# INTRODUCTION

**Title of the Lesson:** Biodiversity

## Learning Objectives

1. We all rely on biodiversity for our survival, because of the vast number of goods and services (in short the resources) our planet provides us.
2. The world is changing, and by engaging with biodiversity, the school students through various activities can bring about a difference and reduce the harmful impact on the environment.
3. At the same time, they will also be benefiting biodiversity in the school grounds and local community.
4. The activities can be extended beyond the immediate school building or the premises, like local communities, as they also offer many opportunities for learning about biodiversity, which includes parks and canals.

## Time Frame

1. The class room activities are not more than Ten minutes to one hour.
2. The outdoor activities involve two to four weeks depending on the schedule provided /one or two sessions of one hour each.

## Key Words Used

Biodiversity, Sustainability, Community, Biodegradable, Organic Farming, Natural Resources, Soil Fertility, Humus, Compost, Biodegradable / garden waste

## Teaching Notes

The students of today are quite aware about the environmental issues and the impact of all the human activities on our environment. Taking Biodiversity as topic, the teacher can have an interactive session with the students, first, by giving an introduction on one of the aspects of Biodiversity: For example

<u>Soil Fertility</u>

The discussion can be on the following points:

1. What is soil fertility?
2. What are the reasons for good soil texture?

3. What are the steps that can be taken to sustain its fertility?
4. What steps can be taken to prevent the soil from getting infertile?
5. Are there any simple methods to retain the soil fertility in day to day life?
6. What is the role of microorganisms in making soil fertile? Why are they important in our life?

With the following questions the teacher can bring them to start thinking on the topic and application of their knowledge in the project.

**Note:** Student are more participative in a group activity than individually. Sharing knowledge and giving their inputs is very interesting for the them. They collectively work towards getting better grades.

# ENGAGE

**MY GRANDFATHER'S TREASURE -- UPVAN** (Click For Slide Show)

Grand Pa was always very passionate about his garden. Every vacation we all would go to spend time with him. Not a single day for him would go without getting up early and taking a walk in the garden to monitor the flower and vegetable beds he had planted and grown. He made sure that the gardener did the work as per his instructions. Every morning the gardener would have a tough time with him. I always thought gardeners were employed on the basis of their skills they possess but grand pa would always load him with instructions. It was quite strange. Days and years went by, the area of say 2,500 sq ft always remained his lifeline.

Grand pa would spend two to three hours every morning in his garden. Then he would go and sit in an enclosure which was right in the middle of the garden and have his morning cup of tea there. It appeared that he treated the plants and the trees as his own children.

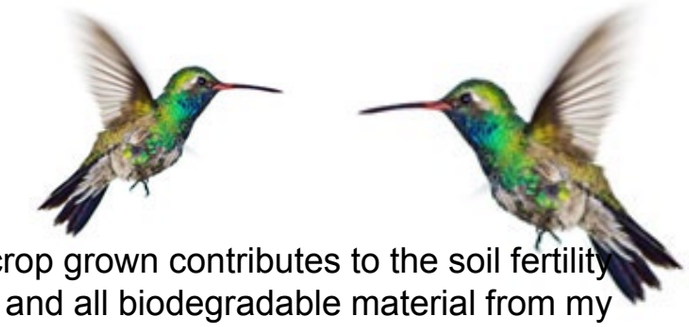
Every year we would visit him. Time went by. When turned thirteen, it became easier for me to understand my grand pa better. His behavior, passion and his being possessive about his garden, actually, I should be calling it a farm house, as it had all seasonal fruits and vegetables growing there. In school I learnt a lot about the ways of maintaining a garden or growing vegetables that are good for health. My education in school gave me a great deal of insight, but my grand pa had experience to offer me.

One day I decided to be with him when he had his cup of tea. We sat together in his favorite place. I looked around and tried to feel and understand the reason why my grand pa would spend a part of his morning there. I looked at him and was surprised to see him smiling to himself. He suddenly started to speak, "Sheila, I always enjoyed sitting here. I find myself very close to nature, I find myself incomplete without spending time here. The plants and trees are part of me. They are very important for us and the earth." I asked him, I have learnt that plants are very important as they give us oxygen to breathe. But it was little difficult for me to relate its relevance to the earth.

Grand pa had a surprised look, He said," Sheila, listen very carefully, it is going to be true for your life time. The earth is very important for all the living and non living elements. It caters for everyone living here, our survival and everything that we need comes from the Mother Earth. Like we study in science, that the cells are the basic fundamental unit of life, similarly plants are the fundamental existence on earth, there is a lot of environment damage that is repaired by plants. Plant as a whole, starting from roots, branch, leaves and other peripherals has a role to play. If plants are not there the following things will suffer like we will have less Oxygen, no transpiration, no roots to bind the soil, top soil most important for vegetation will dry up or will be drained due to water run-off, as a result the land will not be fit for growing crops resulting into the drastic changes in the environment . In short we would be tempering with the natural process and disturbing the natural balance of nature. The changes will be visible and the life on earth will be miserable. Now I am sure, you will be able to understand, why I am very particular about the plants that I grow here "

Grand pa made lot of sense. I started thinking. A lot of questions came to my mind, I was curious to know , what he was doing to maintain his garden, I requested him to give me a tour of his garden and explain.

