

Effective from  
Academic year  
2026-27

NEP 2020 &  
NCF 2023



# Gateway to Social Science

As per the **NEW NCERT Syllabus**  
and the **Latest CBSE Examination Pattern**

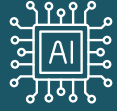
**Class 9**  
**(Part 1)**



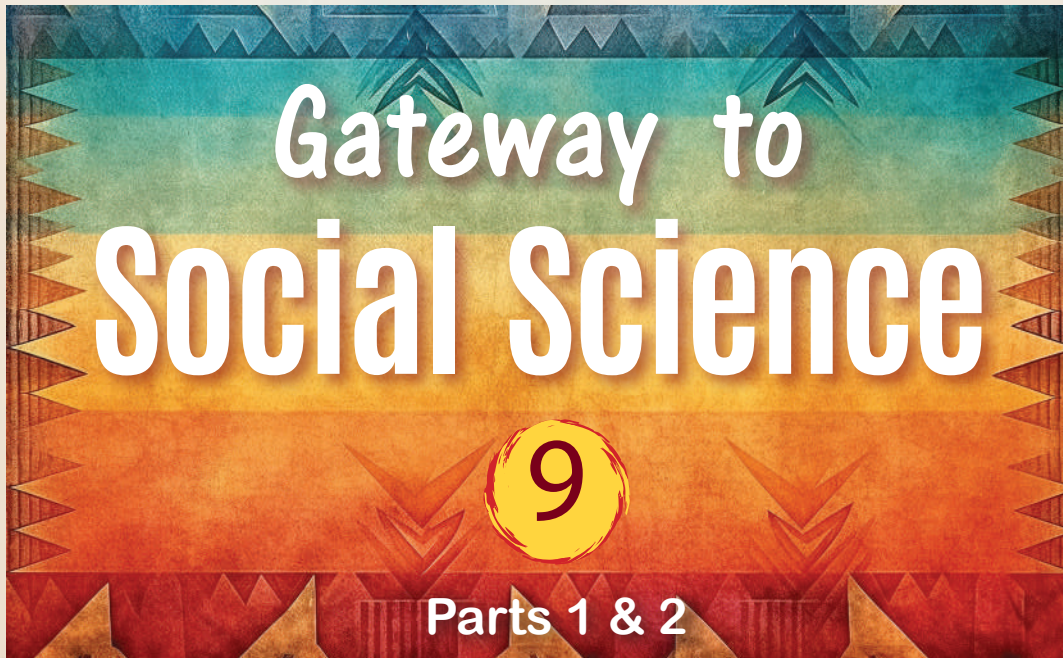
GOYAL BROTHERS PRAKASHAN

As per  
NEP 2020  
& NCF 2023

As per the **New NCERT Syllabus**  
and the **Latest CBSE Examination Pattern**



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- Experiential and Exploration-Based Learning
- Chapters Designed as per Panchpadi
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# Preface

Social Science plays a vital role in helping young learners understand the world around them and their place within it. **Gateway to Social Science** for Grade 9 has been carefully designed to introduce students to the interrelated disciplines of **History, Geography, Political Science, and Economics** in a meaningful, engaging, and learner-friendly manner.

This book follows the **latest NCERT** syllabus and focuses on building **conceptual clarity, critical thinking, and real-life application** of knowledge. The themes covered—from the understanding of Earth's surface and climate, the beginnings of civilisation, and the evolution of society and governance, to democracy, elections, and basic economic concepts—help students develop a balanced perspective of the natural and social world.

## Salient Features of the Course Books

- 🌍 The book follows a **concept-based, thematic, and learner-centred approach**, focusing on essential ideas and key themes rather than excessive facts and data.
- 🌍 Each chapter is structured around **clear learning outcomes** to help students understand what they are expected to learn and achieve.
- 🌍 **Rich visuals** such as maps, diagrams, illustrations, timelines, and charts are used extensively to support better comprehension and retention.
- 🌍 **Key Concepts** highlight the main ideas and core themes of the chapter.
- 🌍 **Did You Know?** shares interesting and additional facts to spark curiosity.
- 🌍 **An Excerpt** links the chapter to real texts or sources for better context.
- 🌍 **Engage & Reflect** encourages critical thinking, discussion, and real-life application.
- 🌍 **Key Learnings** summarise the important points for quick revision.
- 🌍 **Glossary** explains key terms in simple language for better understanding.
- 🌍 Each lesson includes a **wide range of exercises**, including MCQs, assertion–reason questions, case-based questions, short and long answer questions, and map-skill tasks, aligned with CBSE assessment patterns.
- 🌍 The content encourages the development of **democratic values, environmental awareness, economic reasoning, and social responsibility** among learners.
- 🌍 The language is **simple, age-appropriate, and learner-friendly**, making the subject accessible and enjoyable for learners.
- 🌍 **AI Buddy** is a smart companion that offers an **AI Query Resolver** for instant answers, **Play with AI** For fun learning, and **Topic-wise Notes** for practice.

It is hoped that this book will prove useful and enriching for both teachers and students. Constructive suggestions from parents, pupils, teachers, and educationists are most welcome and will be gratefully acknowledged for further improvement.

**The Publisher**

# Curricular Goals & Competencies

(as per NCF 2023)

Curricular Goals	Competency	Competencies Description
<b>CG-1:</b> Understands and analyses the important phases in the Indian history and draws insights to understand present-day India	C-1.1	Explains the historical events and processes using different types of sources with specific examples from the Indian history
	C-1.2	Explains and analyses the chronology of human life on the Indian subcontinent, from prehistory to its civilisational beginnings and beyond, and its relations with other civilisations over time, such as those in Mesopotamia, Greece, Central Asia, China, Southeast Asia, Arabia, and Eastern Africa
	C-1.3	Traces aspects of continuity and change in different phases of history across the Indian subcontinent (including cultural trends, social and religious trends and reforms, and economic and political transformations)
	C-1.4	Explains the growth of new indigenous ideas across India in Mathematics, Philosophy, Science and Technology, Medicine, Architecture, Agriculture, Literature and Art, and Social Science (such as zero and the Indian number system, ahimsa, the six systems of Indian philosophy, Ayurveda, yoga, the 22 shrutis of Indian music, horticulture, use of herbs and spices, etymology, meters, and grammar) and how they affected the course of the Indian history
<b>CG-2:</b> Analyses the important phases in world history and draws insights to understand the present-day world	C-2.1	Explains historical events and processes with different types of sources, with specific examples from the world history
	C-2.2	Explains and analyses the chronology of human life from its beginnings to nomadism to settled life to other phases of human civilisation
	C-2.3	Traces aspects of continuity and change in different phases of the world history (including cultural trends, social and religious reforms, and economical and political transformations)
	C-2.4	Explains the growth of new ideas and practices across the world (including humanism, mercantilism, industrialisation, scientific developments and explorations, imperialism, colonialism, the rise of the new nation states across the world, and various technologies including the most current) and how they affected the course of the world history



	C-2.5	Recognises the various practices that arose, such as those in C-2.4, and came to be condemned later on (such as racism, slavery, colonial invasions, conquest, and plunder, genocides, exclusion of women from democratic and other institutions), all of which have also impacted the course of the world history and have left unhealed wounds
<b>CG-3:</b> Understands the idea of a nation and the emergence of the modern Indian nation	C-3.1	Analyses the meaning of nation and how the concept evolved over time across the world and in the specific context of India, including its roots in the rich civilisational history of the Indian subcontinent
	C-3.2	Identifies and analyses important phases of the Indian national freedom struggle against the British colonial rule with special reference to the movement led by Mahatma Gandhi and including other important figures as well as those that led to Independence, and understands the specific Indian concepts, values and methods (such as swaraj, swadeshi, passive resistance, fight for dharma, self-sacrifice, ahimsa) that played a part in achieving Independence
<b>CG-4:</b> Develops an understanding of the interrelationship between human beings and their physical environment and how that influences the livelihoods, culture, and the biodiversity of the region	C-4.1	Locates physiographical regions of India and the climatic zones of the world on a globe/map
	C-4.2	Explains important geographical concepts, characteristics of key landforms, their origin, and other physical factors of a region
	C-4.3	Draws inter-linkages between various components of the physical environment, such as climate and relief, climate and vegetation, and vegetation and wildlife
	C-4.4	Analyses and evaluates the interrelationship between the natural environment and human beings and their cultures across regions and, in the case of India, the special environmental ethos that resulted in the practices of nature conservation
	C-4.5	Critically evaluates the impact of human interventions on the environment, including climate change, pollution, shortages of natural resources (particularly water), and loss of biodiversity; identifies practices that have led to these environmental crises and the measures that must be taken to reverse them
	C-4.6	Develops sensitivity towards the judicious use of natural resources (by individuals, societies, and nations) and suggests measures for their conservation



<b>CG-5:</b> Understands the Indian Constitution and explores the essence of Indian democracy and the characteristics of a democratic government	C-5.1	Understands that the Indian Constitution draws from the great cultural heritage and common aspirations of the Indian nation, and recalls India's early experiments with democracy (assemblies in Mahajanapadas, kingdoms and empires at several levels of the society, guilds, sanghas and ganas, village councils and committees, and Uthiramerur inscriptions)
	C-5.2	Appreciates fundamental Constitutional values and identifies their significance for the prosperity of the Indian nation
	C-5.3	Explains that the fundamental rights are the most basic human rights, and they flourish when people also perform their fundamental duties
	C-5.4	Analyses the basic features of a democracy and democratic government, its history in India and across the world, and compares this form of government with the other forms of government
	C-5.5	Analyses the critical role of non-state and non-market participants in the functioning of a democratic government and society, such as the media, civil society, socio-religious institutions, and community institutions
<b>CG-6:</b> Understands and analyses social, cultural, and political life in India over time as well as the underlying historical Indian ethos and philosophy of unity in diversity, and recognises challenges faced in these areas in the past and present, and the efforts (being) made to address them	C-6.1	Understands how the Indian ethos and the cultural integration across India did not attempt uniformity, but respected and promoted a rich diversity in Indian society, and how this harmonisation and unity in diversity, with a historical respect for all cultures, women have counted among India's great strengths by promoting peaceful coexistence
	C-6.2	Understands that, despite C-6.1, forms of inequality, injustice, and discrimination have occurred in different sections of society at different times (due to internal as well as outside forces, such as colonisation), leading to political, social, and cultural efforts, struggles, movements, and mechanisms at various levels towards equity, inclusion, justice, and harmony, with varying outcomes and degrees of success
	C-6.3	Analyses aspects of differential treatment or discrimination that may exist in the Indian society, based on, socio-cultural background, region, language spoken, and what individuals and societies can do to eradicate such differential treatment
	C-6.4	Understands that a progressive society and nation, such as India is one that recognises not only its civilisational strengths but also its socio-economic, cultural and political challenges, and continuously makes efforts to address those challenges to become ever more prosperous, inclusive, just, and harmonious



<b>CG-7:</b> Develops an understanding of the economy of a nation with specific reference to India	C-7.1	Defines key features of the economy, such as production, distribution, demand, supply, trade and commerce, and factors that influence these aspects (including technology)
	C-7.2	Evaluates the importance of the three sectors of production (primary, secondary, and tertiary) in any country's economy, especially India
	C-7.3	Distinguishes between 'unorganised' and 'organised' sectors of the economy and their role in production for the local market in small, medium, and large-scale production centres (industries), and recognises the special importance of the so-called 'unorganised' sector in Indian economy and its connections with the self-organising features of the Indian society.
	C-7.4	Traces the beginning and importance of large-scale trade and commerce (including e-commerce) between one country and another — the key items of trade in the beginning and the changes from time to time
<b>CG-8:</b> Evaluates the economic development of a country in terms of its impact on the lives of its people and nature	C-8.1	Gathers, comprehends, and analyses data related to income, capital, poverty, and employment in one's locality, region and at the national level
	C-8.2	Understands and analyses the concepts and practices of the range of economic systems — from free market to entirely state-controlled markets
	C-8.3	Understands these features in the context of ancient India, with its thriving trade, both internal and external, and its well- established trade practices and networks, business conventions, and diverse industries, all of which made India one of the world's leading economies up to the colonial period
	C-8.4	Describes India's recent path towards becoming one of the three largest economies of the world again, and how individuals can contribute to this economic progress
	C-8.5	Appreciates the connections between economic development and the environment, and the broader indicators of societal well- being beyond GDP growth and income
<b>CG-9:</b> Understands and appreciates the contributions of India through history and present times, to the overall field of Social Science, and the disciplines that constitute it	C-9.1	Knows and explains the significant contributions of India to all matters (concepts, explanations, methods) studied within the curriculum, in an integrated manner

# New NCERT syllabus

Part 1			
S. No.	Theme (time allocation in instructional hours)	Outline/Concepts	Learning Outcomes CGs, Cs Students will be able to:
1.	Understanding Social Science (4 Hours)	<ul style="list-style-type: none"> <li>⊕ Meaning, scope and relevance of Social Science</li> <li>⊕ Understanding Social Science from an Indian perspective</li> </ul>	<ul style="list-style-type: none"> <li>⊕ Explain the relevance of studying Social Science to understand society, environment, economy, and governance in our lives.</li> <li>⊕ Explain the meaning and scope of Geography, History, Political Science, and Economics as disciplines and recognise their interconnections.</li> <li>⊕ Appreciate diversity, inclusivity, sustainability, and equity as guiding values when studying society and making decisions.</li> </ul>
2.	Shaping of the Earth's Surface (8 Hours)	<ul style="list-style-type: none"> <li>⊕ Theory of plate tectonics</li> <li>⊕ Interior of the Earth</li> <li>⊕ Role of weathering and erosion; agents of gradation — river, waves and currents, wind, glaciers, and underground water.</li> <li>⊕ Landforms and disasters: earthquakes, landslides, avalanches, Glacial Lake Outburst Flood (GLOF) and duststroms</li> </ul>	<p><b>C4.2</b></p> <ul style="list-style-type: none"> <li>⊕ Describe the concept of plate tectonics and analyse its relevance in understanding Earth's dynamics.</li> <li>⊕ Locate major tectonic plates on a world map.</li> <li>⊕ Explain processes of weathering and erosion with suitable examples.</li> <li>⊕ Identify the prominent agents of gradation operating in a given region.</li> <li>⊕ Describe major landforms and explain the processes involved in their formation.</li> <li>⊕ Explain the causes of natural disasters and propose strategies for their mitigation.</li> </ul>
3.	Atmosphere and Climate (7 Hours)	<ul style="list-style-type: none"> <li>⊕ Structure and composition; elements of weather and climate</li> <li>⊕ Seasons of India</li> <li>⊕ Monsoon in India</li> <li>⊕ Climate change</li> <li>⊕ Floods</li> <li>⊕ Carbon footprint</li> </ul>	<p><b>C4.3, C4.4, C4.5</b></p> <ul style="list-style-type: none"> <li>⊕ Explain the different atmospheric layers and represent them using sketches and diagrams.</li> <li>⊕ Observe and analyse local winds and their impact.</li> <li>⊕ Understand the impact of the Indian monsoon on life, agriculture, and livelihoods across different regions.</li> <li>⊕ Explain the causes and effects of climate change.</li> <li>⊕ Represent climatic data (temperature, rainfall, etc.) through appropriate graphs, charts, or diagrams.</li> <li>⊕ Analyse how climate change influences the frequency and intensity of natural disasters.</li> </ul>
4.	Beginnings of Civilisation (9 Hours)	<ul style="list-style-type: none"> <li>⊕ Cultural development from 2 million years ago</li> <li>⊕ Early human history</li> </ul>	<p><b>C1.2, C2.1, C2.2, C2.3</b></p> <ul style="list-style-type: none"> <li>⊕ Describe how prehistoric time divisions are organised.</li> <li>⊕ Explain how humans lived before the invention of writing</li> </ul>



		<ul style="list-style-type: none"> <li>⊕ Periodisation: Archaeological ages</li> <li>⊕ Who were human ancestors?</li> <li>⊕ Palaeolithic hunter-gatherers and use of stone tools</li> <li>⊕ Mesolithic transition to food production</li> <li>⊕ Mesolithic sites and tools</li> <li>⊕ Neolithic and the beginning of farming</li> <li>⊕ Neolithic Revolution</li> <li>⊕ Domestication of Plants and Animals</li> <li>⊕ Harappan and contemporary cultures</li> <li>⊕ Mesopotamian civilisation, Egyptian civilisation, and Chinese civilisation</li> </ul>	<ul style="list-style-type: none"> <li>⊕ Understand the beginning of the settled life with development of agriculture, and domestication of plants and animals.</li> <li>⊕ Explore the factors of urban development and transformation through time.</li> <li>⊕ Appreciate the diversity of crafts and trade, and their role in the establishment of a prosperous economy.</li> <li>⊕ Understand the diversity of food habits.</li> <li>⊕ Describe the social, political, and religious structures of the civilisations of Egypt and Mesopotamia.</li> </ul>
5.	Society (upto 1000 CE) (9 Hours)	<ul style="list-style-type: none"> <li>⊕ Vedic Age — geography; texts; rituals; political institutions, and social order</li> <li>⊕ Administrative structure of early empires</li> <li>⊕ Quest for knowledge — educational heritage, institutions, knowledge traditions, and cultural practices</li> <li>⊕ Traders and trade routes, guilds and merchants, crafts and industries</li> </ul>	<p><b>C1.3, C2.3, C3.1, C1.4</b></p> <ul style="list-style-type: none"> <li>⊕ Explain various facets of Vedic society and polity</li> <li>⊕ Appreciate the achievements of Indian empires and their cultural legacy.</li> <li>⊕ Understand the knowledge traditions and practices of India.</li> <li>⊕ Understand the foundations of the Indian social and political institutions and their continuity.</li> </ul>
6.	Democracy (9 Hours)	<ul style="list-style-type: none"> <li>⊕ Meaning features and types of democracy</li> <li>⊕ Roots of democracy in India</li> <li>⊕ Challenges to democracy in India</li> <li>⊕ Democratic systems in the world</li> </ul>	<p><b>C5.1, C5.2</b></p> <ul style="list-style-type: none"> <li>⊕ Understand the features of democracy.</li> <li>⊕ Appreciate early democratic traditions in India and how they influenced modern democracy.</li> <li>⊕ Differentiate between parliamentary and presidential systems.</li> <li>⊕ Identify examples of both systems across countries, such as India, USA, France, Russia, and Canada.</li> </ul>
7.	Elections (9 Hours)	<ul style="list-style-type: none"> <li>⊕ Factors of importance of elections</li> <li>⊕ Electoral systems</li> <li>⊕ Delimitation Commission</li> <li>⊕ Election Commission of India and its role</li> <li>⊕ Constituency, electoral rolls, enumerators</li> <li>⊕ Party system in India</li> </ul>	<p><b>C5.2, C5.3, C5.4, C5.5, C6.2, C6.3, C6.4, C9.1</b></p> <ul style="list-style-type: none"> <li>⊕ Identify factors highlighting importance of elections in a democracy.</li> <li>⊕ Categorise three types of electoral systems and list examples.</li> <li>⊕ Identify the major laws that govern the conduct of elections in India.</li> <li>⊕ Describe the main provisions of the Representation of the People Acts.</li> <li>⊕ Define the concept of delimitation and its purpose in the Indian electoral system.</li> <li>⊕ Identify the role and functions of the Election Commission of India (ECI) in the electoral process.</li> <li>⊕ Explain constituency, electoral roll, enumerator.</li> </ul>



			<ul style="list-style-type: none"> <li>Understand the party system in India.</li> <li>Explain the meaning and features of a coalition government in the Indian political system. Explain key provisions of the Anti-Defection Law with reference to political instability and the need for anti-defection measures.</li> </ul>
8.	Building Blocks in Economics (7 Hours)	<ul style="list-style-type: none"> <li>Scarcity of resources, opportunity cost and the need for making choice. What do economists do?</li> <li>What to produce, how to produce, and for whom to produce?</li> <li>Difference between market, centrally planned, and mixed economic systems.</li> <li>Welfare economy</li> </ul>	<b>C8.2</b> <ul style="list-style-type: none"> <li>Explain the meaning of scarcity, choice, and opportunity cost in everyday life, and economic decision-making.</li> <li>Describe what economists do and how they study production, distribution, and consumption of goods and services.</li> <li>Recognise how economic analysis helps in policy-making and solving real-world issues.</li> <li>Describe the three central problems of an economy — what to produce, how to produce, and for whom to produce.</li> <li>Identify and differentiate the characteristics of planned, free market, and mixed economic systems.</li> <li>Explain the concept of a welfare economy and the importance of social safety nets.</li> </ul>
9.	The Price Puzzle: What Drives the Market (8 Hours)	<ul style="list-style-type: none"> <li>Laws of demand and supply</li> <li>Real-world deviations from textbook theory, such as in case of necessities, luxury goods, perishable items, and expectations</li> <li>Some related concepts — price ceilings and market failures (externalities, information asymmetry, public goods)</li> </ul>	<b>C7.1</b> <ul style="list-style-type: none"> <li>Explain the Law of Demand and Law of Supply with the help of real life examples.</li> <li>Interpret how changes in price affect the quantity demanded and quantity supplied of goods and services.</li> <li>Identify the equilibrium price and quantity where demand and supply intersect.</li> <li>Analyse how changes in market conditions (e.g., increase in demand or supply) lead to surplus or shortage and affect equilibrium.</li> <li>Explain the concept of price ceilings and how they can lead to shortages or black markets.</li> <li>Understand market failures and identify their main types.</li> <li>Understand public goods (non- excludable and non-rival goods like parks or street lighting).</li> </ul>

**Part 2**

S. No.	Theme (time allocation in instructional hours)	Outline/Concepts	Learning Outcomes CGs, Cs Students will be able to:
1.	Oceans and Life (7 Hours)	<ul style="list-style-type: none"> <li>Introduction to ocean relief, movement of ocean water-waves, tides and currents</li> <li>Marine resources and their significance; open seas, navigation fishing, and livelihood concerns and challenges</li> </ul>	<b>C4.1, C4.2</b> <ul style="list-style-type: none"> <li>Explain the movement of ocean waters, including waves, tides, and currents.</li> <li>Analyse the connections between ocean currents, and global and regional climate patterns.</li> <li>Understand the importance of marine resources for human livelihoods and ecosystems.</li> </ul>



		<ul style="list-style-type: none"> <li>⊕ Cyclones and Tsunamis — early warning systems</li> <li>⊕ International maritime rules and regulations</li> </ul>	<ul style="list-style-type: none"> <li>⊕ Examine the relationship between oceans, climate, livelihoods, and natural disasters.</li> <li>⊕ Highlight key rules, conventions, and international agreements governing ocean navigation and the use of marine resources.</li> <li>⊕ Explain the need for international cooperation and agreements in the sustainable use of ocean resources.</li> <li>⊕ Construct models or sketches representing ocean relief.</li> </ul>
2.	Life on Earth (7 Hours)	<ul style="list-style-type: none"> <li>⊕ Biomes: Distribution and characteristics; biosphere reserves in India</li> <li>⊕ Forest and ecotourism; forest dwellers, their livelihoods, and challenges</li> <li>⊕ Forest and wildlife conservation</li> <li>⊕ Government efforts to support forest dwellers</li> </ul>	<p><b>C4.3, C4.4, C4.5, C4.6</b></p> <ul style="list-style-type: none"> <li>⊕ Identify the major biomes of the world and describe their key climatic conditions, characteristic flora, and fauna.</li> <li>⊕ Locate biosphere reserves on the map of India.</li> <li>⊕ Appreciate local traditional practices related to biodiversity conservation and analyse their effects.</li> <li>⊕ Explain the concept and importance of biosphere reserves in conserving ecosystems and biodiversity.</li> <li>⊕ Analyse the concept of ecotourism and discuss its role in promoting sustainable forest ecosystem and conservation.</li> <li>⊕ Investigate the causes of forest fires in the local area, and prepare a plan for mitigation and prevention.</li> </ul>
3.	Building a Resilient India (1000–1700 CE) (9 Hours)	<ul style="list-style-type: none"> <li>⊕ Safeguarding sovereignty: resistance, alliances and confederacies</li> <li>⊕ Development of art and architecture, languages and literature</li> <li>⊕ The Bhakti tradition</li> <li>⊕ Forts and fortifications</li> <li>⊕ Expansion of Indian economy and state</li> </ul>	<p><b>C1.3, C1.4, C3.1</b></p> <ul style="list-style-type: none"> <li>⊕ Explain the cultural, political, and military contributions of regional kingdoms in the medieval India.</li> <li>⊕ Appreciate how diverse communities and regions shaped India's history from 1000 CE to 1700 CE.</li> <li>⊕ Explore how regional kingdoms in medieval India adapted to changing political, economic, and cultural contexts over time.</li> <li>⊕ Analyse the continuity of the civilisational history of India as a nation upto 18th century CE.</li> <li>⊕ Explore how regional kingdoms in the medieval India adapted to the changing political, economical and cultural contexts over time.</li> <li>⊕ Analyse the continuity of the civilisational history of India as a nation upto the 18th century CE.</li> </ul>
4.	India and the World-I (1900 BCE-1200 CE) (8 Hours)	<ul style="list-style-type: none"> <li>⊕ Trade and commerce — trade with Mesopotamia, Greece, Roman Empire, China and Southeast Asia</li> <li>⊕ Cultural Connections — Interactions with Greece and Rome, Central Asia, China, and Influence on South East Asia</li> <li>⊕ Indian Knowledge Systems— Medicine, Mathematics and Astronomy, Medicine, Religion</li> </ul>	<p><b>C1.2, C1.4, C6.1, C2.3, C9.1</b></p> <ul style="list-style-type: none"> <li>⊕ Explore India's relations with early civilisations of the world.</li> <li>⊕ Identify the major articles of trade and the major trading ports.</li> <li>⊕ Appreciate the significant contributions of India in diverse spheres in an integrated manner.</li> <li>⊕ Appreciate the influence of Indian religion and culture, particularly in Southeast Asia.</li> </ul>



