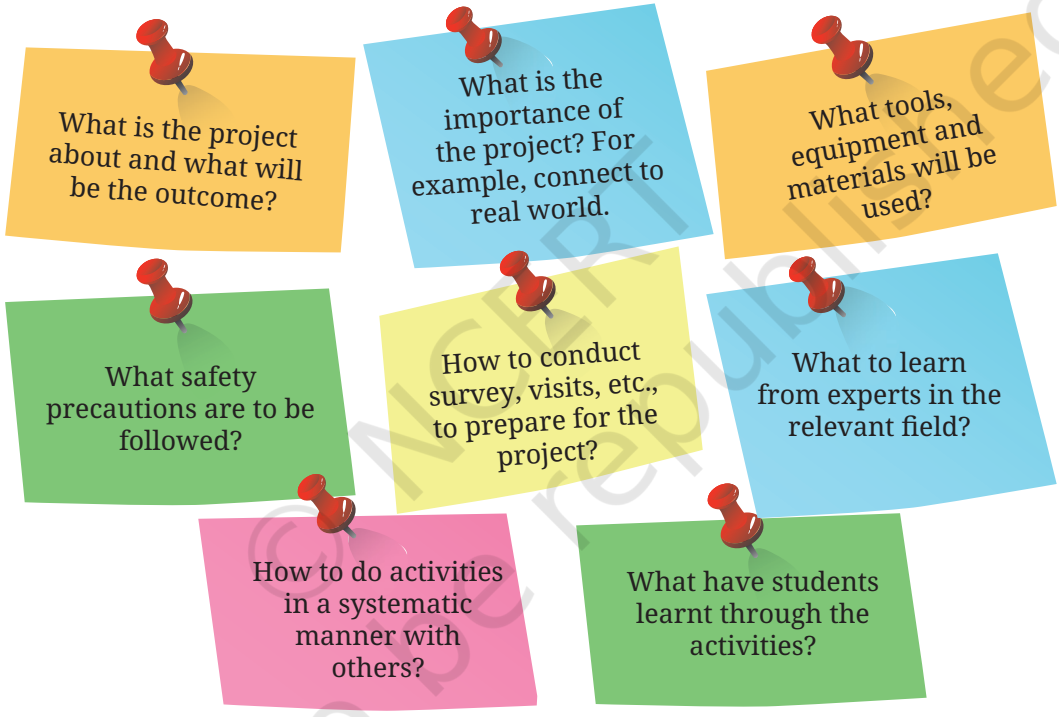
Annexure 1

Project Template

Developing practical projects in schools requires careful planning, clear objectives, and engaging activities that align with educational goals.

The diagram below summarises the key questions that must be addressed while developing the project.



Write about your project

Choose a descriptive and engaging title that gives a clear idea of the broad purpose of the project.

1. Explain why the project is essential.
2. Highlight its relevance to the students' lives, education, or the community.
3. Address the benefits of the project.
4. Describe how the project relates to the real-world scenarios, tasks or problems.
5. Explain the practical implications and potential impact of the project.

What will I be able to do?

Achievable and measurable objectives aligned with the curricular goal, competencies and grade-wise learning outcomes have to be defined for each project. Activities must be designed to fulfil these objectives.

Define two or three simple objectives in words that students can understand. These objectives indicate what students can do at the end of the project. Students must be able to respond to the following questions:

1. What will you be able to do by the end of the project?
2. What will you learn?

What will I need?

Ensure that the required resources are accessible and locally available, and help students identify what is needed for the project. Students must be able to:

1. Provide a brief overview of the tools, equipment, material and other resources needed for the project.

How do I keep myself and others safe?

This section should include all the safety precautions to be taken during the project, including cyber security and Internet safety measures. Students should also wear appropriate clothing, such as long sleeves, pants, and sturdy shoes, while doing activities in the field.

Safety precautions for tools, material, equipment, and Internet use must be explained and demonstrated. Students must be able to respond to the following questions:

1. How will you ensure your safety and that of others during the project?
2. How will you ensure no one is physically or emotionally hurt?
3. How will you ensure the safety of plants and animals, if relevant?
4. How will you maintain confidentiality? (For example, You will not share information about anyone without checking with them first.)
5. What will you do to keep yourself safe on the Internet?

What do I need to know before I start?

Prepare students to begin work by recalling prior knowledge, introducing concepts through activities that require them to work with tools and material, exploring the environment and basic skills related to the project, and so on. Clearly define roles and responsibilities for all participants and ensure everyone understands their tasks and how they contribute to the project. Students must be able to respond to the following questions:

1. Is there anything you need to learn before starting your project?
2. Do you need to meet an expert who can teach you how to do the activities related to the project?
3. Is there anything you need to find out about in your locality?
4. Do you need to conduct a survey, take up field visits, or something similar before you start?

What do I have to do?

Students need to take up various activities required to complete the project. Frame questions that will help them to think about what is to be done and subsequently, record data or information related to the project. Students must be able to do the following:

1. Follow the project plan and execute tasks according to the timelines.
2. Observe others to learn practical skills and techniques, such as proper tool usage, effective planting methods, and maintenance practices.
3. Monitor progress regularly and adjust as necessary.
4. Keep records of all activities and challenges faced during the activities.
5. Document what they have learnt, success, and challenges for future reference.

As they complete each activity, students can be asked the following:

(a) The material you used and how you used them.
(b) The tools you used and how you used them.
(c) The process you followed, such as selection of material/tools, sequence of tasks, and how you completed each one.
(d) If you collected information/data/objects, describe them and explain their usefulness.
(e) If you made something, include a photograph or a sketch.
(f) If you grew a plant, record its growth.
(g) What safety precautions did you take while doing the activities?
(h) Did you use any AI tools? If yes, which ones did you use, and how did you use them?
(i) Did you share the outcome of your project with others outside the school? Describe your plan and how you executed it.
(j) Did you do something to keep the environment clean or to recycle waste? Record the details.

What did I learn from others?

Learning from others is a crucial aspect of any project. Therefore, students should reflect on what they have learnt from others. It can help improve their soft skills, deepen their understanding, and enhance the project's overall success.

