



AGRICULTURE

Mthoko Ndlovu & Kerry Smith



AGRICULTURE

Agriculture is the process of growing plants, crops and raising animals for food, other human needs, or economic gain.



REQUIREMENTS

1. What are the components of soil and why is soil important to plants?
2. Explain the difference between clay, sand, and loam soils. List 3 crops that grow well in each.
3. Test the germination percentage of four varieties of seeds. Record your findings on day 3, 4 & 5
4. Explain how the plants obtain nutrients and convert them to food. Explain the difference between primary, secondary and micro-nutrients.
5. Name and identify ten common weeds of your community and tell how best to eliminate them using natural or chemical methods.
6. Identify six common insect pests or diseases. Tell what plants they usually affect, and how to eliminate or prevent their occurrence.

REQUIREMENTS

7. Locate two sources of Agricultural weather information. How is this information helpful to the farmer?
8. What is erosion? How can it be prevented?
9. Know the purpose of the following: ploughing, cultivating, harrowing, disking, draining, irrigation and harvesting.
10. Name and identify ten common birds of your locality and state their value to the farmer.
11. Assist in planting, cultivating, and harvesting at least four different crops. Maintain a log of work done and problems encountered.
12. Watch a video or visit a website of your local farm and find out what they do. Write a report on what they do and what you learned.



WHO WAS THE FIRST FARMER IN THE WORLD

Adam. He was put in charge of the Garden and Animals.