Next morning, I was up very early and ready to learn some more things from my grand pa. He started by saying that, I always wanted my garden to be sus-



tainable, and I have done my bit to make sure that happens, the cycle of growing the vegetables is such that one crop grown contributes to the soil fertility for the next one, I have a compost pit in two corners of my garden and use all the plant remains, our kitchen waste and all biodegradable material from my garden and house for preparing it, so all material coming out as a waste is practically used up. I have identified certain patches here which have very high water table. I use those patches to grow vegetables that either require lot of water or their roots go deep to procure water like in the case of tomatoes. I water the plants and the trees so that the water is directed towards the roots, excess watering actually does not help. So in the process I also conserve water. Then I saw huge drums which were below the pipes connected to the roof, I immediately understood that this must be for collecting the rain water from the roof. Now I understood why he called his garden self sustainable.

I still had a question which was bothering me, I actually wanted a solution. Grand pa realised, I suddenly got lost in my thoughts, he shook me and said, if I had some thing in mind I must clear it. I got a chance and I asked him, what if the area we are living in is not as big as this? Is it possible to grow some plants or vegetables in small patches or in balconies? He said, yes, it is possible to grow them in the pots by using some scientific methods. By the end of it, I was very happy because I discovered it was possible to grow plants in smaller areas, I decided that I will talk about it to my friends, their parents and whoever possible. Tell them the story of my Grand Father and how he believed and worked for **SUSTAINABLE SYSTEM**.

**Activity based on the story**

**Questions:** Students can be asked to answer the following, after the narration of the story.

**Objective**: To make students understand the Importance of Biodiversityand how it can be preserved?

Q1. Why does the passion for Biodiversity compel someone to grow a flower or a vegetable garden?
Q2. Give reason, why was Grand pa so involved in his garden?
Q3. What was the objective behind grand pa's instructions to the gardener?
Q4. Why was the garden a lifeline for grand father?
Q5. Is it necessary to have a large area to have a garden? How will you use small areas for making a green belt in your city?
Q6. Considering the present scenario, If you had some space in and around your house, what would be the first thing that would occur in your mind?
Q7. Given an opportunity as grandfather had, would you involve yourself in the same manner as he, if yes, how?
Q8. Why is green belt important in a metropolitan city?
Q9. How does biodegradation of garden waste help the soil? What kind of organisms are involved in this process and how?
Q10. Soil fertility is important for plant growth? Give two reasons for your answer.

# EXPLORE

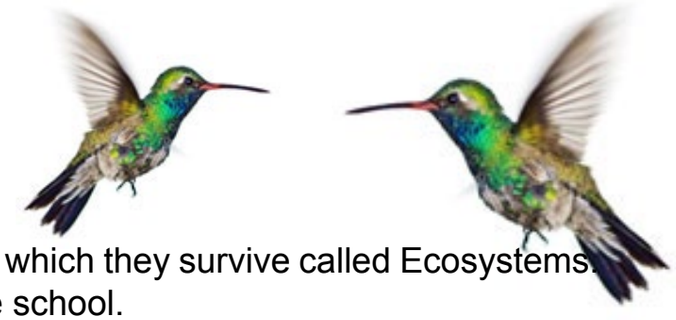
**DURATION: 10 to 20 MINUTES EACH**

**Note:** All The Activities Mentioned Below Can Be Conducted As An Individual Or In Groups.

**Activity 1**
The students should be made to stand in semicircle to perform this activity.
Name the material /objects / substances that may be found in the gardens and give the reason, why they are harmful for the Biodiversity.

**Activity 2**
On the basis of last two to three years observation of their surroundings, let the students mention the changes they have noticed in the Environment. Name the species that they feel have reduced in number / population.

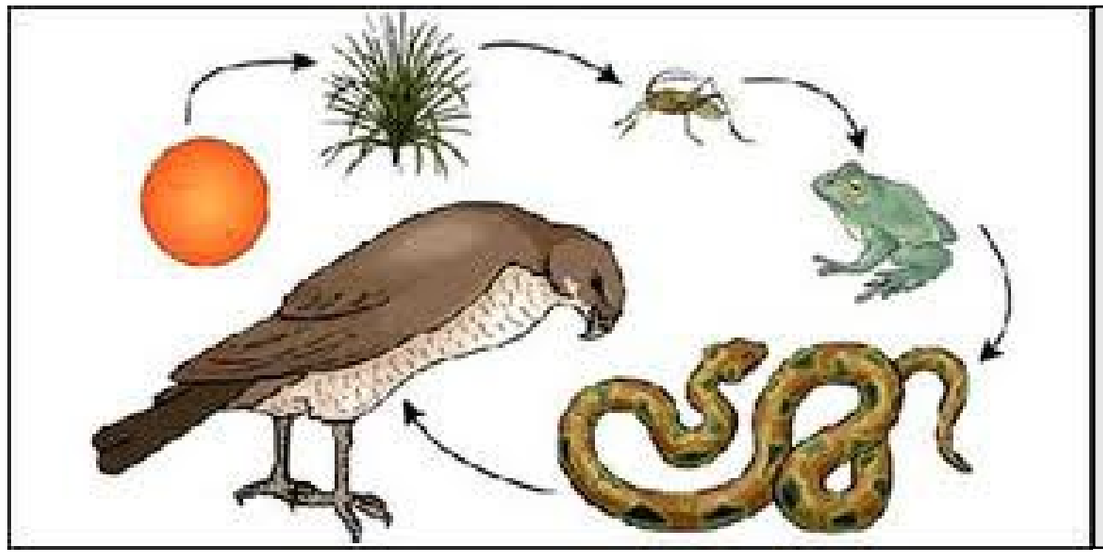
**Activity 3**
The students must suggest a slogan with respect to Biodiversity that can be used in the community garden as bullets/placards for awareness.