5.	Authority (10 Hours)	<ul style="list-style-type: none"> <li>⊕ The Roots of Authority: in Kautilya and <i>shukraniti-danda</i> and relationship with <i>nyaya</i> and <i>bala</i>; the types of <i>nyaya</i> and <i>bala</i></li> <li>⊕ Constitutional status of justice and security since ancient times</li> <li>⊕ Links the role of citizens with the elections and the democratic institutions</li> <li>⊕ Types of authority — functional, sensitive, and welfare-oriented</li> </ul>	<p><b>C5.1, C5.2, C 5.3</b></p> <ul style="list-style-type: none"> <li>⊕ Explain the roots of authority in Indian political thought.</li> <li>⊕ Interpret the relationship between <i>Danda</i> (discipline/force) and <i>Nyaya</i> (justice) as the twin foundations of authority, development, and security.</li> <li>⊕ Trace the evolution of authority structures in India.</li> <li>⊕ Understand the post- independence concept of justice and security.</li> <li>⊕ Illustrate types of authority.</li> <li>⊕ Develop an understanding of citizen discipline, justice, and strength.</li> <li>⊕ Illustrate the role of citizens in authority.</li> </ul>
6.	From Ideas to Startups (8 Hours)	<ul style="list-style-type: none"> <li>⊕ What is entrepreneurship and explain the resources required to start a business</li> <li>⊕ Case studies of successful entrepreneurs</li> <li>⊕ Creative destruction with examples</li> <li>⊕ Start-up ecosystem in India.</li> <li>⊕ Make in India initiative, role of MSMEs and the unorganised sector in India's economic growth.</li> <li>⊕ Stages of starting and executing a business idea through a business plan</li> <li>⊕ Some basic accounting concepts</li> </ul>	<p><b>C7.3</b></p> <ul style="list-style-type: none"> <li>⊕ Define entrepreneurship and explain its importance in innovation, job creation, and economic growth.</li> <li>⊕ Understand the key resources for business.</li> <li>⊕ Explain how resources are managed to produce goods and services.</li> <li>⊕ Analyse real-world examples of successful entrepreneurs.</li> <li>⊕ Describe the features of India's start-up ecosystem and initiatives like Make in India, Startup India, and Digital India.</li> <li>⊕ Recognise the role of Micro, Small, and Medium Enterprises (MSMEs) and the unorganised sector in promoting employment, innovation, and inclusive growth.</li> <li>⊕ Identify and explain the stages of starting a business from developing an idea to creating and executing a business plan.</li> <li>⊕ Understand simple profit and loss.</li> <li>⊕ Identify the key components of a balance.</li> </ul>
7.	Smart Ways to Manage Your Finances (6 Hours)	<ul style="list-style-type: none"> <li>⊕ Relevance of personal financial management in daily life</li> <li>⊕ Inflation and its impact on purchasing power</li> <li>⊕ Simple vs. compound interest rate</li> <li>⊕ Budgeting</li> <li>⊕ Various savings and investment options like fixed deposit, stocks, bonds, mutual funds, etc.</li> <li>⊕ Risk and insurance</li> <li>⊕ Personal income tax</li> </ul>	<p><b>CG8</b></p> <ul style="list-style-type: none"> <li>⊕ Explain what personal financial management means and why it is essential in everyday life.</li> <li>⊕ Recognise how managing income, spending, saving, and investment helps achieve financial stability and long-term goals.</li> <li>⊕ Explain the difference between simple interest and compound interest.</li> <li>⊕ Prepare a simple personal or family budget showing income, expenditure, and savings.</li> <li>⊕ Identify various savings and investment instruments.</li> <li>⊕ Understand the relationship between risk and return in different investment types.</li> <li>⊕ Understand the concept of income tax and why citizens are required to pay it.</li> </ul>

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# Social Science: Meaning, Scope, and Importance



## KEY CONCEPTS

- ▶ Meaning of Social Science
- ▶ Scope of Social Science
- ▶ Relevance of Social Science
- ▶ Guiding values in Social Science
- ▶ Understanding Social Science from an Indian Perspective

## MEANING OF SOCIAL SCIENCE

Human beings are social by nature. From birth, each person becomes part of a family and gradually becomes connected to wider groups such as neighbours, classmates, friends, and co workers. People live in villages, towns, and cities where they depend on one another for safety, livelihood, learning, and well being. They share public spaces and resources such as water, roads, schools, hospitals, markets, parks, and workplaces. They also share ideas, customs, languages, beliefs, and responsibilities. Because life is lived together, the actions of one person can affect many others. Social Science is the study of these connections and shared arrangements.

### Social Science: Key definitions by Scholars and Authors

- **James High:** Defined it as "bodies of learning and study which recognises the simultaneous and mutual action of physical and non-physical stimuli which produce social relation".
- **Charles Beard:** Described it as a "body of knowledge and thought pertaining to human affairs as distinguish from sticks, stones, stars and physical objects".

Social Science studies society in a careful, organised, and systematic way. It does not rely only on personal opinions or assumptions. It asks questions, collects information, compares evidence, and builds explanations. It helps us to understand how people live together, how groups are formed, how rules and institutions develop, and how societies change over time. It also encourages us to think about fairness and responsibility by examining who gains from a decision, who loses, and why.

Social Science can be understood as the study of two closely related aspects of human life:

- **People and their relationships:** This includes the ways in which people interact and support one another in everyday life. It covers family life, community living, social customs, religious and cultural practices, roles and responsibilities, and patterns of behaviour. For example, Social Science may explore how families make decisions, how communities celebrate festivals, how different languages are used in public life, or how social rules influence what people can or cannot do.

- **Systems and institutions:** This includes the organised structures that shape how society works. Institutions such as government, law, courts, schools, police, markets, banks, and local bodies influence daily life. They decide how resources are shared, how public services are provided, and how rights and duties are protected. For example, Social Science may study how elections are held, how laws are made, how budgets affect public services, or how trade and prices influence what families can afford.

Social Science does not only describe what happens in society. It also asks why it happens and what its effects are. It looks for causes and consequences. It tries to understand patterns, such as why some regions develop faster than others, why some communities have better access to clean water, or why certain forms of work are valued more than others.

Consider a situation where some children find it easier to complete schooling than others. Social Science encourages us to ask questions such as:

- Are schools located far from certain villages or settlements?
- Do families have enough income to afford uniforms, books, and transport?
- Do historical disadvantages or social discrimination affect people's opportunities in education, employment, and social mobility?
- Do government policies support all of us equally, including girls and children with disabilities?

These questions show that social situations usually have more than one cause. A single issue can have geographical, economic, political, and historical reasons at the same time. Social Science helps us to connect these reasons and develop a fuller understanding.

By studying Social Science, we begin to see that society is not fixed. It is shaped by human choices and actions. People create rules, institutions, and traditions, and people can also improve them. This understanding supports responsible citizenship. It helps us to develop awareness about society and prepares them to make informed decisions in their daily lives.

### AN EXCERPT

Social Science is a systemic study of human society and the relationship between the individual and society, social institutions, and organisations. It draws its content from the disciplines of History, Geography, Political Science, and Economics, to provide an interdisciplinary understanding of society and its functions. At the heart of Social Science education lies an understanding of the world, the diverse concerns of human society, and participating in it as empathetic and responsible citizens.

*Source: National Curriculum Framework for School Education (NCF-SE) 2023*



### KEY LEARNINGS

- Social Science studies how people live together through relationships, shared spaces, customs, and responsibilities.
- It examines systems and institutions such as government, law, schools, markets, and courts that shape people's daily life.
- It uses organised inquiry, evidence, and reasoning rather than assumptions or personal opinion.
- It explains social issues by linking causes and consequences, often across geography, history, economics, and politics.

## SCOPE OF SOCIAL SCIENCE

The scope of Social Science refers to the wide range of questions and areas it studies in order to understand human life in society. Human beings live in communities, depend on nature and resources, earn livelihoods, follow rules, and participate in collective decision making. Because these aspects of life are closely connected, no single subject can explain society fully. Social Science therefore brings together several disciplines to build a fuller picture of society and to help us to understand the world carefully and responsibly.

At the school level, Social Science is commonly organised around four core disciplines:

- Geography
- History
- Political Science
- Economics

These disciplines have distinct questions and methods, yet they overlap in real life. Social Science becomes meaningful when we connect ideas across these areas and use evidence to understand society, environment, economy, and governance together.

### Geography as a Discipline

Geography studies the Earth as the home of human beings. It helps us understand landforms, climate, rivers, soils, forests, and resources. At the same time, it studies how people live in different places and how they use the environment.

Geography answers questions such as:

- Why do some places receive more rainfall than others?
- Why are some regions densely populated while others are not?
- How do climate and soil influence agriculture?
- How do natural resources affect industries and livelihoods?



Our Earth

Geography helps us see that human life is closely linked to physical conditions.

For example, farming practices in a dry region differ from those in a region with heavy rainfall. Similarly, coastal regions may have fishing and sea trade, while mountain regions may depend on tourism, forests, or terrace farming.

Geography also helps us understand environmental challenges, such as floods, droughts, deforestation, pollution, and climate related risks. It encourages the value of sustainability because it shows that careless use of resources can harm both people and nature.

#### DID YOU KNOW?

Geographers often use satellite images to study rivers, forests, cities, crops, and coastlines. This method is called remote sensing. It helps track floods, droughts, deforestation, and urban growth. It also supports disaster management by providing quick information during cyclones, earthquakes, etc.

### History as a Discipline

History studies the past, but its purpose is not only to remember dates or kings. It helps us understand how society has changed over time and why the present is shaped the way it is.

History explores:

- People and their lives in different periods
- Major events and changes
- Social and cultural developments
- Movements for freedom and justice
- The rise and fall of institutions and ideas

History is important because it helps us understand that today's society did not appear suddenly. Many present day institutions and practices have developed over long periods. For example, when we study India's freedom struggle, we learn about ideas of justice, equality, and rights. These ideas later influenced the making of our Constitution. In this way, History helps us understand why democratic values are important in modern India.

History also teaches us to respect diversity. India's past includes many languages, religions, art forms, and ways of living. By studying this richness, we can learn that diversity is not a weakness. It is a strength that has shaped Indian society.

## Political Science as a Discipline

Political Science studies how societies are governed. It focuses on government institutions, laws, rights, duties, and the ways in which people participate in public life.

Political Science helps us understand:

- Why societies need rules
- How laws are made and implemented
- How governments work at local, state, and national levels
- What rights and duties citizens have
- How democracy functions through participation and representation



Indian Parliament

Political Science is closely linked to daily life. For example, when we use public services such as roads, schools, hospitals, and transport, we are experiencing governance. When we vote or discuss public issues, we are participating as citizens. Political Science helps students become aware citizens who understand both rights and responsibilities.

Political Science also supports inclusivity and equity by discussing equality before law, protection of rights, and the responsibility of the state to support all citizens, especially those who are underprivileged.

### Engage and Reflect

If you had to present one local problem to a local government body, what facts would you use to support your case, and what solution would you propose that is realistic and fair?

## Economics as a Discipline

Economics studies how people and societies manage resources and make choices. Resources are limited, but human needs are unlimited. Economics helps us understand how goods and services are produced, distributed, and consumed, and how people earn a living.

Economics examines:

- Work and employment
- Markets and prices
- Income and expenditure
- Production of goods and services
- Poverty and development
- The role of government in the economy



A local market in India

Economics explains realities that we can observe around them. For example, a family may plan its spending based on income. A shopkeeper sets prices based on costs and demand. Farmers choose crops based on rainfall, soil, and market prices. These are economic decisions.

Economics also shows why equity matters. If some people have very limited access to education, healthcare, or jobs, they may remain trapped in poverty. Understanding this helps us to see why fair opportunities are necessary for a just society.



## KEY LEARNINGS

- Social Science has a wide scope because society involves environment, livelihoods, rules, and collective decision making.
- It brings together four core disciplines: Geography, History, Political Science, and Economics.
- Each discipline has its own questions and methods, but real life issues require connections across disciplines.
- Linking ideas across subjects helps us build fuller explanations of society, environment, economy, and governance.

## RELEVANCE OF SOCIAL SCIENCE

Social Science is relevant because it helps us to understand our lives and the world around us. It connects classroom learning to everyday experiences. Its relevance can be understood through four important areas: society, environment, economy, and governance.

### Social Science and Society

Every society has different groups and different ways of living. Social Science helps us understand how these differences develop and how people learn to live together.

For example, in India, people speak different languages, follow different religions, and practise different customs. Yet they share common spaces and institutions. Social Science helps us understand how unity is built in a diverse society. It also helps us identify social challenges such as discrimination, prejudice, and social exclusion, and encourages students to value inclusivity.

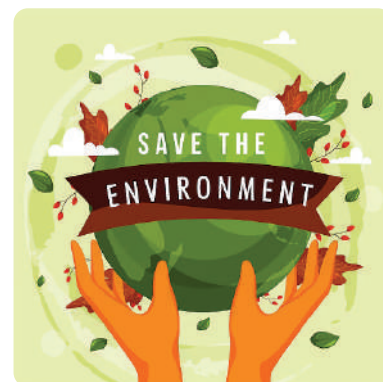
Inclusivity is not only an idea. It influences real decisions. For instance, schools that encourage equal participation among all students are practising inclusivity. Communities that ensure access to water and sanitation for everyone are practising inclusivity.

### Social Science and the environment

Human beings depend on the environment for survival and development. We need land for farming and housing, rivers for water, forests for resources, and energy for work. Social Science helps us understand how human activity affects the environment, and how environmental changes affect human life.

For example, cutting forests may provide land for construction, but it can also lead to soil erosion, reduced rainfall, and loss of wildlife. Similarly, pollution may result from industrial growth, but it can harm health and agriculture.

By studying these links, Social Science encourages sustainability. Sustainability helps us to think beyond immediate gain and consider long term effects on nature and society.



### Social Science and the economy

Most families make daily economic choices. They decide how to earn a living, how to spend money, and how to save for future needs. Social Science helps students understand such choices not only at the family level but also at the level of society.

For example, when job opportunities grow in a city, people may migrate there for work. This can lead to growth, but it can also create pressure on housing, water supply, and transport. This shows how economic decisions affect society and environment.

Economics also helps us to understand why development should not only mean more income. Development should also mean better education, health, safety, and dignity. This idea links to equity because development must benefit all, not only a few.

### Social Science and governance

Governance shapes many parts of our daily life. Government decisions influence schools, hospitals, roads, law and order, and public welfare schemes. Social Science helps students understand how these decisions are taken and how citizens can engage with them.

For example, if a community faces a problem such as poor water supply, it can raise the issue through local bodies and elected representatives. Understanding governance helps students evaluate that democracy is not only about elections. It is also about participation, awareness, and accountability.

Political understanding also helps us to recognise the importance of equality and justice. If laws protect only some people and ignore others, society becomes unfair. Therefore, governance must support inclusivity and equity.



Voting at a booth

### Interconnections of Social Science

Social Science becomes meaningful when we connect its disciplines. Many real life issues cannot be understood through only one subject. They require combined thinking.

Consider the example of floods in a city.

- Geography helps us understand rainfall, river systems, land use, and drainage.
- History can explain how the city developed, where people settled, and how land was used over time.
- Economics helps us examine damage to livelihoods, costs of rebuilding, and how poverty makes some people more vulnerable.
- Political Science helps us understand the role of government in disaster management, public safety, and planning.

This example shows that Social Science is not a collection of separate subjects. It is a connected way of understanding real life.



#### KEY LEARNINGS

- Social Science connects classroom learning to everyday life by explaining society, environment, economy, and governance.
- It helps us understand diversity, discrimination, and social exclusion, and supports inclusivity in daily interactions.
- It explains how environmental change affects human life and why sustainability matters for long term well-being.
- It shows how government decisions affect public services and why citizenship involves participation and accountability.

## GUIDING VALUES IN SOCIAL SCIENCE

Social Science develops not only knowledge but also values. These values act as guiding principles when we examine society and when we make choices in daily life. In India, they connect closely with the constitutional ideals stated in the Preamble, especially justice, liberty, equality, and fraternity.

Guiding values help us in three important ways. First, they shape how we treat people and how we respond to difference. Second, they guide how we use natural resources and plan development. Third, they help us judge whether decisions, rules, and policies are fair and beneficial for all.

### Diversity

Diversity means recognising and respecting differences among people. These differences may be seen in language, religion, region, caste, tribe, gender, age, occupation, physical ability, food habits, clothing, and cultural practices. Diversity exists naturally because communities have different histories, environments, and traditions.

Understanding diversity involves more than noticing difference. It means understanding how diversity enriches society. In India, the variety of languages and cultural traditions can be seen in festivals, art, local crafts, architecture, music, and food. When we respect this variety, we strengthen social harmony and build a wider sense of belonging.

Diversity also requires us to be careful about stereotypes. Sometimes quick judgements are formed based on a person's language, clothing, occupation, or place of origin. A value based approach encourages us to question such assumptions, understand reasons behind different practices, and treat every person with dignity. This supports fraternity, which is the idea that all citizens should relate to one another with respect and a shared sense of togetherness.



Diversity in India

#### DID YOU KNOW?

According to the 2011 Census of India, there are 121 languages and 1,369 rationalised mother tongues spoken across the country. Among these, 22 languages are recognised under the Eighth Schedule of the Indian Constitution, providing them with official status.

### Inclusivity

It means ensuring that everyone feels welcomed, respected, and able to participate fully in shared spaces such as classrooms, playgrounds, neighbourhoods, and public institutions. It reminds us that some groups have faced exclusion or discrimination, and that fairness requires active steps to remove barriers. Inclusivity can be seen in everyday situations.

- In a classroom, it means ensuring equal participation, preventing bullying, and supporting all students, including girls and children with disabilities.
- In a community, it means making sure that public facilities such as drinking water points, toilets, and health services are accessible and safe for everyone.
- In public life, it means ensuring that people can speak, work, and take part in discussions without fear or humiliation.

Inclusivity is closely connected with equality of status and opportunity. It also matches national education goals that emphasise removing barriers created by social and economic disadvantage.

## Sustainability

It means using resources wisely so that both present and future generations can meet their needs. It requires balance between development and protection of nature. This includes careful use of land, water, forests, minerals, and energy, as well as reducing pollution and waste. Sustainability becomes clearer when we connect environment with livelihoods and well-being.

- Cutting forests may create land for construction, but it can also lead to soil erosion, reduced water availability, and loss of biodiversity.
- Industrial growth may increase production and employment, but it can also pollute air and rivers, harming health and agriculture.
- Overuse of groundwater may support farming for a period, but it can cause long term water scarcity.

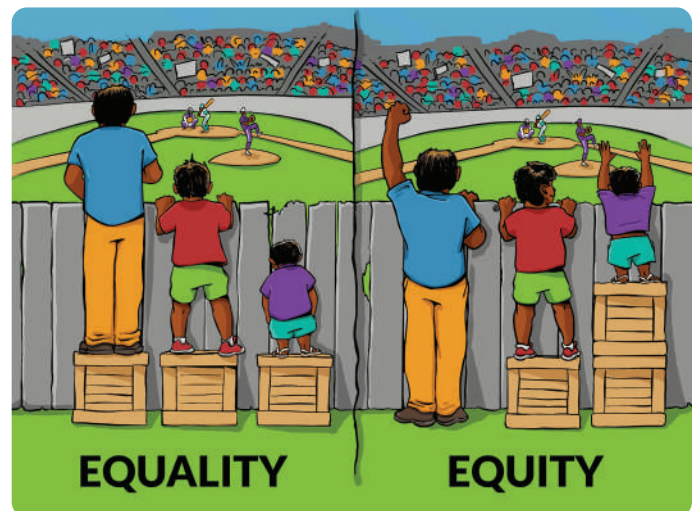
A sustainable approach asks long term questions. Who benefits now and who will bear the costs later? How can development be planned so that nature is protected and livelihoods remain secure. This value is also reflected in global goals that link human well-being with protecting the planet.

## Equity

It means fairness in opportunities and outcomes. It recognises that people do not start from the same position. Some face disadvantages because of poverty, discrimination, disability, remoteness, or lack of access to services. Equity requires additional support where it is needed so that everyone has a genuine chance to study, stay healthy, and live with dignity.

Equity can be seen in many public decisions.

- Scholarships, free textbooks, or meal programmes that support children from low income families.
- Ramps, assistive devices, and supportive teaching methods for children with disabilities.
- Stronger schools and health facilities in remote areas where services are limited.
- Targeted support for communities that have faced long term exclusion.



Equity connects strongly with the constitutional promise of justice and equality of opportunity, and it is also emphasised in education policy aims to ensure quality education for all regardless of background.

### Engage and Reflect

What is one situation in school where treating everyone the same may be unfair, and what equity based support would help ensure participation and dignity for all?

## Why these values matter

These values matter because living together requires understanding and responsibility. They help us examine real problems such as discrimination, unequal access to services, environmental damage, and poverty with sensitivity as well as clear reasoning. They also guide us towards decisions that are fair, inclusive, and sustainable, in line with constitutional ideals.



## KEY LEARNINGS

- Social Science develops values alongside knowledge, linked to constitutional ideals such as justice, liberty, equality, and fraternity.
- Guiding values shape how we respond to difference, how we plan development, and how we judge fairness in public decisions.
- Diversity, inclusivity, sustainability, and equity help us examine social problems with sensitivity and clear reasoning.
- These values support responsible citizenship and encourage actions that protect dignity and promote social harmony.

## UNDERSTANDING SOCIAL SCIENCE FROM INDIAN PERSPECTIVE

Social Science studies people and society, but society does not look the same everywhere. The questions a country asks, the problems it faces, and the solutions it chooses are shaped by its geography, history, economy, and systems of governance. This is why perspective matters. When we study Social Science from an Indian perspective, we try to understand India as it is, with its unique experiences and realities.

India is often described as plural and diverse, but diversity is not only a description of culture. It also shapes questions of language policy, access to public services, employment, and representation. In many places, people of different communities live side by side and share common facilities. In other places, differences can become reasons for prejudice and exclusion. A grounded understanding of India therefore involves recognising diversity while also examining how equality and dignity can be protected in daily life and in public systems.

Indian secularism is often discussed as distinctive because it focuses on protecting religious freedom while ensuring that the state treats all faiths fairly in a diverse democracy. This becomes important when we examine questions such as minority rights, public order, and equality before law.

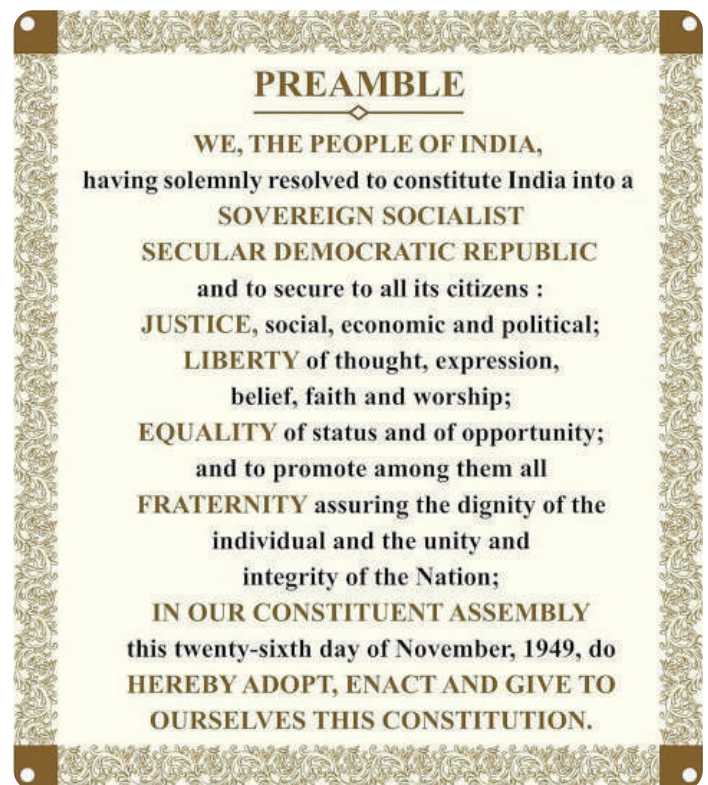
### The Constitution as a guiding framework for public life

India's Constitution is central to understanding public life because it defines the ideals of justice, liberty, equality, and fraternity and sets out how institutions should function in a democracy. These values are not only for courts or parliaments. They guide how we think about discrimination, unequal access to resources, and the responsibilities of government.

