Test 3 of November month
Unit III - Geography Of India

Social Geography (Population Density & Distribution, Racial, Lingusitic Groups & Major Tribes)	**12th Geography**	**Unit 1 Population geography**
		Unit 5 Cultural and Political Geography
Natural calamities & Disaster Management (Environment Pollution, Reasons and Preventive Measures, climate Change, Green Energy)	**11th Geography**	**Unit – 8- Natural Disaster – Public Awareness for Disaster Risk Reduction**
	12th Geography	**Unit – 8 Man Made Disasters, public Awareness for Disaster Risk Reduction**

1. POPULATION GEOGRAPHY

Introduction

- Do you know that 3, 60, 000 persons born every day in the world? Four births take place every second in the world. 'Professor Stephen Hawking thinks the human species will have to populate a new planet within 100 years if it is to survive,' the BBC confirmed.

- 'With climate change, overdue asteroid strikes, epidemics and population growth, our own planet is increasingly precarious,' the news outlet continued.

- Human being is an important element of the environment and is probably the latest occupant of the earth, as its evolution took place less than two million years ago. Although distribution and growth of human population are influenced greatly by the physical environment, they have tremendous capacity to modify the physical environment.

- **Demography** is the statistical study of human population. It includes the study of size, structure and distribution of population as well as changes in time and location in response to birth, migration, aging and death. **'Population explosion'** is one of the greatest challenges that we are facing today.

Distribution of world population

- People have inhabited the earth for several thousands of years, but for a long period of time, their numbers remained limited. It is only during last few hundred years that human population has increased at an alarming rate. Population is spread unevenly across the continents. Only a few areas support large concentration of people while vast areas support the factors influencing the distribution few people. A large number of factors influence the distribution and growth of population over the earth's surface.

The factors influencing the distribution of population

1. Relief

- Rugged mountains pose various obstacles such as unsuitable conditions for the construction of rail-roads and highways, unfavorable conditions for agricultural crops because of short growing season, lack of cultivable land and snowy winters do not encourage large settlement areas. Hence, the mountainous areas support a few people. On the other hand, a large concentration of population is found in the fertile lowlands such as the Ganges and Brahmaputra in India, Hwang-Ho in China and plains of North-Western Europe and the USA. This is mainly due to flat level land which is fertile, favorable conditions for agriculture, long growing seasons and suitable condition for the settlement.

2. Accessibility

- Areas with well-developed transport infrastructure and links through road, rail, shipping, canals and air are likely to be more densely populated than areas which are poorly connected with transport network.

- In earlier times, in the absence of water transport, all islands remained virtually uninhabited. One of the reasons why mountains are not inhabited by people is lack of accessibility.

3. Adequate water supply

- Population distribution is affected very much by the presence or absence of water in any region. Water supply is essential for human survival and development. Areas which have sufficient water tend to have denser population than areas which are dry or suffer from regular drought. Well watered regions of the Great Northern plains of India are densely populated whereas drought prone areas of Sahara are sparsely populated.

4. Soil

- Fertile alluvial soils of river valleys throughout the world have encouraged dense settlement of population because they support Agricultural activities. The high density of population in parts of East and South-East Asia is dependent mainly on fertile soil. For example, dense population is found in the Ganges valley of India, in Indus valley of Pakistan and Hwang-Ho valley of China. On the other hand, desert soil of Sahara region is sparsely populated.

5. Economic and political factors

- Unfavorable economic condition, unemployment, religious intolerance, conflicts and wars do not favour more population.

The patterns of Population Distribution

- The analysis of the pattern of population distribution and density is fundamental to the study of demographic characteristics of any area. The population distribution refers to the way the people are spread over the earth's surface. The population distribution is uneven worldwide. Ten most populous countries of the world together make up nearly 60% of the world's population.

Density of Population

- Absolute numbers do not give any indication of the impact of population on the land and its resources. The number of persons living per unit of land areas gives a better picture. This is expressed in the form of density of population per sq.km of land area.

  Density of population = <u>Total population</u>
  Total area of the country

- It is obtained by dividing the total land area by the total population, the quotient being the number of people per square kilometer. Compared with simple arithmetic density, physiological or nutritional density is a more refined method of calculating man-land ratios.

- **Physiological or Nutritional** density is the ratio between total population and total cropped area. The total arable land in the world is **13.3%** and the nutritional density of the world is 325 per sq.km of land. The total percentage of arable land is 48.83 in India and its nutritional density is 753 per sq.km of land. Singapore has the highest nutritional density of population of **440,998 per sq.km** of land the world. The areas of density of population can be divided into three as follows:

1. High density areas of population

- Fertile plains with favorable climate and highly industrialised and urbanised areas are generally densely populated. There are four major areas of high density of population with more than 100 persons per sq.km. Areas include:

  a. Eastern Asia, including china, Japan and Republic of Korea.
  b. Southern Asia, comprising India, Bangladesh and Sri Lanka.
  c. North-Eastern part of the United States of America.
  d. Central and North-Western Europe. Of the four regions given, the first two i.e. Eastern Asia and South Asia have high density of population due to favourable environmental conditions such as favourable climate, fertile soil and large areas of plains which encourage the growth of agriculture. The plains and river valleys of India and China are densely populated. In the last two groups i.e. North Eastern United States of America and North – Western Europe which are densely populated due to the concentration of manufacturing industries.

HOTS

- Why has Singapore the highest physiological/nutritional density of population in the world?

2. Moderate density areas of population

- The areas of moderate density of population have between 10 and 80 persons per sq.km. The areas of moderate density of population include Central part of the United States of America, Tropical Western Africa, Western blocks of Russia, Eastern Europe, Deccan Plateau of India, Central China, Southern portion of the Plateau of Mexico, North-Eastern Brazil and Central Chile, The

above areas are characterized by the well-developed agricultural activities, favorable climate, fertile soils, fishing, etc.,.

3. Low density areas of population

- About half the area of the world has population less than 10 persons per sq.km. Certain vast areas remain completely uninhabited. The main areas are

    a. Amazon forest region of South America and Congo forest region of Africa.
    b. Arctic area of Canada, Greenland and the Polar regions.
    c. Great deserts of the world i.e. Sahara, Kalahari, Arabia, Great desert of Australia, Atacama Desert of South America, desert regions of Western United States and Thar Desert of India.
    d. High mountainous regions in all continents.
    e. Antarctica.

- **Australia** with an average density of population of 2 persons per sq.km is one of the most sparsely populated countries of the world. However, inhabitants of these areas have high standard of living. The reasons for low density of population are

    a. Bad and unfavorable Environment conditions for human settlement.
    b. Lack of economic activities.
    c. Lack of transport and communication.
    d. Government policy.

Terms related population

1. Population: A group of individuals of the same species occupying a particular geographic area.

2. People: The members of a particular nation, community, or ethnic group.

3. Crude Birth rate (Natality Rate): Number of live births per thousand people in a year.

4. Crude Death Rate (Mortality Rate): Number of deaths per thousand people in a year.

5. Net Migration Rate: the formula for net migration rate is simple:

$$N = 1000 \times (I - E) / P$$

N= net migration rate

E= number of people emigrating out of the country

I= number of people immigrating into the country

P= the estimated mid-year population

6. Fertility Rate: is the number of live births expected per 1000 women in their life times in a specified geographic area and for a specific point in time, usually a calendar year. Niger has the highest fertility rate of 6.49 while Singapore has the lowest fertility rate of 0.83. Can you guess why there is variation between these countries?

7. Dependency ratio: Number of dependents in a population divided by the number of working age people. It's a calculation which groups those aged under 15 with those over 65 years as the 'dependants' and classifying those aged 15-64 years as 'the working-age population'.

8. Growth Rate: = CBR – CDR +/- Net Migration Rate/ 1000

South Sudan has the highest population growth rate of 3.83% in 2017.

9. Rate of Natural Increase (RNI) = CBR-CDR (No Migration) CBR>CDR = ↑ population RNI usually expressed as % e.g., 2% = 2/100 = 20/1000 RNI ≠ population growth if migration significant 10. Adult Literacy Rate: The Adult literacy index (ALI) is a statistical measure used to determine how many adults can read and write in a certain area or nation. Adult literacy is one of the factors in measuring the Human Development Index (HDI) of each nation, along with life expectancy, education, and standard of living. Burkina faso has the lowest literacy rate of 21.8% (2015). How does literacy rate affect the standard of living of a country? 11. Life expectancy rate: Life expectancy equals the average number of years a person born in a given country is expected to live. As of 2015, the country with the highest life expectancy is Monaco at 89.52 years; the country with the lowest is Chad at 49.81 years.

Growth of world population

- After the introduction of agriculture about 8,000 to 12,000 years ago, the size of population was small, roughly 8 million. In the first century (C.E) it was below 300 million. The expanding world trade during the sixteenth and seventeenth Century set the stage for rapid population growth. Around 1750, at the dawn of Industrial Revolution, the world population was 550 million. World population exploded in the eighteenth century after the Industrial Revolution. Technological advancement achieved so far helped in the reduction of birth rate and provided a stage for accelerated population growth.

- The current world population of 7.6 billion is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100, according to a new United Nations report being launched. With roughly 83 million people being added to the world's population every year, the upward trend in population size is expected to continue, even assuming that fertility levels will continue to decline.

- The current world population, according to UN Department of Economic and Social Affairs, Feb, 2019, is 7,685,036,620.

- The new projections include some notable findings at the country level. China **(with 1.4 billion inhabitants) and India (1.3 billion inhabitants) remain the two most populous countries, comprising 19% and 18% of the total global population respectively**. In roughly seven years, or around 2024, the population of India is expected to surpass that of China.

- Among the ten largest countries worldwide, **Nigeria** is growing the most rapidly. Consequently, the population of Nigeria, currently the world's 7th largest, is projected to surpass that of the United States and become the third largest country in the world shortly before 2050.

- Most of the global increase is attributable to a small number of countries.

- From 2017 to 2050, it is expected that half of the world's population growth will be concentrated in just nine countries: India, Nigeria, Congo, Pakistan, Ethiopia, the United Republic of Tanzania, the United States of America, Uganda and Indonesia (ordered by their expected contribution to total growth).

- The group of 47 least developed countries (LDCs) continues to have a relatively high level of fertility, which stood at 4.3 births per woman in 2010-2015. As a result, the population of these countries has been growing rapidly, at around 2.4 % per year. Although this rate of increase is expected to slow significantly over the coming decades, the combined population of the LDCs, roughly one billion in 2017, is projected to increase by 33 % between 2017 and 2030, world population will reach 9.7 billion in 2050.

- Similarly, Africa continues to experience high rates of population growth. Between 2017 and 2050, the populations of 26 African countries are projected to expand to at least double their current size.

- The concentration of global population growth in the poorest countries presents a considerable challenge to governments in implementing the 2030 Agenda for Sustainable Development, which seeks to end poverty and hunger, expand and update health and education systems, achieve gender equality and women's empowerment, reduce inequality and ensure that no one is left behind.

- Population in the world is currently (2019) growing at a rate of around 1.09% per year (down from 1.12% in 2017 and 1.14% in 2016). It is estimated to reach 1% by 2023, less than 0.5% by 2052, and 0.25% in 2076. In 2100, it should be only 0.09% or an addition of only 10 million people to a total population of 11.2 billion. World population will, therefore, continue to grow in the 21st century.

Doubling Time of population

- **Doubling time** is the amount of time it takes for a given quantity of population to double in size at a constant growth rate. We can find the doubling time for a population undergoing exponential growth by using the Rule of 70. It is because the population of a country becomes double in 70 years if the growth rate is 1%. Thus, we divide 70 by the growth rate and we get the doubling time of population growth rate. For example if the growth rate is 2.08, divide 70 by 2.08 and we get 33.6 years as the doubling time of population.

- World population has doubled in 40 years from 1959 (3 billion) to 1999 (6 billion). It is now estimated that it will take another nearly 40 years to increase by another 50% to become 9 billion by 2037. The latest world population projections indicate that world population will reach 10 billion persons in the year 2055 and 11 billion in the year 2088.

World Population Milestones

- According to the United Nations, the 6 billion figures were reached on October 12, 1999 (celebrated as the Day of 6 Billion). World population

reached 7 Billion on October 31, 2011. The current world population is 7.7 billion as of Feb 2019 according to the most recent United Nations estimates. The United Nations projects world population to reach 8 billion in 2023 and 10 billion in the year 2056.]

Regional division on the basis of growth rate

- On the basis of the growth rate of population the world can be divided into the following three types of areas:

1. Areas of Low Growth Rate

- Developed countries like US, Canada, Japan, Australia, New Zealand and countries of western Europe have a low growth rate of population in these countries is due to low birth rates and low death rates. The difference between the birth rate and the death rate in these countries is the lowest.

2. Areas of Moderate Growth Rate

- This category includes the developing countries like Pakistan, Afghanistan, Brazil, Bolivia, Mongolia, Indonesia and many other Africa and South American countries, where the growth rate of nearly 2 % is also included among these countries though the growth rate here has started declining.