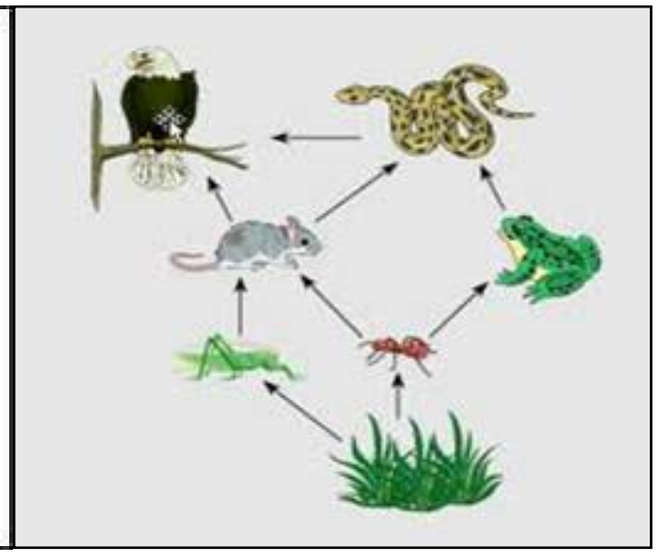


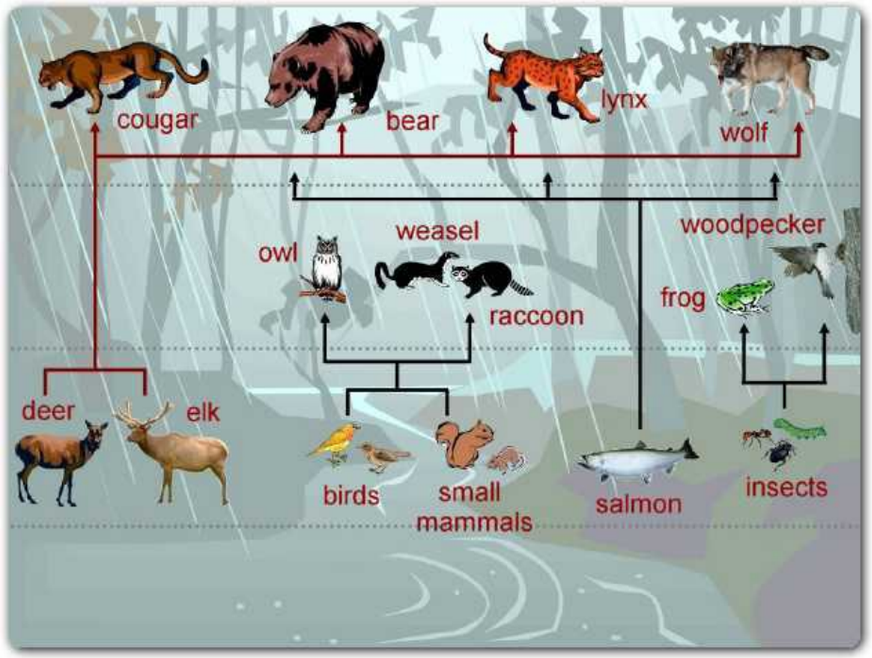
# EXPLAIN

In simple terms the word biodiversity can be described as the variety of plants and animals species and the places in which they survive called Ecosystems. While teaching the school students biodiversity would mean all the different kinds of plants and animals found in the school.

An important aspect of biodiversity that is not always apparent is the interdependence between all the species, in other words the way in which they depend on one another for survival. One way in which this can be presented is by food chains and food webs.







# Biodiversity Secondary Level

The word biodiversity is relatively new. It is made up from the term ‘biological diversity’. This diversity visible around us is crucial in the survival of all the living organisms and the array of plant and animal species that exists, perform a vital role in the web of life.

Biodiversity is the variety of all living things, including plants, animals, microorganisms and their interdependence.

**Importance of biodiversity**

Biodiversity is vital for supporting all life on Earth. It provides all of our food and many industrial products and medicines. Biodiversity also ensures clean air, water and fertile soils, it provides opportunities for recreation, tourism, scientific research and education, and it is a source of cultural identity for many regions of this world.