An Indian perspective also stresses scientific temper and the spirit of inquiry when we examine social issues. This means we should question rumours, stereotypes, and single story explanations, and instead look for evidence and multiple causes. The Fundamental Duties include developing scientific temper, humanism, and the spirit of inquiry and reform, which supports this approach.

### The past and the making of modern India

To understand India today, we need to understand how the past shaped present institutions and identities. Colonial rule influenced land revenue systems,



education, transport, industries, and patterns of inequality. The freedom struggle shaped ideas of rights, justice, and citizenship and helped create a commitment to democratic governance. This historical understanding helps us see that present day debates and laws about equality, development, and national integration have deep roots, and they cannot be understood only by looking at current events.

### **Governance from the village to the nation**

India is a constitutional democracy with several levels of government. Understanding governance in India means understanding how decisions are made and implemented at different levels and how people participate as citizens.

Local self-government is especially important because it brings decision making closer to people's daily needs such as drinking water, sanitation, local roads, and village or ward planning. The 73rd Constitutional Amendment Act strengthened Panchayati Raj Institutions and is often discussed as a major step towards decentralisation and wider participation, including provisions that support representation of groups that were historically excluded.

This perspective helps us see democracy as more than elections. It is also about participation, accountability, and the everyday work of public institutions.

### **Environment and Livelihoods**

Nature shapes livelihoods in powerful ways in India. Monsoons influence agriculture, rivers support irrigation and transport, and forests support both biodiversity and local economies. Environmental issues here often involve questions of survival and justice.

For instance, deforestation, water scarcity, floods, and pollution affect communities differently. Those with fewer resources may live in more vulnerable locations and may have fewer alternatives when crops fail or when water becomes unsafe. Understanding such issues requires linking environment with work, poverty, public policy, and long term planning, which supports sustainability as a guiding value.

### **Economic life and Development**

Economic life shapes our daily choices because livelihoods, inequality, and development affect what we can afford and what opportunities we can access. Work in India ranges from agriculture and fishing to crafts, factories, construction, transport, retail, and services, with many people depending on seasonal or informal jobs and uncertain incomes.

Development can improve roads, electricity, digital access, healthcare, and employment, but its benefits are not shared equally across regions and social groups. An Indian perspective therefore asks who gains, who remains excluded, and how prices, wages, and public services influence mobility. Migration for work also shows these links, as it can raise incomes while putting pressure on housing, water, transport, and public services.

An Indian perspective encourages us to connect disciplines rather than keeping them separate. A single issue such as migration, drought, unemployment, or urban overcrowding involves geography, history, economics, and political institutions at the same time. It also encourages us to judge choices using constitutional values, respect for diversity, inclusivity, sustainability, and equity.



Expressway: A sign of economic development

In this way, the subject becomes a tool for understanding our own lives and our country, and for developing the habit of thinking carefully, fairly, and responsibly about society and public decisions.



## KEY LEARNINGS

- Social questions and solutions vary across countries, so studying Social Science needs awareness of perspective and context.
- India's diversity influences language, representation, access to services, and the need to protect equality and dignity.
- The Constitution guides public life, institutions, rights, and responsibilities, and supports scientific temper and inquiry.
- Understanding India involves linking environment, livelihoods, governance, and development, and asking who benefits and who is excluded.

## GLOSSARY

<b>Diversity</b>	: Diversity is the presence and respectful recognition of differences among people, including language, religion, region, and culture.
<b>Inclusivity</b>	: Inclusivity is the practice of ensuring that everyone feels respected and can participate fully by removing barriers and preventing exclusion.
<b>Sustainability</b>	: Sustainability is the responsible use of resources so that present needs are met without harming the ability of future generations to meet theirs.
<b>Equity</b>	: Fairness in opportunities and outcomes, which may require additional support for those facing disadvantage.
<b>Decentralisation</b>	: Sharing of decision making power with local bodies so that governance is closer to people's daily needs.
<b>Prejudice</b>	: An unfair judgement about a person or group formed without sufficient knowledge or evidence.
<b>Migration</b>	: The movement of people from one place to another, often for work, which affects society, services, and the economy.

## Exercises

### A. Multiple choice questions (MCQs).

1. Social Science is best described as the study of
  - (a) only past events and rulers
  - (b) human society, relationships, and institutions
  - (c) only natural resources and landforms
  - (d) only markets and prices
2. The discipline that studies the Earth as the home of human beings is
  - (a) History
  - (b) Geography
  - (c) Economics
  - (d) Political Science
3. Which of the following best shows the overlap of disciplines in Social Science?
  - (a) A historical event has no effect on the economy
  - (b) A climate event can affect livelihoods and government planning
  - (c) Geography never affects politics
  - (d) Economics cannot be connected to society
4. A key purpose of studying Social Science is to
  - (a) avoid questioning and accept all claims
  - (b) develop informed, responsible citizenship
  - (c) learn only dates and definitions
  - (d) study society without values



### G. Assertion Reason Questions

Two statements are given as Assertion (A) and Reason (R). Study the statements carefully and identify the correct alternative:

- (a) Both A and R are true, and R is the correct explanation of A.
  - (b) Both A and R are true, but R is not the correct explanation of A.
  - (c) A is true but R is false.
  - (d) A is false but R is true
1. **Assertion (A):** Diversity refers to the presence of different cultures, languages, and beliefs in a society.  
**Reason (R):** Diversity creates unity by ensuring that everyone shares the same beliefs and practices.
  2. **Assertion (A):** Development is not just about increasing income but improving the quality of life.  
**Reason (R):** Economic growth is the one of the measure of development used globally by Social Scientists.
  3. **Assertion (A):** The study of History is important because it helps us understand how the present society was shaped.  
**Reason (R):** History only deals with past events and has no relation to understanding current social structures.

### H. Case-based questions.

Read the given text and answer the following questions

The State of India's Environment in Figures 2025 report reveals alarming trends across multiple indicators, showing how environmental challenges are affecting public health, economic growth, and social stability. The report highlights a 25% increase in climate-induced displacement, with floods and droughts being the major contributors. These extreme events have affected more than 5.4 million people, with Assam being one of the hardest-hit states. Toxic pollutants in rivers have been found to exceed permissible limits, while groundwater is being excessively drained in several regions, further compromising local water availability. Despite the progress in certain states, inequality in access to public services remains widespread, and the need for evidence-based policies becomes more urgent.

1. How do the findings in this report illustrate the connection between environmental challenges and social inequality?
2. In what way do extreme weather events like floods affect society and development in India?
3. How can Social Science principles, such as sustainability and governance, help address the environmental issues raised in the report?



**AI Buddy**

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CODE-aEwB

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**WORKSHEET** of this chapter.



CODE-NkMn

# 3

## The Dynamic Atmosphere and Changing Climate



### KEY CONCEPTS

- ▶ Structures and Composition of Atmosphere
- ▶ Elements of Weather and Climate
- ▶ Seasons and Monsoon in India
- ▶ Climate Change
- ▶ Floods
- ▶ Carbon Footprint

The Earth is surrounded by a thick layer of air known as the **atmosphere**. This atmosphere plays a vital role in making life possible on our planet. It provides the air we breathe, protects us from harmful solar radiation, and helps regulate the Earth's temperature. Without the atmosphere, the Earth would be too hot during the day and too cold at night.

**Climate** refers to the average weather conditions of a place over a long period of time. It influences natural vegetation, wildlife, human activities, and patterns of settlement. The atmosphere and climate together control weather phenomena such as rainfall, winds, storms, and seasons.

Understanding the atmosphere and climate is important because they directly affect our daily lives, agriculture, water resources, and the overall environment. In this chapter, we will learn about the composition and structure of the atmosphere, the factors affecting climate, and the relationship between atmosphere, weather, and human life.

### STRUCTURE AND COMPOSITION OF ATMOSPHERE

The **atmosphere** is a thick blanket of gases that surrounds the Earth and extends hundreds of kilometres into space. It is held close to the Earth by gravity. The atmosphere is very important for life because it provides oxygen for breathing, protects us from harmful solar radiation, helps regulate temperature, and plays a key role in weather and climate.

### STRUCTURE OF THE ATMOSPHERE

The atmosphere is not uniform. Based on **temperature changes with height**, it is divided into **five distinct layers**. These distinct layers are called Troposphere, Stratosphere, Mesosphere, Thermosphere (Ionosphere), and Exosphere.

#### Troposphere

The troposphere extends from 8 km near the poles to 18 km near the equator. The word 'tropho' means mixing, which refers to the continuous mixing of gases in this layer, giving its name.

The troposphere contains nearly 75 per cent mass of the atmosphere and all essential gases, such as water vapour and primary greenhouse gases. All weather phenomena such as precipitation,

storms, and lightning, occur in this layer. This is the layer where all life forms exist, making it the most important layer for sustaining life on Earth.

In this layer, the temperature decreases by of 1° C for every 165 m of altitude. This is known as the lapse rate.

**Importance:**

This layer supports life and controls weather and climate. Most living organisms depend directly on this layers.

**Stratosphere**

The layer above the troposphere is called the stratosphere. The stratosphere has a cold lower section and a warmer upper section forming two distinct layers. The name ‘Strato’ means ‘layer’. It extends up to about 50 km above the Earth’s surface. The boundary between the troposphere and stratosphere is known as the tropopause.

Since the Stratospheres contain very little moisture and dust and has minimal air turbulence, it is ideal for flying airplanes.

The ozone layer, located in the stratosphere, protects us from harmful UltraViolet (UV) rays. As altitude increases within the stratosphere, the temperature also rises.

**Importance:**

It protects life on Earth by preventing harmful solar radiation. By filtering UV radiation, the stratosphere protects crops, forests, plankton and marine ecosystems which are essential for food chains and oxygen production.

**Mesosphere**

The layer that lies above the stratosphere is called the mesosphere. It roughly extends up to 80 km from the Earth’s surface. This layer lies between two layers above and two layers below it which is why it is called the mesosphere. Meso means middle.

The boundary between the stratosphere and mesosphere is termed the stratopause.

As meteorites enter this layer, they burn up due to friction with gaseous particles. Meteorites appear to us as shooting stars, but they are not actual stars.

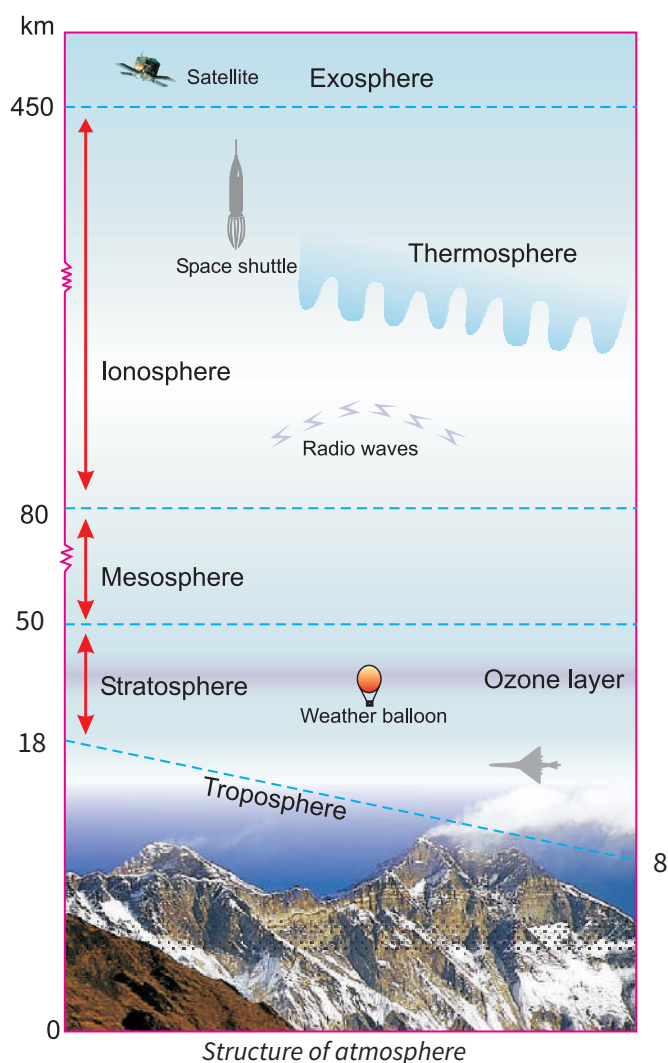
**Importance:**

It protects Earth from falling meteoroids. It helps maintaining energy balance by absorbing and redistributing heat from both below and above.

**Ionosphere**

This layer is also known as the thermosphere, and it roughly extends up to 450 km. The name ionosphere comes from the fact that the atoms of gases in these layers get converted into ions due to solar radiation.

In the thermosphere, as we go upward, the temperature rises and reaches up to 2000° C. It is the hottest layer of the atmosphere. This layer helps in satellite communication and radio transmission.



**Importance:**

It is essential for long-distance communication. The thermosphere acts as Earth's radiation shield and communication layer, playing a vital role in protecting life and supporting technology.

**Exosphere**

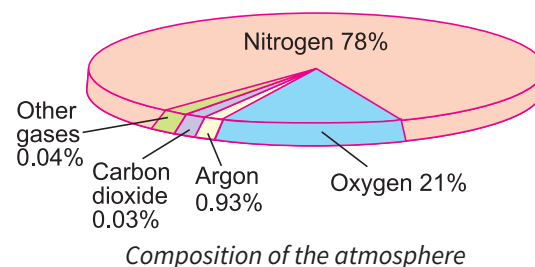
The exosphere is the outermost layer of the atmosphere, which ultimately merges with space. It lacks dust, oxygen, nitrogen, and water vapour. However, traces of hydrogen and helium are found here.

**Importance:**

Many communication, weather and navigation satellites orbit in the exosphere, enabling GPS (Global Positioning System), television, internet and weather forecasting, acts as the transition zone between Earth's atmosphere and outer space.

**COMPOSITION OF THE ATMOSPHERE**

The atmosphere is a mixture of different gases, water vapour, and dust particles that surrounds the Earth. These components are essential for sustaining life, regulating temperature, and supporting natural processes like respiration, combustion, and rainfall. The proportion of gases in the atmosphere remains almost constant up to a height of about 90 km.

**Major Gases of the Atmosphere****1. Nitrogen (78%)**

- Largest component of the atmosphere
- Does not support respiration or burning directly
- Reduces the intensity of oxygen and prevents rapid combustion
- Essential for plant growth (nitrogen cycle)

**Importance:**

Nitrogen-enriched soil leads to better crop yields making it vital for agriculture and food product.

**2. Oxygen (21%)**

- Second most abundant gas
- Essential for respiration in humans and animals
- Supports combustion
- Needed for oxidation processes

**Importance:**

Without oxygen, life on Earth would not be possible. It is also necessary for burning and combustion, which is important for cooking industries, and energy production.

**3. Argon (0.93%)**

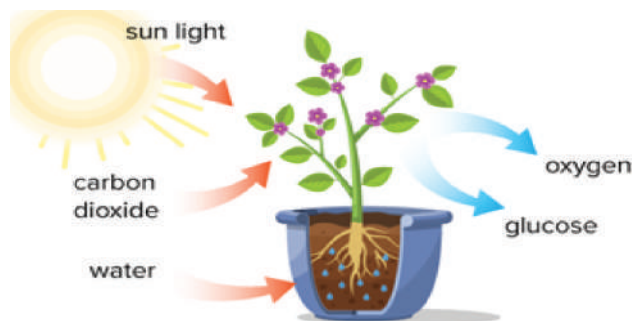
- Chemically inactive gas
- Does not take part in biological processes
- Used in electric bulbs and welding

**Importance:**

It maintains balance in the atmosphere and prevents unwanted chemical reactions. It is also used to protect food, wine and historical documents from oxidation.

#### 4. Carbon Dioxide (0.04%)

- Present in very small quantity but extremely important
- Used by plants for photosynthesis
- Helps in maintaining Earth's temperature through the greenhouse effect
- Released by respiration and burning of fuels



Sunlight + Carbon dioxide + Water → Glucose + Oxygen  
**Photosynthesis**

##### **Importance:**

It supports plant life and helps regulate global temperature. It dissolves in water to form carbonic acid, which influences ocean pH and marine life.

##### **Other Components of the Atmosphere**

###### **(i) Water Vapour**

- Amount varies from place to place
- Responsible for humidity
- Forms clouds, rain, fog, and dew
- Absorbs heat and moderates temperature

##### **Importance:**

It plays a crucial role in weather and climate. It also plays a central role in the hydrological cycle, moving water between oceans, atmosphere and land.

###### **(ii) Dust Particles**

- Includes smoke, pollen, salt, and soil particles
- Help in the condensation of water vapour
- Cause colourful sunsets and sunrises

##### **Importance:**

Dust particles are necessary for rainfall formation. Dust blown from deserts carries minerals and nutrients to oceans and soils, enriching ecosystems and supporting plant and marine life.

###### **(iii) Ozone (Trace Amount)**

- Found mainly in the stratosphere
- Absorbs harmful ultraviolet (UV) rays

##### **Importance:**

It protects living organisms from skin cancer and genetic damage. The ozone layer absorbs most of the Sun's Ultra violet radiations, which can cause skin cancer, cataracts, and damage to plants and marine life.

##### **Conclusion**

The atmosphere is a carefully balanced mixture of gases, water vapour, and dust particles. Each component has a specific role in supporting life, controlling climate, and maintaining environmental balance. Even gases present in very small amounts are extremely important for the survival of living organisms on Earth.

## Engage and Reflect

1. Which layer of the atmosphere contains the ozone layer that protects Earth from harmful UV radiation?  
(a) Troposphere                      (b) Stratosphere                      (c) Mesosphere                      (d) Thermosphere
2. The layer of the atmosphere where weather phenomena occur is:  
(a) Mesosphere                      (b) Troposphere                      (c) Stratosphere                      (d) Exosphere
3. Which of the following gases is most abundant in Earth's atmosphere?  
(a) Oxygen                      (b) Nitrogen                      (c) Carbon dioxide                      (d) Argon



## KEY LEARNINGS

- The atmosphere is a thick blanket of gases that surrounds the Earth and extends hundreds of kilometres into space.
- The troposphere contains nearly 75 per cent mass of the atmosphere and all essential gases such as water vapour and primary greenhouse gases.
- The atmosphere is a mixture of different gases, water vapour, and dust particles that surrounds the Earth.
- Without oxygen, life on Earth would not be possible.
- The ozone layer absorbs most of the Sun's Ultraviolet radiations, which can cause skin cancer, cataracts, and damage to plants and marine life.

## ELEMENTS OF WEATHER AND CLIMATE

Weather refers to the day-to-day conditions of the atmosphere at a particular place, while climate is the average of weather conditions over a long period of time. Weather and climate are controlled by certain basic elements known as the elements of weather and climate. These elements help us understand atmospheric conditions and their impact on human life and the environment.

### Temperature

Temperature is a fundamental element of both weather and climate. It refers to the degree of hotness or coldness of the air. Its variations help scientists understand both immediate weather conditions and long-term climate trends.

It is measured using a thermometer. It is expressed in degrees Celsius (C). It affects air pressure, winds, and rainfall. High temperature leads to expansion of air, while low temperature causes contraction.

There are different types of thermometers used to measure temperature. Some thermometers show the current air temperature, while others are designed to record the highest (maximum) and lowest (minimum) temperatures over a day.

Most traditional thermometers contain a coloured liquid (usually alcohol or mercury) that expands when heated and contracts when cooled to indicate temperature changes. However, digital thermometers are becoming popular because they are fast, more accurate and can store more data.

These temperature readings can also help us calculate important statistics such as:

- **Temperature Range:** This is the difference between the maximum and minimum temperatures recorded over a period, usually 24 hours.

(Range = Maximum temperature – Minimum temperature)



Traditional Thermometer



Digital Thermometer

- **Mean Daily Temperature:** This is the average temperature of the day, calculated by adding the day's maximum and minimum temperatures and dividing by two.  $Mean = (Maximum + Minimum) \div 2$

### Atmospheric Pressure

Our bodies are very sensitive to changes in weather, especially temperature and rainfall, but another important factor that affects how the weather feels is atmospheric pressure. Atmospheric pressure is the force exerted by the weight of the air above us pressing down on the Earth's surface. Although we don't see air, it has weight, and this weight pushes down all around us.

#### Engage and Reflect

- Record the temperature at three different times of the day (morning, afternoon, evening) for three days using a thermometer or weather app.
- Make a table of your findings, compare and contrast the temperature of any other place in a different state on the same three days. Analyse the difference in temperature.

Atmospheric pressure is generally higher at places close to sea level, such as coastal areas, because the air above is denser and heavier. As you move to higher altitudes, like when climbing a mountain, the air becomes thinner, meaning there are fewer air molecules pressing down. This causes the atmospheric pressure to drop. Because of the thinner air, there is also less oxygen available, which makes breathing harder. This is why at high altitudes, people may feel tired, dizzy, or short of breath; their bodies have to work harder to get enough oxygen.

Atmospheric pressure doesn't just change with altitude. It also changes with weather conditions. Sometimes, the pressure falls suddenly over a region, forming what meteorologists call a low-pressure system or a depression. These low-pressure areas often bring unstable weather, including clouds, rain, and strong winds. When the low-pressure system intensifies, it can develop into a storm or even a cyclone, which are powerful and dangerous weather events.

In contrast, regions of high pressure usually bring clear skies and calm weather because the air is heavier and sinks, preventing clouds from forming. Understanding these pressure systems helps meteorologists predict weather changes and warn us about approaching storms.

So, atmospheric pressure plays a vital role in shaping the weather we experience every day and can directly affect how we feel physically, especially in extreme conditions.

The device used to measure atmospheric pressure is known as a **barometer**. Similar to thermometers, barometers come in different types. They usually show pressure readings in millibars (mb). At sea level, the average atmospheric pressure is about 1013 mb or 1 ATM. When the pressure falls below 1000 millibars, it usually signifies the presence of a depression or low-pressure system.



Barometer

#### 4. Wind

Wind is essentially air in motion, moving from areas where the air pressure is high to places where the pressure is lower. This movement happens because nature always tries to balance pressure differences. The greater the difference in pressure between two areas, the stronger the wind tends to be.

##### Speed and Direction

The two main features of wind are its speed and direction. Wind speed tells us how fast the air is moving, usually measured in kilometers per hour (km/h) or meters per second (m/s). Wind direction shows the direction from which the wind is blowing – for example, a north wind means the wind is coming from the north.

## Why is Wind Important?

Wind affects many aspects of our daily life and the environment:

- **Weather Forecasting:** Meteorologists study wind patterns to predict weather changes. For example, a shift in wind direction can indicate that a storm or rain is approaching.
- **Aviation and Sailing:** Pilots and sailors must understand wind conditions to navigate safely and efficiently. Strong winds can affect the speed and course of airplanes and boats.
- **Agriculture:** Farmers watch the wind to forecast rain or dry spells. Wind can also influence the evaporation of water from soil, affecting irrigation needs.
- **Environmental Impact:** Wind helps disperse seeds and pollen, aiding plant reproduction. It can also spread pollutants or wildfire smoke over large distances.

### Measuring Wind: Wind Vanes and Anemometers

A **wind vane** shows the direction of the wind. It has a pointer and a tail mounted on a rotating axis. When the wind blows, the tail catches the breeze and turns the pointer towards the source of the wind. This tool helps us know exactly where the wind is coming from.

To measure how fast the wind is blowing, an **anemometer** is used. This instrument usually has cups or blades that spin faster as the wind speed increases. The speed of rotation is converted into wind speed readings.

## 4. Humidity

Humidity is the final weather element we will explore. It describes how much water vapour is present per unit of air. The level of humidity can vary based on several factors, including temperature, wind, air pressure, and the geographical location of a place.

To answer such questions accurately, we need to understand how humidity is measured.



Wind Vane



Anemometer

### Engage and Reflect

Where do you think the humidity is likely to be higher – Chandigarh or Aizawl? You might assume that Aizawl has more humidity because it is located in a hilly region that receives a lot of rainfall. But how can we be certain? If we wanted to compare the humidity levels between Chandigarh and Aizawl, how would we go about it? Discuss this with your classmates.



But before we go further, let's recall what we learned about the different states of water. That knowledge will help us better understand the concept and measurement of humidity.

- When water evaporates, it produces a cooling effect.
- However, if the air already contains a lot of moisture (high humidity), evaporation happens more slowly. This is often what we experience on a rainy day.

The humidity in the air is measured using a scale called relative humidity, which tells us how much moisture the air is holding compared to how much it could hold at that temperature. If the air had no moisture at all (which almost never happens in nature), its relative humidity would be 0%. On the other hand, if the air is completely full of water vapour, it is said to have 100% relative humidity, meaning it can't hold any more moisture. In everyday conditions, dry weather usually means the relative humidity is between 20% and 40%, while humid weather, when the air feels sticky and moist, falls between 60% and 80%.

