

Grade 7 Geography Class Notes

1. Introduction to Geography

Geography is the study of the Earth, its physical features, climate, population, and how humans interact with the environment. It is concerned with both the **natural environment** (mountains, rivers, forests) and the **human environment** (cities, settlements, transport networks).

Importance of Geography

1. Helps understand the Earth's physical environment.
2. Provides knowledge on how humans affect and are affected by their surroundings.
3. Assists in planning for sustainable development.
4. Enhances map reading and navigation skills.
5. Helps in predicting weather and managing natural disasters.

Branches of Geography

1. **Physical Geography** – Studies natural features like landforms, climate, vegetation, and soil.
 2. **Human Geography** – Focuses on human activities such as settlements, population, culture, and economic activities.
 3. **Environmental Geography** – Examines the interaction between humans and the environment.
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2. The Earth and the Solar System

The Earth is part of the **solar system**, which consists of the Sun and planets.

Structure of the Earth

1. **Crust** – The outermost layer; thin and solid.
2. **Mantle** – Thick layer beneath the crust; semi-solid and hot.
3. **Outer Core** – Liquid layer made of iron and nickel.
4. **Inner Core** – Solid center; extremely hot.

Earth's Shape and Movements

- The Earth is approximately **spherical**, slightly flattened at the poles.
- **Rotation** – Earth spins on its axis once every 24 hours → causes day and night.

- **Revolution** – Earth revolves around the Sun once every 365 days → causes seasons.
 - **Tilt of Axis** – 23.5° tilt → explains variations in sunlight and seasons.
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3. Maps and Map Reading

Maps are simplified representations of the Earth or parts of it.

Types of Maps

1. **Physical Maps** – Show natural features like mountains, rivers, and lakes.
2. **Political Maps** – Show countries, capitals, and boundaries.
3. **Thematic Maps** – Show specific themes like rainfall, population, or vegetation.

Elements of a Map

- **Title** – Explains what the map is about.
- **Compass Rose** – Shows directions (N, S, E, W).
- **Scale** – Shows the ratio of distance on the map to real distance.
- **Legend/Key** – Explains symbols used on the map.
- **Grid Lines** – Help in locating places using coordinates.

Latitude and Longitude

- **Latitude** – Imaginary horizontal lines parallel to the Equator; measure north or south.
 - **Longitude** – Imaginary vertical lines; measure east or west of the Prime Meridian.
 - **Coordinates** – Intersection of latitude and longitude; used to pinpoint locations.
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4. The Earth's Atmosphere

The atmosphere is the layer of gases surrounding the Earth. It supports life and protects the planet from harmful radiation.

Layers of the Atmosphere

1. **Troposphere** – Closest to Earth; where weather occurs.
2. **Stratosphere** – Contains the ozone layer, which protects from UV rays.
3. **Mesosphere** – Meteors burn here.
4. **Thermosphere** – Very hot; contains auroras.
5. **Exosphere** – Outermost layer; merges with space.

Composition of the Atmosphere

- Nitrogen – 78%
- Oxygen – 21%
- Other gases (Argon, CO₂, etc.) – 1%

Weather and Climate

- **Weather** – Short-term atmospheric conditions (temperature, rainfall, wind).
 - **Climate** – Long-term average of weather in a place.
 - Factors affecting climate:
 - Latitude
 - Altitude
 - Distance from the sea
 - Ocean currents
 - Winds
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5. Landforms

Landforms are natural features on the Earth's surface formed by geological processes.

Major Landforms

1. **Mountains** – Elevated land; formed by tectonic activities.
2. **Hills** – Smaller than mountains; gentle slopes.
3. **Plains** – Flat, low-lying areas; good for farming.
4. **Plateaus** – Elevated flat areas.
5. **Valleys** – Low areas between mountains or hills; often have rivers.
6. **Deserts** – Dry areas with little rainfall.
7. **Rivers** – Flowing water bodies; provide water for humans and wildlife.
8. **Lakes** – Inland water bodies; fresh or salty.
9. **Oceans** – Large bodies of saltwater; cover 71% of the Earth's surface.

Processes Shaping Landforms

- **Tectonic Movements** – Formation of mountains and valleys.
 - **Erosion** – Wearing away of land by wind, water, or ice.
 - **Weathering** – Breaking down of rocks.
 - **Deposition** – Accumulation of sediments forming deltas or beaches.
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6. Rocks and Minerals

Rocks and minerals are important components of the Earth.

Types of Rocks

1. **Igneous Rocks** – Formed from cooled lava/magma (e.g., granite, basalt).
2. **Sedimentary Rocks** – Formed from sediments compressed over time (e.g., sandstone, limestone).
3. **Metamorphic Rocks** – Formed by heat and pressure on existing rocks (e.g., marble, slate).

Uses of Rocks and Minerals

- Building materials (granite, limestone)
 - Making tools and machinery
 - Fertilizers (phosphates)
 - Jewelry (gems like diamond, ruby)
 - Energy resources (coal, oil, natural gas)
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7. Soils

Soil is the top layer of the Earth where plants grow. It is formed from weathered rocks and organic matter.

Soil Horizons

1. **Topsoil (A-horizon)** – Fertile; contains humus.
2. **Subsoil (B-horizon)** – Less fertile; contains minerals.
3. **Parent Rock (C-horizon)** – Weathered rock; source of minerals.