Biodiversity is the foundation of healthy, functioning ecosystems upon which all life forms depend.

Biodiversity helps with the following:

- Soil formation
- Nutrient, nitrogen, oxygen and carbon cycling
- Energy production
- Flood and erosion control
- Clean air
- Clean water
- Breaking down pollutants
- Pest and disease control
- Food and medicines.

Various others, which are he integral part of various aspects of the topic as mentioned above. Various studies and research prove this to be correct.

Knowledge of organisms in and around your living area is very important. It helps you to understand your surrounding better. How are they useful or harmful for us?

**The steps you take to learn about the useful organisms present in the garden and take precautions to prevent the harmful to harm you. The knowledge helps in the following.**

- This often provides important clues for understanding the cause of a disease.
- Organisms are used to assess the quality of the environment, for example: if the organisms are surviving in the water body , it means the water is healthy. They are called Bio-indicators, it may involve Biological processes, species or communities.
- Using organisms to study health and disease. For example the research on bacteria, yeast, insects, worms, fish, rodents and plants has shown that

the basic operating principles are nearly the same in all living things.

## Activity - 1

**Aim:** To survey the area in school premises or in the community and note different type of organisms /animals found there.

**Objective:** To know the organisms that live and visit the area in the school premises. The changes if any, will provide healthy living conditions for them.
**Instructions:**

1. Divide the class into different groups depending on the number of students and ask them to survey a specific area of the school premises such as, main garden / pond / flower garden / backyard / vegetable garden etc.
2. Different groups should survey different area.
3. Students must make a list of insects and birds in the table provided.
4. Research and find out the best suited habitat for them.
5. The students should be able to suggest any changes (if any) which would be best suited for their healthy growth.
6. The students may carry magnifying glass, a small shovel, wooden stick etc.

**LIST OF INSECTS AND BIRDS: OBSERVATION TABLE**

| S.NO | ORGANISM | CHARACTERISTICS/FEARTURES |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Note: It will depend on the area the school occupies, it can also be extended to a near by garden or a community area where students are allowed**

**to perform the activity.**

## Activity - 2

**Aim:** To survey the area in school premises or in the community park and note the different types of Plant /Tree found there.

**Objective:** To gain the knowledge of the types of Plants and Trees that grow in and around the school area. Also, the students will be able to observe and note the changes that occur in the Plants / Trees during the year.

**Instructions:**

1. Divide the class into different groups depending on the number of students and ask them to survey a specific area of the school premises such as, main garden/pond/ flower garden/ backyard / vegetable garden etc.
2. Different groups should survey different area.
3. Students must make a list of Plants and Trees in the table provided.
4. Research and find out the scientific names and characteristics of the listed Plants and Trees.
5. Make observation of the weeds if noticed in the vegetable garden.

**LIST OF PLANTS AND TREES : OBSERVATION TABLE**

| S.NO | PLANT/TREE | SCIENTIFIC NAME | CHARACTERISTICS/FEARTURES |
|---|---|---|---|
| | | | |
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**Note: It will depend on the area the school occupies, it can also be a nearby garden or a community area where students are allowed to perform the activity.**

# ELABORATE

## PROJECT – 1

**TOPIC - BIODIVERSITY IS LIFE**

**INTRODUCTION:** The students are expected to make a collage for the given topic – Biodiversity is Life and give the presentation in class. The collage must represent the topic.

**INSTRUCTIONS:**

1. The students will work in groups.
2. The research should be done which enables you to relate Biodiversity with life.
3. Content must bring out the understanding and must reflect the topic.
4. There should be minimum writing work.
5. The following material can be used for the project work
    - Pictures
    - Sketch pens
    - Colours pencils / paints
    - Crayons
    - Pencil peels/shavings etc
6. The following methods of expressions can be used in the making:
    - Pictures
    - Flow chart
    - Figures
    - Cartoons
7. The presentation should not be for more than three minutes.
8. Give a slogan of not more than one line.

**ASSESSMENT:**

| Research and Content | Presentation | Slogan | Overall Effect | Total |
|---|---|---|---|---|
| 5 | 5 | 5 | 5 | 20 |

## PROJECT – 2

**IMPORTANCE OF GREEN ROOF IN SCHOOL**

**INTRODUCTION:** The students are expected to make a chart on the topic – Importance of Green Roof in School. Give the presentation in class.

A green roof or living roof is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems.

http://en.wikipedia.org/wiki/Green_Roof

Advantages of a Green roof building

1. It cools the building and reduces the load of cooling
2. Improves the air quality.
3. Protects the roof lifespan
4. Makes the building look beautiful

**INSTRUCTIONS:**

1. The students can work independently or in groups.
2. The work on the chart must represent the topic.

3. All students must have the chart paper of the same size as instructed by the subject teacher/ educator.
4. Give a relevant slogan to your project.
5. The following material can be used for the project work
    - Pictures
    - Sketch pens
    - Colours pencils / paints
    - Crayons
    - Pencil peels etc
6. The following methods of expressions can be used in the making :
    - Pictures
    - Flow chart
    - Figures
    - Cartoons
7. The presentation should not be for more than 5 minutes.