Engaging with others enables students to communicate effectively, share ideas, and collaborate on tasks. Diverse perspectives and ideas are introduced, which help students learn from the viewpoints of others. This can help them approach problems in a new way and enhance their creativity and problem-solving skills. Listening to others, such as experts and professionals, provides valuable insights that can help improve learner's practices.

Students must identify what they learnt during field trips, online and offline interactions with experts, family and friends, community members, and other sources. They must be able to respond to the following questions:

1. What did you learn from field trips, interactions, video lectures, or experts?
2. What did you learn from your friends? Did you help them with something?
3. What did you learn from family members, siblings, and community elders?
4. What did you learn from people in the community?

What did I do and how long did it take?

To develop the capacity for time-based planning, students must record the entire process followed, the sequence of activities, and the time taken for each activity. This can be done as they proceed or at the end of the project. Students must be able to respond or reflect on what they did and how long it took them to plan and execute the activities.

What else can I do?

Students need to think of another setting to apply their learning from the projects, especially outside the school. For example, students can participate in workshops, coding classes, and exhibitions or fairs. They can also apply what they have learned from the projects at home and in various other places. They can celebrate cultural heritage months, international days, or multicultural

festivals and organise cultural events, culinary events, skill exhibitions, etc. They can integrate subjects through interdisciplinary projects, like historical re-enactments, science and art collaborations, or literary functions through performances. Students must be able to respond to the following questions:

1. What else can you do to apply your learning from the project?
2. Do you see any scope to expand the current project? How?

Think and Answer

Students must reflect on what they have learned from their recent experiences. A set of questions must be designed to assess learning of key aspects of the project and related concepts across curricular areas. Some of the questions that can be asked include the following:

1. What did you enjoy doing?
2. What were the challenges you faced?
3. Question(s) related to the project itself.
4. What are some examples of jobs related to your activities? What other jobs are related to the project?

Planning a Project

Since planning is integral to all work, all projects contain planning components. However, to ensure students can detail the steps required in planning, the planning section can be used as it is given in the Activity Book. If the school plans an alternative approach to meet this outcome, it must be ensured that students can respond to the following questions:

1. What is the final event you are planning?
2. When and where will it be held?
3. Who will be the invitees?
4. What will the final event involve?
5. What steps are required to ensure the final event goes as planned and when do they have to be fulfilled?
6. What are the resources involved, and who will be responsible for each step?

ANNEXURE 2

Curricular Goals and Learning Outcomes for Grade 8

The table below details the Competencies (C) for the Middle Stage and Learning Outcomes defined for Grade 8 to attain of each Curricular Goal (CG).

Competency	Learning Outcomes
CG–1 Develops in-depth basic skills and allied knowledge of work and their associated material/procedures	
C–1.1 Performs procedures competently through required tools/equipment.	LO 1 – Selects tools appropriate for a specific task. LO 2 – Uses tools correctly to complete a given task.
C–1.2 Approaches tasks in a planned and systematic manner.	LO 3 – Demonstrates appropriate stepwise process for completing the given task. LO 4 – Develop a time-based plan for the completion of the task.
C–1.3 Maintains and handles material/equipment for the required activity.	LO 5 – Describes the steps necessary to keep material and equipment ready for use. LO 6 – Follows the safety protocol while handling tools/material.
CG–2 Understands the place and usefulness of vocational skills and vocations in the world of work	
C–2.1 Describes the contribution of vocation in the world of work.	LO 7 – Describes the importance of vocation in the world around them. LO 8 – Explains what interests them in a vocation.
C–2.2 Applies skills and knowledge learned in the area.	LO 9 – Explains how prior knowledge and skills have been used to complete the task.
C–2.3 Evaluates and quantifies the associated products and materials.	LO 10 – Identifies criteria for evaluating the quality of products. LO 11 – Identifies criteria for evaluating the quantity of products.

CG–3 Develops essential values while working across areas	
C–3.1 Develops the following values while engaging in work: • Attention to detail • Persistence and focus • Curiosity and Creativity • Empathy and sensitivity • Collaboration and teamwork • Willingness to do physical work	LO 12 – Keenly observes the usage of tools and material during the demonstration and asks relevant questions. LO 13 – Demonstrates care and respect towards people doing physical labour, irrespective of gender. LO 14 – Plans tasks with peers and helps others during difficulties at work. LO 15 – Reworks/redoes task for improved efficiency. LO 16 – Asks questions about the functioning of tools and machines and gives suggestions for alternative use. LO 17 – Willingness to do physical work while enjoying working with tools and material.
CG–4 Develops basic skills and allied knowledge to run and contribute to a home	
C–4.1 Applies the acquired vocational skills and knowledge in home settings.	LO 18 – Identifies where skills and knowledge are relevant at home.

ANNEXURE 3

Additional Projects

Work with Life Forms

Keyhole Garden

Related areas: Agriculture, gardening, landscaping
Subject Teacher most suitable for this project: Any subject

Activity	Required periods: 50
What will I be able to do?	5
Develop a keyhole garden.	
What will I need?	
Soil testing kit Organic manure (cow dung, vermicompost) Material for keyhole garden structure (stones, compost, mulch) Seeds (traditional/local varieties) Water filter for greywater reuse Neem leaves for organic pesticide preparation Notebook for market study and cost chart preparation	
How do I keep myself and others safe?	
Use gloves and protective gear while handling soil and manure. Be careful while preparing and applying natural pesticides. Follow hygiene practices when handling vegetables. Ensure proper disposal of waste material. Be cautious when visiting local markets and handling money.	
What will I need to know before I start?	15
Basics of farming and the importance of soil health. The concept of keyhole gardens and their historical significance. How to test soil pH and improve soil fertility? Vegetable crop cycle and planting methods. Sustainable water reuse techniques (greywater filtration). Natural pest control methods using locally available materials.	

What do I have to do?	**20**
Visit a local farm to observe farming techniques and soil quality. Test soil pH and discuss its impact on plant growth. Prepare organic manure using cow dung and vermicompost. Learn about different types of vegetable gardens, focusing on the keyhole garden concept. Build a keyhole garden structure using available material. Plan a vegetable crop cycle for efficient planting. Layer material in the keyhole garden to ensure soil fertility. Choose and treat seeds using traditional methods. Reuse water efficiently by setting up a greywater filter. Sow vegetable seeds in the keyhole garden. Monitor plant health, identifying common pests and insects. Make a natural pesticide using neem ark. Learn proper harvesting methods to minimise damage and loss. Estimate the cost of making a keyhole garden and track expenses Visit the local market, observe vegetable prices, and note harvesting losses. Prepare a cost chart based on market research.	
What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Expand the keyhole garden to grow a wider variety of vegetables. Experiment with different organic pesticides and composting methods.	

