanding can be extended by working with Jodo Straws, for example to distinguish between slant height and height.</p>	6, 7, 8

<p>Tangram</p> 	<ul style="list-style-type: none"> Geometrical problem solving Exploring shapes 	<p>Solving puzzles, spatial reasoning, Geometrical problem solving, exploring angles and shapes</p>	6, 7, 8
<p>Factors set:</p> <p>200 Ganitmala (big beads) and Number catchers</p> 	<p>For numbers up to 200:</p> <ul style="list-style-type: none"> Factors, common factors, HCF, LCM Prime numbers Commutative, distributive properties of operations 	<p>Children can see 112 as 14 times 8 on the Ganitmala by using number catcher of 8. By asking (with an appropriate context) which of the number catchers can be used to reach, say 135, the notion of factors (3, 5, 9 and 15) can be introduced with visual support. Similarly, the concept of common factors and highest common factors can be introduced.</p>	6, 7, 8
<p>1000 Ganitmala with Maan card</p> 	<ul style="list-style-type: none"> Consolidating number sense up to 1000 Extending notions of factors, common factors, prime numbers etc. for numbers up to 1000. Expanded form of numbers (up to 10 lakhs), place value system Mental arithmetic 	<p>Visualising numbers up to 1000 laying a basis for larger numbers. Children can understand 743 as having not only 7 hundreds, but also as 74 tens. It can be used along with Maan cards to connect quantity sense and place value. Numbers in lakhs can be shown in their expanded notation. Maan cards can also be used for exercises in mental arithmetic, for instance making jumps of 10, 25, 100, 1000 and multiples of these numbers in a meaningful manner.</p>	6, 7, 8

बच्चों के अधिकार

एक बच्चा 18 वर्ष से कम आयु के सभी व्यक्ति हैं। बच्चे के पालन-पोषण और विकास के लिए माता-पिता की प्राथमिक जिम्मेदारी है। सूरज स्कूल बच्चे के अधिकारों का सम्मान करेगा।

गौरव और अभिव्यक्ति

- मुझे अपने अधिकारों के बारे में जानने का अधिकार है।
- मेरे पास बच्चे होने के अधिकार हैं और कोई फर्क नहीं पड़ता कि मैं कौन हूँ, मैं कहाँ हूँ, मेरे माता-पिता क्या करते हैं, मैं किस भाषा बोलता हूँ, मैं किस धर्म का अनुसरण करता हूँ, चाहे मैं लड़का या लड़की हूँ, मैं किस संस्कृति का हूँ, चाहे मैं हूँ विकलांग, चाहे मैं अमीर हो या गरीब मुझे किसी भी आधार पर गलत तरीके से इलाज नहीं करना चाहिए। यह जानने के लिए हर किसी की जिम्मेदारी है।
- मुझे अपने विचारों को स्वतंत्र रूप से व्यक्त करने का अधिकार है, जिसे गंभीरता से लिया जाना चाहिए, और दूसरों की सुनने के लिए सभी की जिम्मेदारी है।
- मेरे पास गलती करने का अधिकार है, और सभी को स्वीकार करने की जिम्मेदारी है कि हम अपनी गलतियों से सीख सकते हैं।
- मेरे पास जो कुछ भी मेरी क्षमताओं को शामिल करने का अधिकार है और अपने मतभेदों के लिए दूसरों का सम्मान करने की जिम्मेदारी सभी के पास है।

विकास

- मेरे पास एक अच्छी शिक्षा का अधिकार है, और हर किसी के पास सभी बच्चों को स्कूल जाने के लिए प्रोत्साहित करने की जिम्मेदारी है।
- मेरे पास अच्छे स्वास्थ्य देखभाल का अधिकार है और हर किसी के पास बुनियादी स्वास्थ्य देखभाल और सुरक्षित पानी पाने में मदद करने की जिम्मेदारी है।
- मुझे अच्छी तरह से खिलाया जाने का अधिकार है और सभी लोगों को भूख से मरने से रोकने के लिए उत्तरदायित्व है।
- मेरे पास स्वच्छ वातावरण का अधिकार है, और हर किसी की जिम्मेदारी है कि इसे प्रदूषित न करें।
- मेरे पास खेलने का अधिकार है, और आराम करने का अधिकार है।

देखभाल और संरक्षण

- मेरे पास प्यार और हानि और दुर्व्यवहार से सुरक्षित होने का अधिकार है, और हर किसी के पास प्यार और दूसरों की देखभाल करने की जिम्मेदारी है।
- मेरे पास एक परिवार का अधिकार है और एक सुरक्षित और आरामदायक घर है और सभी के पास यह सुनिश्चित करने के लिए उत्तरदायित्व है कि सभी बच्चों के पास परिवार और घर हो।
- मेरे पास मेरी विरासत और विश्वासों पर गर्व करने का अधिकार है और सभी के पास दूसरों की संस्कृति का सम्मान करने के लिए उत्तरदायित्व है।
- मेरे पास हिंसा और शारीरिक सजा (मौखिक, शारीरिक, भावनात्मक) के बिना रहने का अधिकार है, और हर किसी की जिम्मेदारी दूसरों के लिए हिंसक नहीं है।
- मुझे आर्थिक शोषण और यौन से संरक्षित करने का अधिकार है और यह सुनिश्चित करने के लिए जिम्मेदारी है कि कोई भी बच्चा काम करने के लिए मजबूर नहीं है और उसे एक निःशुल्क और सुरक्षित वातावरण दिया गया है।
- मेरे पास किसी प्रकार के शोषण से सुरक्षा का अधिकार है और हर किसी की जिम्मेदारी यह सुनिश्चित करने के लिए है कि किसी भी तरीके से मुझे लाभ नहीं लिया जा रहा है।

बच्चों के प्रति ध्यान मं रखते हुए सभी कायवाही में बच्चे के सर्वश्रेष्ठ रुचिकर एक प्राथमिक विचार होंगे।

My Teacher!
you are god



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