3. Areas of High Growth Rate

- Countries like Mexico, Iran, Colombia, Venezuela, Peru, Libya, Algeria, Sudan, Kenya and Kuwait make this category. In fact, most of the African countries with a growth rate of 3% fall in this category.

Population Concepts

i. **Over population:** situation whereby the population is considered too large for the available resources.

ii. **Under – population:** a situation where the population is less than the available resources of a country.

iii. **Optimum – population:** a situation where the number of people that can be supported is the same as the available resources.

FACT FILE

India - Population

- The current population of India is 1,363,413,725 as of Feb 19, 2019, based on the latest United Nations estimates.
- India population is 17.74% of the total world population.
- India ranks number 2 in the list of countries (and dependencies) by population.
- The population density in India is 455 per Km2.
- 33.6 % of the population is urban (460,249,853 people in 2019)

Composition of Population

- Composition of Population includes sex ratio, literacy rate, age pyramids etc.

Sex Ratio

- The sex ratio is the ratio of males to females in a population.

FACT FILE

Qatar-315 Males per 100 females (2019)

With an astounding ratio of 315 males to a 100 females, Qatar holds the number one spot among **countries with the highest male to female ratio in the world in 2018.**

- As of 2014, the global sex ratio at birth is estimated at 107 boys to 100 girls (1000 boys per 934 girls).

The sex ratio of India is 933 females for every 1000 males according to 2011.

- Kerala has the highest sex ratio in the country with 1084 females for 1000 males followed by Puducherry with 1037 females for 1000 males and Tamil Nadu with 996 females for 1000 males.

Do you know?
Cisgender (often abbreviated to simply cis) is a term for people whose gender identity matches the sex that they were assigned at birth. It is the opposite of the term **transgender.**

What Are Population Age Pyramids?

- **Population pyramids** are graphical representations of the age and sex of a population. For this reason, population pyramids are also referred to as **age-sex** pyramids. We refer to these graphs as pyramids because they are usually shaped like triangles and population pyramids also take other shapes. Population pyramids usually have males on the left side and females on the right. There is also a vertical line in the middle of the graph that separates the males from the females.

FACT FILE

Latvia, country with the highest sex ratio in the world.

Latvia is a former Soviet Union country and experienced a great decline in male population during World War two. By 2015, there were 84.8 males for every 100 females. The proportion of the female was 54.10% of the total population. Men in Latvia have a high mortality rate due to issues such as alcoholism, smoking, and careless car driving. Around 80% of suicides in Latvia are committed by men, often because of unemployment and unrealized financial goals. Women enjoy a longer life expectancy living 11 years more than men.

Literacy Rate

- Total number of literate persons in a given age group, expressed as a percentage of the total population in that age group.

- Literacy rates continue to rise from one generation to the next. Yet according to new data from the UNESCO Institute for Statistics, there are still 750 million illiterate adults, two-thirds of whom are women. These numbers are a stark reminder of the work ahead to meet Sustainable Development Goals (SDGs) 4 and 5 and the Education 2030 targets.

Literacy rate variations between states in India

India's literacy rate is at 74.04%. **Kerala** has achieved a literacy rate of **93.91%. Bihar** is the least literate state in India, with a literacy of **63.82%.** Several other social indicators of the two states are correlated with these rates, such as life expectancy at birth (71.61 for males and 75 for females in Kerala, 65.66 for males and 64.79 for females in Bihar),

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infant mortality per 1,000 live births (10 in Kerala, 61 in Bihar), birth rate per 1,000 people (16.9 in Kerala, 30.9 in Bihar) and death rate per 1,000 people (6.4 in Kerala, 7.9 in Bihar).

Six Indian states account for about 70% of all illiterates in India: Uttar Pradesh, Bihar, Madhya Pradesh, Rajasthan, Andhra Pradesh and West Bengal. Slightly less than half of all Indian illiterates (48.12%) are in the six Hindi-speaking states of Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Jharkhand and Chhattisgarh.

Age - Sex pyramids

- There are three types of Age - Sex pyramids: expansive, constrictive, and stationary

- **Expansive Age - Sex pyramids** depict populations that have a larger percentage of people in younger age groups. Populations with this shape usually have high fertility rates with lower life expectancies. Many third world countries have expansive Age - Sex pyramids. Such a population pyramid is a characteristic of newly developing countries such as Afghanistan, Bangladesh, Kenya, and some countries of Latin America.

- Constrictive **Age - Sex pyramids** are named so because they are constricted at the bottom. There are a lower percentage of younger people. Constrictive Age - Sex pyramids show declining birth rates, since each succeeding age group is getting smaller and smaller. **The United States has a constrictive Age - Sex pyramid.**

Tripura Literacy success

Presently **Tripura** has the **highest** literacy rate in India**, 94.65 percent.** According to the 2011 census, literacy level was 93.91 percent in Kerala and 91.58 percent in Mizoram, among the most literate states in the country. The national literacy rate, according to the 2011 census, was 74.04 percent. The Tripura success story is attributed to the involvement of local government bodies, including Gram panchayats, NGOs and local clubs under the close supervision of the State Literacy Mission Authority (SLMA) headed by the chief minister. Tripura attained 87.75 percent literacy in the 2011 census, from the 12th position in the 2001 census to the 4th position in the 2011 census. Among projects

implemented by the state government to increase literacy in the state are

- 10,000 anganwadi centres have 100 percent enrollment.
- Policy of no fail till class VIII to prevent children from dropping out.
- Midday meals in all schools with an eclectic menu for all days of the week to attract more students.
- No tuition fee in government colleges.

The holistic education system, implemented with equal interest in Agartala, remote areas and the tribal autonomic areas makes sure that people in Tripura do not just become literate but educated, officials emphasized. One pointer to the government's interest in education is the near-total absence of child labor in Tripura.

Stationary Age-sex pyramids

- **Stationary Age - Sex pyramids** are those that show a somewhat equal proportion of the population in each age group. There is not a decrease or increase in population; it is stable.

    Austria has a stationary Age - Sex pyramid.

The Purpose of the Age - Sex Pyramid

- The purpose of making this Age - Sex pyramid is to find out the comparison between the number of men and women, the number of workers, and the structure of the population in a country quickly. In addition, the creation of the Age - Sex Pyramid also has a purpose to assist the government in taking development policies.

Migration

- Migration means the movement of people from one place to the other. It is an important control of population growth after fertility and mortality. Migration of people into an area from outside is called immigration or in-migration while movement out of an area to other regions is called emigration or out-migration.

- Immigration leads to an increased growth rate of population, emigration lowers the growth rate of population in the source region. Mexico's emigration problem is a unique one, with more than 98% of all Mexican

migrants living in the U.S.A, the country with which Mexico shares a border that runs 3110 km in length. The Mexican emigration rate increased substantially since the 1960s and, with more than 11% of Mexicans living abroad, **Mexico is the country with the largest number of emigrants in the world.** According to estimates from the UN 2015 report, in 2013, the **United States, Germany** and **Russia** had the largest number of immigrants of any country, while **Tuvalu** and **Tokelau** had the lowest immigrant.

Types of migration
1 Net Migration

- Net Migration is the difference between immigration (in-migration) and emigration (out-migration).

- Positive value of net migration is that more people coming in and population growth, for example, 44% of North America and 88% of Europe. Negative value of migration is more people coming out and population decline.

2 International Migrations

- Emigration is an indicator of economic and or social failures of a society. It is a crossing of a national boundary. It is easier to control and monitor. There are laws to control or inhibit these movements. Between 2 million and 3 million people emigrate each year. Between 1965 and 2000, 175 million people have migrated: it accounts for 3% of the global population.

3 Internal Migrations

- It occurs within a country. It is crossing of population within domestic jurisdictional boundaries. It is the movement of people between states or provinces. There is little government control over internal migration.

4 Local Migrations

- Local migrations are the migration of the people within state or district. No state boundaries are crossed in the local migration. It happens for several reasons such as buying a new house in the same town or city, difficult to research since they are usually missed in census data. It is based on change of income or lifestyle. Americans change residence every 5 to 7 years.

5 Voluntary migrations

- Voluntary migrations are where the migrant makes the decision to move. Most migration is voluntary.

6 Involuntary migrations

- It is a forced migration in which the migrant has no role in the decision-making process. It includes mostly slavery. It is estimated that about 11 million African slaves were brought to the Americas between 1519 and 1867. In 1860, there were close to 4 million slaves in the United States. People involve in the involuntary migration are refugees due to military conscription, children of migrants, people in the situations of divorce or separation.

Brain Drain

- Brain drain is related to educationally specific selective migrations. Some countries are losing the most educated segment of their population. It can be both a benefit for the receiving country and a problem to the country of origin.

- **Receiving country**: it is getting highly qualified labor which is contributing to the economy right away. It promotes economic growth in strategic sectors: science and technology. It does not have to pay education and health costs, for example, 30% of Mexicans with a PhD are in the US.

- **Country of origin:** Education and health costs are not paid back to the country of origin. It is losing potential leaders and talent: Between 15 and 40% of a graduating class in Canada will move to the US. It has long term impact on economic growth. It has the possibility of getting remittances. Many brain drain migrants have skills which they can't use at home: The resources and technology may not be available there. The specific labor market is not big enough.

Causes of Migration

- We can divide factors causing migrations into two groups of factors as push and pull Factors.

- Push and Pull factors Push and pull factors are those factors which either forcefully push people into migration or attract them. A push factor is forceful, and a factor which relates to the country from which a person migrates. A pull factor is something concerning the country to which a person migrates. It is generally a benefit that attracts people to a certain place. Push and Pull factors are usually considered as north and south poles on a magnet.

- **Push Factors:** Not enough jobs, few opportunities, desertification, famine/ drought, political fear/ persecution, poor medical care, loss of wealth, natural disasters, death threats, slavery, pollutions, poor housing, landlords, bullying and poor chances of finding courtship

- **Pull Factors:** job opportunities, better living conditions, political and or religious freedom, enjoyment, education, better medical care, security, family links, industry, better chances of finding courtship.

Overpopulation

- Overpopulation is the state whereby the human population rises to an extent exceeding the carrying capacity of the ecological setting. In an overpopulated environment, the numbers of people might be more than the available essential materials for survival such as transport, water, shelter, food or social amenities. This regularly contributes to environmental deterioration, worsening in the quality of life, or even the disintegration of the population. Due to immigration, the decline in mortality rates, medical breakthroughs, and increased birth rates, populations will always increase and eventually gives rise to overpopulation.

Impacts of Overpopulation

- Overpopulation thus contributes to some of the most compelling environmental problems which encompass:

1. Depletion of Natural Resources

- As human population keeps on increasing, exhaustible natural resources such as arable land, coral reefs, fresh water, fossil fuels, and forests continue to drop sharply. This creates competitive demands on the vital life-sustaining resources and contributes to an incredible decline in the quality of life.

2. Accelerated Habitat Loss

- The increased loss of the ecosystems including wetlands, wildlife, rainforests, coral reefs, aquatic life forms, and grasslands are highly influenced by overpopulation. For example, rainforests originally covered 14% of the entire earth's surface. Today, rainforest only cover about 6% of the earth's surface and scientists' project it may even become less in the next four decades judged by the current rate of vegetation removal, logging, and deforestation. Besides, due to environmental pollution, 30% of the ocean reefs have been lost because of acidification and global warming since 1980. Also, more than half of the original wetlands have been lost.

3. Amplified Climate Change and Global Warming

- The more the number of people, the more the number of vehicles and industries would be. Furthermore, more population tends to increased use of energy sources such as coal and firewood which contributes to increased greenhouse gas emissions.

- Hence, because of the accumulation of human generated greenhouse gases and carbon footprint in the atmosphere, the planet has continued to witness amplified global warming and climate change. The effects of climate change and global warming are resulting in extreme hunger, drought, flooding, and loss of habitat.

4. Loss of Biodiversity

- Overpopulation has caused encroachment into frontier forests and destruction of natural ecosystems that has led to the mass extinction of species. The number of threatened species persists to multiply in number whereas some have completely gone extinct. This is because of human activities such as acidifying water, over exploitation of natural resources, pollution, over fishing, poaching, and destruction of natural systems which are necessary for the survival of different species.

5. Decrease of fresh water

- The unrelenting nature of overpopulation on the earth has destroyed most of the world's fresh systems. Most of the lakes, streams, rivers and ground water making up fresh water have been polluted. According to the global outlook of

water resources, these activities influenced by over population have only left less than 1% of the planet's fresh water readily accessible for human utilization.

- Water vulnerability is already affecting many overpopulated nations, especially in some developing countries, as the demands for water tend to be more than the accessible water. Millions of fish species from freshwater ecosystems are on the verge of extinction. Thus, as human inhabitants rise in number, so will the problem of quality freshwater accessibility.