Microbes for Healthy Food Preparation

Related areas: Food microbiology, food processing, biotechnology, chemistry, home science and food preservation
Subject Teacher most suitable for this project: Any subject

Activity	Required periods: 50
What will I be able to do?	5
Prepare healthy food using microbes.	
What will I need?	
Tools – basic cooking utensils, gas stove, weighing scale Material – food items as per selected recipe Any four locally preferred recipes	
How do I keep myself and others safe?	
Wash hands thoroughly before and after food preparation. Wear a clean apron and tie your hair to avoid contamination. Ensure all utensils and tools (e.g., knife, stove) are clean and handled carefully. Maintain cleanliness of the workspace; avoid leaving food out for too long. Use safe and fresh ingredients to prevent food spoilage. When handling gas stoves or hot equipment, take adult supervision if needed. Maintain proper hygiene when doing group tasks — avoid cross - contamination.	
What will I need to know before I start?	15
What is fermentation, and how do microbes help in food preparation? How are different traditional Indian foods made using fermentation (e.g., curd, dosa, idli). Basics of food safety and hygiene. How to measure ingredients and keep simple records? Understanding of local or traditional recipes used at home or by the community. Basic knowledge of the role of temperature and time in food fermentation. How to observe changes in smell, texture, and taste due to microbial action?	
What do I have to do?	20
Interact with local cooks or visit a food-related place like a dairy, bakery, or kitchen. Work in groups to observe and experiment with making curd and fermented dishes. Record changes in pH, texture, and flavour during fermentation. Create at least four fermented food items from two different groups. Maintain cleanliness, prepare ingredients, follow recipe steps, and collect feedback. Design food label packaging and calculate the cost of selling. Participate in a *'Kaushal Mela'* to share or sell products and receive reviews.	
What did I learn from others and how did I use it?	5
Incorporating inputs from observation, interaction, discussion and feedback.	

What did I do and how long did it take?	**1**
As per project template	
Think and Answer	**3**
As per project template	
What else can I do?	**1**
Try innovative versions of traditional fermented recipes (e.g., flavoured lassi or millet dosa). Make a fermentation experiment book with different temperatures/times. Start a mini 'health recipe club' at home or school to share fermented recipes.	

Biogas and Solar Operation

Connect to broad areas: Agriculture, green energy, environmental engineering
Subject Teacher most suitable for this project: Science

Activity	**Required periods: 50**
What will I be able to do?	**5**
Develop a biogas production and solar operation system.	
What will I need?	
Notebook, pens, measuring containers for feed input. Stopwatch or clock for boiling/cooking time comparisons. Material for DIY solar cooker: Cardboard box, black paper, foil, plastic sheet, tape/glue Thermometer to record heat inside the solar cooker. Access to the Internet (phone/computer). Protective gloves and masks.	
How do I keep myself and others safe?	
Wear protective gear (gloves, masks, closed shoes) when visiting or working near biogas units. Keep a safe distance from operational machinery and gas outlets. Wash hands thoroughly after handling feed materials (e.g., dung, kitchen waste). Work in well-ventilated areas when dealing with gas. Handle sharp tools and solar materials carefully when making the solar cooker.	

What will I need to know before I start?	**15**
Basics of biogas production and plant components. Common feed types and how they impact gas output. Role of temperature, pressure, and moisture in biogas generation. How solar cookers work—principles of reflection, absorption, and insulation? Simple math for unit conversions (L to m^3).	
What do I have to do?	**20**
Visit a biogas plant to observe working and safety protocols. Find out about biogas operation. Learn how to feed the plant, measure and record inputs. Follow do's and don'ts while feeding biogas units. Record daily gas output for 20 days (volumetric method). Track and compare feed vs gas production. Research DIY solar cookers and how they operate. Build a solar cooker using household materials. Experiment: Boil water using wood, kerosene, LPG, and solar energy Compare the time and cost of cooking using each fuel. Calculate total gas output in m^3 and efficiency of various feeds. Explore alternative feeds (kitchen waste, cow dung, oil cake, etc.).	
What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Start a mini composting or organic waste project at home. Calculate how much LPG a family uses in a month and estimate the cost saved if biogas was used.	

Oyster Mushroom (*Pleurotus ostreatus*) Cultivation

Connect to broad areas: Agriculture
Subject Teacher most suitable for this project: Science

Activity	Required periods: 50
What will I be able to do?	5
Cultivate oyster mushrooms.	
What will I need?	
Plastic bags, knife/scissors, tubs or drums, steamer or chemical steriliser, thermometer/hygrometer to monitor humidity and temperature, water sprayer, stand to stack bags in cultivation room. Spawn sourced from a certified lab. Clean space or room with good ventilation.	
How do I keep myself and others safe?	
Wear gloves and mask for substrate preparation and handling spawn. Use clean water and sanitised tools to avoid contamination. Be cautious when using boiling water, steam, or chemicals for sterilisation. Maintain hygiene in the cultivation area to prevent infections in the crop. Avoid touching mushrooms directly with bare hands during growth or harvesting. Store harvested mushrooms properly to avoid spoilage.	
What will I need to know before I start?	10
Oyster mushroom cultivation: Life cycle and environmental needs. Basic understanding of spawn and how it functions in mushroom growth. Types of substrate/stalks used (wheat straw, paddy straw, etc.). Conditions for growth: Humidity, temperature, cleanliness. Common pests or infections and how to prevent them.	
What do I have to do?	25
Visit a mushroom farm or interview a mushroom cultivator. Source oyster mushroom spawn from a reliable laboratory. Prepare the substrate: Select, chop, soak overnight, and sterilise. Fill plastic bags with spawn and substrate for cultivation. Stack bags in the cultivation area and ensure after-care: Water spraying, controlling temperature and humidity, removing infected parts. Observe mushroom growth and harvest at the right time. Calculate cost of cultivation (materials, time, output).	
What did I learn from others and how did I use it?	5
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	1
As per project template.	
Think and Answer	1
As per project template.	