**ASSESSMENT:**

| Research and Content | Presentation | Slogan | Overall Effect | Total |
|---|---|---|---|---|
| 5 | 5 | 5 | 5 | 20 |

## PROJECT – 3

**USE OF ORGANIC MANURE OVER FERTILIZERS**

**INTRODUCTION:** The students are expected to do the project in the form of an essay or debate on the given topic.

**INSTRUCTIONS:**
1. The research should be Environment based.
2. Essay writing should be an independent work and debate in groups.
3. Project must reflect the Effect of the usage on the Climate.

4. Contents must contain scientific facts.

**ASSESSMENT FOR ESSAY WRITING:**

| Research and Content | Presentation | Effect on Environment and Climate | Overall Message Of the Essay | Total |
|---|---|---|---|---|
| 5 | 5 | 5 | 5 | 20 |

**ASSESSMENT FOR DEBATE:**

| Research and Content | Presentation and Confidence | Effect on Environment and Climate | Overall Impact | Total |
|---|---|---|---|---|
| 5 | 5 | 5 | 5 | 20 |

# EVALUATE

**QUIZ**

1. Name the group of plants that are good for health.
Ans. Herbs

2. Name the process by which the plants produce their own food.
Ans. Photosynthesis

3.Which is the best nutrition for the plants to grow?
Ans. Organic

4. Mention on small space where the planting can be done.
Ans. balcony

5. Name the process by which the trees lose water into the atmosphere.
Ans. Transpiration

6. Which product of plant process is a raw material for Respiration?
Ans. Oxygen

7. We use dead plants materials for composting because it gets _____.
Ans. Biodegraded

8. Paper is made out of _____.
Ans. Wood/trees

9. _____ are also called scavengers.
Ans. Microrganisms

10. In our houses the biodegradable waste can be used for ?
Ans. Composting

**ACTIVITY**

**PREPARING GOOD COMPOST**

# Biodiversity Secondary Level

**Aim:** To prepare a good quality compost by using materials that are easily available.

**Material Required:** Greens from the kitchen, Browns dry material, Compost container (plastic / metal / encloser made of wooden planks), approximate size H= 2 ft, B=2 ft, L=4 ft. Or H=3 ft, B=3 ft, L=3 ft.

**NOTE: Compost containers are the best as it prevents drying in the hot weather, nutrients can be leached from open compost heaps during heavy rains.**

**Greens:** Fruit and vegetable peels, Tea leaves and bags, Green leaves, Dead flowers, fresh horse and cow dung, dead weeds from the garden etc

**Brown – Dry material:** Straw, autumn leaves, ash, wood chips, saw dust, shredded news papers, finely shredded cardboard etc

**Things to avoid: Animal fat, dropping of cats and dogs, bread and cakes, bones, large branches, meat and dairy products, metal, plastic, glass, diseased plants, weeds that have seeds or underground stems, weeds should be used after killing them.**

**Theory and Concept:** Prepare the compost with the mix of browns and greens. Keep the green brown ratio as 50:50. This will give you the right mix of Carbon and Nitrogen going into the compost. As the billions of microbes multiply and digest the organic waste, they produce heat. Layering the food scrapes keeps the mix aerated and builds heat and speeds up the process.

**Method:**

1. Add the greens and browns in the container in layers. Layering keeps the mix aerated and produces optimum amount of heat which speeds up the process.
2. Make sure that the pile has sufficient air by :
   a. Turning the pile regularly at least once a week.
   b. Breaking the crumps of food waste.
   c. Punching holes in the container
   d. Putting twigs and news paper in the mix to increase air space.
   e. Adding compost worms, you will need around 1500 to 2000 in the beginning. It also depends on the area, larger would mean the number increases.

**<u>Reason</u>:** Compost can be made without the air (anaerobically) in which case the decomposition is slow, the pile is likely to smell and it will produce methane, a powerful green house gas. When the pile has enough air, the microbes that decompose the material thrive and produce better, less

smelly, compost more quickly.

3. Keep he mix as moist as wet sponge, as all creatures need water. The water content will depend on the weather, in summers more water is required. Avoid too much of water.

**Reason:** A dry pile makes the compost too slow, however, if the pile is too wet, the ingredients become heavy and there remains no space for the air, which slows the process and create bad smell.