6. Lower Life Expectancy and Diminished Quality of Life

- Overpopulation lowers the standards of living since it creates stress on the vital resources for survival and increases the difficulty of accessing the consistent supply of quality food, water, energy, health, security and shelter. Consequently, it makes the poor to become poorer, and they often opt for poor living conditions to survive.

- Eventually, it gives rise to lower life expectancy. The situation is serious in developing nations such as southern Asia and sub-Saharan Africa where most of the poor populations submit to inadequate and poor diets.

7. Rise in Unemployment, Crime Rate, and Violence

- In overpopulated nations, the available jobs are fewer than the overall job seeking population. This contributes to high levels of unemployment. In turn, lack of unemployment leads to elevated crime rates because of theft, drug cartels, and militia groups which are exploited as options for attaining basic resources and necessities such as food, good living standards, and wealth. Violence and conflicts arise when people start competing for the available limited resources.

8. Increased Intensive Farming

- As population has grown over the years, farming practices have evolved to produce enough food to feed larger numbers of people. However, intensive farming methods also cause damage to local ecosystems and the land, which may pose problems in the future.

Measures to control overpopulation

- Here are some unique solutions to overpopulation:

1. Creating Awareness Campaigns

- Using both social and mainstream media, we can clearly tell people around the world the truth about overpopulation crises and what must be done to solve them the right way.

2. Promotion of adopting child

- Adoptions become a consideration for family planning, particularly among socially conscientious communities. And today, it has become a de-facto solution for people who are interested in starting a family, yet having concerns about overpopulation.

3. Aiming for Single-Child Families

- According to statistics, hundreds of thousands of people are being added to the planet every day, which is an unsustainable rate. Hence, it is need of hour we should aim for single-child families.

4. National Security issue

- Over populated countries should treat population boom as an issue of national security. As you can see, similar to food insecurity and climate change, uncontrolled and rapid population growth can be a national security threat in a way that it results to instability.

5. Changing Social Norms

- Some couple chooses not to have children and we have to respect their decision. This way we will be able to help curb the problem of overpopulation.

6. Providing Tax Benefits or Concessions

- Governments of various countries can come up with various regulations and policies related to tax exemption to help solve overpopulation. For example, they can waive certain parts of income tax or lower income tax rates for couples who have one or two children.

12th Unit 5 Cultural and Political Geography

Introduction

      An interesting traditional Chinese custom says that a husband should carry his bride over a pan of burning coals before crossing the threshold of their home as husband and wife. According to tradition, the ritual ensures that the wife will have an easy and successful labour. Fire walking is also performed by some Chinese people as a means to prevent natural disaster'. 'In Cypriot culture, do not give white lilies as they are used at funerals. It is polite to finish everything on your plate. If you have not finished eating, cross your knife and fork on your plate with the fork over the knife'. It indicates you have finished eating by laying your knife and fork parallel across the right side of your plate'. Do you know some interesting custom practiced in our culture?

- Culture is the total way of life that characterizes a group of people. There are thousands of cultures existing today and each contributes to global diversity. There are so many ways that people can be culturally different. Specifically, a culture consists of numerous cultural components that vary from one culture group to the other. Some of the cultural parameters are religion, language, architecture, cuisine, technology, music, dress, gender roles, law, education, government, agriculture, economy, sport, values, and many more.

Culture Region

- A culture region is a portion of Earth that has common cultural elements and has distinct cultural authority from other regions. Any number of cultural components may be used to define culture regions. A map of world religions, for example, includes a shaded area in South Asia where Hinduism is dominant.

- Culture regions differ greatly in size. Some are exceedingly large, like the Islamic culture region that encompasses millions of square km of North Africa and Southwest Asia. Some are very small, like Spanish Harlem, which encompasses about three square km of Manhattan. Many others are of intermediate size, like the Corn Belt, which occupies a portion of the mid-western United States.

Cultural Diffusion

- Cultural diffusion is the spread of cultural beliefs and social activities from out group of people to another. Mixing of world culture through different ethnicities, religions and nationalities has only increases with advanced communication, transport and technology.

Cultural Landscape

- Cultural Landscapes have been defined by the World Heritage Committee as "cultural properties representing the combined works of nature and of man".

- The World Heritage Committee has identified and adopted three categories of cultural landscape. The three categories extracted from the Committee's Operational Guidelines, are as follows:

  (i) "A landscape designed and created intentionally by man".
  (ii) An "organically evolved landscape" which may be a "relict (or fossil) landscape" or a "continuing landscape";
  (iii) An "associative cultural landscape" which may be valued because of the "religious, artistic or cultural associations of the natural element".

Cultural Interaction

- Cultural interaction focuses on the relationships that often exist between cultural components that characterize a given community. Different factors interact with each other and give rise to prevalent trait.

- What language do you speak? What dress do you wear? What food do you like? What is the structure of the house you live in? For the above question by searching the answer we can learn the culture of a human society.

- Culture shapes our identity and influences our behaviours. Culture refers to the sharing language, beliefs, values, norms, behaviors and material objects, which are passed from one generation to the next generation. Cultural geography is the branch of human geography which deals about the areal organization of various cultural aspects in relation to total environment. Some of the cultural aspects are as follows:

Language

- Language plays great force in socialization and historical transmission, which is the primary instrument for transmitting culture. Human can bind any group of people through the network of interaction. Languages are in written or oral form. India (780) has the world's second highest number of languages, after Papua New Guinea (839).

Customs

- Custom in law is the established pattern of behavior that can be objectively verified within a particular social setting. A claim can be carried out in defense of what has always been done and accepted by law. It becomes characteristic of the group of people performing the act.

- Habit is a similar word which is adopted by an individual and it has been adopted by most of the people of the ethnic group or society.

Norms

- Norms refers to attitude and behaviours that are considered normal, typical or average within the group. Cultural norms are the standards we live by. They are the shared expectations and rules that guide behaviour of people within social groups. Cultural norms are learned and reinforced from parents, friends, teachers and others while growing up in a society. Norms often differ across cultures, contributing to cross-cultural misunderstandings.

Values

- Values refer to intangible quality or beliefs accepted and endorsed by a society. A culture's values are its ideas about what is good, right, fair, and just. Sociologists disagree, however, on how to conceptualize values. Conflict theory focuses on how values differ between groups within a culture, while functionalism focuses on the shared values within a culture.

Cultural Heritage u

- Cultural Heritage is an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values. Cultural Heritage is

often expressed as either Intangible or Tangible Cultural Heritage. As part of human activity Cultural Heritage produces tangible representations of the value systems, beliefs, traditions and lifestyles. As an essential part of culture as a whole, Cultural Heritage, contains these visible and tangible traces form antiquity to the recent past.

Cultural Heritage types

- Cultural Heritage can be distinguished in: Built Environment (Buildings, Townscapes, and Archaeological remains), Natural Environment (Rural landscapes, Coasts and shorelines, agricultural heritage) and Artefacts (Books & Documents, Objects, and Pictures).

Cultural diversity

- Cultural diversity refers to having different cultures, respect to each other differences. Cultural diversity is important; because of work place and show increasingly consist of various cultural, racial and ethnic groups. We can learn from one another but first we must have a level of understanding. Cultural diversity exists in many countries around the world, but it can be challenging and, at times, problematic. Through this lesson, you will learn how to define cultural diversity and explore some of the ways in which it influences society.

Cultural Traits

- A cultural trait is a characteristic of human action that's acquired by people socially and transmitted via various modes of communication. Cultural traits are things that allow for a part of one culture to be transmitted to another. There are millions of culture traits, a trait can be an object, a technique, a belief or an attitude. Culture traits are interrelated with each other, their collective function forms culture complex.

Cultural Realms of the World

- Cultural realm refers to a type of cultural region. Cultural region is a continuous geographical area characterized by cultural homogeneity. It may be classified into three categories as macro, meso and micro region. Cultural realm is classified based on the attitude, religious belief, language, racial group, technological development, etc. There are twelve Cultural realms in the modern world. Let us discuss some of them briefly.

Occidental Realm

- Occidental culture is the culture of the European society. It is influenced, to a great extent, by Christianity. It has regional modifications on the basis of varying levels of industrialisation, political and economic thought, colonisation, commercialisation, urbanisation, and development of transport system, land development of social, political and economic institutions.
- In many parts of the occidental culture, the impact of non-religious factors, particularly the effect of modernisation, is so great that the religious values are sidelined. Post- industrial Europe is fast emerging as a society where traditional values are nearly abandoned. The occidental culture covers a vast area. It is further divided into six sub-regions considering the impact of regional environment.

    (i) West European is the most industrialised and urbanised culture.

    (ii) Continental European culture is influenced by different political and economic thoughts, while Christianity remains an important influence.

    (iii) Mediterranean Europe includes countries lying to the south of the Alps. It is the region of dominance of Christianity.

    (iv) Anglo-American and

    (v) Australian cultural realms are practically the offspring's of west European culture. Both are inhabited by migrants from west Europe. There are only some regional differences.

    (vi) Latin American culture is very similar to the Mediterranean culture. It is the only region of occidental culture which lies in the tropics and is underdeveloped. It became a part of the occidental culture as a result of conversion of tribes into Christianity. The colonial languages, Spanish and Portuguese, have become the state languages. Regional architecture has been influenced by the Spanish and Portuguese styles. Practically all countries maintain economic, cultural and social ties with the Mediterranean countries.

Islamic Cultural Realm

- The Islamic Cultural Realm is influenced by Islamic values. It covers a vast geographical area from Morocco in the west to Pakistan in the east. The population is sparsely distributed due to inhospitable environment. The coasts, river basins and oases have been the cradles of Arabian culture in this realm. The British call it the Middle-East while the Germans call it a region of

oriental culture. This cultural realm lies between the traditional Indian culture in the east and the modernised European culture in the west.

- Islamic culture is highly orthodox and based on traditional beliefs, the impact of which can be seen in high female illiteracy rates. These countries have very high per capita incomes, but the level of modernisation is very low.

Indie Cultural Realm

- Indie Cultural Realm is the culture of the Indian sub-continent. Baker called it a sub-continental culture, while D. Stamp used the term paddy culture. This cultural realm is well-defined; it lies between Himalayas in the north, Indian Ocean in the south and Hindukush Mountains in the west.

- This cultural realm is characterized by joint family, village community, caste system, semi-feudal land relations, subsistence agriculture, paddy farming, seasonal climate changes and agricultural season coming at the same time all over the region. The culture of this region is greatly influenced by Vedic values. Though the region is inhabited by various communities, the social system has the hidden impact of Vedic cultural values.

East Asian Culture

- This culture is basically a Buddhist culture with regional modifications. True Buddhist culture can be seen in South Korea and Japan. Even these two countries have felt the impact of industrialisation, urbanisation and modernisation. The culture of mainland China has modified the Buddhist system. This culture was adopted after the Second World War.

South-East Asian Culture

- It is a transitional culture lying at a place where different cultures have intermingled. Dominance of Buddhism can be seen in Myanmar, Thailand and Vietnam. Influence of Christianity can be seen in the Philippines and of Indie culture over islands of Indonesia. The Islamic influence is evident in Malaysia and the Indonesian islands. No other region has such peculiarities.

Meso-African Culture

- This culture is also known as the Negro culture. It principally includes tropical Africa. Similar cultural systems can be seen among the American Red Indians, Latin American tribes, Australian aboriginals and several tribes of Asia-Pacific region.

- Historian Toynbee has used the term 'marginalised culture' for these traditional culture units. Some geographers even include Eskimos under this cultural realm. Thus, it is a widely scattered cultural realm characterised by marginalised and relatively isolated communities.

Major Culture Hearths

- Areas from which important culture traits, including ideas, technology, and social structures, are originated.

Folk Culture

- Culture traits that are traditional, no longer widely practiced by a large number of people, and generally isolated in small, often rural, areas.

Races

- The race is a group of people with more or less permanent distinguishing characteristics. There are skin colour and hair colour to which persons concerned attach certain interpretations. Objectives and scientific classification are the division of mankind in to racial groups should be done on the basis of measurable physical features and qualities inherited from a common ancestor. The important features on the basis of which the races are identified and classified include skin colour, stature, shape of head, face, nose, eye, type of hair, and blood group. Human races are classified in to four broad groups:

    1. Negroid, 2. Caucasoid, 3. Mongoloid and 4. Australoid.

HOTS
If human being originated from one point, Africa and spread to rest of the world, how could they become different races?

1. The Negroid

- They are usually called as "black race". They have the darkest skin tone than other races, and other common characteristics are the slopped forehead, thick lips, wide nose, and dark hairs. They are living in Sub-Sahara Africa.

2. The Mongoloid

- They have the folding eye lids, almond shaped eyes, yellowish skin tone, and V shaped cheeks. Native Americans and Eskimo are also classified as Mongoloid. Compared to the other races, they have the least body hair, least body odour, and smallest limb ratio. Their facial structure is likely to adapt cold mild wind. They are living in East Asia.