What else can I do?	**1**
Try growing farming with other types of mushrooms (e.g., Button, Shiitake). Record a video tutorial on home-based mushroom farming.	

Art with Bacteria

Connect to broad areas: Biotechnology, microbiology
Subject Teacher most suitable for this project: Biology

Activity	**Required periods: 50**
What will I be able to do?	**5**
Create bacterial art designs.	
What will I need?	
Notebook and pen, internet access. Agar powder, gelatin, or nutrient media, beaker, glass rods, stirrer, cooker/ steamer. Petri dishes or clean plastic containers, cotton swabs, spoons, droppers. Soil, curd, and compost samples for bacterial growth. Markers/labels for plates; Gloves, mask, sanitiser/soap.	
How do I keep myself and others safe?	
Wear gloves and a mask while handling bacterial cultures. Always wash hands before and after lab activities. Sterilise equipment before and after use. Keep petri dishes sealed while observing and dispose of them safely. Label all samples clearly and avoid cross-contamination. Handle curd/compost samples hygienically to prevent spoilage or unwanted exposure.	
What will I need to know before I start?	**15**
What are good and bad bacteria? Examples and functions. Basic needs of bacteria for survival and growth (moisture, nutrients, warmth). Agar media and its role in growing bacteria. Difference between bacterial and fungal colonies. Common household uses of bacteria (curd, composting).	
What do I have to do?	**20**
Learn and list conditions required for the selected bacterial growth. Prepare agar or nutrient media, sterilise tools, and pour into dishes. Grow bacteria using swabs from objects, serial soil dilution, and curd samples. Create bacterial art using safe cultures and petri dishes. Explore home uses of bacteria: Make curd, start compost using kitchen waste. Practice safe cleaning and disposal of used petri dishes and tools.	

What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Explore antibiotic zones (how garlic or neem affect bacterial growth).	

Work with Machines and Materials

Making a Tree Guard

Connect to broad areas: Construction
Subject Teacher most suitable for this project: Any subject

Activity	**Required periods: 53**
What will I be able to do?	**5**
Plan and execute the construction of the tree guard project.	
What will I need?	
Measuring tools: Plumb bob, spirit level, meter tape, right-angle scale, rope. Construction materials: Bricks, cement, sand, water, binding wire, nails, paint. Safety equipment: Gloves, goggles, masks, work shoes. Sketchbook or graph paper for project planning. Access to a construction site for observation and interaction.	
How do I keep myself and others safe?	
Wear safety gear like gloves and goggles while handling tools and materials. Follow proper guidelines for lifting and handling construction material. Use measuring tools carefully to avoid accidents. Ensure proper supervision while working with cement and bricks. Keep the work area clean and organised to prevent hazards. Follow safety protocols while painting to avoid inhalation of toxic fumes.	

What will I need to know before I start?	**17**
Basics of masonry work and the role of masons in construction. Different types of buildings and materials used in construction. Functions and proper usage of measuring and masonry tools. The process of making a project plan, including design thinking. Importance of curing and painting in construction. Cost estimation techniques and market analysis.	
What do I have to do?	**20**
Discuss masonry work and visit a construction site. Identify and list types of buildings and materials used. Learn to use measuring tools and list the required materials. Plan the tree guard project, watch related videos, and use design thinking. Measure the area, draw a sketch, and finalise dimensions in teams. Prepare a material list and estimate the cost based on market prices. Purchase the required materials and document actual costs. Build a simple tree guard under supervision. Work in teams to create their own tree guard. Understand the importance of curing and practice watering construction. Learn about types of paint, application methods, and complete painting.	
What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Explore other small construction projects like making benches or compost pits. Experiment with sustainable and eco-friendly building material. Research different architectural styles and their impact on construction. Volunteer for community-based construction projects. Learn advanced masonry techniques for future vocational opportunities.	

Image Recognition AI Model (Flower and Plants)

Connect to broad areas: Artificial Intelligence
Subject Teacher most suitable for this project: Atal Tinkering Laboratory (ATL) In-charge

Activity	Required periods: 52
What will I be able to do?	5
Build an AI app or model for image recognition.	
What will I need?	
A computer or laptop with internet access. Google Teachable Machine (online tool). Google search engine for research. Videos on how Google search works. Flowchart creation tools (Lucidchart, Draw.io, or paper and pencil). Pre-collected images of flowers/plants for AI training.	
How do I keep myself and others safe?	
Ensure ethical AI usage (avoid using biased or harmful datasets). Use trusted sources for data collection. Protect personal information while using online AI tools. Use reliable AI models and be aware of AI limitations.	
What will I need to know before I start?	14
Basic understanding of AI concepts (machine learning, algorithms). How search engines work and how AI enhances them? The difference between machines and robots. How flowcharts and algorithms help in problem-solving? How AI models are trained using labelled datasets?	
Planning	1
As per project template.	
What do I have to do?	20
Watch a video on how Google's search engine works and discuss insights. Learn about algorithms and create a basic algorithm for a simple task. Understand flowcharts and draw a simple one using flowchart elements. Compare machines vs. robots and discuss how to convert a machine into a robot. Explore AI assistants–What capabilities would you want in your AI assistant? Compare human learning vs. machine learning–How does a computer learn? Analyse human senses vs. machine sensors–How does a machine recognise objects? Create an AI image recognition model: • Upload images to Google's Teachable Machine • Split data into training and testing sets • Train the model to recognise flowers/plants • Test and analyse the AI's accuracy in recognising images • Practice using Google's Teachable Machine with different image datasets	

What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**1**
As per project template.	
What else can I do?	**5**
Train an AI model to recognise different handwriting styles. Create an AI chatbot using simple coding platforms like Scratch or PictoBlox. Explore AI-powered speech recognition (train AI to recognise different voices). Research how AI is used in self-driving cars, healthcare, and intelligent assistants.	