**Result:** Approximately, after four months the compost will become dark and crumbly, at this stage it will be ready to use, best is to mix with the soil or dig into the garden beds, in case you spread it on the top of the garden bed, make sure to cover it with the mulch, to prevent it from drying.

http://www.ehow.com/how_3541_begin-compost-pile.html
http://www.recyclenow.com/home_composting/making_compost/step_by_step.html

# GLOSSARY

**Quotes on Biodiversity**

- We share this planet with many species. It is our responsibility to protect them, both for their sakes and our own
  **– Pamela A. Matson**

- Every time we lose a species webreak a life chain which has evolved over 3.5 billion years.
  **– Jeffrey McNeely**

- "We — human beings — are part of 'biodiversity.' We are dependent on the whole food chain down below us."
  **– Darrell Merrell**

- Biodiversity is our nation's natural wealth. The Endangered Species Act safeguards these riches.
  **– Judy L. Meyer**

- "We are into the opening stages of a human-caused biotic holocaust – a wholesale elimination of species – that could leave the planet impoverished for at least five million years."
  **– Norman Myers**

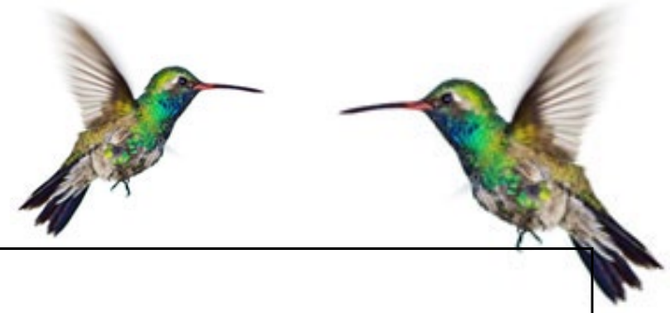
- "Without knowing it, we utilize hundreds of products each day that owe their origin to wild animals and plants. Indeed our welfare is intimately tied up with the welfare of wildlife. Well may conservationists proclaim that by saving the lives of wild species, we may be saving our own ."
  **– Norman Myers**

- "The current massive degradation of habitat and extinction of species is taking place on a catastrophically short timescale, and their effects will fundamentally reset the future evolution of the planet's biota."
  **– National Academy of Sciences**

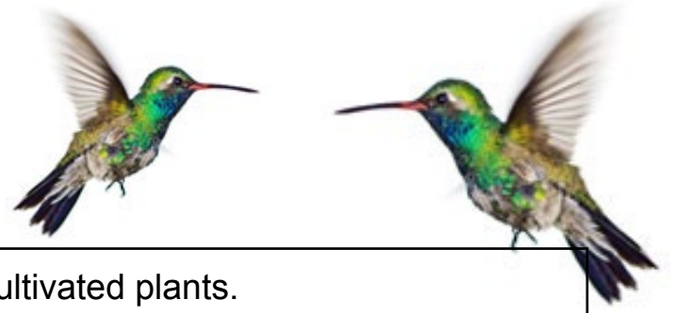
## Glossary of Terms

| S.NO | WORD | MEANING |
|---|---|---|
| 1. | Biodiversity | The variety of life in the world or in a particular habitat or ecosystem. |
| 2. | Sustainability | The property of being sustainable, which is available for further use. |

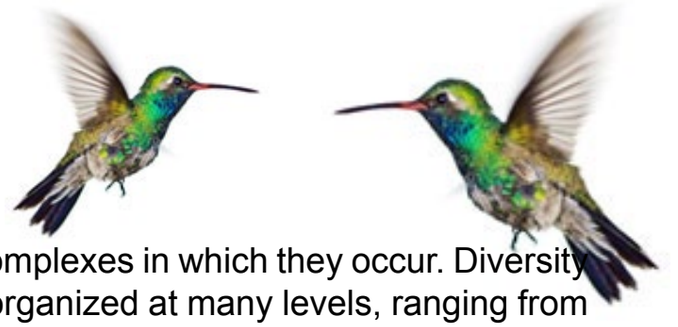
# Biodiversity Secondary Level



| | | |
|---|---|---|
| **3.** | Community | A group of people living together in one place. |
| **4.** | Biodegradable | A substancecapable of being decomposed by bacteria or other living organisms like Fungus. |
| **5.** | Organic Farming | It is the form of agriculture that relies on techniques such as crop rotation, green manure, compost, and biological pest. |
| **6.** | Natural Resources | Materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain. |
| **7.** | Soil Fertility | The ability of a soil to supply plant nutrients. |
| **8.** | Humus | The organic component of soil, formed by the decomposition of leaves and other plant material by soil microorganisms. |
| **9.** | Compost | Decayed organic material used as a plant fertilizer. |
| **10.** | Garden waste | Green waste is biodegradable waste that can be composed of garden or park waste, such as grass or flower cuttings and hedge trimmings. |
| **11.** | Anaerobically | Anaerobic  living or active in the absence of free oxygen. |
| **12.** | Food scrape | Pieces of food that are left after you have finished eating. |
| **13.** | Microorganisms | Any organism of microscopic size. |
| **14.** | Herbs | Any plant with leaves, seeds, or flowers used for flavouring, food, medicine, perfume .Part of such a plant used in cooking. |
| **15.** | Organic waste | Biodegradable waste is a type of waste, typically originating from plant or animal sources, which may be broken down by other living. |
| **16.** | Biological process | A process occurring in living organisms |
| **17.** | Bio-indicators | Biological indicators are species used to monitor the health of an environment or ecosystem. They are any biological species. |



| | | |
|---|---|---|
| **18.** | Weeds | A wild plant growing where it is not wanted and in competition with cultivated plants. |
| **19.** | Soil Erosion | Washing away of soil by the flow of water. |
| **20.** | Transpiration | It is the process where plants absorb water through the roots and then give off water vapor through pores in their leaves. |



