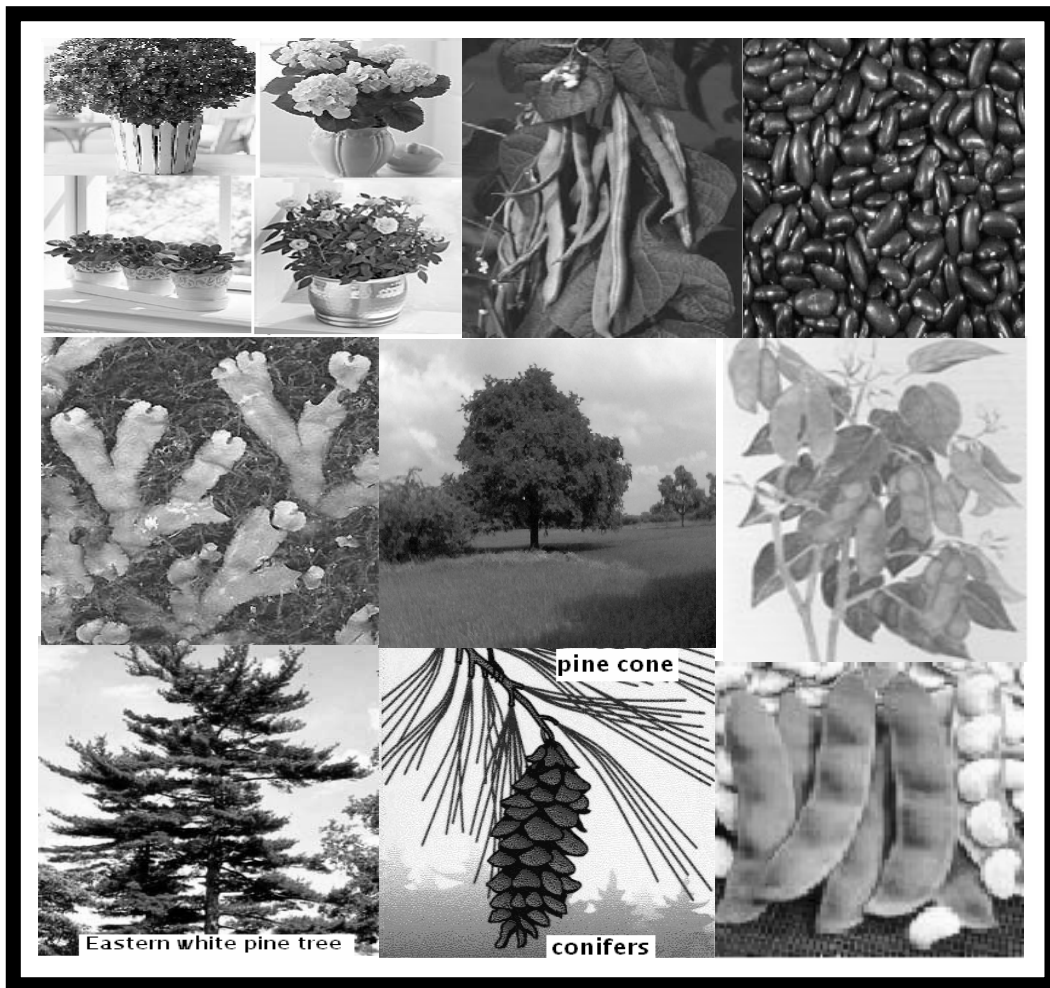


Science and Health

CLASSIFYING PLANTS





To the Learner

Dear Learner,

Hi Kids! Let's welcome our day with a smile. A day that is full of life like the plants around us. Today, you are going to learn how to classify them according to their common characteristics.



Let's Learn This

Scientists of plants (Botanist) have designed ways of classifying plants to have a better way of studying and an easy way of making substitutes for plants.

The criteria of classifying plants are their characteristics that set them apart from others. Some to the criteria used to classify plants with major groups are:

1. presence or absence of plant parts such as roots, stem, leaves, flowers and seeds;
2. the kind of materials that make up the plants;
3. place where plants live;
4. presence of some kind of special structures; and
5. uses of plants.



Let's Try This

A. Group the following plants.

Flowering and Non- flowering

mango	conifers	cypress
pine tree	coconut	tamarind

Flowering	Non- flowering

B. AERIAL, TERRESTRIAL, and AQUATIC

Aerial → air, Terrestrial → land, Aquatic → water

lotus	cattleya	waterlily
bougainvillea	narra	spanish moss

Aerial	Terrestrial	Aquatic



Let's Study This

Like the animal kingdom, the plant kingdom is divided into smaller groups.

A. **Bryophytes** (simple plants)

One criteria of classifying plants is the presence or absence true roots, and leaves. **Bryophytes** or simple plants do not have true roots, stems and leaves.

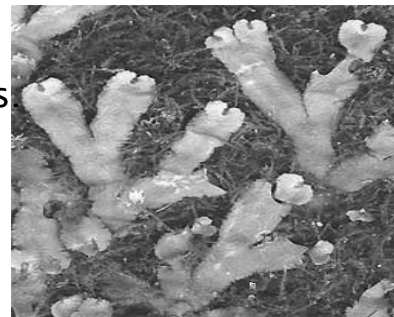
Bryophytes have hairy root like growths called **rhizoids** that anchor the plants to the soil and absorb water and minerals. They lack the tissue that carries water and food throughout the plant.