Household Water Connection

Connect to broad areas: Plumbing
Subject Teacher most suitable for this project: Science

Activity	**Required periods: 45**
What will I be able to do?	**5**
Learn skills related to plumbing systems and repair issues.	
What will I need?	
PVC pipes and joints Plumbing tools: Pipe wrench, pipe cutter, Teflon tape. Safety gear: Gloves, goggles, and protective clothing. Material for making plumbing models and objects.	
How do I keep myself and others safe?	
Wear safety gear while cutting or assembling PVC pipes. Use tools correctly to prevent injuries. Maintain hygiene while working with plumbing material. Ensure proper handling and storage of plumbing tools.	
What will I need to know before I start?	**10**
Types of PVC pipes and joints and their common uses. Functions of plumbing tools and their applications. Common plumbing problems and their solutions.	

What do I have to do?	**20**
Learn about different types of PVC pipes and joints. Practice cutting and assembling PVC pipes. Make useful objects from PVC pipes, like a bangle stand, cloth hangar, mobile stand or book holder. Work with a plumber to understand plumbing connections in a house. Draw a representation of water transport in a house. Build a simple tap connection model. Identify and fix minor plumbing issues in school.	
What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Design a water-saving plumbing system for home use. Explore innovative ways to use PVC pipes in creative projects. Research water conservation techniques in plumbing and apply them to real-world scenarios. Learn about advanced plumbing techniques and tools. Experiment with DIY plumbing repairs at home.	

Apparel Design

Connect to broad areas: Textile
Subject Teacher most suitable for this project: Arts/Home Science

Activity	Required periods: 45
What will I be able to do?	5
Develop fabric items with different techniques.	
What will I need?	
Cotton, silk, and other natural fabrics. Natural dyeing materials, like turmeric, beetroot, and indigo. Tools for dyeing: Pots, tongs, gloves, strainers, wooden blocks for fabric painting, paints and brushes. Weaving materials: Loom, cardboard, yarn. Crochet material: Crochet hooks, yarn of different colours. Scissors, measuring tape, needles, and thread.	
How do I keep myself and others safe?	
Wear gloves and aprons while dyeing fabrics. Work in a well-ventilated area to avoid inhaling fumes. Handle weaving and crochet tools carefully to avoid injuries. Use fabric paints and dyes safely, following usage instructions. Keep workspaces clean and organised.	
What will I need to know before I start?	10
The basics of different textile fibres and fabrics. The process of dyeing and setting natural colours on fabric. The techniques of weaving and how looms function. The basics of crochet and different stitches. How to use block painting techniques for fabric design.	
What do I have to do?	20
Learn about different types of fibres and fabrics. Visit workshops/production units–dyeing, tailoring, printing. Learn about material, tools, and dyeing techniques. Dye cotton fabric using turmeric and wash after dyeing. Experiment with dyeing different fabrics like cotton and silk. Learn block painting techniques on scarves or dupattas. Use wooden blocks and fabric paints for printing designs Practice weaving using a loom or cardboard to create a small woven item such as a bookmark or handkerchief; alternatively, make DIY pom-poms. Learn about crochet tools and basic crochet patterns. Practice making simple items, like a potholder, hand belt, or keychain.	
What did I learn from others and how did I use it?	5
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	1
As per project template.	

Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Experiment with other natural dyes like pomegranate and indigo. Design and make customised tote bags using block painting. Try advanced crochet patterns to create intricate fabric designs. Develop a small business plan for handmade fabric products. Explore traditional weaving techniques from different regions. Research and present on sustainable fabric production methods.	

Food Preservation through Organic Techniques

Connect to broad areas: Food preservation
Subject Teacher most suitable for this project: Science

Activity	**Required periods: 47**
What will I be able to do?	**5**
Preserve food through organic techniques.	
What will I need?	
Survey forms for collecting data on food preferences and shelf life. Ingredients and tools for food preservation. Recipes for food preservation techniques. Packaging materials such as jars, vacuum-seal bags, and labels.	
How do I keep myself and others safe?	
Maintain hygiene while handling food items to prevent contamination. Use gloves and clean utensils during food processing. Follow proper food safety guidelines to avoid spoilage and food-borne illnesses. Store preserved food items in suitable conditions (temperature, humidity, and airtight containers). Label food items with dates and ingredients to ensure proper tracking and consumption.	
What will I need to know before I start?	**12**
Basic understanding of food spoilage and preservation. Different methods of food preservation (drying, freezing, pickling, canning, etc., can use freezing and canning if specific equipment is available). Importance of packaging and labelling for food safety. Strategies for marketing food products effectively.	

What do I have to do?	**20**
Interaction with a professional or experienced individual. Survey to determine popular food choices and the shelf life of different food items. Analyse survey results and decide on food items to preserve. Research and obtain recipes and necessary ingredients. Learn the science behind food preservation techniques. Interact with an expert to gain practical knowledge. Perform food preservation processes (drying, pickling, fermenting, etc.). Package and label preserved food products. Organise a presentation or exhibition to showcase preserved products.	
What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Experiment with different preservation methods on various food items. Research eco-friendly packaging options for preserved foods. Start a small business selling homemade preserved food items. Learn about international preservation techniques and compare them with local methods. Explore the role of food preservation in disaster preparedness and emergency food supply.	

Work in Human Services

Creating Content on Heritage Sites/Old Homes

Connect to broad areas: Creative writing, media and journalism, online content creation

Subject Teacher most suitable for this project: Social Science, ICT, Science

Activity	Required periods: 50
What will I be able to do?	5
Identify heritage sites and old buildings in the locality and document them.	
What will I need?	
Notebook, pens, and sketchbook for documentation. Camera or smartphone for photography and videography. Recording device for interviews. Access to books, official records, and online sources. Computer with editing software (Canva, PowerPoint, or video editing tools). Internet access for editing and research. Permission and guidance for visiting heritage sites/old homes.	
How do I keep myself and others safe?	
Follow safety guidelines while visiting heritage sites/old homes. Seek permission before conducting interviews or clicking photos. Handle historical artefacts or old structures with care. Follow ethical practices while collecting and sharing information. Work in teams to ensure safety and support. Verify information before publishing online.	
What will I need to know before I start?	15
Basics of historical research and different types of sources. Importance of oral history and how to conduct interviews. How to document findings effectively? Basics of photography and videography. How to write blog or podcast techniques for creating engaging presentations?	
What do I have to do?	20
Identify and research local heritage sites or old buildings. Find and use primary and secondary sources of information. Prepare a questionnaire and conduct interviews with elderly individuals. Develop worksheets for different stages of the field visit. Create a graphic organiser or sketchbook. Conduct a field visit, take photographs, and record videos. Edit and create a video documentary or PowerPoint presentation. Reflect on collected data and document insights. Edit and update the blog with verified information and images. Prepare and deliver engaging storytelling presentations.	
What did I learn from others and how did I use it?	5
Incorporating inputs from observation, interaction, discussion and feedback. Improved teamwork and collaboration during field visits.	