Types of Soil

- **Sandy Soil** – Light, drains water quickly.
- **Clay Soil** – Heavy, holds water.
- **Loamy Soil** – Mixture; ideal for farming.
- **Peaty Soil** – Rich in organic matter; acidic.

Soil Erosion

- Loss of topsoil due to wind, water, or human activities.
 - Methods of control:
 - Terracing
 - Afforestation
 - Crop rotation
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8. Water Bodies

Water is essential for life, and it exists in various forms.

Types of Water Bodies

1. **Rivers** – Source of water for irrigation, transport, and hydroelectricity.
2. **Lakes** – Natural or artificial; provide water and support fish.
3. **Oceans** – Major source of climate regulation and marine resources.
4. **Groundwater** – Stored in aquifers; accessed through wells.
5. **Glaciers** – Large ice masses; store freshwater.

The Water Cycle

- **Evaporation** – Water turns into vapor.
 - **Condensation** – Vapor forms clouds.
 - **Precipitation** – Rain, snow, hail.
 - **Collection** – Water collects in rivers, lakes, oceans.
 - **Transpiration** – Water lost from plants into the atmosphere.
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9. Vegetation

Vegetation is the plant life of a region. It varies according to climate, soil, and human activity.

Types of Vegetation

1. **Forest** – Dense trees; tropical rainforests and temperate forests.
2. **Savanna** – Grasslands with scattered trees.
3. **Desert Vegetation** – Sparse plants; adapted to drought.
4. **Mediterranean Vegetation** – Shrubs and bushes; hot, dry summers.
5. **Mangroves** – Coastal vegetation; adapted to salty water.

Importance of Vegetation

- Provides oxygen and food
 - Prevents soil erosion
 - Habitat for animals
 - Source of timber and medicine
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10. Population

Population geography studies people and their distribution.

Population Factors

1. **Birth rate** – Number of births per 1000 people.
2. **Death rate** – Number of deaths per 1000 people.
3. **Migration** – Movement of people from one place to another.

Population Distribution

- **Dense areas** – Fertile land, good climate, access to water.
- **Sparse areas** – Mountains, deserts, harsh climates.

Urbanization

- Movement of people to towns and cities.
 - Causes: Job opportunities, better services, education.
 - Effects: Overcrowding, pollution, traffic congestion.
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11. Human Activities and the Environment

Human activities impact the environment in both positive and negative ways.

Agriculture

- Provides food, employment, and raw materials.
- Methods: Subsistence farming, commercial farming.
- Environmental impact: Deforestation, soil depletion, pollution.

Mining

- Extracts minerals and metals.
- Environmental impact: Soil erosion, water pollution, deforestation.

Industrialization

- Creates jobs and products.
- Environmental impact: Air and water pollution, habitat destruction.

Conservation

- Protecting natural resources for future generations.
- Methods: National parks, afforestation, sustainable farming.

12. Climate Change

Climate change refers to long-term changes in temperature and weather patterns.

Causes

1. Burning fossil fuels → greenhouse gases.
2. Deforestation → reduces CO₂ absorption.
3. Industrial activities → emissions.

Effects

- Rising sea levels
- Extreme weather events
- Loss of biodiversity
- Changes in agriculture

Mitigation

- Planting trees
 - Using renewable energy
 - Recycling and waste management
 - Public awareness
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13. Natural Disasters

Natural disasters are extreme events caused by natural processes.

Types of Natural Disasters

1. **Earthquakes** – Sudden shaking due to tectonic movements.
2. **Volcanoes** – Eruption of molten lava and gases.
3. **Floods** – Overflow of water on land.
4. **Droughts** – Long periods of little rainfall.
5. **Tornadoes and Hurricanes** – Strong winds causing destruction.

Disaster Management

- Early warning systems
- Emergency preparedness
- Rescue and relief operations

- Rehabilitation and rebuilding
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14. Economic Activities

Human beings carry out various activities to earn a living.

Primary Activities

- Extracting raw materials directly from nature: farming, fishing, mining, forestry.

Secondary Activities

- Processing raw materials into products: manufacturing, building, industries.

Tertiary Activities

- Providing services: transport, education, healthcare, banking.

Quaternary Activities

- Research, information technology, innovation, management.
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15. Transport and Communication

Transport and communication connect people and resources.

Transport Types

1. **Road transport** – Trucks, buses, cars.
2. **Rail transport** – Trains.
3. **Water transport** – Boats, ships.
4. **Air transport** – Airplanes.
5. **Pipeline transport** – Oil and gas pipelines.

Communication Systems

- Postal services
- Telecommunication (phones, internet)
- Broadcasting (TV, radio)

Importance

- Facilitates trade and economy
 - Connects people
 - Provides access to information
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16. Tourism

Tourism is traveling for leisure, education, or business.

Types of Tourism

1. **Cultural tourism** – Visiting historical sites.
2. **Ecotourism** – Nature-based tourism.
3. **Adventure tourism** – Hiking, trekking, climbing.

Benefits of Tourism

- Economic growth and employment
- Cultural exchange
- Conservation of natural and historical sites

Challenges

- Environmental degradation
 - Cultural erosion
 - Overcrowding
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17. Revision and Exam Tips

1. Focus on definitions and key terms.
2. Understand concepts rather than memorizing.
3. Practice map reading and drawing diagrams.
4. Revise current events and relate to geography.
5. Use mnemonics to remember processes like the water cycle.