3. The Caucasoid

- The Caucasoid is known as "white people" characterised by the pointy nose, vertical forehead, pinkish/orange skin tone, visible brow ridge, and colorful eyes/hair. Some believe that their light skin tone is meant to receive more sunlight due to Europe's climate. Some believe that their nose structure is meant to keep the nose moisture from getting dried by the wind. They are living in Europe and Middle East.

4. Australoid Race

- They have visible eye ridge, wide nose, curly hair, dark skin tone, and short in height. Some believe that their visible ridge helps them to eat stiff foods. They are living in Australia and Papua New Guinea.

Characteristic of Major Races

Feature	Caucasoid	Monogoloid	Negroid
Skin colour	Pale reddish white to olive brown.	Saffron to yellow brown, reddish brown.	Brown to black brown yellow brown.
Stature	Medium to tall.	Medium tall to medium short	Tall to very short.
Face	Narrow to medium broad, tends to high no	Medium broad to very broad malars high and	Medium broad to narrow tends to medium high

	prognathism.	flat tends to medium.	strong prognathism.
Head form	Long-broad and short medium, high-very high	Medium height, predominantly broad.	Predominantly long low height.
Hair colour	Light blonde to dark brown, straight to wavy.	Brown to brown black, straight.	Brown black light curl and wooly.
Body build	Linear to lateral slender to refuge.	Tend to be lateral, some linearity evident.	Tend to be linear and muscular.
Nose	Usually high, narrow to medium broad.	Low to medium form, medium broad.	Low, medium to very broad.
Blood group	more A than B	High in B	High is Rh(D)
Eye	Colour: light blue to dark brown, lateral eye –fold occasional.	Colour: brown to dark brown, medial epicanthic fold very common.	Colour: brown to brown block, vertical eye-fold common.

Ethnicity

- Ethnicity is a concept referring to a shared culture and a way of life. This can be reflected in language, religion, material culture such as clothing and cuisine, and cultural products such as music and art. Ethnicity is often a major source of social cohesion and social conflict. The world is home to thousands of different ethnic groups, from the Han Chinese (the largest ethnic group in the world) to the smallest indigenous groups, some of which include only a few dozen people. Almost all of these groups possess a shared history, language, religion, and culture, which provide group members with a common identity.

- India is a unique country with great diversity in ethnicities, race, religion, language, culture, cuisine and in every other aspect of the human society. Indian civilization is one of the oldest in the world and primarily consists of the Indo-Aryans of North India and the Dravidians of South India, the people of the Indus Valley Civilization while the former migrated to the country at

about 1800 BC. As India has such a diverse cultural demographic, it makes sense that the country is also.

Dravidians

The Dravidian people are any native speakers of the Dravidian languages in the Indian Subcontinent. Almost all the Dravidians live in the southern part of India. The five major ethnic groups of Dravidian people in India are Tamil, Telugu, Kannada, Malayalam, and Tulu.

The ancient Indus Valley civilization in India was believed to have been of Dravidian origin in northern India, but then the Dravidian people were pushed south when the Indo- Aryans came in and the Kuru Kingdom in northern Indian arose. Later South India was dominated by the three Dravidian kingdoms of the Cheras, Cholas, and the Pandyas. These three kingdoms have been shown to sponsor the growth of literature, music, and the arts and to have done extensive trading. The three kingdoms also supported and were tolerant of Buddhism, Jainism, and Hinduism. The major languages spoken by the Dravidian people are Tamil, Telugu, Kannada, Malayalam, and Brahui.

Do you know?

Arabic script Brahui is the only Dravidian language which is not known to have been written in a Brahmi based script, instead, it has been written in the Arabic script since the second half of the 20th century in Iran Pakistan and Afghanistan.

Religion

- Religion is not a vague fear or unknown powers not the child of terror, but rather a relation of all the members of a community to a power that has the good of the community at heart and protects its law and moral order. Religion produces a distinct attitude towards life which affects the further development of the society. Indeed most cultural situations show the mutual interaction between religion and socio-economic and politico-cultural factors.

Classification of religion

- Religion may be classified based on the belief in god. Monotheistic: the followers of monotheism believe in a single god (Islam, Christianity). Polytheistic: the followers of polytheism believe in many gods (Hinduism). Another classification is on the basis of areas of origin such as Eastern

religion, Western religion, far Eastern religion, African religion, Indian religion, etc. Geographers generally classify religions into following;

- Universalizing religions – Christianity, Islam, and Buddhism.
- Ethnic religions – Hinduism, Shintoism (Japan), Chinese faiths, Judaism.
- Tribal or traditional religions – animism, shamanism, secular (non-religious and atheists).

Major religions of the world

- Major religions of the world are classified based on the followers. They are Christianity, Islam, Hinduism, Buddhism, and Judaism. Other important religions include Chinese folk religions, Sikhism, Confucianism, Shintoism etc.

- Christianity is a universal religion which has the largest number of followers in the world. They are spread in Europe, Anglo America, Latin America, Africa, Asia and Oceania. Its sacred book is "Bible". Islam is the second largest religion of the world. The largest concentration of the Islam is in the South West Asia, Central Asia, South Asia and South East Asia Followed by the North Africa. Shia and Sunni are its two main sects. Its sacred book is Kuran.

- Hinduism is the oldest ethnic religion of the world which was founded about 3000 B.C (B.C.E) in India. Today it has over 8 million followers in the world but main concentration is in India and Nepal. Nearly 99 percent of the total Hindu population is concentrated in south Asia. Its sacred books include the Vedas, the Upanishads, the Epics, the Ramayana and Mahabharata, and the Bhagavad Gita. Buddhism is also one of the oldest religions of India which was founded by Lord Buddha around 525 B.C (B.C.E). Its spread in several Asian countries (China, Myanmar, India, Srilanka, japan, Mangolia, Korea and South East Asian countries) due to its liberal philosophy. Its two main sects are Hinayana and Mahayana.

- Judaism is the oldest Monotheistic faith which is regarded as the parent of Christianity. It originates 4000 years ago in the Middle East. At present it has about 14 million followers living in U.S.A, Europe and Asia. Chinese religions include two main beliefs called Confucianism and tao-ism. Confucianism was established by Confucious (551-479 B.C (BCE)). Taoism was established by Lao Tse (604-517 B.C (BCE)).

- Jainism is also born in India as a reaction to orthodox Hinduism. It was founded by Lord Mahavir who was a Contemporary of Lord Buddha. Its followers are mostly concentrated in India. It is an offshoot of Hinduism which was established in the 15th century by Guru Nanak. It remained confined to Punjab state and has accepted Gurumukhi as its language.

Tribal Religions

- Tribal religions are the special forms of ethnic religion. The tribal people are generally in the Neolithic stage of social development. Tribal people are strikingly different and diverse in their culture, social and economic life. They cherish their own distinct and have maintained a close relationship to the land and natural environment. Most of them live according to their traditions and are engaged in food gathering, hunting, fishing, primitive agriculture etc, there are about 300 million indigenous people worldwide, constituting about four percent of the total population of the world living in more than sixty countries.

Do you know?
The percentage of tribal to total population is as high as over 90 percent in Greenland, 66 percent in Bolivia and 40 percent in Peru. In India share of tribal people to total population is 8.2 percent.

- Sometimes the tribal people are being termed as the fourth world. The first – second and third world believed that "the land belongs to the people" whereas the fourth world believes that "the people belongs to the land

Tribal Distribution in world

- Sme major tribal group of the world particularly who are living and struggling

1. Equatorial Forest region: Pigmy, Semang, Sakai, Boro, Papuan, etc.

2. Grasslands: Masai, Kyrghizs, etc.

3. Tropical deserts: Bedowin, Bushman, Aborigines etc.

4. Mountainous region: Bhotia, gujjar, Naga etc.

5. Monsoon regions: Gonds, Santhals, Todas, Bhils, etc.

6. Arctic cold regions: Eskimo, Lapp, Alute, Chukchi etc.

Pigmies

- The pigmies are Negroid people and are also called Negrillos. They are the nearest approximation of human being to animal. They are short stature, flat nosed, wooly haired, long headed and black people. The average height of men and women are found 150cm. So they are also called dwarf. The pigmies are those who live in scattered parts of tropical Central Africa. They are found in many sub-groups in the equatorial forest region of Africa mainly in Congo basin $3^{o}N$ and $3^{o}S$ latitudes along both sides of the equator. In addition some groups of Pigmies are also found in the forests of Philippines and New Guinea.

Masai

- The Masai of east Africa belong to the pastoral society and are known as the best and most typical cattle herders not only of Africa but also of the world. Masai people are tall and slender with ling feet, hands and fingers. Their skin colour ranges from light chocolate to dark brown. They have high and long head, thin face and nose. Their lips are less thick than that of Negroid people. Masai occupy the interior plateau of the equatorial Africa. The territory of the Masai lies between $1^{o}N$ and $6^{o}S$ latitudes and covers all the rift valleys in this region.

Bedouin

- In Arabic, Bedouin means desert dwellers. The Bedouins are most important among the tribal of South West-Asia and North Africa. They are pastoral nomads and keep camel, sheep, goats, horse etc. The Bedouins occupy the desert areas of the Arabian Peninsula including Saudi Arabia, Yemen, Oman, Syria and Jordan. The Bedouins belongs to the mixture of Mediterranean and Armenian races. They are medium stature people with long narrow face, prominent nose, dark eyes and hair. Their complexion is wheatish to pale.

Bushman

- Bushman is the tribal people of Kalahari Desert in southern Africa who are still engaged in hunting and gathering economics. They are on constant run for both food and water. Their homeland Kalahari Desert lies in Botswana, Namibia and southern Angola. The bushman territory is a wide plateau about 2000 meters above the sea level with sub-tropical climate. The bushman are including in the Negroid stock. They are very short in stature and have long head, short and flat ears, and yellowish brown complexion. On the whole the Negroid characteristics prevail among the Bushman.

Eskimos

- Eskimos also called Inuits are tribes of tundra cold region in Canadian northland, Alaska, Greenland and north-eastern Siberian coastal region. The Eskimos are Mongoloid race. The main physical characteristics of the Eskimos are short stature, Flat narrow face, small snub nose, yellow –brown complexion and coarse straight black hair. Hunting and fishing are the main occupations of the Eskimos. They live in igloo and practice hunting way known as Maupak. The Eskimos wear clothes of caribous or reindeers skin and other furs.

- Eskimos are migratory by nature and construct ice houses called Igloos. For travelling on ice shield the Eskimos use sledge which is usually built either of whale bone or of wood whichever is available. It is drawn by two or more dogs, caribous or rain deer.

Tribal in India

- India is the home to large number of indigenous people, who are still untouched by the lifestyle of the modern world. With more than 84.4 million, India has the largest population of the tribal people in the world. These tribal people also known as the adivasis are the poorest in the country, which are still dependent on haunting, agriculture and fishing. Some of the major tribal groups in India include Gonds, Santhals, Khasis, Angamis, Bhils, Bhutias and Great Andamanese. All these tribal people have their own culture, tradition, language and lifestyle. There are more than 50 tribal groups in India. Most of the tribal belong basically to the Negrito, Australoid and Mongoloid racial stocks.

Bhils

- Bhils are popularly known as the bow men of Rajasthan. They are the most widely distributed tribal groups in India. They form the largest tribe of the whole South Asia. Bhils are mainly divided into two main groups the central or pure bills and eastern or Rajput Bhils.

Gonds

- The Gonds are the tribal community mostly found in the Gond forests of the central India. They are one of the largest tribal groups in the world. Gonds have been largely influenced by the Hindus and for the long time have been practicing the Hindus culture and traditions.

Santhals

- Santhals are the third largest tribe in India. They are mostly found in the states of West Bengal, Bihar, Odisha, Jharkhand and Assam. They belong to the pre-Aryan period and have been the great fighters from the time of the British.

Munda

- Munda tribe mainly inhabit in the region of Jharkhand, although they are well spread in the states of West Bengal, Chhattisgarh, Odisha and Bihar. Munda generally means headman of the village. Hunting is the main occupation of the Mundas tribe.

Khasi

- Khasi tribe is mainly found in the Khasi Jaintia hills in Meghalaya and in the states of Punjab, Uttar Pradesh, Manipur, West Bengal and Jammu and Kashmir. They form the large part of the population in the state of Meghalaya.

Angami

- Angami tribe belongs to the extreme north eastern part of the country, in the state of Nagaland. The total population of the Angamis is around 12 million. They are quite popular for their woodcraft and artwork. Sekrenyi is the main festival celebrated among the Angamis in Nagaland.

Bhutia

- Bhutia tribes are of the Tibetan origin. They migrated to Sikkim around 16th century. In the northern part of the Sikkim they are known as the Lachenpas and Lachungpas. Bhutias forms 14% of the total population of Sikkim. Losar and Losoong are the main festivals celebrated among the Bhutia tribes.

The Sentinelese tribe, the most dangerous tribe in the world!