What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Organise a heritage walk for the school or community. Create a digital archive of local history. Start a blog or social media page to share findings.	

Personal Grooming and Art of *Mehndi*

Connect to broad areas: Beauty care, Design
Subject Teacher most suitable for this project: Arts

Activity	**Required periods: 46**
What will I be able to do?	**5**
Prepare and use natural skincare and haircare products, practice personal grooming, and create beautiful *mehndi* designs on hands.	
What will I need?	
For skincare and haircare—Natural ingredients: turmeric, curd, honey, lemon, *multani mitti*, *besan*, aloe vera; Herbal items: *amla*, *reetha*, *shikakai*, hibiscus flowers/leaves, curry leaves, coconut oil. Basic Materials—Bowls, spoons, towel, mirror, comb, water, soap. For Nail care—Nail clippers, nail files, moisturiser or natural oil for massage (coconut oil); Bowl for soaking hands (optional, with warm water and a few drops of lemon or oil). For *Mehndi* Design—*Mehndi* powder at school, fresh *mehndi* leaves, a flat tray for drying, grinder or mortar and pestle, fine sieve or cloth for straining. *Mehndi* cone—Transparent plastic sheet, scissors, tape or rubber band, spoon (to fill paste), pin (to make a hole at the tip); sugar and lemon mixture.	
How do I keep myself and others safe?	
Maintain personal hygiene to prevent infections. Use natural and skin-friendly ingredients for homemade remedies. Be cautious while using grooming tools to avoid cuts or injuries. Follow correct hand washing techniques to maintain cleanliness. Test any new product on a small patch of skin before full use. Use natural *mehndi* without harmful chemicals. Test *mehndi* on a small skin patch to check for allergies.	

What will I need to know before I start?	**10**
The importance of grooming and self-care for overall well-being. The role of hygiene in preventing diseases. Different skin and hair types and their specific care requirements. The benefits and potential side effects of homemade skin care and hair care remedies. The history and cultural significance of *mehndi* art, including the types of *mehndi* (Indian, Arabic, Moroccan, etc.). How to make a smooth and dark-staining *mehndi* paste. The correct method to hold and control a *mehndi* cone.	
What do I have to do?	**20**
Personal Grooming: Learn about personal grooming, healthy eating, and the benefits of exercise. Practice basic hygiene techniques like hand washing and personal cleanliness. Identify different skin types and understand skincare practices. Prepare and apply homemade skincare remedies such as cleansing lotions and face packs. Practice nail care by cleaning, trimming, filing, and moisturising the nails and cuticles. Understand different hair types and their specific care needs. Make homemade hair care products like hair oil and hair masks. Learn the importance of manicures and pedicures and practice them at home. Maintain a grooming routine and track improvements in personal care **Mehndi Design:** Discuss *mehndi* techniques and best practices with an artist. Practice drawing different lines, shapes, and symbols on paper. Prepare *mehndi* paste using traditional ingredients. Make *mehndi* cones for application. Learn and practice the correct way to hold and press a *mehndi* cone. Try drawing simple *mehndi* designs on your hands and progress to full-hand *mehndi* designs with intricate details. Learn the proper way to remove dried *mehndi* for the best colour.	
What did I learn from others and how did I use it?	**2**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**2**
As per project template.	
Think and Answer	**2**
As per project template.	
What else can I do?	**5**
Create a daily or weekly self-care routine. Experiment with different homemade skincare and hair care products.	

Create a School Magazine

Connect to areas: Media and communication, publishing, design, journalism, ICT, art and creative writing
Subject Teacher most suitable for this project: Language, Art, ICT/Computer

Activity	Required periods: 50
What will I be able to do?	5
Create a school magazine.	
What will I need?	
Paper, pens, markers Computers/laptops with basic publishing or word processing software with Internet access. Printers (optional for hard copies) Camera/phone for photos Stationery for layout and artwork, glue, scissors, old magazines.	
How do I keep myself and others safe?	
Use digital devices responsibly—protect eyes, avoid unsafe sites and respect copyright. Be respectful and empathetic during interviews and when writing about people.	
What will I need to know before I start?	15
Types of magazines, structure (cover, editorial, features, photo spreads). Role of content writer, editor, photographer, designer, illustrator. How to structure an article, write catchy headlines, and edit for clarity. Understanding design principles–fonts, colours, white space, balance in layout, etc.	
What do I have to do?	20
Choose themes, articles, interviews. Write poems, articles, etc. Take photos, draw or design visuals. Edit and proofread content. Showcase the magazine and reflect on learning.	
What did I learn from others and how did I use it?	5
Incorporating inputs from observation, interaction, discussion and feedback. Collect and review guest feedback to understand strengths and areas for improvement. Reflect on the experience and compile a final report.	
What did I do and how long did it take?	1
As per project template.	

Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Start a personal blog (if closed group available in school). Design a home newsletter or greeting card.	

Fundraising by Providing Services

Connect to broad areas: Banking and finances, Social sector
Subject Teacher most suitable for this project: Any subject

Activity	**Required periods: 50**
What will I be able to do?	**5**
Plan and organise a fundraising drive for a cause by providing valuable services.	
What will I need?	
Notebook, pen/pencil, Chart paper or whiteboard (for group brainstorming), Calculator (for budgeting), Items for providing services, for example: • Cultural programme: Traditional costumes, musical instruments (*dhol*/*tasha*/lezim, etc.). • Cleaning services: Buckets, mops, cloths, soap, disinfectant, water, sponge, car shampoo, detergent, tools for basic repair work (if offering repair services), bags/boxes for collecting and organising scrap.	
How do I keep myself and others safe?	
Safety while performing operations: Following safety protocol using protective gear, viz hand gloves, and shoes, and maintaining space and discipline during public events. Hygiene safety: Wash hands after using cleaning materials, dispose of waste properly in bags or boxes. Financial safety: Keep money safe in a box or use digital payments. Never share passwords for digital tools. Sensitivity: Respect customs and traditions while performing.	
What will I need to know before I start?	**10**
The purpose or cause for fundraising (e.g., donation, picnic, sports items). Good examples of providing the selected services. Key points related to giving quality services to clients or customers. Understanding selected services (e.g., folk dance performances, cleaning, or repair camps). Giving cost estimates of service to clients/customers. Taking feedback after providing the service.	