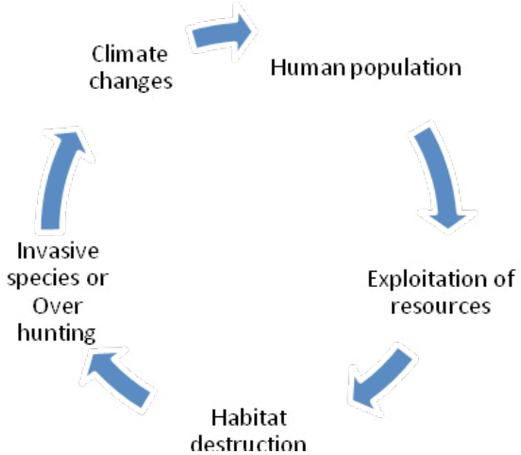
## NOTES TO TEACHER

**Biological diversity or Biodiversity** refers to the variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequency. For biological diversity, these items are organized at many levels, ranging from complete ecosystems to the chemical structures that are the molecular basis of heredity. Thus, the term includes different ecosystems, species, genes, and their relative abundance or in other words,the number and variety of species, ecological systems, and the genetic variability they contain.

http://www.youtube.com/watch?v=5UFGA2synNA
http://www.youtube.com/watch?v=xnTCNI5kDxM

**Treat to biodiversity**

The five largest types of threat to biodiversity tend to be almost exclusively man made in nature. Human overpopulation is said to be the single largest threat to biodiversity, followed closely by climate change, overexploitation of resources, introduced and invasive species, and habitat destruction. It is surprising that many people that harbor an almost entirely anthropocentric view (considering human beings as the most significant entity) of the world that short term goals and profits seem to be of far greater importance than the well being of natural creatures. Wonderfully diverse and fascinating creatures that have taken millions of years to evolve, but can be wiped out by short sightedness. It has been by far human activities and intentions towards natural creatures,has been one of the reasons for the stress on the environment.




**Loss of Habitat**

All species have specific food and habitat needs. The more specific these needs and localized the habitat, the greater the vulnerability of species to loss of habitat to agricultural land, livestock, roads (highways) and cities. In the future, the only species that survive are likely to be those whose habitats are highly protected, or whose habitat corresponds to the degraded state associated with human activity, also, the conversion of forested land to agriculture.

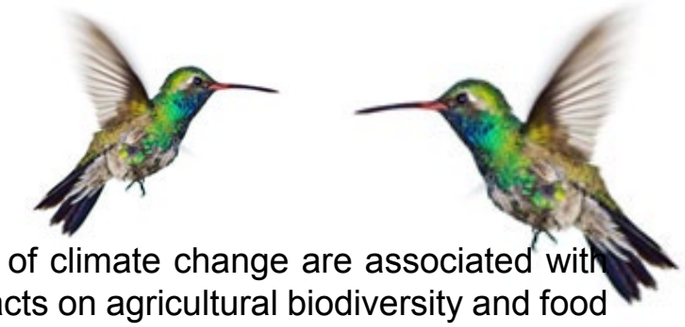
http://www.youtube.com/watch?v=-1IJgrAlKw0
http://www.youtube.com/watch?v=Tw_xz0AVXrY

**Extinctions**

- Habitat loss / degradation/fragmentation is an important cause of known extinctions. As deforestation proceeds in tropical forests, this promises to become the cause of mass extinctions caused by human activity.
- Over - hunting has been a significant cause of the extinction of hundreds of species and the endangerment of many more, such as whales and many African large mammals. Most extinctions over past several hundred years are mainly due to over-harvesting for food, fashion and profit.
- Pollution from chemical contaminants certainly poses a further threat to species and ecosystems.

**Biodiversity and human health**

Biodiversity's relevance to human health is becoming an international political issue, as scientific evidence builds on the global health implications of biod-



iversity loss. This issue is closely linked with the issue of climate change as many of the anticipated health risks of climate change are associated with changes in biodiversity (e.g. changes in populations and distribution of disease vectors, scarcity of fresh water, impacts on agricultural biodiversity and food resources etc.) This is because the species most likely to disappear are those that buffer against infectious disease transmission, while surviving species tend to be the ones that increase disease transmission.

The growing demand and lack of drinkable water on the planet presents an additional challenge to the future of human health. Partly, the problem lies in the success of water suppliers to increase supplies, and failure of groups promoting preservation of water resource .Some of the health issues influenced by biodiversity include dietary health and nutrition security, infectious disease, medical science and medicinal resources, social and psychological health. Biodiversity is also known to have an important role in reducing disaster risk, and in post-disaster relief and recovery efforts.