Located far into Andaman and Nicobar Islands, the Bay of Bengal in the Indian Ocean, North Sentinel Island is one of the most isolated places on earth. This remote island is home to the Sentinelese tribe, the most dangerous tribe in the world. The Sentinelese is hunter-gatherers, as agriculture is not known to them. Their diet consists mainly of coconuts and fish that can be found in the shallow waters around their shores. The Sentinelese would be described as Stone Age people. The women wear fibre strings tied around their waists, necks and heads. The men also wear necklaces and headbands, but with a thicker waist belt. The men carry spears, bows and arrows. Sometimes the Sentinelese appeared to make friendly gestures at others they would take the gifts into the forest and then fire arrows at the contact party. The population of North Sentinel Island is estimated at 250 individuals. The Sentinelese does not want help from outsiders.

Chenchu

- Chenchu inhabit in the Nallamalai hills, which have been the part of the Nagarjuna Segar Tiger Sanctuary for centuries in Andhra Pradesh, India. They are mainly found in the districts of Mahabubnagar, Nalgonda, Praksham, Guntur, and Kurnool.

Great Andamanese

- Great Andamanese is the Negrito tribe inhabitant in the Andaman group of Islands. They form the largest population among the other tribes found in these islands. According to the census the population of Great Andamanese is now limited to few individuals.

Tribals in Tamil Nadu

- Tribes of Tamil Nadu are concentrated mainly in the district of Nilgiris. Of all the distinct tribes, the Kodas, the Thodas, the Irulas, the Kurumbas and the Badagas form the larger groups, who mainly had a pastoral existence. Other tribes include, Kattunayakan and Paliyan amongst others.

- According to census 2011, tribal population in Tamil Nadu is 7, 94,697. There are around 38 tribes and sub-tribes in Tamil Nadu. The tribal people are predominantly farmers and cultivators and they are much dependent on the forest lands.

- **Toda:** Men from the family of the tribes are occupied in milking and grazing their large herds of buffaloes. Their settlements are known as 'Munds'. They do not worship any god and their consciousness is cosmic. They live in Nilgiris. Today, there are about a thousand Todas left.

- **Badaga**: The Badagas belong to the backward class and are not classified as tribal. They are an agricultural community, dwelling in the higher plateau of the Nilgiris district in the state of Tamil Nadu. They are engaged in tea cultivation and potato growing. They form the largest group of tribes and boast a rich oral tradition of Folk tales, songs and poetry. These tribes are Hindu and belong to the Shiva sect.

- **Kota:** The Kotas are mainly concentrated in the Tiruchigadi area in the Nilagiri hills. They are distinguished by their colorful Folk dances and are basically musicians, who play at Badaa funerals. They are mainly engaged in producing handicrafts. These tribes of Tamil Nadu are expert iron smiths, potters and carpenters. In order to maintain distance and status in society, the Kotas implement elaborate tattoos.

- **Kurumbas**: The Kurumbas tribes of this state inhabit the intermediate valleys and forests in Villages and were known for their black magic and witchcraft in the past. Their way of living today has changed from their original gathering and hunting existence to working in Coffee and Tea plantations as laborers. Kurumbas are perhaps the only main caste in southern India that has a specialized and distinctive Kurumbas Language.

- **Irula**: The Irula tribes of Tamil Nadu occupy the lower slopes and forests at the base of the Nilgiri Hills. They constitute the second largest group of tribes

after the Badagas and are similar to the Kurumbas in many ways. This tribe produces honey, fruits, herbs, roots, gum, dyes etc., and trades them with the people in the plains. In the recent times the Irulas help in catching snakes and collect the snake venom.

- **Paliyan:** They are of the food gathering communities of Tamil Nadu. It is believed that the Paliyan originally belonged to the Palani hills. They are distributed in the districts of Madurai, Tanjavour, Pudukkottai, Tirunelveli and Coimbatore.

Language

- Language is an identification mark for different cultures. Because language is essential to communication, it strongly influences the sort of political, social and economic we create. As a result, economic and religious system frequently follows patterns of language distribution and political borders quite often parallel linguistic boundaries. In modern times linguistic diffusion has been facilitated by trade, tourism, media and international organizations. It has helped in the development of the linguistic pluralism. The greatest linguistic diversity is attributed to heterogeneous societies.

Do you know?
Tamil is one of the longest-surviving classical languages in the world. The earliest period of Tamil literature, Sangam literature, is dated from 300 BC (BCE) – AD (CE) 300. It has the oldest extant literature among Dravidian languages.

Major linguistic Families of the World

- The classification of languages by origin and historical development is known as a genetic classification. The languages which are the descendants of common ancestral language are called proto – language.

- G.L. Trage has classified the languages of the world into 7 linguistic phylum and 30 linguistic families. Linguistic families are further classified in to sub families of languages, which denote major languages.

  - 1.Indo-European - a. Indo-Iranian, b. Latin or Romantic, c. Germanic, d. Balto –Slavic, e. Celtic, f. Hellenic
  - Sino-Tibetan - a. Chinese, b. Tibetan, c. Burman

- Afro-Asiatic – a. Semitic, b. Egyptian, c. Cushitic, d. Chadic
- African – a. Niger – Congo (Atlantic, Voltaic, Benu-Nagar)
    b. Sudanic (Chari-Nile, Saharan,)
    c. Click Languages (Khoisan)
- Ural-Altaic - a. Finno-Igric, b. Turkic, c. Mangolic, d. Tunguzic
- Dravidian- malayo – Polynesian- - a. Dravidian, b. Malayan, c. Melanesian, d. Micronesian, e. Polynesian, f. Austro- Asiatic.
- Palaeo Asiatic- a.Yukaghir

Do you know?

As many as half of the world's 7,000 languages are expected to be extinct by the end of this century; it is estimated that one language dies out every 14 days.

Major Languages of India

- India has a rich Linguistic heritage and has heterogeneous ethnic and social groups, which have their own languages and dialects. According to census of India 1961, there were 187 languages spoken by various sections of Indian society. 23 major languages were spoken by about 97 percent population of the country. 22 languages excluding English are mentioned in the eighth schedule of the constitution of India as follows; Kashmiri, Punjabi, Hindi, Urdu, Bengali, Assamese, Guajarati, Marathi, Kannada, Tamil, Telugu, Malayalam, Sindhi, Sanskrit, Oriya, Nepali, Kongani, Manipuri, Bodo, Dogri, Maithili and Santali of these languages, 14 were initially included in the Constitution. Subsequently, Sindhi was added in 1967 by 21st constitutional amendment act; Konkani, Manipuri and Nepali were added in 1992 by 71st Constitutional Amendment Act; and Bodo, Dogri, Maithili and Santali were added in 2003 by 92nd Constitutional Amendment Act. Indian Languages belong mainly to four linguistic families

    - Austric – Munda, Mon-Khmer
    - Dravidan – Tamil, Telugu, Kannada, Malayalam, Gondi, kurukh, orean, etc.
    - Sino- Tibetan- Bodo, Karen, Manipuri, etc.
    - Indo - Aryan – Hindi, Urdu, Sans.

Dialect

- A distinct linguistic form peculiar to a region or social group but which nevertheless, can be understood by speakers of other forms of the same language. The two main types of dialects are the **geographic dialect,** spoken by the people of the same area or locality, and the **social dialect** used by people of the same social class, educational level or occupational group.

Major dialects **in India**

- More than 40 languages or dialects in India are considered to be endangered and are believed to be heading towards extinction as only a few thousand people speak them officials said.

- According to a report of the census Directorate, there are 22 scheduled languages and 100 non –scheduled languages in India. The scheduled languages are 11 from Andaman and Nicobar, Seven from Manipur and Four from Himachal Pradesh. There are 42 languages spoken by less than 10,000 people. Some other languages also are in endangered position in India.

Major dialects in Tamil Nadu

- Tamil is an interesting language with a range of native dialects. The language has several charming improvisations in different regions of the state. Many people are familiar with the old and familiar dialects of Tamil such as Chennai, Coimbatore, Madurai and Tirunelveli

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UNESCO'S five levels of language risk:

Safe: Widely spoken
Vulnerable: Not spoken by children outside the home (600 languages)
Definitely endangered: Children not speaking (646 languages)
Severely endangered: Only spoken by oldest generations (527 languages)
Critically endangered: Spoken by only a few members of the oldest generation, often semi-speakers (577 languages)

Political Geography - Concept of Nation and State
Nation

- A nation is a group of people who see themselves as a cohesive and coherent unit based on shared cultural or historical criteria. Nations are socially

constructed units, not given by nature. Their existence, definition, and members can change dramatically based on circumstances. Nations in some ways can be thought of as "imagined communities" that are bound together by notions of unity that can pivot around religion, ethnic identity, language, cultural practice and so forth.

State

- A State is an independent, sovereign government exercising control over a certain spatially defined and bounded area, whose borders are usually clearly defined and internationally recognized by other states.

> **Do you know?**
> **Vaishali** was established as a republic by the 6th century B.C (BCE), prior to the birth of Gautama Buddha in 563 B.C (BCE), making it the world's first republic.

Nation-State

- The nation state is a system of organization defined by geography, politics and culture. The nation is cultural identity that is shared by the people, and the state is the governing administration. A nation state must have a shared national identity, physical borders, and a single government.

- A nation-state is a political unit with a well-defined territory, inhabited by a people who are well-organised, possess sufficient powers and consider them to be a nation by virtue of certain binding factors which may be emotional and which are reflected in law and governance.

Frontiers and Boundaries

- **Frontiers:** International frontiers and boundaries separate land, rivers and lakes subject to different sovereignties. In 1900 frontiers had almost disappeared and had been replaced by boundaries that are lines. A Frontier is a politico geographical area, lying beyond defined borders of a political unit into which expansion could take place.

Types of Boundaries

- Boundaries can be classified according to their relationship with the cultural landscape. Some boundaries were established prior to the permanent occupation of areas by the present inhabitants. In some cases patterns of settlement were already developing so that the boundary ultimately established has a different relationship to the cultural realities of the area involved. This classification is known as the functional or genetic classification of boundaries.

Different between Frontier and Boundary

Frontier	Boundary
1. Natural	1. Mostly Anthropogenic.
2. Areal Concept	2. Linear Concept.
3. Frontiers have no political dispute.	3. Boundaries vary often disputable by the rival nations.
4. Frontiers generally have mountainous area, desert, marshes, etc. Thus, inhabitable.	4. But boundaries have no such criteria.
5. Frontiers are dynamic.	5. Boundaries are static because once fixed, they hardly change.

Boundaries: A boundary is a line demarcating the recognised limit of an established political unit, administrative region or geographical region e. g a state, country or district.

Do you know?
China has the maximum number of neighbors touching its border. The 14 countries touching its border are: India, Pakistan, Afghanistan, Tajikistan, Kyrgyzstan, Kazakhstan, Mongolia, Russia, North Korea, Vietnam, Laos, Myanmar, Bhutan and Nepal

Do you know?
Canada, the world's second largest country, shares the longest international land border with the United States. The Canada- US land border is 8,893 km long.

Genetic Classification of the boundaries

1. Antecedent Boundaries
The boundaries drawn before the cultural-political realm.

Such boundaries were non-contentious.
E .g, N. Africa and the state boundaries of USA.

2. The Subsequent Boundaries
When the cultural realms are fully developed & political boundaries are contentious.

Such boundaries are irregular or amorphic boundaries.
E.g. the countries of Europe.

3. Superimposed Boundaries

When a political boundary divides a homogenous cultural region and across the boundary the people with similar ethnicity are found.
E.g. Pok

4. Relict Boundaries

Historical boundaries which only exist in the books.

E .g. Persia, the boundary between east & West Germany.

Geopolitics: Global Strategic views

- The study of the way a country's size, position, etc, influence its power and its relationships with other countries. Political activity is influenced by the physical features of a country or area of the world. Geo politics is concerned with how geographical factors including territory, population, strategic location, and natural resources endowments as modified by economics and technology affect the relations between states and the struggle forward domination. It is battle between land power and sea power which is going to lead the world continents by one.

- Mackinder described the political history of the world as continuous struggle between land and sea powers. According to him, the Columbian era of sea

powers, which gave Europe its pivotal position for four centuries is coming to an end. And in the struggle between land and sea powers, the ultimate victory is going to be of one possessing land powers. He divided the earth into 3 tiers.

1) The Heartland - area of interior and Arctic drainage in the Eastern Europe, covered by mountains on three sides and Arctic in north. This is a natural fortress on earth, inaccessible to sea powers.

2) The Inner or Marginal Crescent - area of Europe and Asia adjoining the Heartland and Africa, north of Sahara.

3) The Outer or Insular Crescent - It includes North and South America, Africa (south of Sahara) and Australia. Besides, it also includes the Great Britain and Japan because of their insularity from Eurasia.

- According to Mackinder, one with control over Heartland will be in an unstoppable position to rule the world. Heartland, with its agricultural and industrial resources would conquer the inner crescent and Outer crescent would follow later. He conceptualized his theory as:

Who rules East Europe commands the Heartland.