### Engage and Reflect

If the humidity level in Kanpur is 52% and in Mumbai it is 84%, where do you think wet clothes would dry more quickly? And in which city would you be sweating more, assuming the temperature is the same in both places?

So how are these humidity levels measured? This is done using an instrument known as a **hygrometer**. There are different types of hygrometers, each working on a different principle. Measuring humidity is very important in various fields, for example, in food processing industries, where the right moisture levels must be maintained. Even museums carefully track humidity to keep the air dry and protect valuable artefacts from damage.



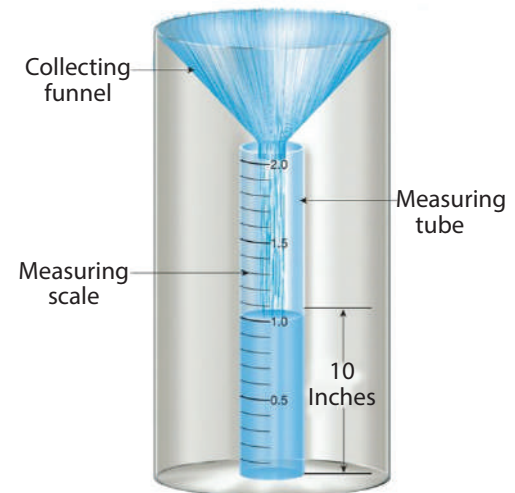
### Precipitation

When the news reports that a place received 30 millimetres (mm) of rainfall in a day, it means that 30 mm of rainwater fell and collected on the ground in that area. To understand it better, imagine if there were no drains or slopes, then the rain would form a layer 30 mm deep on the flat ground. That's about as thick as three 10 coins stacked together.

But how do we know how much it rained? We use a special instrument called a **rain gauge**. A rain gauge is a simple tool used by weather scientists to measure rainfall. It has a wide funnel at the top, which catches the rain and directs it into a cylinder or container. This container has markings or a scale on it so that we can read how much rain has collected.

Let's say the water collected in the container rises to the 15 mm mark. That means the area got 15 mm of rain during that time. If it rises to 30 mm, then it received 30 mm of rainfall.

Rainfall is usually measured over a 24-hour period, and the results help farmers, weather forecasters, and disaster management teams prepare for floods, droughts, or crop planning. Even in your city, regular rainfall records help the local government manage water supply and drainage systems.



*The Standard Rain Gauge*

## SEASONS AND MONSOON IN INDIA

A distinct seasonality is a prominent character of the monsoon type of climate. The weather changes also occur from one season to the other and are obvious to anyone observing it, especially

## Engage and Reflect

1. The instrument used to measure atmospheric pressure is called:  
(a) Thermometer                      (b) Barometer                      (c) Hygrometer                      (d) Anemometer
2. Humidity refers to the:  
(a) Amount of wind in the atmosphere                      (b) Amount of water vapour in the air  
(c) Atmospheric pressure at a place                      (d) Intensity of sunlight
3. When the temperature difference between land and sea increases, it mainly affects:  
(a) Precipitation patterns                      (b) Wind circulation and monsoon formation  
(c) Earth's rotation                      (d) Solar radiation



## KEY LEARNINGS

- Weather refers to the day-to-day conditions of the atmosphere at a particular place, while climate is the average of weather conditions over a long period of time.
- The two main features of wind are its speed and direction.
- The level of humidity can vary based on several factors, including temperature, wind, air pressure, and the geographical location of a place.
- The humidity in the air is measured using a scale called relative humidity.
- A rain gauge is a simple tool used by weather scientists to measure rainfall.

in the interiors of India. Not much difference in temperature can be seen in the coastal areas but a distinct pattern is seen in the rainfall that occurs here.

India experiences four main seasons :

1. Hot Weather Season
2. Cold Weather Season
3. Advancing Monsoon Season
4. Retreating Monsoon Season.

**1. Hot Weather Season (Summer) :** The sun's northward movement causes the global heat belt to shift northwards. This causes the hot weather season in India from March to May. The effect of the shifting of heat belt can be seen clearly from the temperature recordings during March–May at different stations that are located at various latitudes. The temperature is around 42 °C in April in Gujarat and Madhya Pradesh. The temperature of 48 °C is common around May in northwestern regions of India. The moderating effect of the ocean is very obvious when we observe the temperature in peninsular India. The Deccan Plateau experiences a temperature up to 38 °C .

In north India, rising temperature and falling air pressure occur in the summer months. An extended low pressure area develops in north India by the end of May. This low pressure area extends from the Thar Desert in the northwest to Patna and Chhotanagpur plateau in the east to southwest. Around this trough the circulation of air begins to set in.

A unique feature of the hot weather season in India is the **loo**. The loo are strong, hot and dry winds that blow during the day in summer, over northern and northwestern India. They may even continue till midnight. Many people suffer from heat strokes or other fatal consequences when they are exposed to these hot winds. During May the areas experience dust storms in the evening. These dust storms bring some relief from the intense, oppressive heat for a brief time. They are accompanied by light drizzle and cool breeze. In some areas locally formed thunderstorms along with violent winds, torrential rainfall with hailstorms may also occur.

When the summer season is about to reach an end, Kerala and Karnataka experience pre-monsoon showers. These showers are vital in aiding the ripening of the mango crop; hence they have earned the name of **mango showers**.

**2. Cold Weather Season (Winter) :** By mid-November the cold weather season sets in north India. It prevails in the area till February. The coldest months of these seasons are December and January. The temperature at this time decreases from south to north. The mean temperature is between 24 °C and 25 °C in Chennai but in the northern plains the temperature is between 10°C and 15°C. The days are mostly warm but the nights are cold. In the higher regions frost is a common occurrence.

In the winter season, the northeast trade winds prevail over the country. Blowing from land to sea, they cause most of India to experience a dry season. However, the coasts of Tamil Nadu receive most of its rains from these winds as they reach here from sea to land.

In north India, a weak high pressure area is developed. Light winds blow outwards from this region. They are affected by the relief. These winds blow through the Ganga valley from west and northwest. The fine weather in this season is marked by clear sky, low temperature and low humidity.

The inflow of depression from west and northwest is the prominent characteristic feature of the cold weather season over the north Indian Plains. Known as the **Western Disturbances**, these low pressure systems originate over the Mediterranean Sea and Western Asia. They are brought in by the westerly jet stream. The vital winter rain required by the land is caused by these low pressure systems. The winter rain falls over the plains and the Himalayas experience snowfall. This meagre rainfall is important for the rabi crops and is known locally as '**mahawat**'.

The peninsular region has no particular winter season. There is not much seasonal change in the distribution pattern of temperature due to the influence of the sea.

**3, Advancing Monsoon-Rainy season :** The intensity of the low pressure conditions over the north-western plains is increased by first week of June. They are strong enough to attract the trade winds of the Southern Hemisphere. These ocean-originating southeast trade winds move over the Indian Ocean and cross the Equator to follow the south-westerly direction. As they pass over the equatorial warm currents they carry a lot of moisture in them.

The monsoons are pulsating winds as compared to the steady trade winds. These strong winds tend to blow at an average speed of 30 km per hour. They blow all over the country in a month's time, leaving only the extreme northwest. Violent thunder and the lightning that mark the sudden approach of these moisture rich winds bring on what is popularly known as the breaking of the monsoon. The southwest monsoon that flows into India bring about a major change in its weather.

The Indian Peninsula divides the monsoons into two branches :

- (i) The Arabian Sea Branch
- (ii) The Bay of Bengal Branch

#### **Characteristics of the Arabian Sea Branch**

- | The Arabian Sea branch reaches Mumbai by 10th June.
- | The Western Ghats pose an obstruction to this branch of monsoon.
- | Heavy rains occur on the windward side of the Sahyadris.
- | This monsoon branch crosses the Ghats and reaches the Deccan Plateau and Madhya Pradesh, where it causes some rainfall.
- | This branch then enters the Ganga Plains to meet the Bay of Bengal branch.
- | Another sub-branch hits the Saurashtra peninsula and the Kachchh by mid-June.

- | Delhi receives rainfall by the 29th of June.
- | As this branch passes over western Rajasthan it causes scanty rainfall.
- | This branch meets the Bay of Bengal branch in Punjab and Haryana to cause rains in the western Himalayas by first week of July.



Advancing Monsoon



Retreating Monsoon

*Mawsynram*, located on the crest of the southern range of Khasi Hills, receives the highest average annual rainfall in the world. Cherrapunji, located 16 km east of Mawsynram holds some other rainfall records.

*Cherrapunji* is one of the wettest places on earth and established a world record of an incredible 1032 inches of rain in 1861. It continues to record an average rainfall of 450 inches in the monsoon months of July to September.

Cherrapunji is surrounded by groves of orange and banana trees. This little town has a lively weekly market and is famous for its delicious orange-flavour honey.

The heaviest rainfall in the world is recorded in the nearby village of *Mawsynram* with an annual average of 479 inches. The excessive rainfall is due to a situation on an amphitheatre relief and on the windward side of the monsoon.



Study the graphs to answer the following questions:

- Which places have the highest and the lowest annual range of temperature?
- Which place receives the highest annual rainfall?
- Which place receives the lowest rainfall?
- Identify the place having more rainfall in October – November.
- Which place receives almost all its rain from south west monsoon?
- Which place has relatively extreme temperature and has rainfall concentrated between June and September?

## Characteristics of the Bay of Bengal Branch

- | This branch of monsoon is naturally directed towards parts of southeast Bangladesh and coastal Myanmar, to be deflected later.
- | This deflection occurs due to the Arakan Hills along Myanmar's coast. Here a major part of this monsoon branch enters West Bengal and Bangladesh from south and southeast.
- | Low temperature in northwest India causes the branch to split into two — one of which moves westward and the other moves to the north and northeast India.
- | The westward branch reaches the Punjab Plains along the Ganga Plains, while the other branch moves up the Brahmaputra valley to cause heavy and widespread rains in northeastern India.

The relief of our country determines the distribution of rainfall from the southwest monsoon. So we observe that the Western Ghats receive a rainfall of over 250 cm. On the other hand, less than 50 cm of rain is recorded on the leeward side of the Ghats. Similarly, the hills and mountain ranges cause heavy rainfall in the northeastern states. The Northern Plains experience decreased rainfall as one moves westward. At this time of the season Kolkata receives 120 cm of rain while Patna, Prayagraj and Delhi receive 102 cm, 91 cm and 56 cm of rainfall respectively. The increasing distance from the sea causes the decline in the rainfall.

The monsoon tends to have 'breaks' in its rainfall which causes wet and dry spells. This means that monsoon rains occur only a few days at a time. Rainless, dry spells occur in between. This phenomenon is due to the frequent and strong tropical depression. Formed at the head of the Bay of Bengal, they cross over the mainland. The depressions follow the axis of the monsoon trough of the low pressure. Due to different causes the trough and its axis keep moving to the north or south which in turn decides on the spatial distribution of rainfall. When the axis of the monsoon trough is over the plains, the region receives ample rainfall. But if there is a shift in the axis and it moves closer to the Himalayas, then an increase in dry spells is observed and these dry spells also last longer than other times. Widespread rainfall occurs in the mountainous catchment areas of the Himalayan rivers. These heavy rainfalls herald floods that devastate the lands leading to huge loss of life and property in the plain regions.

Uncertainty and changes are characteristics of the monsoons. The alternation of dry and wet spells varies in intensity, frequency and in durations. They bring heavy rains in one part and cause droughts in other areas. Their irregular arrival and retreat disrupt the farming schedule of most of the Indian farmers.

**4. Retreating Monsoon (Transition Season) :** The monsoon trough of low pressure grows weaker by October–November. It is then slowly replaced by high pressure. The monsoon's outreach is rendered unsustainable and the gradual withdrawal begins. This is known as the 'retreat of monsoon'. By the time October begins the monsoons withdraw from the Northern Plains.

The period of transition from hot and rainy to dry and cold season occurs in the months of October–November. Clear skies and rising temperature are prominent marks of retreating monsoon. During the daytime the temperature remains high but nights are pleasant and cool. The land remains moist. High temperature and humidity cause the daytime weather to become rather oppressive. Known as **October Heat**, this phenomenon of early October is replaced in late October by low temperature especially in Northern India.

The northwestern India's low pressure conditions move to the Bay of Bengal area by early November. This shift is caused due to cyclonic depressions that occur with their origins over the Andaman Sea. Those depressions that are able to cross the eastern coasts of India cause heavy rains. The destructive tropical cyclones strike the thickly populated area in the Godavari, Krishna and Kaveri deltas. Loss of lives and properties are on a large scale. These cyclones may also arrive

in Odisha, West Bengal and Bangladesh coasts. Most of the rainfall of the Coromandal Coast is a consequence of the depressions and cyclones.

### Distribution of Precipitation

India receives an annual rainfall of over 400 cm over parts of western coast and northeastern India. However, in western Rajasthan and parts of Punjab, Haryana and Gujarat only 60 cm rain is recorded. Low rainfall is also recorded in the interiors of the Deccan Plateau in the east of the Sahyadris. Around Leh in Jammu and Kashmir we can once again observe low precipitation.

The rest of India gets moderate rainfall while snowfall is restricted to the Himalayan region.

Due to the vagaries of the monsoon, the annual rainfall is bound to vary from year to year. Regions of low rainfall have high variability. These regions include parts of Rajasthan, Gujarat and the leeward sides of Western Ghats. Thus, areas that receive high rainfall are prone to floods while areas having low rainfall suffer from droughts.

### Monsoons – A Unifying Bond

The Himalayas are protective barriers that stop the cold winds from entering the subcontinent. This allows even the areas of northern India which lie on the same latitude to experience uniform high temperature. In the same way the influence of the sea from three sides makes for moderate temperature on the peninsular plateau. Even though these moderating influences exist there are some great differences in the temperature conditions. Even then the monsoon as a unifying bond is an obvious fact. The seasonal alternation of the wind systems and the associated weather conditions provide a rhythmic cycle of season. The uncertainties of rain and the uneven distribution are a prominent character of the monsoons. The monsoon has a profound influence on India's festivals, lifestyle of people, the agricultural routine, animal and plant life and the Indian landscape too. The monsoon is a unifying factor as it influences the occupation followed by a large percentage of Indian population—agriculture. The summer monsoon is vital to India's agriculture. The timing and amount of the rains can mean the difference between a successful harvest and widespread crop failure and famine. Other than this, monsoons have a profound impact on the culture of India. The very essence of folk life style, dances, music, festivals, paintings and literature come under the monsoon's influence. For centuries the Indians from north to south, from east to west have waited for the monsoon to arrive eagerly. But how much prosperity or devastation they bring is another matter to discuss.



#### KEY LEARNINGS

- India experiences four main seasons, i.e., Hot weather season, Cold weather season, Advancing monsoon season and Retreating monsoon season.
- Hot weather season is from March to May with rising temperature and falling air pressure.
- Loo are strong hot, dusty and dry winds that blow during the day in summer over northern and north-western part of India.
- Cold weather season sets in north India in mid-November and prevails till February.
- In the winter season, north-east trade winds prevail over the country, and blowing from land to sea, they cause most parts of India to experience a dry season.
- South-east trade winds cross the equator and blow in a south-westerly direction entering the Indian peninsula as the south west monsoon, bringing abundant moisture to the subcontinent.
- The months of October–November form a period of transition (Retreating monsoon season) from hot rainy season to dry winter conditions.
- The bulk of rainfall of the Coromandel Coast is derived from depression and cyclones.

## Engage and Reflect

1. The coldest months in the northern parts of India are
  - (a) December and January
  - (b) March and April
  - (c) May and June
  - (d) August and September
2. What are mango showers?
3. In which months India experiences hot weather season.
4. During the advancing monsoon season, which part of India receives the highest rainfall?
5. State one main feature of the retreating monsoon.

## CLIMATE CHANGE

Climate change is one of the most important environmental issues facing the world today. Its change is the long-term change in Earth's average temperature and weather patterns, mainly caused by human activities such as burning fossil fuels and deforestation, which increase greenhouse gases in the atmosphere.

### Causes of Climate Change

#### 1. Burning fossil fuels

Coal, oil, and natural gas burned for electricity, transport, and industry release greenhouse gases like carbon dioxide (CO<sub>2</sub>). These gases trap heat in the atmosphere.

#### 2. Deforestation

Trees absorb CO<sub>2</sub>. When forests are cut down or burned, that stored carbon is released, and fewer trees remain to absorb future emissions.

#### 3. Industrial and agricultural activities

Factories emit greenhouse gases, and farming produces methane (from livestock) and nitrous oxide (from fertilisers), both are very powerful heat-trapping gases.

#### 4. Waste and overconsumption

Landfills emit methane, and producing goods at large scales increases energy use and emissions.

### Effects of Climate Change



Melting of Ice Due to High Temperature



Droughts, Wildfires, storms, Floods, etc. are the consequences of climate Changes

#### 1. Rising global temperatures

Average temperatures are increasing, leading to hotter days and more frequent heatwaves.

#### 2. Melting ice and rising sea levels

Glaciers and polar ice caps are melting, causing sea levels to rise and threatening coastal cities and islands.

### 3. More extreme weather

Climate change increases the intensity and frequency of storms, floods, droughts, and wildfires.

### 4. Harm to ecosystems and wildlife

Many plants and animals struggle to adapt quickly enough, leading to habitat loss and species extinction.

### 5. Impacts on humans

- Food and water shortages
- Health problems (heat stress, spread of diseases)
- Economic losses and climate-driven migration
- Thus we find that Climate change affects every part of life on Earth—nature, economies, and human health. The good news is that reducing emissions, protecting forests, and switching to renewable energy can slow its impacts.

### Engage and Reflect

1. Which of the following is a major contributor to global warming?
  - (a) Increase in oxygen concentration
  - (b) Excessive greenhouse gases
  - (c) Decrease in atmospheric pressure
  - (d) Formation of clouds
2. The melting of glaciers and rising sea levels is mainly caused by:
  - (a) Deforestation and global warming
  - (b) Tidal waves
  - (c) Volcanic eruptions only
  - (d) Ozone layer depletion



### KEY LEARNINGS

- Climate change is one of the most important environmental issues facing the world today.
- Average temperatures are increasing, leading to hotter days and more frequent heatwaves.
- Climate change increases the intensity and frequency of storms, floods, droughts, and wildfires.

## FLOODS

Floods are inundations of land with water caused by rains, rivers overflowing their banks, increase in reservoirs of water, winds, cyclones, tsunamis, melting of glaciers and sea tides. Sometimes rivers breach or burst their banks. There may also be a dam burst or a thunderstorm or a tsunami may cause floods. Such a violent splash of water is called flash flood. The area drained by the waters of the river is called drainage basin. The flattish area alongside river channels covered by water during floods is called flood plain. The area in the upper course of the river which catches rainfall and feeds the river is called catchment area. A stream or a smaller river joining the main river is called a tributary. The point from where river begins its course is called origin. A point or a place where the river joins the sea is called its mouth. The high relief feature that separates two drainage basins is called water divide. The surface flow of water is called run off. These terms are very essential to learn in order to understand the anatomy of floods.

### Onset Type

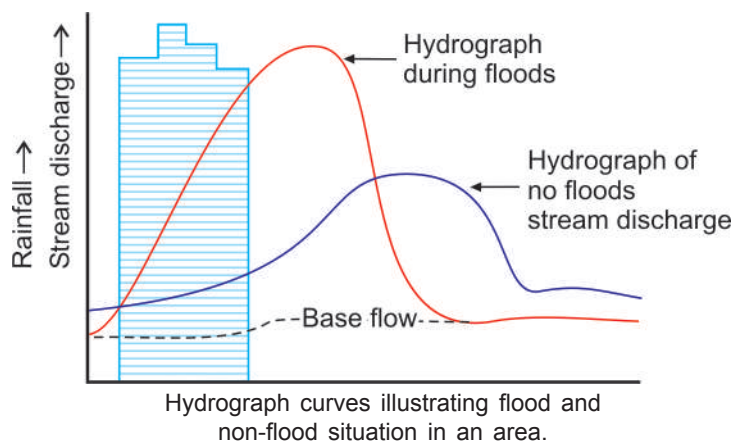
Floods are regarded as 'slow movements' in terms of their origin but not in terms of their happening. Most floods are preceded by heavy rainfall and melting of snow over several days. During this period even an ordinary person gets an idea of flooding. This period is known as 'probability' period. During the probability period prior to onset of flood there is persistence or intensity of rain and rapid flow or heavy runoff. The floodplains first receive the release of extra water that the channel cannot hold. Even the dam bursts regarded as major hazards have a probability period when a breach or a crack in the reservoir walls may have been noticed. Globally

dissemination of statistical information collected from flood-prone streams and areas has revealed that there is a probability of occurring floods once during a ten year period. In between this period there may be milder floods every two years. Even floods occurring on account of cyclones or tsunami, and producing storm surges, have a certain probability period.

### Warning

The Central Water Commission (CWC) has about 132 forecasting stations in the country which cover almost all the interstate flood prone rivers. Over 6000 forecasts are issued annually. In most cases the discharge of rivers is within permissible limits. The period of peak flow depicted in the given hydrograph may indicate possible flooding above this level which also serves a warning on T.V. screen and computer networks for flood control personnel in the area to which the hydrograph pertains.

The probability period discussed before allows sufficient time for media and administrative authorities to issue warnings and begin evacuation process much in advance. Almost all major river systems and canals have water level gauges fixed at strategic points which indicate the water level at a particular period of time. The Flood/Irrigation Departments of the Government or field units of Central Water Commission (CWC) use various other methods to forecast floods and issue warnings. They use hydrographs or charts to show lag-time between heavy rainfall and peak discharge as shown in the figure. [The interval between heavy rainfall and flooding is called lag-time in the present context.]



### Vulnerability

- Settlements in low lying areas of flood plain (known as peneplain) at the mouth of the river or the stream or on steep slopes where rush of water may put the structures at risk.
- Houses built on stilts near the mouth of a river.
- Industries and multistoreyed housing projects in flood plains have in recent studies been found not only vulnerable but are regarded as the cause of floods. It is because surfaced roads, drains, covered areas, parking lots prevent water from seeping underground. The hydrographs are also used to depict these variations.

### Typical Effects

- **Panic** : This is almost common to most hazards. Most persons having weak physique, old people, children, pregnant mothers die more on account of panic.
- **Disease** : Floods mix-up wastes and waste water. In India most floods come during rainy season when it is very warm. Decomposition of organic matter on a vast scale leads to spread of diseases such as epidemics, viral infections, malaria and diarrhoea.
- **Physical damage** : In India crops are raised in flood plains. They are still standing during rainy season when floods come. The sediments transported by floods cause the most damage to standing crops. Houses at risk, dam bursts on account of pressure, landslides, houses on stilts, animals and animal shelters all become victims of heavy rush of water during floods.
- **Soil erosion** : While in flood plains rivers generally do deposition work, severe floods cause heavy rush of water and consequently do the work of erosion. Even in areas of deposition soil characteristics are changed, especially due to non-degradable materials washed out by floods.

## Main Mitigation Strategies : Non-Structural Mitigation

- **Mapping** : Most major rivers, their flood plains, their basins and water divides are now fully mapped. A wide-variety of computer data-base is also available. This information is often made use of by flood control personnel to good advantage.
- **Land-Use Control** : This will reduce the danger to life and property when water inundates the floodplains and the coastal areas. No major development should be permitted in areas which are subjected to flooding. Important facilities like hospitals should be located in safer and elevated areas.
- **Flood Forecasting and Warning** : Better facilities for forecasting and warning help in reducing the impact of floods.

## Structural Mitigation

- **Straightening of channels** : In straight channels water flows speedily during floods. Meanders are open to floods. Artificial straightening is the main strategy to control floods.
- **Dikes and levees** : These are artificial embankments to divert the flood of water in particular direction.



Dikes in the Netherlands



Levees

- **Stream behaviour** : The behaviour of a stream river is an important aspect of study in hydrography or the science of charting rivers and other water bodies. Engineering structures are then built to divert the course of water where no major risk is posed. This also involves non-structural strategy of zoning and separate flood-tracts are earmarked.
- **Flood proofing** : These measures include the following :
  - (i) artificial reservoirs in flood prone area with sluice gates to divert flood water into a certain direction.
  - (ii) sand bags to block flow of water in a certain direction.



Irrigation ditches in Egypt siphon off floodwaters of the Nile river for use in agriculture.



A dam can create a reservoir to contain floodwater of a river. The reservoir can also become a source of hydroelectric power.

- **Constructing platforms and elevations** : During the Indus Valley Civilisation houses were constructed on elevated platforms as a safety measure against floods. In many Nordic countries which are below the sea level such raised platforms are constructed even today. Settlements are founded on these platforms.

### Engage and Reflect

1. Floods in India are most commonly caused by:
 

(a) Deforestation and heavy rainfall	(b) Earthquakes
(c) Cyclones in western India only	(d) Cloud formation
2. Which of the following measures can reduce flood risk?
 

