N5 Biology **LE5 Food production** LEARNING OUTCOMES

|  |  |  |
| --- | --- | --- |
| -+\* | | by the end of each lesson you should know (including meanings of **key words**) |
| **Increasing** **Crop Yield** |  | * I can explain that increasing human population requires an **increased food yield.** * I can explain that increasing food yield can involve the use of **fertilisers** and **pesticides**. * I can state that **fertilisers** provide chemicals such as nitrates which increase crop yield * I can state that plants and animals which reduce crop yield can be killed by **pesticides** |
| **fertilisers** |  | * I can state that **nitrates** dissolved in soil water are absorbed into plants. * I can explain that nitrates are used to produce **amino acids** which are synthesised into plant **proteins**. * I can explain that animals **consume** plants or other animals to obtain amino acids for protein synthesis. * I can state that **fertilisers** can be added to soil to increase the **nitrate** content of the soil. |
| **algal bloom** |  | * I can describe **eutrophication**: * **fertilisers** can **leach** into fresh water, adding extra, unwanted nitrates. * This will increase algal populations which can cause **algal blooms**. * Algal blooms **reduce light levels**, killing aquatic plants. * These dead plants, as well as dead algae, become food for **bacteria** which increase greatly in number. * The bacteria use up large quantities of **oxygen**, reducing the oxygen availability for other organisms. * algal blooms therefore result in the **death** of many aquatic organisms |
| **pesticides** |  | * I can explain that **pesticides** sprayed onto crops can **accumulate** in the bodies of organisms over time. As they are passed along food chains, toxicity increases and can reach lethal levels. * I can state that build-up of toxic substances in living organisms is known as **bioaccumulation**. |
| **Alternative farming practices** |  | * I can explain that **genetically** **modified** (GM) crops can be used to reduce the use of fertilisers. E.g. **GM crops** are being developed to increase the plants’ ability to absorb nitrates * I can state that the use of **biological control** and **genetically modified (GM)** crops as alternatives to the use of **pesticides**. * I can state that **biological control** is the control of a pest using its natural consumer or a disease |