Who rules Heartland commands World Island.

Who rules World Island commands the World.

- Mackinder later argued that key to control Heartland lays in Eastern Europe, reflecting a powerful strand of pre and post- Versailles geographical thinking concerning the news to separate the powerful states of Germany and Russia by the creation of 'buffer states'.

- Influence - His theory was put to test during the World War II when the Heartland could become the power center of the world if either Germany unites with Russia or China or Japan thrashes Russia. But the shattering defeat of Germany turned Heartland into a power vacuum.

- The area highlighted in red is the heartland, blue is rim land and the encircled area is the world island.

- The heartland is inaccessible from top because North Sea, Norwegian Sea, Barents Sea, Kara Sea, Laptev Sea, East Siberian Sea are all frozen throughout the year. The hearland is inaccessible from the bottom because of Middle Eastern desert, Iranian Plateau, Himalayas, Plateau's of Tibet and Siberian mountains. This makes heartland immune to any conquests from any other side than Eastern Europe.

- The only gateway to the heartland is through Eastern Europe. So, protecting one gateway would be far easier than protecting the whole land. Moreover, the heartland was self-sufficient with most of the resources and wasn't dependent on trade from outside world.

- So, Mackinder believed that the one who controls the heartland would be able to control the Rimland and as a result the world-Island, and the one, who rules the world Island, would rule the world. Although this theory made sense at that time (1904), when there was no significant aviation and naval power, it does not make much sense now.

Century Geopolitics of the multipolar world order

- To put it succinctly, the unipolar world is characterized by the US' predominant hegemony in a wide variety of spheres, whether exercised directly through unilateral initiatives or indirectly ("Lead From Behind") through its regional and institutional partners. The Multipolar forces in the world are working to replace the US-led international order with a diversified array of multiple stakeholders in order to bring balance to International Affairs. Importantly, they seek to do this through progressively reforming international institutions such as the UN, IMF, World Bank, and others, as well as creating their own counterparts to some of them like the BRICS New Development Bank or outright forming entirely new and unprecedented organizations like the SCO.

- One of the latest proposals has been to broaden the BRICS format through what has now been called the "BRICS-Plus" strategy, which essentially seeks to have each of the five member states encourage multilateral cooperation between each other's respective regional integration organizations. As Russian Valdai Club expert Yaroslav Lissovolik describes it, this could see Mercosur, the SADC, and the Eurasian Economic Union, SCO, SAARC, and ASEAN all cooperating with one another in changing the world order.

Missile Defense Shield, Prompt Global Strike, and the Naval Race

- The basis of American control over the world is through economic means as enforced by military ones. In certain cases, though, the US is unable to directly attack its rivals such as Russia and China without suffering unacceptable damage through a nuclear second strike, ergo why Washington is pushing to build anti-missile installations all around Eurasia in order to ring in these Great Powers and diminish their most credible deterrent capability. Complementary with this are the US' space weapons, whether based in this theatre (X37-B and the policy of "Prompt Global Strike") or directed towards it (anti-satellite weapons, whether kinetic such as missiles or non-kinetic like lasers).

- Neither the US' missile shields nor its space-related weaponry are sufficient enough for ensuring that the country is defended from submarine-launched ballistic missiles, which form a crucial component of any country's nuclear triad. This explains why there's an ongoing naval race across the world as the US seeks to ensure its dominance in the high seas in the face of rising competition from Russia, China, and others. The global ocean is also important for another reason as well, and this one relates back to the economic basis of American dominance over the world. China depends on the international waterways for the vast majority of its trade, which makes it inordinately vulnerable to any US efforts to block certain chokepoints such as the Strait of Malacca and Suez Canal.

OBOR's Global Reorganization

- Understanding the sudden systemic-shaking consequences that any hostile action like this could inflict for China's domestic socio-economic stability, the People's Republic prudently foresaw the need to pioneer ambitious trans-continental trade routes to its crucial European partner, as well as secure the Sea Lines Of Communication (SLOC) along its existing maritime ones in order to safeguard its access to the growing economics of Africa. The latter are exceptionally important nowadays because their growth is expected to allow Beijing to relieve itself of its industrial overproduction so long as it can succeed in building up these marketplaces and stabilizing them. As for the Western Hemisphere, China wants to increase its soft presence here as a

means of competing with the US and asymmetrically countering America's moves in the South China Sea.

- Altogether, the above stratagem explains the essence of China's One Belt One Road (OBOR) global vision of New Silk Road connectivity, which is designed to transform the world's trading networks so as to facilitate the transition from a unipolar American-led international order to a diversified Multipolar one safeguarded by a host of Great Powers. It also, however, provides the blueprint for how the US will oppose the greatest threat thus far to its worldwide hegemony, as all that Washington has to do is encourage identity-centric Hybrid Wars in the geostrategic transit states along these corridors in order to disrupt, control, or influence them in ways which remove their Multipolar game-changing impact.

Geopolitics and the New World Order

- The global elite–leading academics, intellectuals, foreign policy analysts, foundation heads and corporate power brokers, as well as many Western leaders–may largely have forgotten about it. But what we're witnessing now is geography's revenge in the East-West struggle for control of the buffer state of Ukraine, in the post–Arab Spring fracturing of artificial Middle Eastern states into ethnic and sectarian fiefs and in the unprecedented arms race being undertaken by East Asian states as they dispute potentially resource-rich waters. Technology hasn't negated geography it has only made it more precious and claustrophobic.

- Whereas the West has come to think about international relations in terms of laws and multinational agreements, most of the rest of the world still thinks in terms of deserts, mountain ranges, all-weather ports and tracts of land and water. The world is back to the maps of elementary school as a starting point for an understanding of history, culture, religion and ethnicity–not to mention power struggles over trade routes and natural resources.

- Europe's modern era is supposed to be about the European Union triumphing over the bonds of blood and ethnicity, building a system of laws from Iberia to the Black Sea–and eventually from Lisbon to Moscow. But the E.U.'s long financial crisis has weakened its political influence in Central and Eastern Europe. And while its democratic ideals have been appealing to many in

Ukraine, the dictates of geography make it nearly impossible for that nation to reorient itself entirely toward the West.

- Russia is still big, and Russia is still autocratic after all it remains a sprawling and insecure land power that has enjoyed no cartographic impediments to invasion from French, Germans, Swedes, Lithuanians and Poles over the course of its history. The southern Crimean Peninsula is still heavily ethnic Russian, and it is the home of Russia's Black Sea fleet, providing Russia's only outlet to the Mediterranean.

- In short, Russia will use every geographical and linguistic advantage to weaken Ukraine as a state. Ukraine is simply located too far east, and is too spatially exposed to Russia, for it ever to be in the interests of any government in Moscow–democratic or not–to allow Ukraine's complete alignment with the West.

- To live in a world where geography is respected and not ignored is to understand the constraints. Many obstacles simply cannot be overcome. That is why the greatest statesmen work near the edges of what is possible. Geography establishes the broad parameters– only within its bounds doe's human agency have a chance to succeed.
- While our foreign policy must be morally based, the analysis behind it must be cold-blooded, with geography as its starting point. In geopolitics, the past never dies and there is no modern world.

11th geography
Unit VIII Natural Disasters Public Awareness for Disaster Risk Reduction

Introduction

- On an average, 232 million people are affected by different types of disasters every year. In recent years disaster risks have been on the rise due to factors such as population growth, unplanned urbanization, environmental degradation, conflicts and competition for scarce resources, climate change, disease epidemics, poverty and pressure from development within high-risk zones. Hence, disaster risk reduction is the need of hour.

- Recognizing the importance of Disaster Risk Reduction in 2005, 168 governments and all leading development and humanitarian actors signed the Hyogo Framework for Action (HFA), committing themselves to a ten-year multi-stakeholder and multi-sector plan to invest in disaster risk reduction as a means to building disaster-resilient societies.
- Public awareness campaigns can be started modestly and tailored to meet the needs of specific populations and target groups. These approaches can be integrated into almost all existing initiatives, whenever and wherever they take place. They can build on and support existing volunteer mobilisation and peer-to-peer communications. To support this, it requires strong and unified disaster reduction messages and clear and targeted information, education and communication materials.

Public awareness for disaster risk reduction

- There are four key approaches to public awareness for disaster risk reduction: Campaigns, participatory learning, informal education, and formal school-based interventions. Let's take formal school based interventions to learn in detail.

Formal school-based interventions:

- The focus of formal school-based interventions cover two areas: school disaster management and disaster risk reduction in school curricula. These are considered to be formal because accountability and responsibility for school

safety and curricula belong exclusively to education authorities, so they require support for long-term planning and capacity building.

School disaster management:

- The primary goals of school disaster management are to ensure the safety of students and staff. Sustained school disaster management requires the familiar participatory and on-going process of identification of hazards and risks, mitigation and reduction of risks, and developing response capacity.

- A school disaster management plan, developed at the school level, should be the living document that expresses the awareness of public for disaster risk reduction. Every school has to setup the following school disaster committees:
1. Coordination Committees
2. Awareness generation Team
3. Search Rescue and Evacuation Team
4. Site safety Team
5. First Aid Team
6. Warning and Information Team
7. Bus safety Team
8. Water / Food Arrangement Team.

All the teams should participate in the mock drill.

Mock drills form a vital part of the school disaster management process, and provide an intensive learning experience. They should be followed by reflection and assessment by all members of the school community. Lessons learned are incorporated into the school disaster management plan, and goals set for improvement next time. Depending on hazards faced, there are several major types of drills that can be practiced:

Disasters and Rules of actions during disasters

Earthquake

- An earthquake is sudden, rapid shaking of the ground caused by the shifting of rocks beneath the earth's surface. Earthquakes strike suddenly without warning and can occur at any-time. The impacts of the earthquakes include deaths, injuries and damage of property. You have learned about occurrence of the earthquake and other related information in the earlier part of the book.

Nepal - India Earthquake

The April 2015 Nepal Earthquake (also known as the Gorkha Earthquake) killed nearly 9,000 people and injured nearly 22,000. It occurred on 25 April, with a magnitude of 8.1 Richter scale. Its epicentre was east of Gorkha District at Barpak. It was the worst natural disaster to strike Nepal since 1934 Nepal-Bihar earthquake. The earthquake triggered an avalanche on Mount Everest, killing 21 people making April 25, 2015 the deadliest day on Nepal's history. The earthquake triggered another huge avalanche in the Langtang Valley, where 250 people were reported missing.

Mock drill: Earthquake

In case we are inside the class when earthquake occurs, instruct loudly "earth quake position - drop, cover, and hold on". Drop down on your knee. Cover your head, neck and face. Go under a table to protect your head.

Rules of actions during an earthquake:

1. Stay calm, do not panic.
2. If you are in a building, sit down on the floor under a table or any other furniture and firmly hold on to it until the earthquake has stopped.
3. If there is no table nearby, cover your face and head with your hands and sit on the floor in a corner of the room.
4. Keep away from glass windows, glass doors and things that can fall down.
5. Do not try to leave the building quickly; during earthquakes people mostly die because they try to run out of the building and become trapped under ruins if the building is destroyed.
6. Do not go to the staircase, a balcony or an elevator.
7. If you are in the street, keep away from buildings; try to get into an open space and avoid power transmission lines.
8. If you are at home, turn off electrical equipment and gas quickly.
9. If you are in chemistry class or a laboratory where chemicals are stored, try to leave the room because chemicals may cause injuries;

After earthquake:

1. First check if you have any injuries, and then check the condition of the surrounding people. If you cannot do this, wait for the rescue team;
2. After the earthquake when you leave the shelter, do not return for 2-3 hours because the quakes may repeat (an aftershock).
3. Check if there is fire; in case of a mild one try to extinguish it.

4. Be cautious about the possibility of gas leakage and damage caused to electrical wiring.
5. Be careful while opening wardrobe doors to take necessary items;
6. Use only lanterns; do not use an oil lamp or a candle.
7. Listen to the radio to receive information about the earthquake.

Landslide

- A landslide is defined as the movement of a mass of rock debris down a slope. Landslides are caused by the direct influence of gravity. Landslides can be caused by rainfall, snowmelt, stream erosion, and flood, earthquakes, volcanic activity, disturbance by human activities, or any combination of these factors. Landslides cause property damage, injury and death and adversely affect a variety of resources. For example, water supplies, fisheries, sewage disposal systems, forests, dams and roadways can be affected.

During a Landslide

1. Listen for any unusual sounds that might indicate moving debris, such as trees cracking or boulders knocking together.
2. If you are near a river, be alert for any sudden increase or decrease in water flow and for a change from clear to muddy water. Such changes may indicate landslide activity upstream, so be prepared to move quickly.
3. Be alert especially when driving. Embankments along roadsides are particularly susceptible to landslides.
4. Disconnect the power supply in the areas of landslide.