COMPONENTS OF SOIL

Solid

Liquid

Gases

Organic matter

Minerals



IMPORTANCE OF SOIL TO PLANTS





CLAY



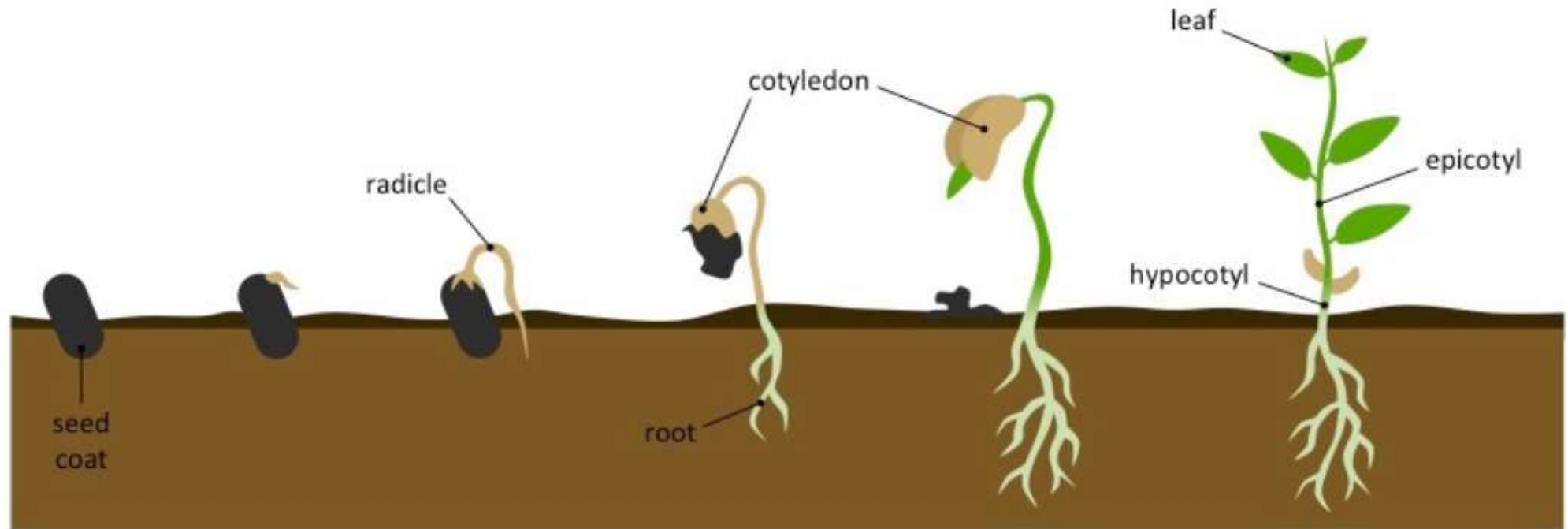
LOAM

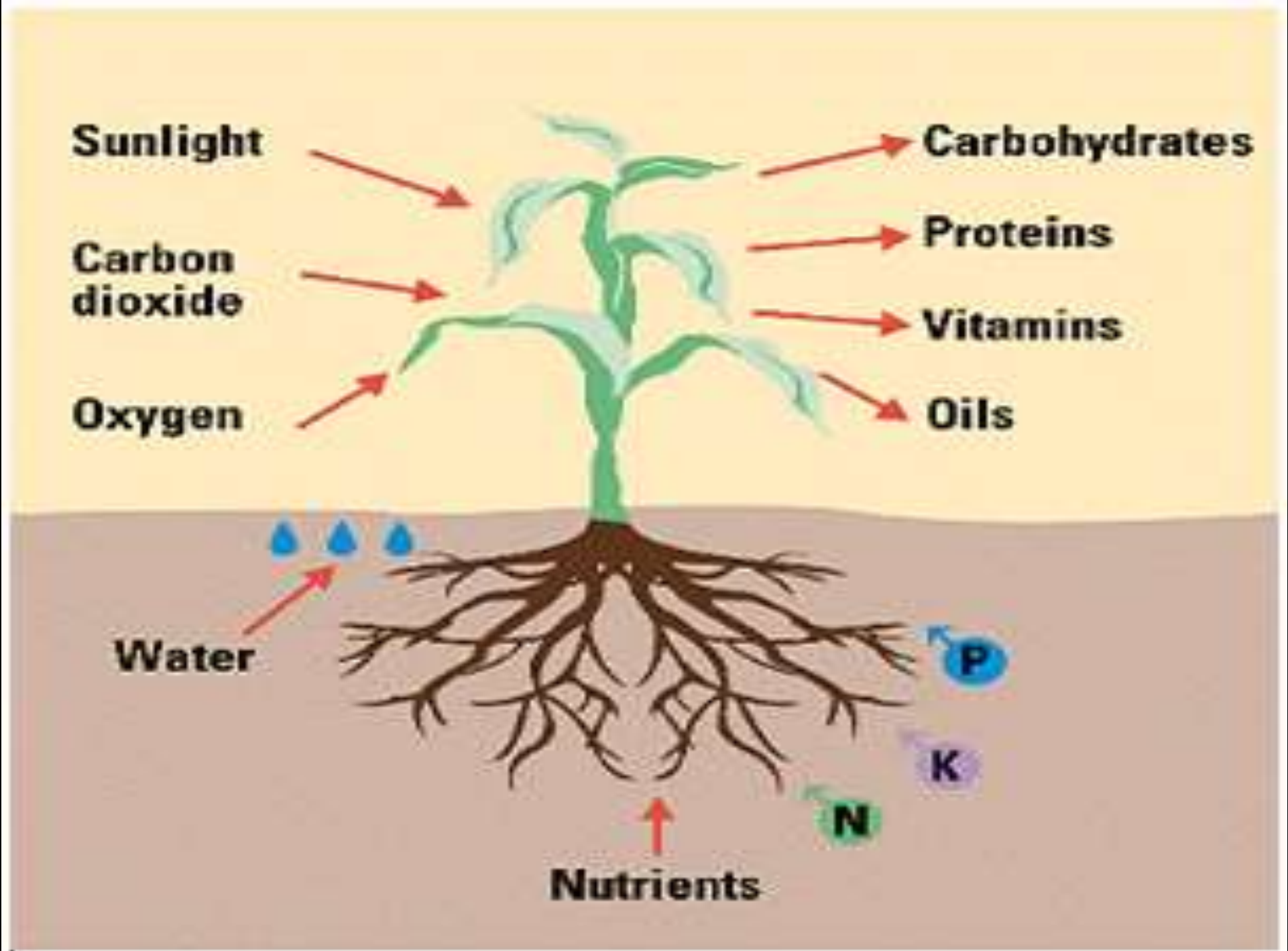


SAND

TYPES OF SOIL

Germination Process







Couch Grass



Dandelion



Hairy bitter cress



Dock Leaves



Bindweed

COMMON WEEDS



Eel-worm



Cucumber Mosaic



Peach potato



Vine weevil



Locust



Potato Leaf Curl

COMMON PESTS AND DISEASES

FARMERS BEST FRIEND

- ❖ Earthworms
- ❖ They improve the soil



SOURCES OF WEATHER

- ❖ Weather forecasts can help the farmer make decisions such as planting and harvesting



NEGATIVE EFFECTS OF WEATHER ON FARMING

Rainfall - Flooding enhances the possibility of disease and triggers nitrogen loss in crops.

