# Biology Revision Notes – Ecology

1. The **carbon cycle** and the **nitrogen cycle**.
2. The 'good' bacteria in the nitrogen cycle make nitrates, and are as follows:
   - **Nitrifying** bacteria turn ammonium compounds in decaying matter into nitrates.
   - **Decomposing** bacteria decompose proteins and urea into ammonia or ammonium compounds.
   - **Nitrogen fixing** bacteria turn nitrogen gas into nitrates.
3. **Denitrifying** bacteria are 'bad', because they turn nitrates into useless nitrogen gas.
4. A **community** is the number of plants or animals living in a **habitat**.
5. A **habitat** is where an organism lives.
6. A **population** is the number of **species** living in a habitat.
7. A **species** is one kind of plant or animal that can produce fertile offspring.
8. A **food chain** begins with a **producer** (always a plant), then can have a primary and secondary **consumer** (and maybe even a tertiary consumer).
9. A **food web** shows many producers and consumers linked together.
10. **Pyramids of numbers** can be 'top heavy', but **pyramids of biomass** are always correct.
11. **Energy** is lost at every stage in a food chain.
12. Plants and animals live together and have complex relationships.
13. Organisms **compete** with each other:
    - **Plants** compete for light, water, space and insects.
    - **Animals** compete for food, water, shelter, mates, and territory.
14. Populations are **balanced**, so that changes in the numbers of one organism will affect another.
15. Plants and animals are **adapted** to their habitats in order to survive.
16. It is possible to **estimate** populations.
17. Humans have a strong **impact** on the environment.
18. The **greenhouse effect** causes an increase in the Earth's temperature. This results in:
    - Big changes in **climates**.
    - Rises in the **sea level** (the ice caps melt).
19. **Sulphur dioxide** and **nitrogen oxides** cause **acid rain**. This damages trees and makes rivers and lakes acidic (killing plants and animals).
20. **Fertilisers** are used by farmers, and when the excess is washed into rivers and lakes it causes **eutrophication**:
    - Plants rapidly grow.
    - Some plants die due to competition.
    - Decomposing microbes increase in numbers.
    - Oxygen is used up in the respiration of the microbes.
    - Fish and animals in the water suffocate, through lack of oxygen.
21. **Deforestation** increases the release of carbon dioxide (through the burning of the wood), and reduces the intakes of carbon dioxide (through photosynthesis).