After the Landslide

1. Stay away from the slide area. There may be danger of additional slides
2. Check for injured and trapped persons near the slide, without entering the direct slide area.
3. Direct rescuers to their locations.
4. Listen to local radio or television for the latest emergency information
5. Watch for flooding, which may occur after a landslide or debris flow.

8.3.3 Cyclone

- The major natural disaster that affects the coastal regions of India is cyclone and as India has a coastline of about 7516 km; it is exposed to nearly 10

percent of the world's tropical cyclones. About 71 percent of flood prone areas are in ten states (Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Pondicherry, Andhra Pradesh, Orissa and West Bengal). The islands of Andaman, Nicobar and Lakshadweep are also prone to cyclones.

- Districts in Tamil Nadu which are frequently affected by cyclones: All the 13 coastal Districts of Tamil Nadu are affected by cyclonic storms which occur during May-June and in October-November months. These Districts are: Tiruvallur, Chennai, Kancheepuram, Villupuram, Cuddalore, Nagapattinam, Tiruvarur, Tanjavur, Pudukkottai, Ramanathapuram, Tuticorin, Tirunelveli and Kanniyakumari.

- On an average, about five or six tropical cyclones form in the Bay of Bengal and Arabian sea and hit the coast every year. Out of these, two or three are severe. When a cyclone approaches to the coast, a risk of serious loss or damage occurs from severe winds, heavy rainfall, storm surges and river floods. The effect of a storm surge is most pronounced in wide and shallow bays exposed to cyclones such as in the northern part of Bay of Bengal. Most cyclones occur in the Bay of Bengal followed by those in the Arabian Sea and the ratio is approximately 4:1. During the cyclonic of cyclonic storms, wind speed is between 65 km/h and117 km/h.

Rules of action before a cyclone

1. Go to high-lying places from low-lying areas
2. Those residing in old buildings should temporarily relocate to safer buildings; Jewels and documents should be kept in safe custody.
3. Battery-operated radio, plastic torchlight, lamp, kerosene, match-box should be kept safely for future use.
4. Keep in ready all the first-aid kit and material available with you.
5. Keep in stock foodstuffs, material, fuel, drinking water and life-saving drugs needed for the next week.
6. It is also important to take cattle and other pets to safer places.
7. It is important to know that if we see quickly approaching storm clouds it is possible to predict strong winds several minutes in advance.

During a cyclone

1. If you are in a building during a strong gust, it is necessary to close and fasten windows and doors. It is better to stay in the rooms.

2. Turn off all electrical devices.
3. Protect yourself with your hands or a scarf. Protect the eyes, nose and mouth from dust.
4. If you are in a wildlife area, try to find a place protected from the wind. If there is no such place nearby, lie down on the ground.
5. If you are in a car it is better to stay there and close the windows. Do not park the car under unstable objects that can break down and fall on the car.

After cyclone

1. Turn off electricity, gas and water and unplug all electric appliances.
2. Beware of snakes and other animals immediately after the cyclone.
3. Do not go for sightseeing.
4. Stay away from damaged power lines, falling trees and flood water.
5. Boil and purify water before drinking.

Flood

- Flood destructions have always brought miseries to numerous people, especially in rural areas. Flood results in the outbreak of serious epidemics, specially malaria and cholera. Simultaneously, scarcity of water also arises. It has a drastic effect on agricultural produce. Sometimes, water remains standing over large areas for long span of time hampering the Rabi crops.

- India is one of the most flood prone countries in the world. The principal reasons for flood lie in the very nature of natural ecological systems in this country, namely, the monsoon, the highly silted river systems and the steep highly erodible mountains, particularly those of the Himalayan ranges. The average rainfall in India is 1,150 mm with significant variation across the country. The annual rainfall along the western coast and the Western Ghats, Khasi hills and over most of the Brahmaputra valley amounts to more than 2,500 mm. Twenty-three of the states (29) and union territories (6) in the country are subject to floods and 40 million hectares of land, roughly one-eighth of the country's geographical area, is prone to floods. The National Flood Control Program was launched in the country in 1954.

Mock Drill means Practicing of something that can happen in future so that it can be easily dealt with in.

- Tropical Cyclone Vardha hit Chennai on 12 December, 2016. National Disaster Management Authority (NDMA) reports that at least 10 people have died in Tamil Nadu.
- Maximum sustained wind speeds of over 130 km/h were recorded, and the storm has caused severe damage to parts of the city of Chennai. Over 4,000 trees have been uprooted, power lines downed and buildings damaged.

Do's before flood

1. Keep furniture and electrical appliances on beds and tables
2. Put sandbags in the toilet bowl and cover all drain holes to prevent sewage back flow.
3. Keep your mobile charged
4. Listen to radio or watch television for the latest weather bulletin and flood warnings.
5. Keep strong ropes, a lantern, battery operated torches, extra batteries ready.
6. Keep umbrellas and bamboo sticks with you for protection from snakes.

Drought

- The above map shows most the acute shortage of water in Tamil Nadu in 10 years. (2017) Drought is a period of time (months or years) during which a part of the land has shortage of rain, causing severe damage to the soil, crops, animals, and people. It sometimes causes even death. During drought high temperature is experienced. Such conditions may affect our health.

- The primary cause of drought is deficiency of rainfall and in particular, the timing, distribution and intensity. In India around 68 percent of the country is prone to drought. Of the entire area 35 percent receives rain falls between 750 mm and 1,125 mm which is considered drought prone while 33 percent areas receive rainfalls less than 750 mm is considered to be chronically drought prone.

Rules of action before, during and after Drought
Before drought:

1. Rainwater harvesting should be followed.
2. Sewage water should be recycled and used for domestic purpose.
3. Building canals or redirecting rivers for irrigation.

4. Utilise water economically.

During drought:

1. Wear cotton clothing and a hat.
2. In case of overheating, immediately move to a shady area.
3. Consume adequate amounts of water stay.

After drought:

1. If anyone faints after sunstroke, emergency medical measures should be taken.
2. Contact local government agencies to receive information about disaster and assistance for the population.

Lightning

- Lightning is an atmospheric electrostatic discharge (spark) accompanied by thunder, which typically occurs during thunderstorms, and sometimes during volcanic eruptions or dust storms. Lightning generates 10-20 ampere current and it is therefore fatal. It is especially dangerous for people in an open area.

> - You can hear thunder from about 16 km of its starting point.
> - Lightning bolts travel at the speed of up to 80,000 km / second.
> - The average length of a single lightning bolt is 3-4km.

- Lightning strikes often have fatal consequences. On an average, 2000 people die from lightning in the world every year. Lightning mostly strikes tall things, such as trees that break down and catch fire or it may strike power transmission lines and antennas fastened on roofs and buildings which causing fire. The air temperature, when lightning occurs, is as hot as 9982.2 °C.

- Thunder is the sound caused by lightning. A charged, superheated lightning bolt creates a "resonating tube" as it travels. The air in the tube rapidly expands and contracts causing vibrations that we hear as the rumble of thunder. Lightning strikes can explode a tree. Imagine 15 million volts of electricity hitting a tree branch. The heat travels through the tree, vaporizing its sap and creating steam that causes the trunk to explode.

Before lightning

1. If you are planning to go to the countryside, check the weather forecast.

2. If a thunderstorm is expected it is better to postpone the trip.

3. It is good if you can estimate the distance to the front line of a thunderstorm. In order to do this you must check the time interval from the moment you see the lightning until you hear thunder. Lightning always precedes thunder. We know that the sound speed travels on average about 1km every 3 seconds. Reduction of the time interval between the sight of lightning and the resulting thunder means that the danger is approaching and protective measures must be taken. If there is no interval between lightning and thunder means, it means that the cloud is already over your head.

During Lightning:

1. If you are in a building it is necessary to close windows, doors, ventilation pipes and chimneys.
2. It is necessary to turn off the telephone, TV set, and other electrical equipment because lightning may strike electrical cables and pass through wiring.
3. Do not take a shower because both water and metal conduct electricity.
4. Do not light the fireplace because the heat coming from the chimney may attract lightning.
5. It is better to stay away from electric wires, lightning rods, water pipes, antennas and windows.
6. If you are in an open area during a thunderstorm, do not stand under a tall tree. Lighting is most damaging for tall trees. It is better to stay 30-40 meters away from them. Avoid trees that are standing separately. Remember that lightning does not strike bushes.
7. If the area is open, it is better to find a lower place or a cavity and squat there. It is dangerous to stand or lie down on the ground, because this increases the exposure area.
8. It is necessary to get rid of metal items such as a bicycle, coins etc.
9. Do not stand under an umbrella.
10. Do not run during the occurrence of lightning; move slowly towards a shelter because the air flow may attract lightning;

11. If you are in a car, do not get out. It is better to close the windows and turn of the antenna. Do not park your car under tall trees or any structures that may fall down and hit you.

12. If there is an injured person next to you, remember that the victim may lose consciousness. It is necessary to provide first aid.

13. Cover your mouth with a wet cloth in order to protect your lungs.

Introduction

"Mumbai railway station stampede kills at least 22"
"Rush-hour crush on footbridge connecting two stations was triggered by falling concrete that caused panic!" At least 22 people have been killed and more than 30 injured during a rush-hour stampede on a bridge between two railway stations in Mumbai. The crush occurred on a narrow footbridge connecting Prabhadevi station, formerly Elphinstone, and Parel station during the Friday, September 29, 2017 morning commuter rush and amid heavy rain. "There was a huge crowd on the foot over bridge. Everybody tried to leave at once and it appeared one of them slipped and fell, triggering the stampede," said an Indian Railways spokesman. Another spokesman said the number of people on the bridge was higher than usual because people were using the station to shelter from the rain. The above incident throws some lights on how to be aware of the accidents we encounter in our daily walk of life. Let us try to answer the following questions:

1. Which is more important life or the scheduled journey to be completed?
2. Why rushing in anything may be disastrous?
3. Why timely communication is more important to avoid accident?

The root of the word disaster ("bad star" in Greek and Latin) comes from an astrological theme in which ancients used to refer to the destruction of a star as a disaster.

Terms to know:
1. Hazard is a potentially damaging physical event or human activity which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.
2. Disaster is a serious disruption of a society functioning, causing widespread human, material losses which exceed the ability of the affected society to cope using its own resources.

3. Disaster risk management is a set of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of disaster.
4. Capacity - the assets, resources and skills available within a community that can be used to reduce the risks or effects of a disaster.
5. Disaster risk reduction includes activities that will minimize disaster-related losses of life and property.

- Disaster is a serious disruption, causing damage or injury to people, buildings, roads, livelihoods, or the environment, which exceed the community's ability to cope.

- The magnitude and impact of disasters are increasing and disasters have disrupted social, economic and environmental community activities worldwide. International data shows that disasters have taken, over the last 10 years, more than 478,000 lives. It has affected 2.5 billion people and caused direct economic losses in the amount of 690 billion US dollars worldwide.

- Recent financial studies underline the urgent need for a shift from sole disaster response to disaster risk reduction. Therefore, efforts should be made to ensure that disaster risk reduction is an important aspect of poverty reduction and general development initiatives in the coming years.

Community-Based Disaster Risk Reduction

- Community is a group of people living in the same place having homogenous characteristics. It includes shared experiences, locality, culture, language and social interests. Community-based disaster risk reduction is a process within a community and for the community. Reducing risk in communities should address the root causes of risks and address it through local knowledge and expertise. Performance and the arts provide a variety of creative opportunities to communicate. Important messages through live experiences. Examples include: Street theatre, dramatic readings, skits and plays, puppet shows, poetry reading.

- Dance, flash mob activities in large urban settings (a group of people who assemble suddenly in a public place, perform an unusual act and then disperse), tapping into oral traditions such as story-telling, music and sing-along, mural-making and other hands-on art and design activities. All of these

can involve volunteers and community members, as performers and audiences. Skilled performers find creative ways to engage their audience.

Man - made Disasters

- Disasters induced by human beings are man-made disasters. It includes fire accident, transport accident, structure failure, mining accidents, explosions, stampede etc. In this lesson, we study about some of the man-made disasters.

Stampede

- The term stampede is a sudden rush of a crowd of people, usually resulting in injuries and death from suffocation and trampling. In stampede, the term mob or crowd is used to refer to a congregated, active, polarized aggregate of people, which is basically heterogeneous and complex. Its most salient features include homogeneity of thought and action among its participants and their impulsive and irrational actions.

Causes of stampede

- Incidents of stampedes can occur in numerous socio-cultural situations. These stampede incidents can be categorized into the following types: Entertainment events, escalator and moving walkways, food distribution, processions, natural disasters, power failure, religious events, fire incidents during religious/ other events, riots, sports events and weather related events.

- Large religious gatherings are a particular stampede danger in the developing world. A 2013 paper out of India, for example, found that 79 percent of stampedes in that country have taken place at religious events, as opposed to political or entertainment-related events.

Stampede Management

- Crowd management is defined as the systematic planning and supervision of the orderly movement and assembly of people. Crowd control is the restriction or limitation of group behavior.