(a) Afforestation	(b) Increasing urban concrete surfaces
(c) Deforestation	(d) Building on floodplains
3. Floods are less likely to occur in:
 

(a) Coastal plains	(b) Mountain valleys
(c) Arid regions	(d) River basins



### KEY LEARNINGS

- Floods are regarded as ‘slow movements’ in terms of their origin but not in terms of their happening.
- Most persons having weak physique, old people, children, pregnant mothers die more on account of panic caused by floods.

## CARBON FOOTPRINT

Human activities have greatly increased the amount of greenhouse gases in the atmosphere. One important way to understand this impact is through the concept of carbon footprint. Reducing our carbon footprint is essential to control climate change and protect the environment for future generations.

### Meaning of Carbon Footprint

A carbon footprint is the total amount of greenhouse gases, mainly carbon dioxide (CO<sub>2</sub>), released into the atmosphere due to human activities.

It is usually measured in tonnes of carbon dioxide equivalent (COe).

In simple words, a carbon footprint shows how much we contribute to air pollution and global warming through our daily actions.

### Sources of Carbon Footprint

Carbon footprints are created from various activities at individual, community, and national levels.

#### Major sources include:

- Burning of fossil fuels (coal, petroleum, natural gas)
- Transportation (cars, buses, airplanes)



Pollution from vehicle

- Electricity generation in thermal power plants
- Industries and factories
- Deforestation
- Use of household appliances like air conditioners and refrigerators
- Agriculture and livestock farming



Factory Smoke Polluting the Air

### Types of Carbon Footprint

Carbon footprint can be classified into two main types:

#### Direct Carbon Footprint

This includes emissions from activities we directly control, such as:

- Driving vehicles
- Using LPG or petrol
- Burning fuels at home

#### Indirect Carbon Footprint

This includes emissions produced during the manufacturing and transportation of goods and services we use, such as:

- Clothes
- Food products
- Electronic items

### Effects of High Carbon Footprint

An increase in carbon footprint leads to serious environmental problems such as:

- Global warming
- Climate change
- Melting of glaciers and polar ice
- Rise in sea level
- Increase in extreme weather events
- Loss of biodiversity
- Health problems due to air pollution

### Ways to Reduce Carbon Footprint

Reducing carbon footprint is a shared responsibility.

Steps individuals can take:

- Use public transport, cycling, or walking
- Save electricity and use energy-efficient appliances
- Switch to renewable energy sources
- Reduce, reuse, and recycle materials
- Avoid unnecessary use of plastic
- Plant more trees
- Consume local and seasonal products

### Role of Students in Reducing Carbon Footprint

Students can play an important role in environmental protection by:

- Spreading awareness
- Practicing energy conservation at home
- Participating in tree plantation drives
- Supporting eco-friendly habits at home and school

## Engage and Reflect

1. Why is carbon footprint considered harmful for human beings?
2. Mention the role of government in order to reduce carbon footprint?



## KEY LEARNINGS

- Human activities have greatly increased the amount of greenhouse gases in the atmosphere.
- An increase in carbon footprint leads to serious environmental problems such as climate change air pollution, and global warming:
- Reducing carbon footprint is a shared responsibility.

## GLOSSARY

<b>Atmosphere:</b>	: It is the layer of gases surrounding Earth, held by gravity, that protects life and regulates climate and weather.
<b>Natural Vegetation</b>	: A plant population that has evolved naturally without the assistance of humans.
<b>Solar Radiation</b>	: It is the energy emitted by the Sun in the form of light and heat that reaches Earth.
<b>Ultraviolet Radiation</b>	: It is a form of invisible electromagnetic energy from the Sun that can affect living organisms and Earth's atmosphere.
<b>Food Chain</b>	: It is a linear sequence of organisms through which energy and nutrients pass as one organism eats another.
<b>Ecosystem</b>	: It is a community of living organisms interacting with each other and their physical environment.
<b>Combustion</b>	: It is a chemical process in which a substance reacts with oxygen, releasing heat and light.
<b>GPS</b>	: Global Positioning System is a satellite-based navigation system that provides location and time information anywhere on Earth.
<b>Photosynthesis</b>	: It is the process by which green plants use sunlight, carbon dioxide, and water to produce food (glucose) and oxygen.
<b>pH</b>	: It is a measure of how acidic or basic a substance is, on a scale from 0 to 14.
<b>Marine life</b>	: It refers to all plants, animals, and other organisms that live in oceans, seas, and saltwater environments.
<b>Condensation</b>	: It is the process by which water vapour in the air changes into liquid water.
<b>Thunderstorm</b>	: It is a weather event characterised by heavy rain, lightning, thunder, and often strong winds.
<b>Greenhouse gas</b>	: A greenhouse gas is a gas in the atmosphere that traps heat, contributing to the warming of Earth's surface.
<b>Extinction</b>	: It refers to the permanent disappearance of a species from the Earth.
<b>Deforestation</b>	: It is the large-scale clearing of forests, usually by humans, for agriculture, development, or other activities.
<b>Global Warming</b>	: It is the gradual increase in Earth's average temperature caused mainly by the buildup of greenhouse gases in the atmosphere.

# Exercises

## A. Multiple Choice Questions

1. Which of the following statements is true regarding Stratosphere?
  - I. Its temperature increases with height due to absorption of ultraviolet rays.
  - II. It contains the ozone layer.
  - III. It is the coldest layer of the atmosphere.
  - IV. It helps in radio communication by reflecting radio waves.

(a) Only I                                      (b) Only II  
 (c) Both I and II                              (d) Both III and IV



2. Identify the given instrument.
 

(a) Rain gauge                              (b) Thermometer  
 (c) Barometer                              (d) Anemometer
3. Consider the statements given below and choose the correct answer.
 

**Statement I:** Poor drainage systems cause flood.  
**Statement II:** Construction of dams, embankments and reservoirs can prevent flood.

(a) Both statements are correct  
 (b) Both statements are incorrect  
 (c) Statement I is correct but Statement II is incorrect  
 (d) Statement I is incorrect but Statement II is correct
4. Most parts of India receive rainfall during which of the following months?
 

(a) Prayagraj to February                              (b) March to May  
 (c) June to September                              (d) October to November
5. In which of the following months does the Tamil Nadu coast get most of its rainfall?
 

(a) December to February                              (b) March to May  
 (c) June to September                              (d) October to November
6. Which of the following places have cooler climate even during summers?
 

(a) Allahabad                              (b) Mumbai                              (c) Mussoorie                              (d) Amritsar
7. Due to which of the following factors does Pune receive much lesser rainfall as compared to Mumbai?
 

(a) It is located on the leeward side of Western Ghats  
 (b) It is located on windward side of Western Ghats  
 (c) It is located on central India  
 (d) It is located far from the sea

[hots]

8. Match the following items given in column I with those in column II.

Column A		Column B
1.	Annual rainfall above 400 cm	A. Hyderabad
2.	Annual rainfall between 100–200 cm	B. Jaisalmer
3.	Annual rainfall below 20 cm	C. Shillong
4.	Annual rainfall between 60–100 cm	D. Nagpur

- (a) A-I, B-II, C-III, D-IV                              (b) A-III, B-I, C-II, D-IV  
 (c) A-IV, B-III, C-II, D-I                              (d) A-IV, B-I, C-II, D-III

## B. Fill in the blanks

1. A \_\_\_\_\_ is the total amount of greenhouse gases, mainly carbon dioxide released into the atmosphere due to human activities.
2. GPS stands for \_\_\_\_\_
3. Warm ocean current along the coast of Peru is called \_\_\_\_\_
4. The loo are strong hot and dry \_\_\_\_\_
5. The \_\_\_\_\_ are proactive barriers that stop the cold winds from Central Asia from entering the subcontinent.

## C. Very Short Answer Type Questions

1. Which layer of the atmosphere contains the ozone layer?
2. Name the gas that makes up the highest percentage of the atmosphere.
3. Which element of weather is measured using a barometer?
4. What is the normal duration of the southwest monsoon in India?
5. Which season in India is known as the “hot weather season”?
6. Name the process by which water vapour turns into clouds.
7. What term is used for long-term average weather conditions of a place?
8. Which greenhouse gas is mainly released by burning fossil fuels?
9. What is the immediate cause of floods in most regions?
10. What does the term “carbon footprint” refer to?

## D. Short Answer Type Questions

1. State any two differences between weather and climate.
2. Why is the troposphere important for human life?
3. Explain the role of nitrogen in the atmosphere.
4. How does altitude affect temperature?
5. Mention two characteristics of the retreating monsoon season in India.
6. Why do coastal areas experience moderate climate?
7. Give two human activities responsible for climate change.
8. Explain how deforestation contributes to floods.
9. State two impacts of global warming on India's climate.
10. Suggest two ways by which individuals can reduce the amount of carbon footprint.

## E. Long Answer Type Questions

1. Describe the structure and composition of the atmosphere and explain how each layer supports life on Earth.
2. Explain the elements of weather and analyse how they collectively influence the climate of a region.
3. Describe the major seasons of India and explain the climatic conditions associated with each season.
4. Explain the mechanism of the southwest monsoon in India with suitable reasons for its importance.
5. “Monsoon is the lifeline of India.” Justify this statement with examples.
6. Analyse the causes and consequences of climate change, highlighting its impact on weather patterns.
7. Explain the major causes of floods in India and suggest effective flood management measures.
8. Discuss how urbanisation and industrialisation increase the frequency of floods.

9. Explain the concept of carbon footprint and examine its role in global climate change.
10. Suggest sustainable strategies at individual, national, and global levels to reduce climate change impacts.

#### F. Assertion Reason Questions

There are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below.

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
  - (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
  - (c) (A) is correct but (R) is wrong
  - (d) (A) is wrong but (R) is correct
1. **Assertion (A):** Atmosphere is divided into three distinct layers.  
**Reason (R):** All weather phenomena like rain, clouds, storms, and fog occur in Troposphere.
  2. **Assertion (A):** Wind is the horizontal movement of air from high pressure to low pressure areas.  
**Reason (R):** It is measured by an instrument called rain gauge.
  3. **Assertion (A):** Climate change is caused by human activities such as burning fossil fuels and deforestation, which increase greenhouse gases in the atmosphere.  
**Reason (R):** It is one of the most important environmental issues facing the world today.
  4. **Assertion (A):** Floods cause loss of life, property damage, and environmental destruction.  
**Reason (R):** Floods are among the most common destructive natural disasters in the world.

#### G. Case-Based Questions

Read the given text and answer the following questions.

In 2023, a coastal city in India experienced unusually heavy rainfall over a short period, leading to widespread flooding. Meteorologists observed that the rainfall was associated with strong southwest monsoon winds originating from the Arabian Sea. Additionally, the city had experienced unusually high temperatures in the preceding months. Scientists suggest that climate change may have intensified the extreme weather.

1. Which layer of the atmosphere is primarily responsible for weather phenomena like the heavy rainfall described in the case study?
2. The unusually high temperatures before the monsoon could have contributed to the intensity of rainfall. Provide a valid reason to support this statement.
3. Name few human actions that could help reduce the frequency and impact of such floods in the future.



**AI-Buddy**

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**WORKSHEET** of this chapter.



CODE-EGT6

# The Stone Age: The Earliest People



## KEY CONCEPTS

- ▶ The Stone Age
- ▶ The Mesolithic Period
- ▶ The Palaeolithic Period
- ▶ The Neolithic Period

Early man was a hunter-gatherer. It means that he moved from place to place in search of food. He depended on nature for all his needs. Early man was also a nomad. He travelled great distances to find food. He fished, hunted for wild animals, and gathered berries, nuts, wild roots and fruits.

There were many reasons for his moving from place to place.

- If he stayed at one place for a long time all the available food would have been eaten up.
- Animals move from place to place in search of grass and water. Early man, who was a hunter, had to follow their movements.
- Plants and trees bear fruits in different seasons. So, early man had to move in search of different fruits and other plant products.
- People, plants and animals need water to survive. All rivers are not perennial. People living on the banks of seasonal rivers had to go in search of water during the dry seasons.

It was not easy for early man to hunt. He needed special skills to hunt and gather food. To hunt he had to have proper tools and a quick and alert mind, and a knowledge of the animals they hunted.

To gather food he had to know which food to gather, which food to eat, and the knowledge of the season when he could gather a particular fruit or food. In short, he needed skills and knowledge.

Early man initially used tools such as sticks to dig up wild roots. Gradually, he started making tools out of stone. This led to the beginning of the Stone Age.

## The Stone Age

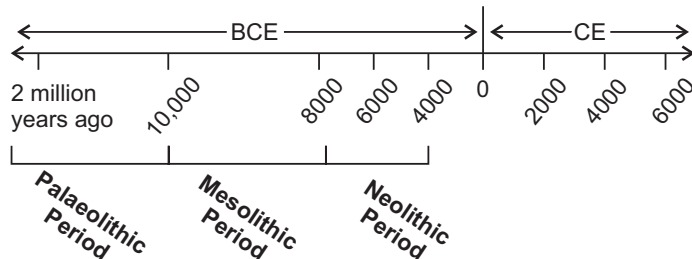
The Stone Age is divided into three periods :

- Palaeolithic Period
- Mesolithic Period
- Neolithic Period

**Palaeolithic Period:** The Palaeolithic period began about two million years ago and lasted till about 10,000 BCE.

**Mesolithic Period:** The Mesolithic period lasted from 10,000 BCE till 8000 BCE.

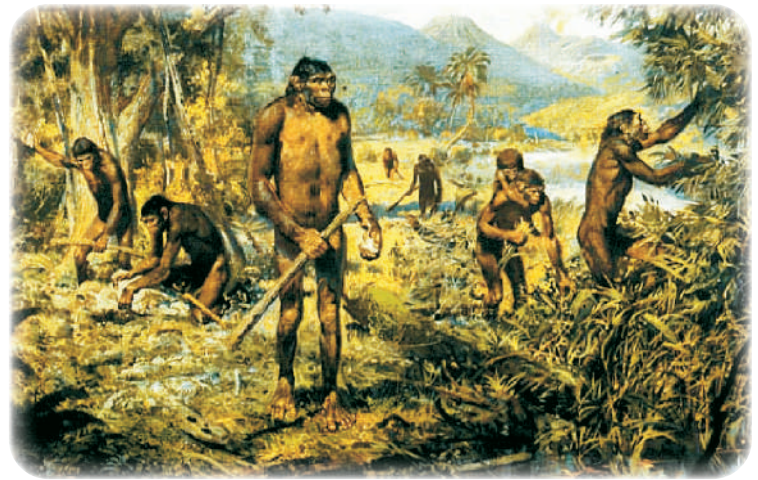
**Neolithic Period:** The Neolithic period began around 8000 BCE and lasted till about 4000 BCE.



The Early man

## THE PALAEOLITHIC PERIOD

The Palaeolithic period or the ‘Old Stone Age’ roughly began about two million years ago. During this period, man hunted and gathered food. He moved from place to place in search of food and wild animals. He ate whatever he could find. He did not wear anything in summers. In winters he covered himself with animal skins and leaves to keep himself warm. As he was a wanderer he moved in search of food from place to place. He had no home. At night he slept on trees or hid in caves.



Early man hunting and gathering food

The Palaeolithic Period is further subdivided into Lower Palaeolithic period, Middle Palaeolithic period, and Upper Palaeolithic period.

### Lower Palaeolithic Period

During this period, most of the earth’s surface was covered with thick sheets of ice. The climate was very cold. This period was also called the ‘Ice Age’ or ‘Pleistocene Period’. Hand axes were used by early man during this age.

### Middle Palaeolithic Period

The tools used during the Middle Palaeolithic Period were scrapers and borers made of stone flakes. Needles were used to sew furs and skins for body coverings.

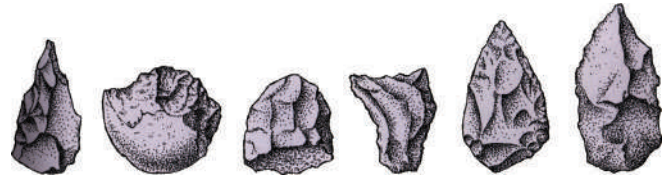
### Upper Palaeolithic Period

During the Upper Palaeolithic Period, the climate became slightly warmer. Tools such as flint, blades and projectile points were used for hunting and skinning wild animals.

## Use of Tools

Tools were used by early man for different purposes.

- They were used as weapons for hunting wild animals.
- They were used for shaping or cutting materials.
- They were used for digging the ground for cutting edible roots.
- They provided a sense of security and protection from wild beasts and enemies.



Old Stone Age tools



## KEY LEARNINGS

- The stone Age is divided into three periods — Palaeolithic, Mesolithic and Neolithic.
- Early man (Old Stone Age) was a hunter – gatherer. He hunted animals and ate their raw flesh.
- He used crude stone tools.
- He was a wanderer who moved from place to place in search of food.

## MESOLITHIC PERIOD

Mesolithic Period or the Middle Stone Age was the period in history that existed between the Palaeolithic Period and the Neolithic Period. Mesolithic People used tools made of bones, antler and wood for hunting, fishing and gathering food.

Later, they used tools formed from chips like blades, points, borers and scrapers known as microliths.



Mesolithic tools – Microliths

## DID YOU KNOW?

Several human habitats dating back to the Stone Age have been discovered in different parts of the earth:

- ▶ A tent-like structure was found inside a cave near Nice, France.
- ▶ Many huts made of bones were found in Eastern Europe and Siberia.
- ▶ Megalithic tombs built during the Neolithic Age have been discovered all across Europe and Asia.

The people living during the Mesolithic Period were hunter-gatherers. Gradually, towards the end of this period, they moved on from being food gatherers to food growers. They experimented with seeds by dropping them on the ground and seeing them grow. They realised that by growing plants they received food in sufficient quantity. They made attempts to domesticate animals like goats, sheep and cattle which provided them with milk and food.



Cave paintings from the Mesolithic Period

## Mesolithic sites

Mesolithic sites in India are spread across various regions, with notable examples including Bhimbetka, Adamgarh, Panchmarhi (Madhya Pradesh), Bagor and Tilwara (Rajasthan) and Langhnaj (Gujarat).

## Tilwara

- Westernmost Mesolithic site in India.
- It has two phases – First phase is mesolithic and is characterised by the presence of Microliths (small polished stones). The second phase has yielded wheel-made pottery, some pieces of iron, glass beads along with microliths.
- Circular arrangement of stones on the ground indicate habitation structure.
- Diet of people include both meat and vegetable food.
- Fire hearths, charred bones indicate settlement of Mesolithic culture.
- Stone working site found.



Tilwara Mesolithic Site

## Bagor (largest mesolithic site of India)

- Located in Bhilwara district of Eastern Rajasthan, near Kothari river.
- One of the best documented microlithic sites.
- Three occupational levels mesolithic, Chalcolithic and evidence of iron.
- Microliths made of locally available chert and quartz were found alongwith a large number of geometric microliths such as triangles and trapezes.
- House floors paved with stone slabs were found.
- Stone paved areas with a large number of animal bones found.
- Animal bones of domesticated animals such as sheep, goat, cattle have been found.
- Important discoveries include ring stones (used as hammer stones to make microliths, and rubbing stones (for grinding food).



Bagor Mesolithic Site

## Langhnaj

- Situated in Mehsana district, Gujarat.
- It is most extensively studied site in Gujarat.
- Important discoveries were – microliths, human burials, bones of wild animals and some potsherds.
- 14 human skeletons with cut marks on fore head were found.
- Symbiotic relationship with Harappan urban culture found. Honey and hunted meat were sent to Harappan centres.



Langhnaj Mesolithic Site

## Engage and Reflect

- Differentiate between tools of Palaeolithic and Mesolithic Age
- Why were Microliths called so?



## KEY LEARNINGS

- Mesolithic period (Middle Stone Age) was a transition period between Palaeolithic and Neolithic periods.
- Mesolithic people used small polished stone tools, which were sharp and pointed, called microliths.
- Notable examples of Mesolithic sites in India are Bhimbetak, Adamgarh and Panchamarhi (M.P.) Bagor and Tilwara (Rajasthan) and Langhnaj (Gujarat).

## NEOLITHIC PERIOD

The Neolithic Period began around 8000 BCE and lasted till about 4000 BCE. The Neolithic people learnt to make more polished tools. One of the major developments of this period was the adoption of agriculture. They moved to larger settlements and realised the importance of domestic animals like dogs, sheep and cattle. They used them as means of transport and for providing them with milk and meat.

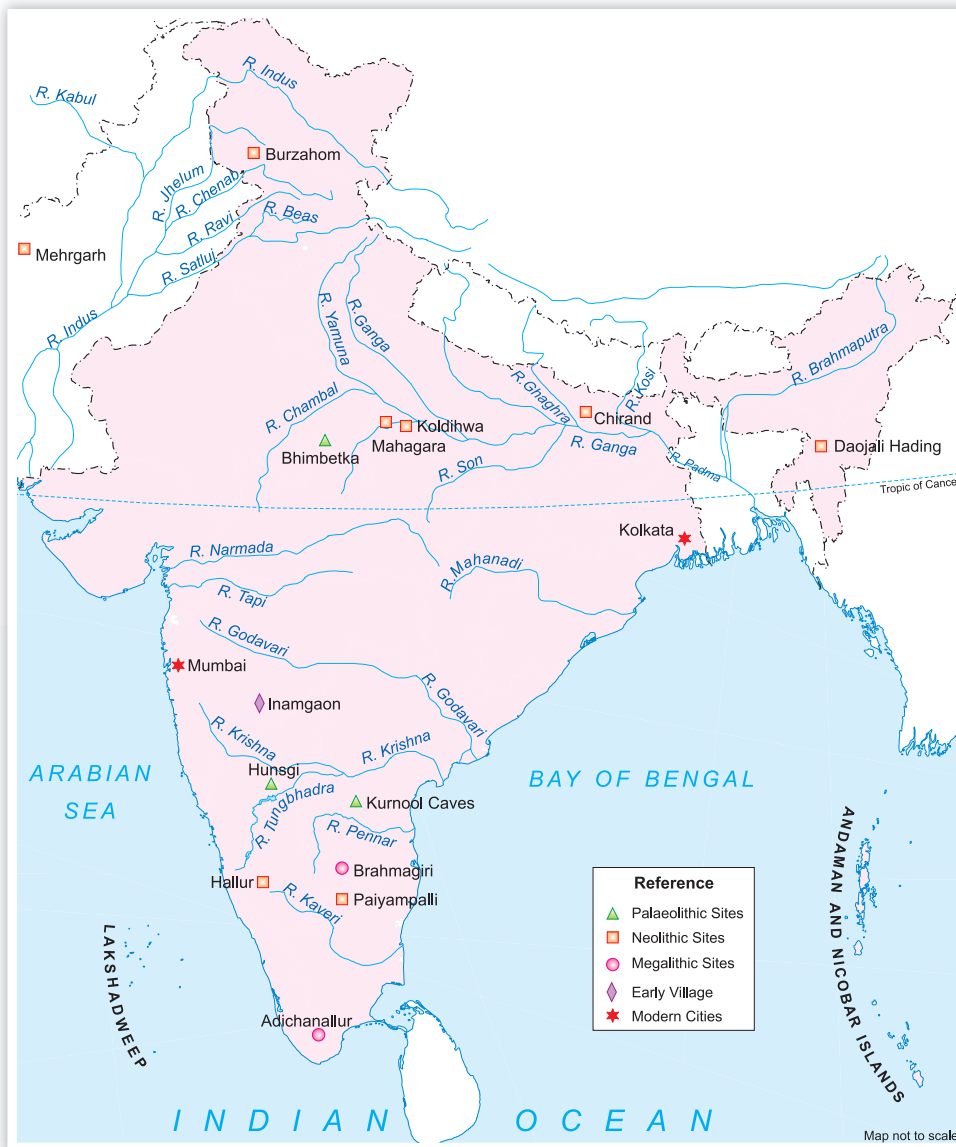


Neolithic tools

## The Neolithic Revolution

The Neolithic Revolution (8,000 – 4000 BCE) was a foundational shift from nomadic hunting and gathering to settled agriculture. It featured the domestication of plants and animals, permanent settlements, use of polished stone tools, pottery, population growth and societal complexity. Humans began cultivating crops such as wheat, barley, rice and domesticating animals such as sheep, goats and cattle for food, labour, and resources

like milk and wool. Instead of migrating, people established permanent villages with improved housing. The period is marked by the use of polished stone tools (sickles, axes), wearing of textiles, and the development of pottery for storing food.



Some Important Archaeological Sites

**AN EXCERPT**

In the Neolithic Age, humans quietly rewrote their own destiny — not with kings or armies, but with seeds, fire, and patience. For the first time, people stopped chasing food and began growing it, turning wild land into shared memory and fragile villages into the first idea of home. Stone tools grew sharper, hands grew steadier, and life slowed just enough for stories, rituals, and belonging to exist. It was self revolution — farming, pottery, and community — yet it reshaped the entire future of humanity more deeply than any battle ever could.

### Development of Agriculture

The emergence of agriculture was the most important development of the Neolithic Age. Early man turned into a Food Producer from a Food Gatherer. Agriculture led to a settled life. Man moved into larger settlements. He cultivated the fields, grew crops and stayed in one place. He did not have to move from place to place

in search of food. He started living in huts made of dried leaves and mud.