Temperatures - drier soils will reduce growth of crops, cause soil compaction or cracking

Wind - tear crops out of the ground or pound them flat, dry out wet plants, move soil, and cause erosion, as well as disperse seeds.

Snow/Frost - Cold weather, particularly frost, causes the water in plant cells to freeze, damaging the cell wall.

SOIL EROSION

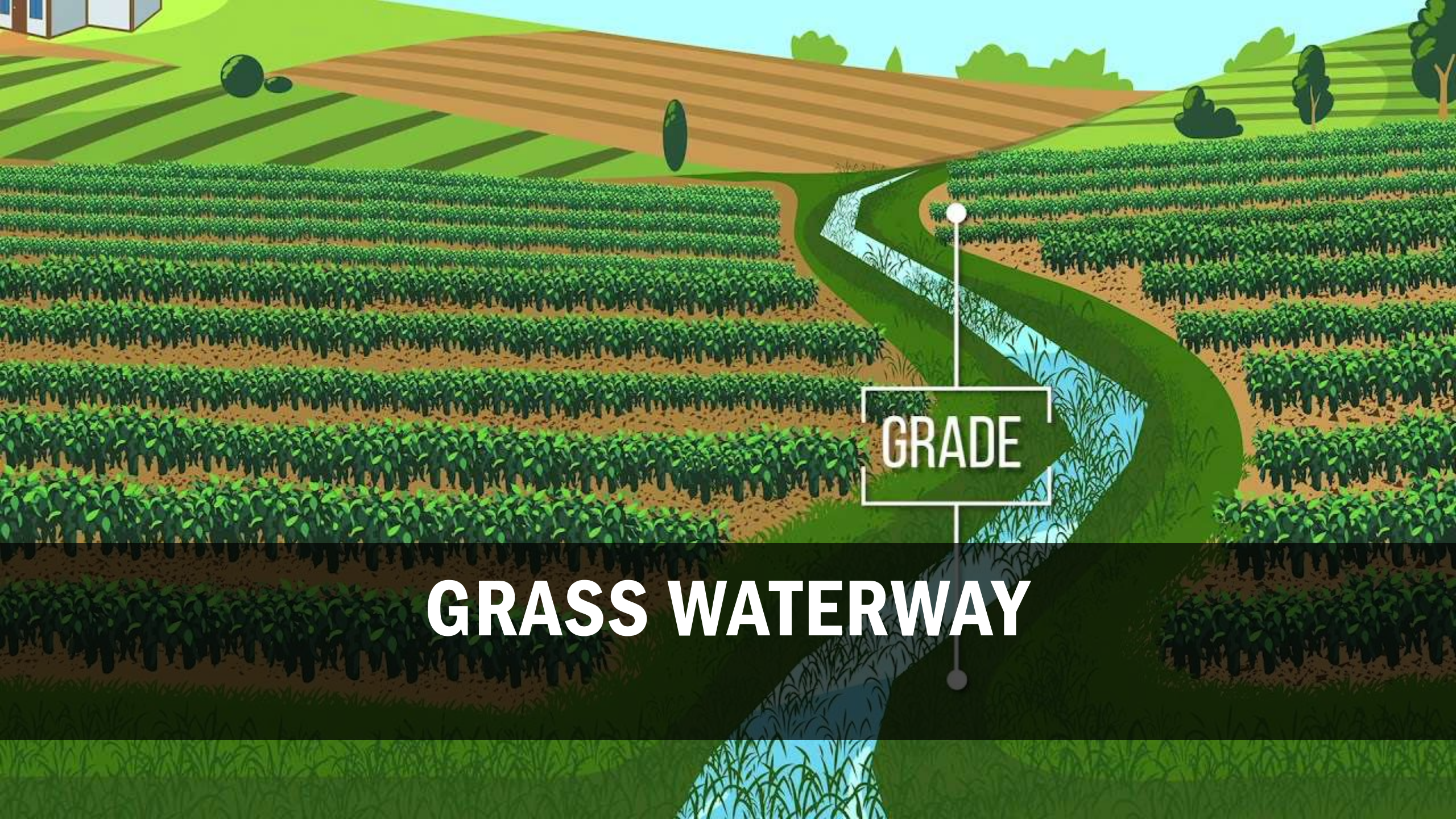
- ❑ It is the natural process where the elements, (wind, water, ice etc) cause the displacement of the upper layer (or organic layer) of soil.
- ❑ Over time, if not rectified, this can lead to reduced crops, or even crop failure.
- ❑ It can cause the soil structure to change and can lead to a lack of nutrients.
- ❑ Sites which are steeply sloped are more likely to suffer from soil erosion and soil can be shallow.