What do I have to do?	**25**
Estimate how much money is needed to achieve the goal. Discuss and choose the type of services to offer through group brainstorming. Explore volunteer-based services for events or functions. Choose services to be provided (e.g., folk dance performances, cleaning, or repair camps). Plan, prepare, and practice the selected services. Design posters and flyers using Canva to promote selected services. Choose platforms for the dissemination of promotional materials. Learn how to give a cost estimate and draw a simple contract with clients/customers. Deliver the service responsibly and politely. Create bills and collect payments correctly. Ask for customer/client feedback after providing the services. Keep records of earnings and expenses for the fundraiser. Document project with photos and short videos.	
What did I learn from others and how did I use it?	**5**
Incorporating inputs from observation, interaction, discussion and feedback.	
What did I do and how long did it take?	**1**
As per project template.	
Think and Answer	**3**
As per project template.	
What else can I do?	**1**
Do promotional or add-on services to attract/retain clients/customers. Share work through a class blog, school wall magazine, or newsletter. Invite local leaders or parents to support and spread the word. Plan a small event to celebrate the completion of the drive. Encourage other students to start similar initiatives.	

Set up a School Restaurant

Connect to areas: Hospitality management, customer relations, event management, food and beverage services, tourism
Subject Teacher most suitable for this project: Any subject

Activity	Required periods: 46
What will I be able to do?	
Set up a school restaurant during an event.	
What will I need?	
Stationery (notebooks, pens, planning sheets) Hospitality setup props (menus, tablecloths, cutlery, trays, notepads) Computer/Tablet for menu designing, record keeping, customer feedback forms. Aprons, name tags, or uniforms (optional) Reception setup Feedback forms and checklists Charts or visual aids for service etiquette and standard procedures.	**5**
How do I keep myself and others safe?	
Follow hygiene and cleanliness standards while handling food, props, or equipment. Wash hands before service activities and after handling shared material Wear aprons (or uniforms, if available), and keep workspace organised and clutter-free. Practice respectful and calm communication with guests and team members. Maintain a safe and respectful environment.	
What will I need to know before I start?	**8**
Understand the basics of hospitality—greeting guests, polite communication, and professional appearance. Learn about different roles in a hospitality setting: Receptionist, server, host, etc.	
What do I have to do?	**20**
Visit hospitality services (hotels, restaurants) and discuss what makes them successful. Know how to plan a service setup—from menu design to taking orders and guest handling. Understand the importance of customer feedback and service improvement. Be familiar with materials and tools for use: checklists, trays, menus, etc. Learn basic service etiquette and how to handle common guest scenarios. Plan and set up a hospitality station—like a café or reception desk. Create menus, feedback forms, and service scripts. Welcome and serve guests during the school event.	
What did I learn from others and how did I use it?	**2**
Incorporating inputs from observation, interaction, discussion and feedback. Collect and review guest feedback to understand strengths and areas for improvement. Reflect on experience and compile a final report.	

What did I do and how long did it take?	**2**
As per project template.	
Think and Answer	**2**
As per project template.	
What else can I do?	**6**
Organise home-based events like family dinners or celebrations where students plan the setup, welcome guests, serve food and manage the overall experience, simulating a hotel or restaurant-like environment.	

ANNEXURE 4

Time Allocation and Mapping of Learning Outcomes

The tables below indicate the allocation of time and mapping of Learning Outcomes for the activities included in the projects for Grade 8.

Time Allocation: The time allocated for each activity is a suggestion, and teachers can adjust it based on class size and the complexity of the project.

Cross-curricular Connections: The projects can be drawn from other subjects in the Middle Stage—Language, Mathematics, Science, Social Science, Art Education and Physical Education and Well-being. This allows for a more holistic learning experience. Connection to other curricular areas is also indicated in the ensuing tables.

Student Reflection: Reflection prompts are included ('What did I learn?', and 'What else can I do?') to encourage students to think critically about their work.

Safety: The tables emphasise safety precautions (LO 6) for activities involving tools or potential hazards.

Open-ended Learning: The 'What else can I do?' section (LO 18) encourages students to explore connecting to home and extend their learning.

Learning Outcomes: Each project focuses on developing specific skills and knowledge (LO 1–11) along with essential values related to work (LO 12–17).

Please note that LO 12–17, which refer to the essential values while working across areas, are applicable across all activities.

Project 1: Hydroponics: Growing Plants Without Soil

Connection with other curricular areas: Science

Activity	Required periods: 54	Related Learning Outcomes	
What will I be able to do?	2	LO 1, 2, 3, 7	LO 12, 13, 14, 15, 16 and 17 to be observed, throughout the project.
What will I need?			
How do I keep myself and others safe?		LO 6	
What will I need to know before I start?	2	LO 1, 3, 5, 7	
Field visit to learn about the use of new technologies in farming.			
What do I have to do?			
Growing micro-greens for preparing a healthy salad.	8	LO 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	
Building hydroponics system—wall hanging pet bottle hydroponics garden (wick method).	8		
Building hydroponics system—Deep-Water-Culture (DWC) or Bucket method.	10		
Building hydroponics system—Simple Nutrient Film Technique (NFT).	10		
Making compost tea to use as an organic liquid fertiliser.	6		
Measuring water pH and its effect on plant growth in hydroponics.	4		
What did I learn from others, and how did I use it?	1	LO 1, 5, 7	
What did I do, and how long did it take?	1	LO 4	
What else can I do?	1	LO 7, 9, 10, 11, 18	
Think and Answer	1	LO 7, 8, 18	