The first cereals to be grown were wheat and barley. Later, he learnt to domesticate animals like dog, goat, sheep and cattle.

Agriculture was first practised by the people of the Near East (Modern Iran, Iraq, Turkey) and the Levant (Lebanon, Palestine and Southern Syria) as early as 7000 BCE.

Many Neolithic sites have been discovered where traces of wheat, millets, lentils, grains and animal bones have been found. They are

- Mehrgarh in Pakistan.
- Koldihwa and Mahagara in Uttar Pradesh.
- Gufkral and Burzahom in Kashmir.
- Hallur in Karnataka and Paiyampalli in Tamil Nadu.



Early Farming

### Domestication of Animals

The first domesticated animal was the dog. Dogs were most probably used for guarding caves and for pulling loads. Cattle, goat and sheep provided meat, milk and wool. The domestication of animals gave rise to pastoralism. But what is pastoralism? Pastoralism is a form of farming in which animals such as camels, goats, cattle and sheep move in herds in search of fresh pastures and water.

### Pottery

Once early man learnt how to grow food, he also developed the art of storing food. He needed vessels for it.

Neolithic man needed vessels to store food grains and water. He learned to make clay pottery with his hands. Later, these pots were decorated with various designs of animal figures on them. With the invention of potter's wheel, various types of pottery could be made easily and faster.



## Invention of the Wheel

One of the major achievements of the Neolithic period was the invention of the wheel. The potter's wheel enabled him to make pots of different shapes and sizes. The use of wheels made transportation easier and faster. The invention of wheel led to invention of carts and then to bullock-driven carts. Man could now move heavy loads easily and go from one place to another faster. Invention of wheel led to invention of spindle whorls for weaving cloth of wool and cotton. Various types of pottery enabled early men to store grains and seeds for the next season. The invention of wheel quickened the march of civilisation.



### DID YOU KNOW?

- ▶ Domestication is a name given to a process in which people grow plants and look after animals.
- ▶ In domestication a selection of plants and animals are made by the people.
- ▶ Plants which are healthy, can bear and yield grains, are chosen.
- ▶ Domestication began 12,000 years ago.
- ▶ Sheep and goats, along with the dog, were among the first animals to be domesticated.

### Findings at Various Neolithic Sites in India

Neolithic Site	Location	Remains of Bones	Remains of Grains
Mahagara	Uttar Pradesh	Marks of cattle hoof	Rice
Koldihwa	Uttar Pradesh	Bone fragments of animals	Rice
Chirand	Bihar	Bones of buffalo and ox	Wheat, barley and peas
Mehrgarh	Pakistan	Bones of sheep, goat, cattle	Wheat, barley
Burzahom	Kashmir valley	Bones of buffalo, cattle, dog, sheep, goat	Lentil, wheat
Gufkral	Kashmir valley	—	Lentil, wheat
Hallur	Karnataka	Bones of cattle, pig, goat and sheep	Milletts
Paiyampalli	Tamil Nadu	Bones of cattle, pig and sheep	Milletts, black gram

## Neolithic Tools

Tools of the Neolithic Period included agricultural implements like sickles, digging sticks, hoes and grinding tools like the mortar and pestles.

- Polished stone tools with fine cutting edge were used for grinding grains and other products. Some tools were made of bones too.
- Stone axes found from Bellary district (Karnataka) and Santhal Parganas (Jharkhand) also belonged to this period.



Polished stone tools of the Neolithic Period

### Engage and Reflect

- What do you mean by the term 'Neolithic Revolution'?
- Why was it called a revolution?
- Distinguish between tools of Neolithic and Mesolithic period



**Options**

- (a) Statements 1 and 2 are appropriate (b) Statements 1, 2 and 3 are appropriate  
 (c) Statements 2, 3 and 4 are appropriate (d) Only statement 3 is appropriate
8. Which of the following statements about the Mesolithic period are correct?
1. It existed between the palaeolithic and neolithic periods
  2. They mostly used stone tools made from chips like blades, points, borers and scrapers called Microliths
  3. The Mesolithic people invented pottery
  4. They stored grains in vessels

**Options**

- (a) 1 and 2 (b) 2 and 3 (c) 1 and 4 (d) 2 and 4
9. Arrange the following events or landmarks in chronological order, that occurred in the Neolithic Age.
1. Beginning of farming
  2. Domestication of animals
  3. Invention of wheel
  4. Invention of potter's wheel

**Options**

- (a) 1, 2, 3, 4 (b) 4, 3, 2, 1 (c) 2, 1, 4, 3 (d) 2, 1, 3, 4

**B. Fill in the blanks.**

1. The Palaeolithic period began about \_\_\_\_\_ years ago.
2. The Mesolithic people used tools collectively called as \_\_\_\_\_.
3. The Neolithic period began around \_\_\_\_\_ BCE and lasted till about \_\_\_\_\_ BCE.
4. The first domesticated animal was \_\_\_\_\_.
5. One of the major achievements of the Neolithic period was the invention of \_\_\_\_\_.

**C. Match the following items given in column A with those in column B.**

	Column A	Column B
1.	Mahagara	A. Pakistan
2.	Chirand	B. Kashmir Valley
3.	Burzahom	C. Bihar
4.	Mehrgarh	D. Uttar Pradesh

**D. Very short answer type questions.**

1. Name the periods in which the Stone Age is divided.
2. When did the Mesolithic period begin and end in India?
3. What was the most important discovery of early man?
4. Why is Bhimbetka famous?
5. What was the most important development of Neolithic Age?
6. Name two important archaeological sites of Neolithic India?
7. Which were the first cereals to be grown by early man?
8. Which were the first animals to be domesticated by early man.

### E. Short answer type questions.

1. How did the Stone Age people get food?
2. How did the early man discover fire?
3. Mention any three uses of stone tools.
4. How did the invention of wheel benefit early man?
5. Where have the Neolithic tools been found in India?
6. Why did the early man live in group?

### F. Long answer type questions.

1. Bring out the main features of the Neolithic Age.
2. Differentiate between the Palaeolithic period and the Mesolithic Period.
3. Describe major Mesolithic sites.
4. Differentiate between the Mesolithic and Neolithic periods.
5. Bring out the main features of Neolithic Revolution.
6. How did the invention of wheel quicken the march of human civilisation?
7. Differentiate between the Palaeolithic and Neolithic Age.

### G. Study the statements carefully and identify the correct alternatives. Two statements are given as Assertion (A) and Reason (R).

Choose the correct option:

- (a) Both A and R are true, and R is the correct explanation of A.
- (b) Both A and R are true, and R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

1. **Assertion (A)** : Early man used stone tools

**Reason (R)** : It is therefore called as the Stone Age.

2. **Assertion (A)** : Neolithic period is referred to as Neolithic Revolution.

**Reason (R)** : Development of farming, domestication of animals revolutionised the life of early man.

3. **Assertion (A)** : The people of Mesolithic period were hunter – gatherers.

**Reason (R)** : They cultivated grains and domesticated animals.

### H. Case-based questions.

Read the passage given below and answer the questions that follow.

Stone tools have been found from many sites as well. Many of these are different from the earlier Palaeolithic tools and that is why they are called Neolithic. These include tools that were polished to give a fine cutting edge, and mortars and pestles used for grinding grain and other plant produce. Mortars and pestles are used for grinding grain even today, several thousand years later. At the same time, tools of the Palaeolithic types continued to be made and used, and remember, some tools were also made of bone.

1. How were the Neolithic tools different?
2. What are mortars and pestles?
3. Distinguish between tools of old and New Stone age.

### I. Map skill based question

On an outline map of India, locate and label the following Neolithic sites —

Chirand, Hallar, Mahagara, Burzahom

# 9

## Understanding Democracy



### KEY CONCEPTS

- ▶ Meaning of Democracy
- ▶ Features of Democracy
- ▶ Democratic System in the World
- ▶ Roots of Democracy in India
- ▶ Types of Democracy
- ▶ Challenges to Democracy in India

### MEANING OF DEMOCRACY?

A famous political philosopher of the 20th century, Reinhold Niebuhr, has stated, “Man’s capacity for justice makes democracy possible and man’s capacity for injustice makes democracy necessary.” This statement highlights why democracy is both desirable and essential.

Democracy is one of the most widely accepted forms of government in the contemporary world. What makes democracy so popular? To answer this we must understand what democracy truly means and examine whether it is indeed best form of government capable of meeting the challenges of modern society.

Many definitions of ‘democracy’ have been given by eminent authorities on the subject. The term ‘democracy’ was coined in ancient Athens in the fifth century BCE. It originated from the Greek word ‘demokratia’. The components of the word are ‘demos’ **people**; ‘kratos’ **power**. Thus, democracy means “rule by the people.”

Democracy in Athens is the earliest example of the system and it corresponds to some of the modern ideas about democratic rule. The whole of adult male population of Athens could vote, whether they were poor or rich did not matter. All Athenian male citizens were free to vote and speak in the Assembly. Athenians did not vote for representatives but made decisions directly.

The simplest definition of democracy is that “**Democracy is a form of government in which the rulers are elected by the people.**” This can be achieved by implementing a system of voting in which the majority of people rule, either directly or indirectly through elected representatives. Elections become the necessary and basic condition of democracy. In fact, voting by all adults is the main feature which separates democracy from other forms of government, for example, a monarchy.

Former President of the United States of America, Abraham Lincoln, defined democracy as “**the government of the people, by the people, for the people.**” This definition emphasises participation, representation, and welfare of the people.



Abraham Lincoln

History shows that elections alone are not sufficient to ensure democracy. A dictator, like Hitler or Mussolini, may be elected by the people at some stage, but once he starts acting in a manner in which the policies are not meant for the welfare of the people, the government ceases to be democratic.

### What Constitutes the People

What do we understand by the word people? The Greeks did not give the voting rights to women, slaves, or foreigners therefore, it was not universal franchise. Switzerland granted women the right to vote at the federal level in 1971. It practices direct democracy through referendums and popular initiatives, though not all government decisions are decided directly by citizens. In a vast and populous country like India it is not practical to adopt direct democracy at the national level; therefore, India follows representative democracy.

In parliamentary democracies, decisions are generally taken by the majority of elected representatives, while ensuring protection of minority rights.

Every government imposes certain restrictions on people who can be elected. Some restrictions on age of maturity are also needed. Thus the word people excludes certain groups, e.g., those below 18 years, or people who may be criminals. Above all no government can possibly ensure that the opinion of every elected representative shall be incorporated in all government legislations.



Mussolini (left) and Hitler right



### KEY LEARNINGS

- Democracy is widely practised across the world, although not all countries follow democratic systems.
- The term ‘democracy’ was coined in ancient Athens in the fifth century BCE. It originated from the Greek word ‘demokratia’. The components of the word are ‘demos’ people; ‘kratos’ power. Thus, democracy means “rule by the people”.
- Former President of the United States of America, Abraham Lincoln defined democracy as “the government of the people, by the people, for the people”.

### Engage and Reflect

1. The word ‘Democracy’ comes from the Greek word  
(a) Democrazia      (b) Demokratia      (c) Demos      (d) Kratia
2. Who among the following defined democracy as “the government of the people, by the people, for the people”?  
(a) Abraham Lincoln    (b) George Washington    (c) Reinhold Niebuhr    (d) Winston Churchill
3. What is Direct Democracy?

### ROOTS OF DEMOCRACY IN INDIA

India has a long history of democratic practices that developed long before the rise of modern democracies worldwide. These early traditions laid the foundation for ideas such as participation, consultation, and collective decision-making, which continue to shape present-day democracy in India.

Vedic society displayed certain consultative features, though it was not democratic in the modern sense. They believed in shared decision-making and the active participation of people in governance. Institutions such as Panchayats in clans and *Samitis* functioned as early democratic bodies where power rested with the people.

Authority was not centralised and not hereditary but was based on government by participation. The brotherhood of mankind, expressed through the principle of *Vasudhaiva Kutumbakam*, meaning the world is one family, formed the moral foundation of Aryan democracy.

During the Vedic period, assemblies such as the *Sabha* and *Samiti* played an important role in governance. These bodies discussed public matters and advised the king, showing that rulers did not enjoy absolute power and were expected to consult the people.

Between 600 BCE and 400 BCE, many large kingdoms and republics known as *Mahajanapadas* emerged in northern India. Some of these, such as the Vajjis, followed a republican system of government. In these states, rulers were not hereditary but were chosen through election. Governance was based on collective decision-making, with discussions and debates playing an important role.

The Vajji confederacy is especially known for its democratic traditions. The Buddhist text *Mahaparinibbana Sutta* describes the Vajjis as a well-organised republic with strong community rule. It praises them for holding regular assemblies, making decisions through mutual agreement, and ensuring fair representation. The Sakya Republic also followed democratic practices. The head of the Sakya clan, known as the Raja, was elected by an assembly of elders. The leader was selected through discussion among elders, reflecting collective decision-making within the ruling group.

The Panchayat system forms the foundation of modern Indian democracy, but its origins go back thousands of years. The word Panchayat is derived from panch, meaning five, and refers to a council of five respected elders chosen by the community. This system was democratic in nature because the members were selected by the people and were responsible to them. The Panchayat played an important role in village life by taking key decisions, settling disputes, and delivering justice, thus managing the daily affairs of the community.

Archaeological evidence from Lothal indicates advanced civic administration; however, there is no clear proof of elected councils or democratic institutions.

At the local level, village councils or Panchayats managed administration, justice, and welfare. This system encouraged people's participation and decentralisation of power, which remains an important feature of Indian democracy even today.

The Gupta Empire is often described as the Golden Age of India. This period saw great progress in art, science, and literature, as well as in ideas related to governance and public life. Administration during the Gupta period was marked by a high degree



Vasudhaiva Kutumbakam—The world is one family, united by peace, respect, and shared humanity



Village Panchayat—An Ancient Institution of Governance

of decentralisation and local self-government. Village councils, known as *Sabhas*, played an important role in managing local affairs and delivering justice. These councils were made up of local landowners and merchants chosen by the community, and they functioned independently, making decisions that affected the daily lives of the people.

These early democratic traditions influenced modern democracy in many ways. They promoted people's participation in governance, inspired institutions of local self-government, and encouraged respect for discussion and consensus. Thus, modern Indian democracy is deeply rooted in India's own historical experience rather than being entirely adopted from other countries.

### DID YOU KNOW?

According to Greek scholars of Alexander's time, some form of democracy was used by republics in ancient India during the sixth century BCE, around the time of Buddha. "The Sabarcae and Sambastal states (now in Pakistan and Afghanistan) followed a form of government which was democratic and not regal."



### KEY LEARNINGS

- Democratic ideas existed in India long before the rise of modern democracies.
- Vedic assemblies and Panchayats allowed people to participate in decision-making.
- Republics such as the Vajjis and Sakyas followed elected leadership and collective rule.
- Local self-government through village councils ensured decentralisation of power.
- Modern Indian democracy has grown from these early Indian democratic traditions.

## FEATURES OF DEMOCRACY

- **Final decision by elected representatives** : In a democracy the final decision-making authority rests with elected representatives, but it must function within the limits of the Constitution and is subject to judicial review.
- **Free and fair elections** : A democracy must be based on a free and fair election where those currently in power have a fair chance of losing. (i) First, voters must be honestly counted (a proper census). (ii) Voters should vote freely without any kind of pressure from those in power. (iii) Voters should have the right to choose freely from among those competing in the elections. (iv) Elections should be held regularly and be strictly impartial. In India the Election Commission of India ensures free and fair elections.
- **Universal suffrage** : All adults have the right to vote in the elections irrespective of their colour, caste, religion, gender, etc. In a democracy each adult citizen must have one vote and each vote must have one value.

### DID YOU KNOW?

In India, people got the right to vote in 1950, when the Constitution of India came into force on 26 January 1950. From the beginning, India adopted Universal Adult Franchise, which meant that every citizen aged 21 years and above had the right to vote, regardless of caste, religion, gender, or wealth. Later, in 1988, the 61st Constitutional Amendment Act reduced the voting age from 21 years to 18 years.

- **Freedom of expression** : Citizens should have the right to express their opinion without any fear. They should be allowed to discuss the policies of the government. They can also demonstrate, criticise, organise meetings or campaign on public issues.

- **Freedom to form associations :** Citizens have the right to form associations, unions, and political parties, and to join or leave them freely, subject to legal restrictions in the interest of public order and national security.

### DID YOU KNOW?

Right to Information (RTI) Act was passed by Indian Parliament on 15 June 2005 and came fully into force on 12 October 2005. Every-day over 4800 RTI applications are filed. Under the provisions of this Act, any citizen of India may request information from a public authority (a body of government or “instrumentality of the State”) which is required to reply expeditiously or within thirty days. The RTI Act strengthens transparency and accountability in governance.

- **Freedom of culture and religion :** A democracy allows people to follow their own beliefs and faith. People can openly and freely follow any religion, and speak their own language. The rights of the minorities should not be in any way less than those of the majority.



Independent India's first elections were held in 1951-52

- **Individual freedoms :** In a democracy, citizens enjoy personal freedoms such as freedom of movement, residence, occupation, and education. However, these freedoms are subject to reasonable restrictions in the interest of public order, morality, and national security.

- **Rule of law :** In a democracy, the rule of law prevails. No individual or authority is above the law. The police and military function under civilian control. The judiciary is independent, protects the rights of the individuals and its decisions are respected by the government. Thus, a democratic government rules within limits set by constitutional law and citizens' rights.

### Engage and Reflect

In some countries, such as China, only the ruling party can put up candidates. Voters have to choose between the two candidates put up by the ruling party. No one else has a chance. Is this democracy?

- All the above are the minimum necessary features of any country aspiring to be called a democratic country. In a democracy, “The will of the people is the basis of the government.” It is expressed by universal and equal suffrage through secret vote.
- Democracy demands accountability from all organs of government — the legislature, executive and judiciary — within the framework of the Constitution.

These facts tell us whether a country, claiming to be democratic, is really democratic or not. It is easy to see that no country enjoys all the rights needed in a democracy or has institutions which work with equal effectiveness. No country provides unlimited freedoms. Even advanced democracies such as France and the United States impose certain legal restrictions to maintain public order and security. There are certain defects common to all forms of government. They arise because of certain inherent and instinctive weaknesses in human nature.

## TYPES OF DEMOCRACY

### Direct versus Representative Democracy

In ancient Greece, particularly in Athens, adult male citizens directly participated in discussions and decision-making, while women, slaves, and foreigners were excluded. But in many vast, modern countries direct democracy is impossible. The vast population cannot collect at one place, for example it is just impossible for 140 crores voters of India, to find a place where 50 to 60 thousand people can assemble for discussion.

- People engaged in different occupations or businesses cannot meet at the same time. Direct participation was possible in small countries with a few occupations.
- A system of representation had to be devised so that there could be a popular government. In this system people elect their representatives who make the laws and supervise the functioning of the government.
- So what is the difference? Is it still a democratic system? Yes it is, because in representative democracy, people are the supreme authority. People choose their government by electing their representatives. Elected representatives exercise power on people's behalf. They remain in power as long as they enjoy the confidence of the people and can be removed through periodic elections.
- Some critics of democracy think that representative democracy is not a true democracy. How can a handful of representatives speak for the interests and personal views of the country's citizens? Is this criticism justified?



People Participating in a Representative Democracy

Let's consider direct democracy. Suppose a democracy has about 2000 to 3000 persons, when an issue is discussed. Do all the 2000–3000 persons speak? Are the views of all the 2000-3000 people taken into consideration? Is it possible? The assembly would never have the time to solve any issue in this way. Even in such a democracy only a few speak. These few are chosen by the people before the assembly and the rest listen to them. Thus issues are solved. It is practically impossible to conduct a meeting where everybody is going to speak. The result would be complete chaos.

To avoid this, in a democracy we frame rules which give every citizen an opportunity to choose their representatives. These representatives speak on behalf of the majority. Thus, representative democracy is a participatory democracy where all citizens vote to choose their representatives.

### Engage and Reflect

Why do you think most countries prefer representative democracy instead of direct democracy?



### KEY LEARNINGS

- In democratic countries, all adults have the right to vote in the elections irrespective of their colour, caste, creed and religion.
- A democracy allows people to follow their own beliefs and faith. People can openly and freely follow any religion, speak their own language, etc.
- In democratic countries, the judiciary is independent, protects the rights of the individuals and the decisions are respected by the governments.
- Democracy demands accountability from all organs — the legislature, judiciary and executive.

## DEMOCRATIC SYSTEM IN THE WORLD

Most democracies today follow the system of representative democracy, in which citizens elect their representatives to govern on their behalf. However, democracies do not function in the same way everywhere. There are two main forms of representative democracy.

### (a) Parliamentary Democracy


Parliamentary democracy is a system of government in which the executive derives its authority from the legislature and remains accountable to it. The members of the executive are also part of the legislature. The head of the government, usually the Prime Minister, is chosen from the majority party or coalition in the legislature. The Prime Minister and the Council of Ministers are responsible for implementing government policies.

The Council of Ministers is collectively responsible to the legislature, which makes the government accountable for its actions. India has a bicameral legislature made up of the Lok Sabha and the Rajya Sabha. In our country, the Council of Ministers can continue working as long as they have the confidence of the Lok Sabha. In this form of government, citizens elect the members of the legislature. Selected members become the ministers (part of the executive). In a parliamentary system, there is a close relationship between the executive and legislative branches, with the executive being dependent on the confidence of the legislature.

In this system, the President is the formal or nominal head of the executive, while the Prime Minister is the real head of the government. The President represents the State, but the Prime Minister is responsible for running the government and managing its day-to-day affairs. Countries with parliamentary systems include India, the United Kingdom, Germany, Japan, and Canada.

#### Engage and Reflect

Can a country be democratic even if it follows different forms like parliamentary or presidential system? Discuss.



New Parliament House of India (Sansad Bhavan)

## (b) Presidential Democracy

The presidential form of government is based on the principle of separation of powers between the executive and the legislature. Under this system, the executive is independent of the control of the legislature.

In the presidential form of government, the head of the State is also the real executive head. The President directly exercises executive powers and does not function merely as a nominal authority. This system is based on the principle of separation of powers, in which the executive, legislature, and judiciary work independently. The executive is not responsible to the legislature and cannot dissolve it, while the judiciary remains independent of both the executive and the legislature.

At the same time, the system follows the principle of checks and balances. Although the three organs of government are separate, they keep a check on one another to prevent misuse of power. The President holds significant executive authority but these powers are limited by constitutional provisions and checks and balances. Another important feature of the presidential system is that political homogeneity is not essential. Members of the cabinet do not have to belong to the same political party as the President. At present, countries like the USA, Brazil, etc are having presidential form of government. Sri Lanka has semi-presidential system.

## Alternatives to Democracy

**Monarchy** is the rule by one person. In ancient times it was the most common form of government in the state. He combined in himself the functions of the military commander, the lawmaker, the executive officer of the state and also the judge.

Under **Absolute Monarchy**, the king is the government, and his authority is unlimited. Most monarchies are hereditary. Before the revolution, the Czars were absolute rulers of Russia. Some monarchs claimed they got their authority directly from God (the Divine Right Theory). They claimed they were answerable to God and not to their subjects.

Idi Amin became the ruler of Uganda in 1971 after a military coup. During his rule 300,000 Ugandans lost their lives and he forced the Indian minority to leave Uganda. His reign was ended after an invasion by Tanzanian forces aided by Ugandan exiles in 1979.



Idi Amin's Caricature

**Constitutional Monarchy** : The United Kingdom is a typical example of constitutional monarchy. There is the king or the queen as the Head of the State but the sovereign does not exercise any real authority. The monarch in the United Kingdom performs largely ceremonial functions and acts on the advice of the Prime Minister and the Council of Ministers. Actually in U.K. representative democracy prevails. People elect their representatives to the parliament and they govern on their behalf.

### Saudi Arabia

Saudi Arabia has been ruled over by the Saudi royal family since 1932, when the modern Kingdom of Saudi Arabia was established. It is an example of an absolute Monarchy. All powers lie in the hands of the Saudi royal family. All the ministers and members belong to the royal family.

The power of the monarch is regarded as legitimate based on the right of birth.

**Dictatorship** : Under dictatorship, the governments is not accountable to the people and may disregard public opinion. Power is concentrated in the hands of one person or a small group. All benefits are enjoyed by those in power and people who support the rulers. The poor and the weak suffer as they are excluded from the benefits.

### **Military Dictatorship**

Iraq was ruled by the Ba'ath Party from 1968, and Saddam Hussein served as President from 1979 to 2003. The military dictator Saddam Hussein had full and absolute power in the country and ordinary citizens had no say in the decision making process. He was later toppled after the military action by USA, UK and allies in 2003. He was then arrested, tried by an Iraqi court, found guilty of genocide and executed on December 30, 2006.



During the U.S. invasion of Iraq, a large statue of Saddam Hussein in Baghdad's Firdos Square was destroyed by Iraqi civilians and United States Marines.