SOIL EROSION



HOW TO REDUCE SOIL EROSION

- ❑ Improve the soil structure by adding organic matter (things like compost, manure)
- ❑ The time in which you prepare the land for growing is key. If you have a light sandy soil or a soil with a lot of silt, the best time to add the organic matter is late winter/early spring as this will reduce the amount of time the soil will lay bare.
- ❑ **Crop rotation** –high residue crops protect the top-layer of soil
- ❑ **Contour farming** –Planting in row patterns that run level around a hill
- ❑ **Grass Waterways:** By planting grass in areas of concentrated water flow.



GRADE

GRASS WATERWAY



CONTOUR FARMING

A photograph of a garden with various green plants, including tall stalks and leafy greens. A large blue circular arrow graphic is overlaid on the image, pointing clockwise. In the center of the arrow is a blue rectangular box containing the text "Crop Rotation" in yellow.

Crop Rotation

FACT

There has been increased coastal erosion and flooding in Northern-Ireland which could lead to more landslides.

The National Trust charity has pledged to plant 20 million trees before 2030 to reduce soil erosion.

PLOUGHING/PLOWING

The primary purpose of ploughing is to turn over the upper layer of the soil, bringing fresh nutrients to the surface, while burying weeds and the remains of previous crops, allowing them to break down. It also aerates the soil and allows it to hold moisture better.



HARROWING

- ❖ A process of removing dead thatch, vegetation, leveling up and to aerate the soil.
- ❖ The process helps the soil to breathe and improves water infiltration
- ❖ Protects the soil surface from rapid drying



DISKING

- ❖ Disking follows the rough finish left by ploughing operations.
- ❖ The purpose of this is generally to break up clods and lumps of soil and to provide a finer finish, a good tilth or soil structure that is suitable for seeding and planting operations.



CULTIVATING

- ❖ The principle of cultivation is turning the soil to provide an ideal environment for seeds to germinate
- ❖ The process also aerates and loosens the soil after the crop has begun to grow.





DRAINING

Artificial removal of water from land

IRRIGATION

- ❖ Irrigation is the artificial application of water to the soil for assisting in growing crops.
- ❖ In crop production it is mainly used in dry areas and in periods of rainfall shortfalls, but also to protect plants against frost.



HARVESTING

The purpose of harvesting is to collect the ripe crops grown in a field when it reaches maturity.





**GLASS GEM
CORN**



RICE HARVEST

HONEY HARVEST



MANGO HARVEST





TURNIP HARVEST

GENETICALLY MODIFIED FOODS

- ❖ **Organisms like Plants & Animals' genetic (DNA) make up has been altered in a way that does not happen naturally**
- ❖ **USA is the largest producer of GMO**
- ❖ **Wheat was the first to be genetically modified**
- ❖ **Some countries in Europe banned GMO cultivation**

Name and identify ten common birds of your locality and state their value to the farmer.



BARN OWL



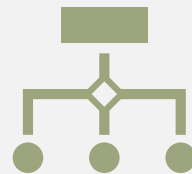
CROW

HOMework

HOMEWORK



Plant and harvest at least four different crops.



Maintain a log of work done and problems encountered.

- ❖ Rabbits don't like mint.
- ❖ If you plant mint next to your crop, they won't go near it or eat it



FACT

HOMework

Watch a video or visit a website of your local farm and write a report on what they do and what you learned



FACTS

- ❖ **72 Institutions in the UK offering agriculture courses**
- ❖ **China has 7% of the arable land and with that, they feed 22% of the world's population.**
- ❖ **Ukraine has the richest soil on earth. Statistics estimated that food planted on Ukraine's soil could feed whole Europe**
- ❖ **United states has the best climate for Agriculture**



THE END

Enjoy tiling the land and planting your own crops