Biodiversity provides critical support for drug discovery and the availability of medicinal resources.A significant proportion of drugs are derived, directly or indirectly, from biological sources .At least 50% of the pharmaceutical compounds are derived from plants, animals, and micro-organisms, while about 80% of the world population depends on medicines from nature.

https://www.google.co.in/search?q=pictures+for+ayurvedic+medicine&espv=210&es_sm=93&tbm=isch&tbo=u&sourc

**Biodiversity, Business , Agriculture and Industry**

Many industrial materials derive directly from biological sources. These include building materials, fibers, dyes, rubber and oil. Biodiversity is also important to the security of resources such as water, timber, paper, fiber, and food. As a result, biodiversity loss is a significant risk factor in business development and a threat to long term economic sustainability.

# Biodiversity Secondary Level

http://en.wikipedia.org/wiki/File:Ueberladewagen_(jha).jpg

**Biodiversity, leisure, cultural and aesthetic value**

Biodiversity enriches leisure activities such as hiking, birdwatching or natural history study. Biodiversity inspires musicians, painters, sculptors, writers and other artists. Many cultures view themselves as an integral part of the natural world which requires them to respect other living organisms.

Popular activities such as gardening, fishkeeping and specimen collecting strongly depend on biodiversity. The number of species involved in such pursuits is in the tens of thousands, though the majority do not enter commerce.

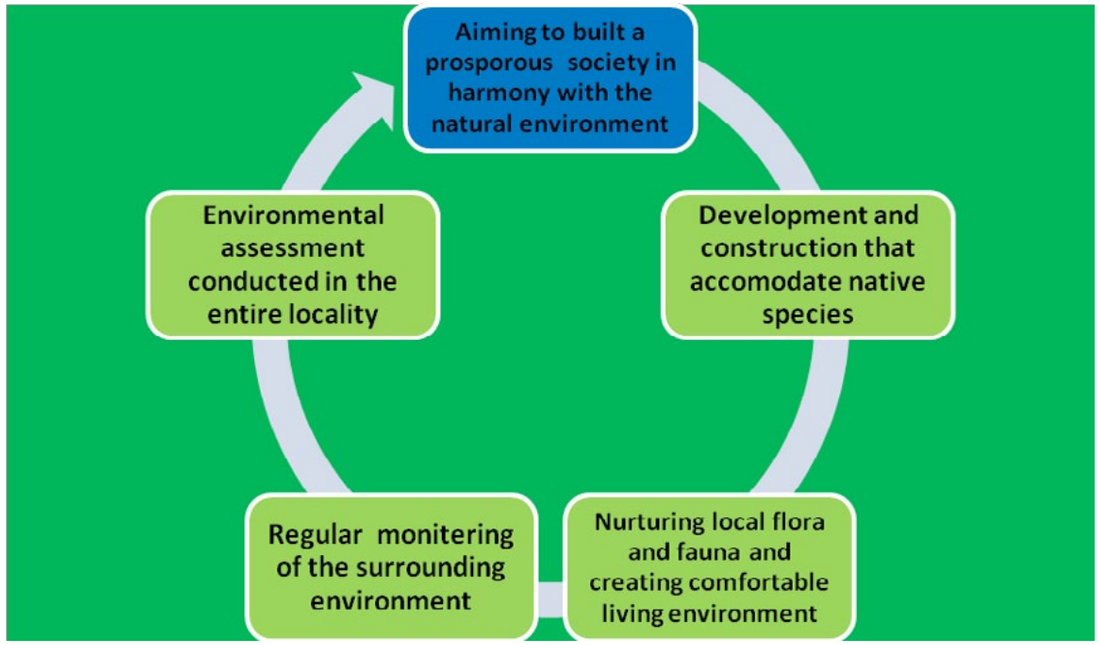
It plays a part in regulating the chemistry of our atmosphere and water supply. Biodiversity is directly involved in water purification, recycling nutrients and providing fertile soils. Experiments with controlled environments have shown that humans cannot easily build ecosystems to support human needs, for example insect pollination cannot be mimicked.

Biodiversity is not evenly distributed, rather it varies greatly across the globe as well as within regions. Among other factors, the diversity of all living things depends on temperature, precipitation, altitude, soils, geography and the presence of other species. Therefore, it has become the need of the hour is to study the distribution of organisms, species, and ecosystems and

**Create an environment where Industry, Lifestyle and Nature can coexist in Harmony**

**Harmony between Society and Nature.**

# Biodiversity Secondary Level




**Bibliography:** http://en.wikipedia.org Environment articles from news papers and magazines.

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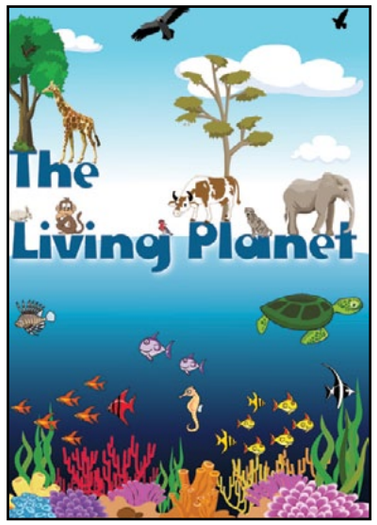
# FUN STUFF

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