Under **military dictatorships**, power is concentrated in the hands of military leaders, and political opposition is often suppressed. Those in power amass wealth illegally. Limited freedom of speech in such regimes often reduces public accountability and criticism of government policies. They do not fear any opposition as there is no opposition and they do not fear losing in elections.

**Theocracy** : Iran is an Islamic Republic that combines elements of theocracy and democracy. Iran has elected institutions (President, Parliament) along with religious oversight. In a revolution overthrew the Shah of Persia and installed a religious government. The government is made up of majority religion, i.e., Islam. Civil laws are made to conform to the religious teachings of Islam. The highest authority is the Supreme Leader who is an Ayatollah. Recently modest reforms in Iran are trying to make it more democratic and less religious. Present-day Iran is attempting to combine theocracy and democracy.

Democracy has proved itself superior to both monarchy and the government of one or a few.

Democracy also has a built-in mechanism to see that rulers do not go astray. Regular and periodical elections give the people a chance to discard people who have a bad record.

Democracy provides mechanisms such as elections and reservations (in countries like India) to enhance representation of sections. It is thus superior to all other forms of government.

### **Why Democracy has Spread**

Democracy promises equality to all. Every citizen has a right to be elected and contest elections.

In the non-democratic governments those who enjoy power do not want to give it up. They resist attempts to wrest power from their hands. To have a democratic government people have to struggle for it, as in Poland during the Solidarity movement in the 1980s. Various social groups including workers, students, and civil society organisations have played important roles in democratic movements.

Democracy has spread because of three major events :

- (i) The Second World War
- (ii) Decolonisation and
- (iii) The collapse of the Soviet Union.

These three external factors started a chain of events in many countries which helped democracy. There were, of course, internal forces and conditions conducive for democracy.



### KEY LEARNINGS

- Democracy treats everyone as equal and works on the belief that every citizen has a right to decide who to vote for, who should rule and what should the policies be.
- Democracy gives an opportunity to people to express their views through debates. It helps in evolving a consensus of opinion through persuasion and compromise.
- A democracy is not the rule of the majority. We choose a government on the basis of majority votes but the elected government protects the interests of all — majority as well as minority.
- Democracy has been the result of three major events, i.e. the second World War, Decolonisation and the collapse of the Soviet Union.

## CHALLENGES OF DEMOCRACY

Democracy may be the best form of government but it has to face many problems.

- Wide gaps between rich and poor allow the wealthy to dominate politics, often leading to exploitation of underprivileged voters.
- The increasing gap, the growing economic inequality has an adverse impact on politics. Policy-makers may sometimes prioritise the interests of influential economic groups over those of weaker sections. The poor are not given enough attention, their grievances are not properly addressed.
- Economic inequalities have an adverse effect on elections. People with money have more chances of winning elections. More and more money is being spent on elections — on campaigning, publicity, etc. Huge contributions are made to the election campaigns. People who make the contributions expect favours from the parties and leaders they help. The ordinary citizens cannot do this.

Some non-democratic or weak democracies, voters may face coercion or intimidation. How can people, elected by corrupt means, be true representatives of the people? Democracies have been harmed by the practice of corruption, inefficiency and negligence.

These factors lead people to lose interest in democracy. People start losing confidence in democratic political institutions. About two-thirds people have lost faith in political parties and many do not trust government officials. But still the majority of people, two-third, think that a democratic political system is best suitable to our country, only 5 per cent think it is not. They feel that democratic institutions are not working properly and are dissatisfied with the present state of affairs.

- The need of the hour is to establish a healthy democracy based on a democratic society. Correct democratic values have to be taught and imbibed at the grassroot levels — beginning with the family, friends and neighbourhood.
- All out effort should be made to root out corruption from public dealings and choose a government which is sensitive to the needs of the people.
- Last of all, the voters must realise how important it is to exercise their voting rights. It is in their hands to elect representatives who can govern with integrity, commitment and ability.

Winston Churchill, Prime Minister of U.K. during the Second World War, said :

“Many forms of government have been tried in this world of sin and woe. No one pretends that democracy is perfect or all-wise. Indeed, it has been said that democracy is the worst form of government except all those other forms that have been tried from time to time.”

In the end we can conclude that democracy cannot find immediate solutions to all problems. In countries like India, with a large and diverse population and significant socio-economic challenges, fulfilling public expectations can be complex. But democracy is still a better form of government. It is because of the values a democratic government stands for. These values are freedom, equality and justice. It is upto us to consolidate democracy so that these values are realised in society.



### KEY LEARNINGS

- Economic inequalities have an adverse effect on elections. People with money have more chances of winning elections. More and more money is being spent on elections – on campaigning, publicity, etc. to attract voters.
- Voters must realise how important, it is to exercise their voting rights. It is in their hands to elect representatives who can govern with integrity, commitment and ability.

### GLOSSARY

<b>Eminent</b>	: Famous and respected within a particular sphere.
<b>Monarch</b>	: A sovereign head of state, especially a king, queen or emperor.
<b>Dictator</b>	: A ruler with total power over a country, typically one who has obtained control by force.
<b>Accountability</b>	: being responsible for what you do and able to give a satisfactory reason for it.
<b>Coercion</b>	: The act of forcing someone to do something they don't want to do.

## Exercises

### A. Multiple choice questions (MCQs).

1. The word 'Democracy' is derived from the Greek word:  
(a) Democracia (b) Demokratia  
(c) Demos (d) Kratia
2. Who defined democracy as “the government of the people, by the people, for the people”?  
(a) George Washington (b) Winston Churchill  
(c) Abraham Lincoln (d) Reinhold Niebuhr
3. In a democracy, the final decision-making power must rest with:  
(a) The military chief (b) Religious leaders  
(c) Elected representatives (d) The judiciary alone
4. In a parliamentary system, the real executive head of the government is the:  
(a) President (b) Monarch  
(c) Prime Minister (d) Chief Justice

5. Which of the following is a major challenge faced by democracy?
- (a) Equal distribution of wealth (b) Decreasing voter turnout  
(c) Growing economic inequality (d) Absence of elections

6. Which type of democracy is depicted in the given image?
- (a) Direct  
(b) Constitutional  
(c) Monarchical  
(d) Representative



7. Which of the following statements is correct regarding democracy?
- (a) It protects only the majority community.  
(b) It allows exploitation of weaker sections.  
(c) It protects the interests of both majority and minority.  
(d) It eliminates all economic inequality.

8. Consider the given statement and choose the correct option.

**Statement I:** Direct democracy is difficult to practise in large countries.

**Statement II:** In a representative democracy, the final decision-making power rests with elected representatives.

- (a) Statement I is correct and Statement II is incorrect.  
(b) Statement I is incorrect and Statement II is correct.  
(c) Both statements are correct.  
(d) Both statements are incorrect.
9. Match the following columns and choose the correct option:

Column I	Column II
A. Democracy	1. Citizens participate directly in decision-making
B. Rule of Law	2. People elect their rulers
C. Representative Democracy	3. Rule by the people
D. Direct Democracy	4. Equality before the law

**Options:**

- (a) A-3, B-4, C-2, D-1 (b) A-2, B-4, C-3, D-1  
(c) A-1, B-4, C-2, D-3 (d) A-4, B-3, C-2, D-1
10. Identify the incorrect statement about democracy.
- (a) It eliminates all economic inequality immediately. (b) It protects minority rights.  
(c) It ensures free and fair elections. (d) It allows citizens to criticise the government.
11. In a village, all adult citizens gather to discuss and decide on local development projects directly, without electing representatives.
- This is an example of:
- (a) Representative democracy (b) Military rule  
(c) Direct democracy (d) Parliamentary system

12. In a country, the President is elected directly by the people and does not depend on the legislature to remain in office.

This system is known as:

- (a) Parliamentary democracy (b) Presidential democracy  
(c) Absolute monarchy (d) Coalition government

**B. Fill in the blanks.**

1. In a \_\_\_\_\_ democracy, citizens elect representatives to make decisions on their behalf.
2. In a democracy, rulers are chosen through free and fair \_\_\_\_\_.
3. The idea of the brotherhood of mankind, expressed through the principle of \_\_\_\_\_.
4. The presidential form of government is based on the principle of separation of powers between the executive and the \_\_\_\_\_.

**C. Very short answer type questions.**

1. Who defined democracy as “government of the people, by the people, for the people”?
2. What does the principle of *Vasudhaiva Kutumbakam* convey?
3. Why is regular election considered essential in a democracy?
4. How does political equality strengthen democracy?
5. Voter apathy is considered a challenge to democracy. Give a reason.
6. Differentiate between absolute monarchy and dictatorship.

**D. Short answer type questions.**

1. Define democracy. Mention any two essential features of a democratic government.
2. Distinguish between a parliamentary system and a presidential system.
3. State any two merits of democracy over other forms of government.
4. Explain the significance of regular elections in maintaining democratic values.
5. How does democracy accommodate social diversity? (HOTS)

**E. Long answer type questions.**

1. “Democracy is considered better than other forms of government.” Justify the statement.
2. Trace the roots of democracy in ancient India. Explain the role of Sabha and Samiti in early governance.
3. Discuss the challenges faced by modern democracies.
4. Explain the types of democracy.

**F. Assertion-Reason questions.**

**Two statements are given as Assertion (A) and Reason(R). Study the statements carefully and identify the correct alternative:**

- (a) Both A and R are true, and R is the correct explanation of A.  
(b) Both A and R are true, but R is not the correct explanation of A.  
(c) A is true but R is false.  
(d) A is false but R is true

- 1. Assertion (A):** Sabha and Samiti were important institutions in early Indian governance.  
**Reason (R):** They enabled participation of people in decision-making processes.
- 2. Assertion (A):** Ancient Indian political systems had no elements of democracy.  
**Reason (R):** Institutions like Sabha and village councils existed in early India.
- 3. Assertion (A):** Representative democracy is suitable for large modern states.  
**Reason (R):** It is difficult for all citizens to directly participate in decision-making in large populations.

### G. Case- based questions.

Read the given text and answer the following questions:

India's experience with democracy dates back to **1947** when it gained independence from British colonial rule. It declared itself a democratic state by adopting its constitution in **1950**. Since independence, India had an almost uninterrupted democracy, except for "the Emergency" declared by Indira Gandhi between **1975** and **1977**. Until recently, India has been considered a stable parliamentary democracy, in fact, the "largest democracy in the world". The Freedom in the World reports by Freedom House have rated India as Free for many years. Elections at Union and State levels have been held regularly in a competitive multiparty system, albeit not without instances of vote buying and corruption. The transfers of power between governments have also been peaceful so far.

(Source: *Democratic Erosion in India: A Case Study - Democratic Erosion*)

1. Explain any two features of democracy.
2. When did India declare itself democratic?
3. Which form of democracy is followed by India? State any one feature of it.



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CODE-25YP

# 12

## Why Prices Change: The Story of Demand and Supply



### KEY CONCEPTS

- ▶ Why Price Changes?
- ▶ Supply
- ▶ When Markets Do Not Follow Simple Theory
- ▶ Market Failure
- ▶ Demand
- ▶ Market Equilibrium
- ▶ Price Controls

### WHY PRICE CHANGES?

Prices change every day in markets around us. The price of tomatoes can rise after heavy rain damages crops. The price of umbrellas can increase during the monsoon season. A cinema ticket can cost more on weekends than on weekdays. These changes are not random. In most cases, prices change because of the way buyers and sellers respond to market conditions.

Economics explains these changes using two simple ideas: demand and supply. Demand describes what buyers want and can afford. Supply describes what sellers are willing and able to provide. When demand and supply meet, they help decide what the price will be and how much of a good or service will be bought and sold.

#### Prices as signals in markets

A price is more than a number on a label. It acts like a signal that carries information to both buyers and sellers.

#### For buyers, price signals how costly something is.

If the price of a product rises, many people will think carefully before buying it. They may buy less, delay the purchase, or choose an alternative. If the price falls, more people may feel that the product is affordable and worth buying.

#### For sellers, price signals how profitable it might be to sell more.

If the price of a product rises, producers may try to supply more because the higher price can cover costs and bring more profit. If the price falls, producers may reduce supply because selling becomes less attractive.

Because of these signals, prices help coordinate decisions without any single person controlling the whole market. This is especially clear in markets with many buyers and many sellers, such as fruit markets, clothing shops, or mobile phone services.



Discount attracts buyers

However, prices also change when conditions change. Some common reasons include:

- **Changes in costs of production:** If fuel prices rise, transportation becomes more expensive, and the supply of many goods can become costlier.
- **Changes in incomes:** If people earn more, they may buy more goods and services, which can increase demand.
- **Changes in tastes and preferences:** A new fashion trend can increase demand for certain clothes.
- **Changes in expectations:** If people expect prices to rise in the future, they may buy more now, increasing demand today.
- **Changes in the number of buyers or sellers:** If more sellers enter a market, supply can increase. If more buyers want the product, demand can increase.

Prices, therefore, are closely connected to how markets respond to changing conditions.



### KEY LEARNINGS

- Prices act as signals that guide the decisions of buyers and sellers in markets.
- Price changes often happen because demand or supply conditions in the market change.
- Buyers generally prefer lower prices, while sellers generally prefer higher prices.
- Everyday choices, when repeated by many people, can change market outcomes.

## DEMAND

Demand explains the buying side of a market. It focuses on consumers and answers a simple question: how much of a good or service will people buy at different prices?

In our everyday life, we can see demand in your own choices. If the price of a snack rises, you might buy it less often. If the price of a bus ticket falls, you might travel more. Economists study these patterns and describe them using the Law of Demand, demand schedules, and demand curves.

### The Law of Demand

The Law of Demand states that, other things remaining the same, when the price of a good rises, the quantity demanded falls, and when the price of a good falls, the quantity demanded rises.

This happens for two main reasons:

1. **The substitution effect:** When the price of one product rises, people often switch to a similar product that is cheaper. For example if the price of butter rises, some families may buy more margarine instead.
2. **The income effect:** When a product becomes more expensive, people feel as if their money buys less. Their purchasing power falls, so they reduce buying. For example if the price of cooking oil rises, a household may use it more carefully and buy less than before.

The Law of Demand helps us predict how buyers respond to price changes. However, it does not say that buyers always stop buying when prices rise. It says that they usually buy less than before.

The Law of Demand matches many real life experiences:

- If the price of ice cream rises on a hot day, some people may buy fewer ice creams or choose a cheaper snack.
- If the price of a bus ticket falls because of a discount, more people may choose to travel by bus.
- If the price of a popular video game falls after a few months, more players may buy it.

### The Demand Curve and Quantity Demanded

A demand curve is a graph that shows the relationship between price and quantity demanded. It is usually drawn with price on the vertical axis and quantity on the horizontal axis. For most goods, the demand curve slopes downward from left to right. This shape shows the Law of Demand: higher prices are linked with lower quantities demanded.

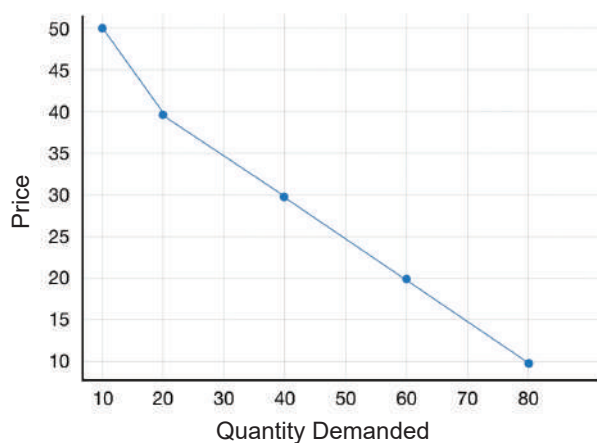
It is important to understand the idea of **quantity demanded**. Quantity demanded means the exact amount consumers want to buy at a particular price, during a particular time period.

A key point is the difference between:

- **A change in quantity demanded:** this happens when the price of the good changes, and consumers move along the same demand curve.
- **A change in demand:** this happens when something other than the price changes, and the whole demand curve shifts.

**For example:**

- If the price of tea falls, and people buy more tea, that is a change in quantity demanded.
- If people start preferring tea more than before, even at the same prices, that is a change in demand.

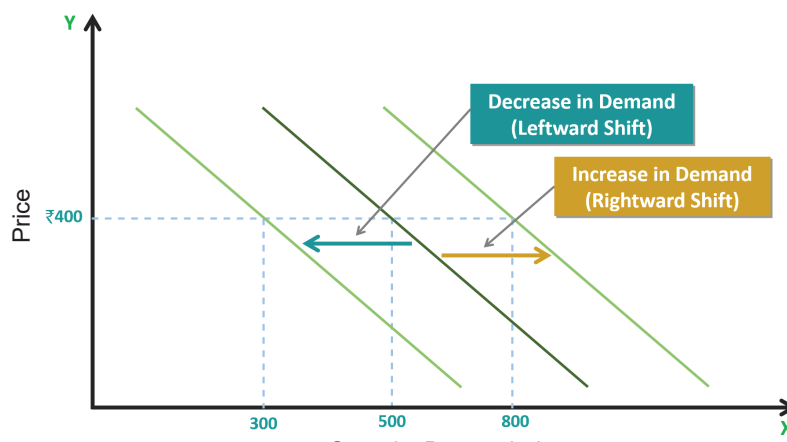


Demand Curve showing inverse relationship between Price and Quantity demanded

### Shifts in Demand

Demand can change even when the price of the good stays the same. When this happens, the demand curve shifts.

- If demand increases, the demand curve shifts to the right. At every price, consumers want to buy more than before.
- If demand decreases, the demand curve shifts to the left. At every price, consumers want to buy less than before.



Shift in Demand Curve

Common causes of changes in demand include:

#### 1. Income

- When income rises, demand for many goods rises because people can afford more.
- When income falls, demand often falls because people reduce spending.

#### 2. Tastes and preferences

- If more students begin to prefer fruit juice instead of fizzy drinks, demand for fruit juice rises and demand for fizzy drinks may fall.

#### 3. Prices of related goods

- **Substitutes:** goods that can replace each other, such as tea and coffee. If coffee becomes more expensive, demand for tea may rise.
- **Complements:** goods that are often used together, such as smartphones and mobile data. If smartphone prices fall and more people buy smartphones, demand for mobile data may rise.

#### 4. Population and number of buyers

- If a town's population increases, demand for many goods like bread, transport, and housing can rise.

#### 5. Expectations about the future

- If people expect prices to rise soon, they may buy more now, increasing demand today.
- If people expect prices to fall soon, they may wait, decreasing demand today.



## KEY LEARNINGS

- Demand means willingness and ability to buy a good at different prices over time.
- The Law of Demand says quantity demanded usually falls when price rises, and rises when price falls.
- A change in price causes movement along the demand curve, changing quantity demanded.
- Factors like income, tastes, related goods, and expectations can shift demand.
- When demand shifts, buyers want more or less at every price than before.

## SUPPLY

Supply is the economic term for how much of a good or service producers are willing and able to sell at different prices, during a given time period, when other factors remain the same. Just as demand is more than simply wanting something, supply is more than simply having something. A shop may have bottles of water in stock, but if the price is extremely low, the shop may not want to sell many because it might not cover costs.



Excess supply can lead to wastage

### The Law of Supply

The Law of Supply states that, in general, when the price of a good rises, the quantity supplied rises, and when the price of a good falls, the quantity supplied falls, assuming other factors do not change.

This happens because a higher price often makes production and selling more profitable. Producers respond to this stronger reward by supplying more.

The Law of Supply matches many real life experiences:

- If the market price of tomatoes rises, farmers may try to bring more tomatoes to market, and some farmers may plant more tomatoes in the next season.
- If the price of handmade crafts rises at a local fair, craft sellers may produce more items to sell.
- If the price of tutoring services rises, more people may offer tutoring because it becomes a better way to earn income.

The Law of Supply does not mean that producers can always increase supply immediately. Some goods take time to produce. Farmers cannot grow extra wheat overnight, and factories cannot instantly build a new production line. In the short run, supply may be limited by time, resources, and capacity. Over a longer period, producers can often adjust more.

### Engage and Reflect

**Choose one item your family buys regularly (e.g., tomatoes, onions, milk, notebook). Record its price from 3 different shops/sellers (local shop, street vendor, supermarket/online). Note the quantity/quality (size, brand, freshness).**

- Why might the same item have different prices in different places?
- Is the difference due to demand, supply, quality, or transport costs?
- Which price seems “fair” and why?

### The Supply Curve and Quantity Supplied

A supply curve is a graph that shows the relationship between price and quantity supplied. It is usually drawn with price on the vertical axis and quantity on the horizontal axis. For most goods, the supply curve slopes upward from left to right. This shape shows the Law of Supply: higher prices are linked with higher quantities supplied.

It is important to understand **quantity supplied**.

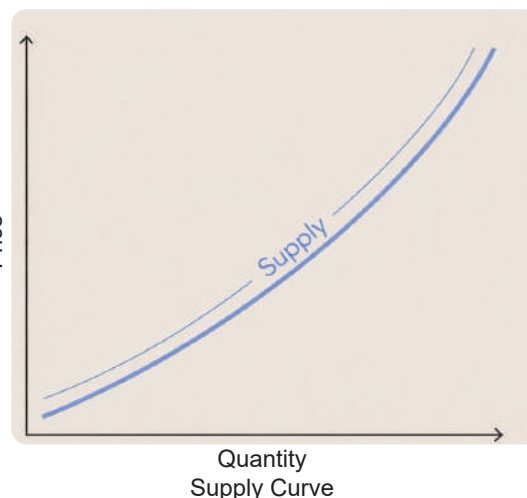
Quantity supplied means the exact amount producers want to sell at a particular price, during a particular time period.

A key point is the difference between:

- **A change in quantity supplied:** this happens when the price of the good changes, and producers move along the same supply curve.
- **A change in supply:** this happens when something other than the price changes, and the whole supply curve shifts.

**For example:**

- If the price of bread rises and bakeries decide to bake more loaves, that is a change in quantity supplied.
- If the cost of flour rises and bakeries produce fewer loaves at every price, that is a change in supply.



### Shifts in Supply

Supply can change even when the price of the good stays the same. When this happens, the supply curve shifts.

- If supply increases, the supply curve shifts to the right. At every price, producers supply more than before.
- If supply decreases, the supply curve shifts to the left. At every price, producers supply less than before.

Common causes of changes in supply include:

#### 1. Costs of production

Costs include wages, raw materials, electricity, transport, and rent.

- If production costs rise, supply may fall because it becomes harder to make profit.
- If production costs fall, supply may rise because production becomes cheaper.

#### 2. Technology

Better technology can make production faster or cheaper.

- A new machine that packs biscuits more quickly can increase supply.

#### 3. Number of sellers

- If more firms enter the market, supply usually increases.
- If firms leave the market, supply decreases.

#### 4. Natural factors and weather

Weather is especially important for agriculture.

- A drought can reduce the supply of crops, shifting supply left.
- A good monsoon can increase crop supply, shifting supply right.

#### 5. Government policies

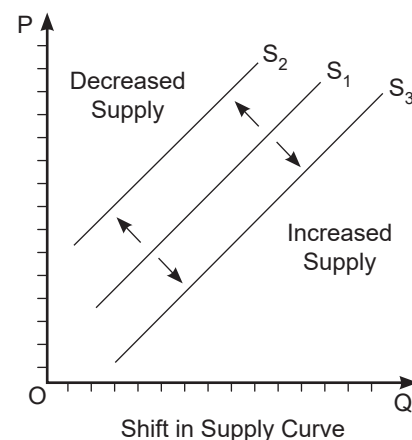
Taxes and subsidies affect costs.

- A tax on sugary drinks increases costs and can reduce supply.
- A subsidy for solar panels reduces costs and can increase supply.

#### 6. Expectations about the future

Producers also react to what they expect.

- If sellers expect prices to rise in the near future, they might hold back stock now, reducing supply today.
- If they expect prices to fall, they may sell more quickly, increasing supply today.



## DID YOU KNOW?

During the 1973–74 oil shock, production cuts and an embargo contributed to oil prices rising from about \$2.90 a barrel to \$11.65 by January 1974—an example of a major leftward shift of supply.



## KEY LEARNINGS

- Supply means willingness and ability of sellers to offer goods at different prices over time.
- The Law of Supply says quantity supplied usually rises when price rises, and falls when price falls.
- A change in price causes movement along the supply curve, changing quantity supplied.
- Costs, technology, number of sellers, weather, and policy can shift supply.
- Expectations can change supply today if sellers hold back or release stock.

## MARKET EQUILIBRIUM

Markets bring together buyers and sellers. The market price and the amount bought and sold are decided by the interaction of demand and supply. When economists talk about equilibrium, they mean a balance point where the plans of buyers and sellers match.

### Equilibrium Price and Equilibrium Quantity

The **equilibrium price** is the price at which the quantity demanded equals the quantity supplied. The **equilibrium quantity** is the amount bought and sold at that price.

On a graph, equilibrium is found at the point where the demand curve and the supply curve intersect. This intersection is important because it shows the market outcome when buyers and sellers are free to respond to prices.

A simple example is a market for notebooks:

- At a high price, fewer students want to buy notebooks, but shops are willing to supply many.
- At a low price, many students want to buy notebooks, but shops are willing to supply fewer.
- At one particular price, the number of notebooks students want to buy matches the number shops want to sell. That is equilibrium.