Project 2: Feeding and Caring For Farm Animals

Connection with other curricular areas: Science

Activity	Required periods: 54	Related Learning Outcomes	
What will I be able to do?	2	LO 1, 2, 3, 7	LO 12, 13, 14, 15, 16 and 17 to be observed, throughout the project.
What will I need?			
How do I keep myself and others safe?		LO 6	
What will I need to know before I start?		LO 1, 3, 5, 7, 8	
Taking care of livestock.	2		
Field visit to a veterinary clinic/animal healthcare centre in your village.	3		
Participation in vaccination or health check-up drives of animals in the village.	5		
What do I have to do?			
Preparing a health record for the selected animal.	5	LO 3, 4	
Estimating the weight of selected animals.	5	LO 3, 4	
Preparing a feeding chart.	3	LO 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	
Feed formulation—Making of silage and cost calculation.	10		
Feed formulation—Making healthy dry fodder mixture.	10		
Offering feed to animals and observing their response.	3	LO 3, 10, 11	
Preparing home remedies for livestock.	2	LO 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	
What did I learn from others, and how did I use it?	1	LO 1, 5, 7	
What did I do, and how long did it take?	1	LO 4	
What else can I do?	1	LO 7, 9, 10, 11, 18	
Think and Answer	1	LO 7, 8, 18	

Project 3: Working With Wood And Bamboo

Connection with other curricular areas: Mathematics, Arts

Activity	Required periods: 50	Related Learning Outcomes	
What will I be able to do?	2	LO 1, 2, 3, 7	LO 12, 13, 14, 15, 16 and 17 to be observed, throughout the project.
What will I need?			
How do I keep myself and others safe?		LO 6	
What will I need to know before I start?		LO 1, 3, 5, 7, 8	
Visit a local woodworking/bamboo workshop.	3		
Understanding products made of wood/ bamboo.	6		
What do I have to do?			
Make a prototype of the article you want to make.	5	LO 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	
Making a product from Wood.	10		
Make a product from bamboo.	10		
Costing–How much did we spend?	5		
Basic repairs around the school.	5		
What did I learn from others, and how did I use it?	1	LO 1, 5, 7	
What did I do, and how long did it take?	1	LO 4	
What else can I do?	1	LO 7, 9, 10, 11	
Think and Answer	1	LO 7, 8, 18	

Project 4: Home Automation

Connection with other curricular areas: Science

Activity	Required periods: 52	Related Learning Outcomes	
What will I be able to do?	2	LO 1, 2, 3, 7	LO 12, 13, 14, 15, 16 and 17 to be observed, throughout the project.
What will I need?			
How do I keep myself and others safe?		LO 6	
What will I need to know before I start?		LO 1, 3, 5, 7, 9	
Exploring automation in our surroundings.	3		
Explore circuits using simulation Platform.	5		
What do I have to do?			
Building circuits using physical components.	10	LO 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	
Make the circuit smart.	9		
Exploring automation cycle.	9		
Making your own automation system using a microcontroller.	10		
What did I learn from others, and how did I use it?	1	LO 1, 5, 7	
What did I do, and how long did it take?	1	LO 4	
What else can I do?	1	LO 7, 9, 10, 11	
Think and Answer	1	LO 7, 8, 18	

Project 5: Water Audit

Connection with other curricular areas: Science, Mathematics, Social Science

Activity	Required periods: 43	Related Learning Outcomes	
What will I be able to do?	2	LO 1, 2, 3, 7	LO 12, 13, 14, 15, 16 and 17 to be observed, throughout the project.
What will I need?			
How do I keep myself and others safe?		LO 6	
What will I need to know before I start?		LO 1, 3, 5, 7, 9	
Water measurement methods.	4		
Interview with water supply official.	2		
What do I have to do?		LO 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	
Estimating average consumption in a household.	5		
Rainwater availability in your district/ town/village/ward (Secondary data collection).	8		
Compare and analyse the data.	3		
Identify wastage points and amount of wastewater.	4		
Reusing water	8		
Estimate future water requirements.	3		
What did I learn from others, and how did I use it?	1	LO 1, 5, 7	
What did I do, and how long did it take?	1	LO 4	
What else can I do?	1	LO 7, 9, 10, 11	
Think and Answer	1	LO 7, 8, 18	

Project 6: Advertising For Small Businesses

Connection with other curricular areas: Language, Arts, Social Science

Activity	Required periods: 50	Related Learning Outcomes	
What will I be able to do?	2	LO 1, 2, 3, 7	LO 12, 13, 14, 15, 16 and 17 to be observed, throughout the project.
What will I need?			
How do I keep myself and others safe?		LO 6	
What will I need to know before I start?		LO 1, 3, 5, 7, 9	
Exploring advertisements in our surroundings.	2	LO 1, 2, 3, 4, 5, 6, 7, 9, 10, 11	
Elements comprising advertisements.	4		
Meeting an expert.	3		
What do I have to do?			
Identification of client.	8		
Understanding the small business.	5		
Designing the advertisement.	20		
Review	2	LO 10, 11	
What did I learn from others, and how did I use it?	1	LO 1, 5, 7	
What did I do, and how long did it take?	1	LO 4	
What else can I do?	1	LO 7, 9, 10, 11	
Think and Answer	1	LO 7, 8, 18	

CONSTITUTION OF INDIA

Part III (Articles 12 – 35)
(Subject to certain conditions, some exceptions and reasonable restrictions)

guarantees these

Fundamental Rights

Right to Equality

- before law and equal protection of laws;
- irrespective of religion, race, caste, sex or place of birth;
- of opportunity in public employment;
- by abolition of untouchability and titles.

Right to Freedom

- of expression, assembly, association, movement, residence and profession;
- of certain protections in respect of conviction for offences;
- of protection of life and personal liberty;
- of free and compulsory education for children between the age of six and fourteen years;
- of protection against arrest and detention in certain cases.

Right against Exploitation

- for prohibition of traffic in human beings and forced labour;
- for prohibition of employment of children in hazardous jobs.

Right to Freedom of Religion

- freedom of conscience and free profession, practice and propagation of religion;
- freedom to manage religious affairs;
- freedom as to payment of taxes for promotion of any particular religion;
- freedom as to attendance at religious instruction or religious worship in educational institutions wholly maintained by the State.

Cultural and Educational Rights

- for protection of interests of minorities to conserve their language, script and culture;
- for minorities to establish and administer educational institutions of their choice.

Right to Constitutional Remedies

- by issuance of directions or orders or writs by the Supreme Court and High Courts for enforcement of these Fundamental Rights.