The rules of action for stampede

1. Notice Alternate Exit: First thing to know in such situations is the route out. If you are attending an event, one of the things you can do in preparation is to try and know the topography of the place. This will help you find the exits. So, when struck in a stampede, try to identify these exits.

2. Keep Your Hands by Your Chest: Your hands must be up by your chest like they would be in a boxing position. This makes it easy to move. It also stops your ribs from getting crushed by the crowd on both sides. When the crowd pushes you from front and back, your lungs will be affected. You will suffer of suffocation.

3. How to move when on your feet: In the middle of a moving crowd, do not resist the flow by standing still or sitting down. The force is too much to fight. Like in a wave, there is force and in crowd situation. Keep moving diagonally between the pockets of people whenever there is a lull. Try to move towards the exits but not towards walls or fences where you might be cornered. Keep moving with the crowd to avoid falling.

4. How to move if you fall: If you fall and get back on your feet, cover your head with your hands and hurl up in a fetal position. Basically, avoid exposing your lungs to the crowd. Keep trying to find an opportunity to get up.

5. Communicate smartly: When trapped in the crowd, use sign language such as waving your hands up one side after another so that you will not get exhausted.

6. Conserve energy: Keep calm and do not try to scream. That only increases panic.

7. Set a meeting place: Arrange a meeting place, in case you get separated, one inside and another one outside.
If someone extends his/her hand for help, grab hold to keep them up.

Child safety Tips: Take a second, take a photo.
Before taking children out to any event, pull out your phone and take a photo of each child individually a selfie. That way you have a picture of how they looked that day. The photo can be sent to police to aid in

locating the child in case the child is lost in a crowd.

Drowning

- Drowning is the 3rd leading cause of unintentional injury death worldwide, accounting for 7% of all injury-related deaths. There are an estimated 3, 72, 000 annual drowning deaths worldwide. Children, males and individuals with increased access to water are most at risk of drowning. Drowning is the process of experiencing respiratory impairment from submersion/immersion in liquid; outcomes are classified as death, morbidity and no morbidity.

Fact File

It is one of our most visceral fears; thrashing in the deep, far below the water's surface, lungs burning for oxygen. Drowning claims hundreds of thousands of lives every year, a great many of whom are young children. Of course, exposure to water is a key factor in drowning, but there is a strong economic correlation as well. Those in poorer countries are far more likely to be drowning. In Bangladesh, 17,000 children drown annually that's 46 a day.

Below are 10 facts about drowning; from a lake that never surrenders its victims to a party for lifeguards that ended in deadly irony.

Fresh Water and Salt Water Drown You Differently.

- Males are especially at risk of drowning, with twice the overall mortality rate of females. Studies suggest that the higher drowning rates among males are due to increased exposure to water and riskier behavior such as swimming alone, drinking alcohol before swimming alone and boating. Drowning accounts for 75% of deaths in flood disasters.

Prevention

- There are many actions to prevent drowning. Installing barriers (e.g. covering wells, using doorway barriers and playpens, fencing swimming pools etc.) to control access to water hazards, or removing water hazards entirely greatly reduces water hazard exposure and risk. Community-based, supervised child care for pre-school children can reduce drowning risk and has other proven health benefits. Teaching school-age children basic swimming, water safety and safe rescue skills is another approach. Setting and enforcing safe boating, shipping and ferry regulations is an important part of improving safety on the

water and preventing drowning. Building resilience to flooding and managing flood risks through better disaster preparedness planning, land use planning, and early warning systems can prevent drowning during flood disasters.

Fire Accident

- Massive forest fires may start in hot and droughty weather as a result of lightning, and human carelessness or from other causal factors. Fires can lead to the destruction of buildings, wooden bridges and poles, power, transmission and telecommunication lines, warehouses of containing oil products and other fuel. It causes injury to people and animals.

Students' activity Mock Drill:

To escape a fire, **stop, drop, and roll.** In case your clothes burn, stop running, drop on the floor and roll to stop fi re spreading.

- During droughts or windy weather, fire may destroy low vegetation and trees. The spreading speed of low fire is 1-3 m/sec and high fire may reach up to 100m/sec.

Rule of actions for Fire Accident-Do's

1. When Fire accident occurs, warning should be given by shouting or ringing bell.
2. Extinguish the fire using sand and other fire extinguishers.
3. Main switch should be switched off immediately.
4. If clothes started burning, the victim should roll on the ground to extinguish the fire.
5. The combustible materials found near the fire accident place, have to be discarded so that the fire does not spread to them.
6. If fire breaks out with smoke spreading, cover the nose, crawl and move out.
7. Think that life is more valuable than belongings.
8. Move from the fire accident place to a safe place.

Preventive Measures

1. Create a safe zone between the house and flammable plants.

2. Cut off all the branches of trees with below three meter height standing near your house.
3. Remove moss and dry branches from plants standing near the house.
4. Clean ditches and pits from dry branches, leaves and cones.
5. Keep flammable materials in the checked safe containers.
6. Ask your relative or friend living in a different location to be your contact person.
7. Have a fire extinguisher and know how to use it.

Do you know?
A natural gas vent in Iraq known as The Eternal Fire of Baba Gurgur, meaning 'Father of Fire' has been burning continuously for over 4,000 years, and it has been mentioned by Herodotus, and Plutarch.

During fire accident

1. When water cannot be used (because the equipment is plugged-in) or there is no water and the fire is not strong, you can use cooking soda or calcite soda, washing powder, sand, soil.
2. Keep your head no higher than 30 cm above the floor; above this height accumulation of heavy poisonous gases is possible.
3. If there is no opportunity to leave the room, move towards a window, and try to get the attention of people by giving signals.
4. If your clothing has caught fire do not run because this will intensify burning. Take the clothes off, throw them in a safe place and put out the fire.
5. If you are near a fire in a forest and cannot extinguish the fire by yourself, immediately inform people who are nearby about the necessity to leave the hazard zone.

Things that must never be done during a fire

1. Never pour water on burning electrical equipment if it is switched on. If a TV set, a refrigerator is burning, turn off the electricity from the main switch.
2. Do not jump from windows of upper floors.
3. Do not panic.
4. Do not try to extinguish the fire by yourself.

Industrial Disasters

- Industrial hazards consist of four principle hazards. The hazards encountered are fire, explosion, toxic release and environmental damage. This is because industries employ many different processes involving a wide range of different raw materials, waste products and final products. Danger originates from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities. It may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Fire: This is the most frequent hazard. Fire can also produce toxic fumes like Acrolein, Carbon monoxide and Cyanides. Physical structures can be damaged either by the intensity of the heat or combustion. It may also have an effect on essential services like power and instrumentation.

Explosion: Explosions is the result of a shock wave. This overpressure can kill people but usually the indirect effects of collapsing buildings, flying glass and debris causes far more loss of life and severe injuries. There are different types of explosions which include gas explosions and dust explosions. Gas explosions occur when a flammable gas mixes with air. Dust explosions occur when flammable solids, especially metals, in the form of fine powders are intensively mixed with air and ignited.

Chemical release: Sudden release of toxic vapors has the potential to cause death and severe injuries several kilometers from the release point. They are carried by water and air. Their release into public sewage systems, rivers, canals and other water courses, either directly or through contaminated water used in firefighting can result in serious threat to public. The number of casualties depends on the weather conditions, population density in the path of the cloud and the effectiveness of the emergency arrangements.

Environmental Damage: Release of other substances, not directly toxic to humans can cause major pollution problems. It is becoming increasingly recognized that damage to natural resources such as plant and animal life can have serious long term consequences. E.g. destruction of trees is increasing the effect of global warming and extinction of animals are severely disrupting food webs and causing an increase in pests.

Means of reducing the industrial hazards

Process Safety Management: Reliability assessment of process equipment, incorporating safety tips, scrubbing system, etc, should be done before effecting major process changes.

Safety Audits: Periodical assessment of safety procedures, performance of safety systems and gadgets along with follow up measures should be carried out.

Emergency Planning: A comprehensive risk analysis indicating the impact of consequences and practiced emergency procedures should be done. This can be done by communities as well as national or regional corporation authorities.

Training: Proper training of employees and protective services should be done.

Road accident

- It is estimated that 1.34 million people are killed in the road accidents every year. Road accident is the 8th leading cause of death globally. Every year, up to 50 million people suffer serious, life-altering injuries which, in many low- and middle-income countries, directly contribute to the poverty cycle.

  Primary road safety risk factors in low and middle-income countries include:

  1. Speeding
  2. Drink-driving
  3. Non-use, or improper use of helmets, and
  4. Non-use, or improper use of seatbelts

- Strengthening the capability of the road traffic police to enforce traffic laws is fundamental to deterring road users from violating the laws, to reduce harm and to reduce inappropriate and unsafe behaviors on the roads.

Basic road safety rules for students:
1. Aware of the road signals

- Assist students to learn the traffic lights and signs. Check out the relevance of each color:

- Green light is an indication for "go"- Whenever the signal turns green, the vehicle can move ahead.
- Red light is an indication "to stop"- All the vehicles have to stop, when the red light is on.
- Yellow light is an indication "to slow down"- When the yellow light turns on, you should slow down your vehicle and prepare to stop.
- "Walking man" signal at intersections are constructed for the pedestrians. Recall the fact that you will be authorized to cross the road only when the signal turns green. Ensure that there are no vehicles, both on the left and right side of the road.
- Never attempt to cross the road, if the signboard signifies "Don't walk" message or the walking symbol turns red.

2. Stop, look, and cross

- In fact, students will either walk to school or to the bus stop for waiting their respective school bus. The only task of students is to cross the road prudently, right after the school bus drops them off. Hence, we should undertake the responsibility to provide adequate guidance for crossing the road cautiously.

- We teach them to be aware of various road signs and recommend them to utilize the zebra crossing while crossing the road. If there are no markings or signs, the following procedures can be worthwhile:

  - Check the right side, after that to the left side of the road for the incoming vehicles.

  - If you notice a vehicle is approaching, wait for the vehicle to pass and then safely cross the road.

  - Do not cross the road at the turns, it is unsafe.

  - Never cross the road between the stopped vehicles.

However, accompaniment is required for the children aged below 6 years and you should compulsorily hold their hands while crossing the road.

3. Listen

- Educate the child to be extra vigilant while they cross the road at the turns. As a consequence, listening can only aid them. For this reason, instruct your child to listen and ensure whether a vehicle is approaching or not. Ordinarily, vehicles apply horns at turns and at unmanned intersections to provide a warning to other road users. Meanwhile, you can interpret the following instances to students:

  ➢ If a horn is heard, stop and cross only after ensuring that no vehicle approaches you from left or right side of the road.

4. Don't rush on roads

- Students will not be tolerant and have a tendency to dash across the road to reach the other side. In addition, they become absent-minded when they are having fun and henceforth bound across or along the road. Therefore, teach them to remain placid while they are near the road.

5. Relevance of Sidewalks

- Persuade students to avail the service of sidewalks whenever they walk on the road. Demonstrate them how to cross the road safely. Motivate them to avail the sidewalks even though it is not a busy street.

6. Crossroads and pedestrian crossings

- Students will have a tendency to scoot across the street. This will become particularly perilous since vehicles will never slow down unless there is a cross road or relevant signal. Notify your students to cross only at intersections and avail the pedestrian crossings. If there is no crossroad or pedestrian crossing, you can admonish students to comply the rules mentioned above.

7. Place the hands inside the vehicle

- A multitude of students have the habit of placing their hands outside the vehicle while it is moving. They will lay their head out and wave with exhilaration. This is a familiar sight among the school bus students. Nevertheless, these behaviors can have significant consequences. Due to

carelessness, they will be injured by vehicles, which advance from the opposite direction.

8. Never cross road at bends

- Bends are evidently the blind spot for motorists. When you attempt to cross at bends, the driver will be unable to recognize you and stop the car at the right time. As a result, students will be hurt while crossing at bends.

9. Remain safe on a bicycle

- If students ride bicycle to reach the school, ensure that they adhere to the following cycling rules:

  - Utilize the bicycle lane. If such a lane does not exist, ride the bike either on the extreme left or right side of the road and glide along with the traffic.
  - Never permit your students to ride on congested streets without your supervision.

10. Staying safe in a moving vehicle

- In a moving vehicle, you can ensure the student's safety with the assistance of a seat belt. Let them practice the following safety rules in your absence:

  - Never stand, stroll or sprint inside a moving vehicle.
  - Remain seated and hold the rails on the seats until the school bus halts.
  - Do not put your hands outside the moving vehicle.

11. Get off the vehicle at the curb side

- Ask your students to memorize the following safety tips and conform to the rules while they get down from the school bus:

  - Ensure that you reach the bus stop prior to the scheduled bus timing in order to avert the circumstance of running behind the school bus.
  - Form a queue to board or descend the school bus.
  - Disembark the school bus at the curbside in order to evade unnecessary endangerment and hindrance to other vehicles.