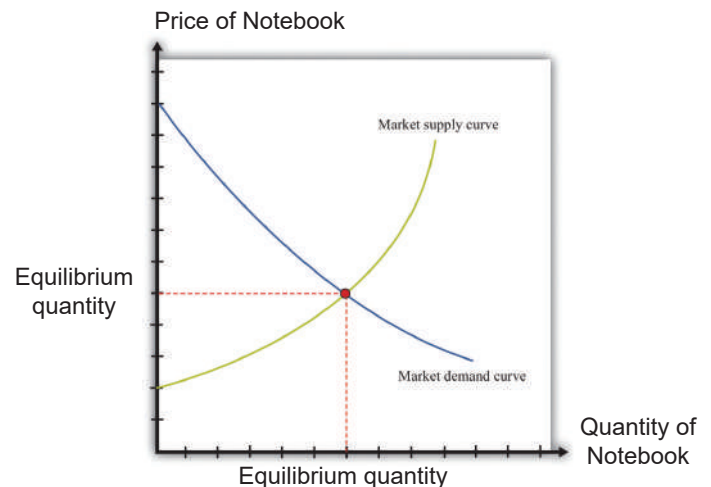
Equilibrium does not mean that everyone is perfectly satisfied. Some buyers may still think the price is high, and some sellers may still wish the price was higher. It simply means the market clears, so there is no pressure for the price to rise or fall.

### Surplus and Shortage

When the market price is not at equilibrium, markets create either surplus or shortage.

**Surplus** happens when the price is above equilibrium and quantity supplied is greater than quantity demanded. It means sellers have more goods than buyers are willing to buy at that price. For example, a shop sets the price of winter jackets very high at the start of spring. Few people want to buy, but the shop has a large stock. Jackets remain unsold, creating a surplus.

**Shortage** happens when the price is below equilibrium and quantity demanded is greater than quantity supplied. It means, buyers want more than sellers are willing to provide at that price. For example, if a canteen sells a popular snack at a very low price, many students may want it, but the canteen may not be able to supply enough. The snack



Market Equilibrium: Intersection of Demand and Supply Curves

sells out quickly, creating a shortage.

Surplus and shortage create pressure for prices to change:

- A surplus pushes prices downward because sellers want to sell what they have.
- A shortage pushes prices upward because buyers compete to get limited supply.

### Changes in Equilibrium

Equilibrium can change when demand or supply changes. This is one of the most important reasons why prices change in real life.

**When demand increases:** At the original price, more buyers want the good than before, which can cause a shortage. This shortage puts upward pressure on price. The new equilibrium usually has:

- a higher equilibrium price
- a higher equilibrium quantity

For example, a famous sportsperson is seen wearing a particular brand of shoes. Many people begin to want those shoes. Demand increases, prices may rise, and more shoes may be produced and sold.

**When demand decreases:** At the original price, fewer buyers want the good, which can create a surplus. Sellers may lower prices. The new equilibrium usually has:

- a lower equilibrium price
- a lower equilibrium quantity

For example, if a new type of earphone becomes popular, demand for an older model may fall, leading to price cuts and reduced production.

**When supply increases:** At the original price, sellers offer more than before, which can create a surplus. Prices tend to fall. The new equilibrium usually has:

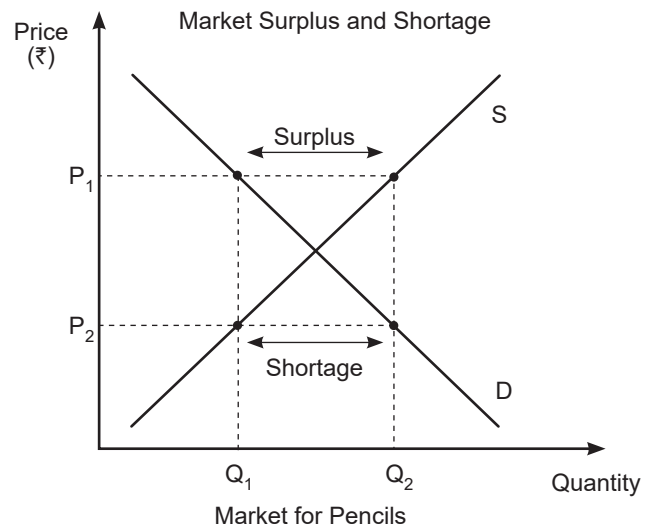
- a lower equilibrium price
- a higher equilibrium quantity

For example, a good harvest increases the supply of vegetables. With more vegetables available, prices fall and people buy more.

**When supply decreases:** At the original price, sellers provide less than before, which can cause a shortage. Prices tend to rise. The new equilibrium usually has:

- a higher equilibrium price
- a lower equilibrium quantity

For example, if a disease harms poultry farms, the supply of eggs may fall. Egg prices can rise and fewer eggs may be sold.



When the price is above equilibrium ( $P_1$ ), supply is more than demand, which creates a surplus. When the price is below equilibrium ( $P_2$ ), demand is more than supply, which creates a shortage.



### KEY LEARNINGS

- Equilibrium occurs where quantity demanded equals quantity supplied.
- Surplus happens when price is above equilibrium and goods remain unsold.
- Shortage happens when price is below equilibrium and goods sell out quickly.
- An increase in demand usually raises equilibrium price and quantity.
- A decrease in supply usually raises equilibrium price but lowers equilibrium quantity.

## WHEN MARKETS DO NOT FOLLOW SIMPLE THEORY

The laws of demand and supply are very useful, but real life markets can behave differently from the simplest textbook picture. Sometimes buyers do not reduce buying much when prices rise. Sometimes sellers cannot respond quickly to higher prices. Sometimes a good has special features that change how people react.

### Necessities and Luxuries

Not all goods are equally easy to reduce or increase in daily life. The response of buyers depends on how essential the good is.

**Necessities** are goods that people feel they must have to maintain basic living standards, such as staple foods, basic medicines, or essential transport. When the price of a necessity rises, people may not be able to reduce consumption much, because there is no easy replacement.

For example, if the price of a basic medicine rises, patients may still buy it because it is needed for health. In such cases, demand still follows the Law of Demand, but the fall in quantity demanded may be small.

**Luxury goods** are goods that people can live without, such as expensive branded clothing, high end electronics, or costly restaurant meals. When the price of a luxury rises, buyers can often reduce buying more easily. Luxury goods often have more substitute choices. This makes demand more responsive to price changes compared to necessities.

For example, if the price of an expensive designer bag rises, many buyers may decide not to buy it or may choose a different brand.



Necessities

Luxury goods

### Perishable Goods

Some goods spoil quickly, such as fresh fish, milk, vegetables, or baked items. These are called perishable goods. Perishability creates time pressure for sellers, and this can cause unusual price behaviour.

If a seller has perishable goods that must be sold today, the seller may reduce prices near the end of the day to avoid waste. For example, a fruit seller may lower the price of bananas in the evening to sell them before they become overripe.

Perishability can also affect buyers. If buyers know that prices usually fall later, they might wait, which can reduce demand earlier in the day and increase demand later. This can create price changes within a short time period.



Perishable Goods

### Engage and Reflect

Visit a local market (or observe an online marketplace). Choose two goods: one perishable (fruits/vegetables) and one non-perishable (rice/soap). Observe or ask:

- Price at opening time vs closing time
- If the seller changes price when there are fewer buyers
- What happens to perishable goods at the end of the day

**Write:**

1. Which good shows faster price changes and why?
2. What does this show about supply conditions and perishability?

## Expectations

People often make buying and selling decisions based on what they expect will happen in the future. Expectations can change demand and supply.

**Expectations affecting demand:** If consumers expect prices to rise soon, they may buy more now, which can increase demand. For example, if people hear that the price of cooking gas may rise next month, they may refill sooner, increasing demand.

If consumers expect prices to fall soon, they may delay purchases, which can decrease demand. For example, if a buyer expects a phone model to become cheaper during a sale, they may wait, reducing current demand.

**Expectations affecting supply:** Sellers also respond to expectations. If sellers expect prices to rise soon, they may hold back goods, which can reduce supply. For example, a trader may store onions if a price rise is expected, so fewer onions reach the market.

If sellers expect prices to fall, they may sell more quickly, which can increase supply. For example, a shop may clear its stock of old shoes before a new model arrives, increasing supply at current prices.



### KEY LEARNINGS

- Necessities often show a smaller fall in demand when prices rise.
- Luxury goods usually show a larger fall in demand when prices rise.
- Perishable goods can lead to price cuts because sellers want to avoid waste.
- Expectations about future prices can increase or reduce demand and supply today.
- Speculation can sometimes increase price changes when many react to predictions or rumours.

## PRICE CONTROLS

Sometimes governments intervene in markets instead of allowing prices to adjust freely. One common intervention is a price ceiling. Price ceilings are usually used when a good is considered essential and the government wants it to be affordable for more people. However, if a price ceiling is set too low, it can create problems such as shortages and black markets.

### What is a Price Ceiling?

A **price ceiling** is a legal maximum price that sellers are not allowed to charge for a good or service. The main aim is to protect consumers from high prices.

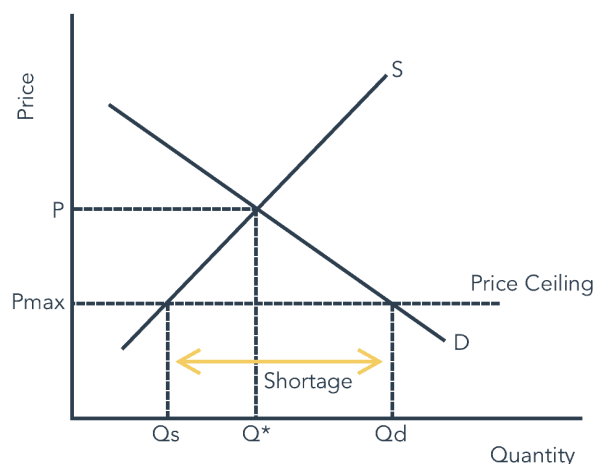
Price ceilings may be used for goods such as:

- basic food items
- medicines
- public transport fares
- rent in housing markets

A price ceiling only has a strong effect if it is set below the equilibrium price. If the equilibrium price of a product is ₹50 and the government sets a price ceiling of ₹55, the ceiling does not change the market because sellers were not charging above ₹55 anyway. But if the government sets a ceiling of ₹40, it forces the price below the market equilibrium.

When a price ceiling is below equilibrium:

- the price becomes lower than what the market would naturally set



Price ceiling leading to shortage in the market

- consumers want to buy more at the lower price
- producers may supply less because the price is less attractive

This situation often leads to a shortage.

## Shortages in Market

When the price ceiling is below equilibrium, quantity demanded becomes greater than quantity supplied. This creates a **shortage**.

Suppose the market price of cooking oil would normally be ₹200 per litre, but a price ceiling sets the maximum price at ₹150. At ₹150:

- more families want to buy cooking oil because it is cheaper
- some producers and sellers may reduce supply because profit per unit is lower
- the result is not enough cooking oil for everyone who wants it

When shortages appear, price is no longer doing its normal job of balancing demand and supply. Instead, other methods may decide who gets the good.

Common results of shortages include:

- **Queues and waiting time:** People may have to stand in long lines to buy the product. Time becomes the cost instead of money.
- **Rationing:** Shops or authorities may limit how much each person can buy, such as one packet per customer or a fixed amount per household. Rationing can prevent a few people from buying everything, but it can also be difficult to organise fairly.
- **Falling quality or reduced service:** Sellers might respond by reducing quality instead of increasing the price. For example, landlords under strict rent ceilings may spend less on maintenance because they cannot charge higher rent.



Shortages lead to queues and waiting time

In each case, the price ceiling changes the market outcome. Even though the product is cheaper, it may be harder to find.

## Black Markets

A black market is an illegal market where goods are bought and sold at prices higher than the legal price. Black markets often appear when a price ceiling creates a shortage.

Why can this happen?

- Some buyers are willing to pay more than the legal price to avoid queues or to ensure they get the product.
- Some sellers want to earn higher profit than the ceiling allows.
- Because the good is scarce, some people may buy extra and resell it illegally at higher prices.

For example, if a price ceiling keeps the price of a ticket low but tickets are limited, some people might buy tickets and then sell them at a much higher price outside the legal system.

Price ceilings can also lead to other unintended outcomes:

- **Corruption:** If goods are scarce, people might try to use connections or bribery to obtain them.
- **Hoarding:** People may buy more than they need because they fear the good will not be available later. This makes shortages worse.
- **Misallocation:** Goods might not reach the people who need them most, because the system cannot use price to guide distribution.

This does not mean that price ceilings are always useless. They can protect consumers in emergencies, but governments often need other policies alongside ceilings, such as increasing supply, improving distribution, or using well organised rationing.



## KEY LEARNINGS

- A price ceiling is a legal maximum price set by the government.
- If set below equilibrium, it can create a shortage because demand exceeds supply.
- Shortages can lead to queues, rationing, and reduced quality or service.
- Black markets may develop where goods are sold illegally above the legal price.
- Price ceilings may need extra measures, such as better supply and fair distribution.

## MARKET FAILURE

In many markets, prices guide resources in a useful way. When demand rises, prices rise and firms supply more. When demand falls, prices fall and firms supply less. However, there are situations where markets do not produce the best outcomes for society. Economists call this problem **market failure**.

Market failure happens when the market price does not fully reflect the real costs and benefits of producing and consuming a good or service. As a result, too much or too little of something may be produced or consumed.

### Externalities

An **externality** is a side effect of production or consumption that affects people who are not directly involved in the market transaction. Externalities can be positive or negative.

**Negative externalities** arise when an economic activity imposes costs on third parties who are not directly involved in the transaction. A common example is pollution: a factory may produce goods and earn revenue, yet it may also emit smoke that harms the health of nearby residents. Because the factory and its customers do not bear the full social cost of this damage, the market price of the product can be artificially low. As a result, too many resources are allocated to producing the good, leading to overproduction relative to the socially efficient level.

**Positive externalities** occur when an economic activity generates benefits for others beyond those enjoyed by the buyer and seller. Vaccination highlights this clearly: an individual who is vaccinated gains personal protection, while other people also benefit because the disease is less likely to spread. However, since these wider benefits are not fully reflected in private decisions, the market may provide too little vaccination. Consequently, the quantity exchanged in the market can fall below the socially desirable level.

In both cases, the market outcome can differ from what is best for society because the price signal is incomplete.

### DID YOU KNOW?

A Pigouvian tax, named after 1920 British economist Arthur C. Pigou, is a tax on a market transaction that creates a negative externality, or an additional cost, borne by individuals not directly involved in the transaction. Examples include tobacco taxes, sugar taxes, and carbon taxes.

### Information Asymmetry

A market works better when buyers and sellers have good information. Information asymmetry happens when one side of the market has more or better information than the other.

This can cause unfair deals and poor decisions. For example, a shop might exaggerate the quality of a product, while customers cannot easily check the truth before buying.

Information asymmetry can lead to two key problems:

- Low trust: Buyers may become suspicious and stop buying, even from honest sellers.
- Bad quality driving out good quality: If buyers cannot tell quality apart, they may only be willing to pay an average price. Then sellers of high quality goods may leave the market because the price is not worth it.

Governments and organisations sometimes reduce information problems through rules such as labelling, safety standards, and consumer protection laws.

## DID YOU KNOW?

The 2001 Economics Nobel Prize went to Akerlof, Spence and Stiglitz for analysing markets with asymmetric information.

### Public Goods

A public good is a product or service that is both non-excludable and non-rivalrous.

**Non excludable** means it is difficult or impossible to stop people from using the good, even if they have not paid for it. For example, a street lighting benefits anyone walking on the road at night. It is not easy to exclude only those who have paid.

**Non rival** means that one person using the good does not reduce the amount available for others. For example, one person walking through a public park does not stop others from walking there too.



Park is a type of Public Goods

### Why Markets Under Provide Public Goods

Private firms usually supply goods to earn profit. They need customers to pay, otherwise they cannot cover costs. Public goods create a problem because of non excludability.

If people can use a good without paying, many may choose to avoid paying and still enjoy the benefit. This behaviour is called **free riding**. For example, consider a neighbourhood park a private company could build and maintain the park, but it would need money from users. Because the park is open, people may enter without paying. If many people do this, the company does not collect enough money to maintain the park.

As a result, private markets often provide too little of a public good, or none at all. Even if some people are willing to pay, they may think it is unfair to pay when others can use the same good for free.

This is why public goods are considered a market failure. The market does not fully match society's needs because the price system cannot work properly when payment cannot be enforced.

### AN EXCERPT

#### WHAT ARE PUBLIC GOODS?

The topic of this module is “public goods” - both in concept and concretely in daily life. Public goods are “...things [that] do not lend themselves to [private] production, purchase and sale. They must be provided for everyone if they are to be provided for anyone, and they must be paid for collectively or they cannot be had at all.”<sup>2</sup> This definition, by John K. Galbraith, is similar but not identical to other definitions that are put forward in economic theory. Definitions matter, as you will see; if health care, libraries, schools, roadways, and drinking water are considered to be public goods they will be produced by governments. If they are considered to be private goods, they will be produced by private, for-profit actors and made available through markets. This means that those who can pay the price will have access to these things, and those who cannot pay will not get them.

Public goods are produced by public sector agents – government agencies, public authorities, public universities, etc. – not by businesses, civil society, NGOs, households or individuals. Goods produced by such entities that may be enjoyed by the public can be called “social goods” but they are not public goods. The distinguishing characteristics of public goods are that they are created through collective choice (voting) and are paid for collectively (public financing).

*Source: Public Goods in Everyday Life By June Sekera*



## KEY LEARNINGS

- Market failure happens when market outcomes are not best for society.
- Externalities occur when third parties are affected by production or consumption.
- Information asymmetry arises when buyers and sellers have unequal information.
- Public goods are non-excludable and non-rival, so many can benefit at once.
- Private firms often under-provide public goods due to difficulty collecting payment.

## GLOSSARY

<b>Law of Demand</b>	: When price rises, quantity demanded usually falls, and when price falls, quantity demanded usually rises, other things unchanged.
<b>Law of Supply</b>	: When price rises, quantity supplied usually rises, and when price falls, quantity supplied usually falls, other things unchanged.
<b>Equilibrium</b>	: The market situation where quantity demanded equals quantity supplied at a particular price and quantity.
<b>Price Ceiling</b>	: A legal maximum price set by the government; if below equilibrium it can cause shortages and other problems.
<b>Market Failure</b>	: When a market does not allocate resources efficiently because prices do not reflect true costs or benefits to society.
<b>Externality</b>	: A positive or negative effect of a market activity on others who are not part of the buying and selling decision.
<b>Information Asymmetry</b>	: When one side of a transaction has more or better information than the other, leading to unfair or inefficient outcomes.
<b>Public Good</b>	: A good that is non-excludable and non-rival, such as parks or street lighting, so markets often under-provide it.

## Exercises

### A. Multiple choice questions (MCQs)

- The law of demand says that, other things being equal, when price rises:
  - quantity demanded rises
  - quantity demanded falls
  - demand curve shifts right
  - supply curve shifts left
- Market equilibrium occurs when:
  - demand is greater than supply
  - supply is greater than demand
  - quantity demanded equals quantity supplied
  - price is set by the government
- If the market price is above equilibrium price, the market will face:
  - shortage
  - surplus
  - equilibrium
  - black market automatically
- A price ceiling is:
  - a minimum legal price
  - a maximum legal price
  - the equilibrium price
  - a price fixed by producers only
- Pollution from a factory affecting nearby residents is an example of:
  - public good
  - information asymmetry
  - externality
  - surplus

6. Which of the following statement(s) are true with respect to a shift in demand?
- I. Demand can increase due to a rise in consumer preference for a product.
  - II. Demand can decrease if the price of a substitute rises.
  - III. Demand for a normal good generally increases when income increases.
  - IV. Demand can change even if the price of the good itself remains the same.

Choose the correct option:

- |               |                  |
|---------------|------------------|
| A. I and IV   | B. I, III and IV |
| C. II and III | D. I, II and IV  |

7. Which of the following statement(s) are true with respect to price ceiling and market outcomes?

- I. A price ceiling is the maximum legal price fixed by the government.
- II. If a price ceiling is set below equilibrium price, it may create shortages.
- III. A price ceiling set above equilibrium price always creates shortages.
- IV. Price ceilings are often used for essential goods to keep them affordable.

Choose the correct option:

- |               |                 |
|---------------|-----------------|
| A. I and II   | B. I, II and IV |
| C. II and III | D. I and III    |

8. Match the following and choose the correct option.

	Column A	Column B
1.	Demand	A. Unwanted effect of production/consumption on others
2.	Supply	B. Situation where quantity supplied is more than quantity demanded
3.	Surplus	C. Buyers' willingness and ability to purchase at different prices
4.	Externality	D. Sellers' willingness and ability to offer at different prices

**Options:**

- |                        |                        |
|------------------------|------------------------|
| (a) 1-C, 2-D, 3-B, 4-A | (b) 1-D, 2-C, 3-A, 4-B |
| (c) 1-B, 2-A, 3-D, 4-C | (d) 1-A, 2-B, 3-C, 4-D |

**B. Fill in the Blanks.**

- When the price of a good increases, the quantity demanded generally \_\_\_\_\_.
- The curve that shows the relationship between price and quantity demanded is called the \_\_\_\_\_ curve.
- The point where demand and supply intersect is called the market \_\_\_\_\_.
- When the market price is below equilibrium price, it leads to a \_\_\_\_\_.
- Goods like street lighting are called \_\_\_\_\_ goods because everyone can use them.

**C. Match the Following**

	Column A	Column B
1.	Necessities	A. Maximum legal price fixed by the government
2.	Luxuries	B. Situation where quantity supplied is more than quantity demanded
3.	Equilibrium	C. Goods that people feel they must have to maintain basic living standards.
4.	Surplus	D. Point where quantity demanded equals quantity supplied
5.	Price ceiling	E. Goods that people can live without.

#### D. Very Short Answer Questions

1. Define demand.
2. State the Law of Supply.
3. What is equilibrium quantity?
4. What is shortage?
5. What are necessities?
6. Define externalities.
7. What is a price ceiling?
8. What is market failure?

#### E. Short Answer Questions

1. What is meant by demand in economics? Mention any two factors that affect demand.
2. What is the difference between a change in quantity demanded and a change in demand?
3. What do you understand by market equilibrium? How is equilibrium price determined?
4. Distinguish between surplus and shortage
5. Why do black markets arise?

#### F. Long Answer Questions

1. What are public goods? Explain their main characteristics and why the private market may not supply them in sufficient quantity.
2. State and explain the law of demand. Also describe any three situations where the law of demand may not work in the usual way.
3. Explain externalities in detail. Distinguish between positive and negative externalities, and give suitable examples of each.
4. Explain price controls. What is a price ceiling? Discuss its effects on the market, such as shortages, rationing, and black marketing.
5. Explain the concept of supply and state the law of supply. Discuss the factors that can change supply in a market.

#### G. Assertion–Reason Questions

Choose the correct option:

- (a) Both A and R are true, and R is the correct explanation of A.
  - (b) Both A and R are true, but R is not the correct explanation of A.
  - (c) A is true but R is false.
  - (d) A is false but R is true.
1. **Assertion:** A change in the price of a good causes a shift in its demand curve.  
**Reason:** A change in the price of the same good leads to movement along the demand curve.
  2. **Assertion:** Market equilibrium does not occurs when quantity demanded equals quantity supplied.  
**Reason:** At equilibrium, there is no tendency for the price to change unless demand or supply changes.
  3. **Assertion:** Public goods are usually underprovided by private markets.  
**Reason:** People can benefit from public goods after paying.

**4. Assertion:** If the market price is above the equilibrium price, a surplus is created in the market.

**Reason:** At a higher price, quantity supplied becomes greater than quantity demanded.

#### H. Case-Based Questions

**Read the following case and answer the questions:**

**Nashik:** The average wholesale price of the new kharif onions surged significantly by 55% at Lasalgaon APMC — from Rs 2,000 per quintal on Saturday to Rs 3,100 per quintal on Dec 01, 2025.

Around 2,400 quintals of the new kharif onions were auctioned on Monday with the minimum wholesale price recorded at Rs 500 per quintal and maximum reaching to Rs 4,300 per quintal.

An APMC official said the rapid increase in the average wholesale price is due to a substantial drop in the supply of the crops relative to the market demand.

"There is a rise in demand for export which puts additional pressure on the available stock. A contributing factor is also the buying activity of some firms who are purchasing the new Kharif onions for the purpose of making seeds. The combination of limited arrivals, increased export demand and seed procurement collectively led to the notable rise in the average wholesale onion prices," the official said.

According to traders, the supply is still low as harvesting has just begun, pushing up the rates sharply.

Source: Times of India

1. Identify whether the situation is a shortage or surplus. Give one reason from the case.
2. Why did prices increased when demand increased? Explain using demand and supply.
3. How does perishability affect farmers' selling decisions and market price?



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