Bryophytes are a group made up of liverworts and mosses. Mosses grow in such moist, watery, and shady places as forest but there are some that thrive in dry places too.

1. **Mosses** tend to grow in bunches, and they often form dense mats that cover large areas. They usually grow in damp and moist places. Most mosses turn dull brown and appear dead during dry times but they turn green again when rain falls.

Mosses are very important to our environment, animals, and people. They help prevent soil erosion and flooding. They also store minerals and other nutrients. Other plants then use these nutrients to grow.

2. **Liverworts** are moss like plants. You will find these plants along the banks of streams. They are called liverworts because their leaves are like tiny livers

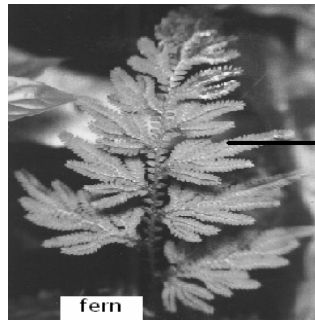


3. Tracheophytes (the highest plants)

Higher plants of the plant kingdom are called **tracheophytes**. They have tree roots, leaves and stems. Some of them do not grow very tall, but they grow taller than the bryophytes.

Tracheophytes means tube plant's roots to the stems and to their leaves. Ferns and seed plants belong to this group.

1. Fern plants - have roots, stems and leaves. Water and food



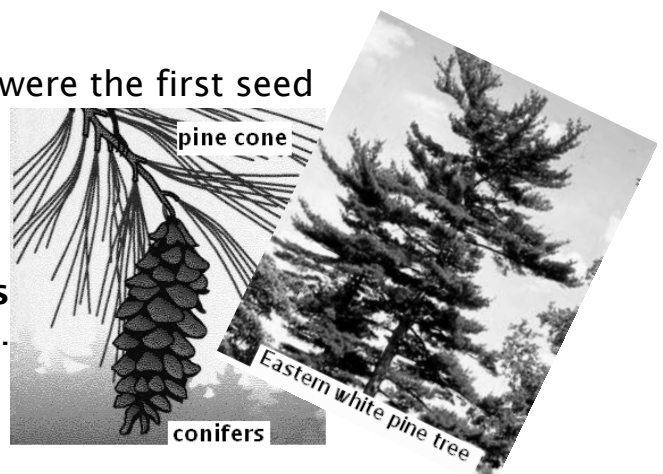
can travel to all parts of these plants. Because of this, ferns grow much taller than mosses. Their leaves are popularly known as **fronds**. On the underside of each fronds, dark cases called **sori** are found. Sori contains many tiny **spores** which are used in reproduction. It reproduces in a process called alteration of generations. It consist of two stages: sexual and asexual reproduction.

Ferns grow in warm, moist places. Some ferns grow in shady places, in the yards and gardens.

2. Seed plants - are the most advanced of all plant groups. They produce or make seeds. They also have Protective coverings over their stems.

Most of the plants that we know are seed plants. It is very large groups of plants. Scientists have divided the seed plants into smaller groups: **flowering and non- flowering plants**

1. Non- flowering plants were the first seed plant group which are not contained in a fruit but are held in **cones**. For this reason, they are called **conifers** or cone- bearing plants.



They produce seeds without flowers and are also called **gymnosperms**.

These plants are **evergreens** because they stay green and keep their leaves even during cold season. The leaves of the conifers are usually needle- like and scale- like. During summer, the old needles fall to the ground and new ones take their place. Some examples of evergreens are the pine and the cypress.

2. **Flowering plants** have true roots, stems and seeds. Their seeds (except a few) are inside the fruits. Fruit trees, bushes, and vegetables belong to this group.

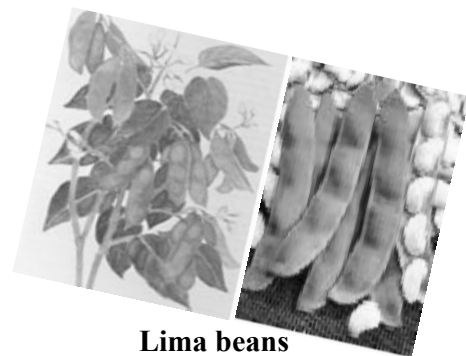


flowering plants

Flowering plants are **angiosperms**. They develop flowers that produce **stamen** (male reproductive organs). After fertilization, the flower develops into a fruit with seed.



Tamarind tree and fruit



Lima beans



Kidney beans



Let's Do This

A. Write B if the plant is Bryophytes and T if it is Tracheophytes.

_____1.



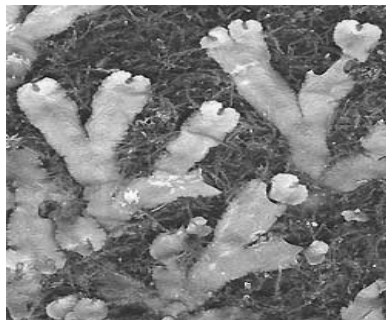
Fern

_____2.



Palm tree

_____3.



Liverwort

_____ 4.



Peat moss

_____ 5.



Pine tree

B. Match column A with column B. Write the letter of the correct answer on the space provided for.

A

B

_____ 1. Non flowering plants that have seeds in their cones

a. Bryophytes

_____ 2. Plants that have protective coverings on stems and produce seeds

b. Mosses

_____ 3. Plants commonly found on water bank and are shaped like smaller livers.

c. Tracheophytes

_____ 4. Simple plants that do not have true roots, stem and leaves

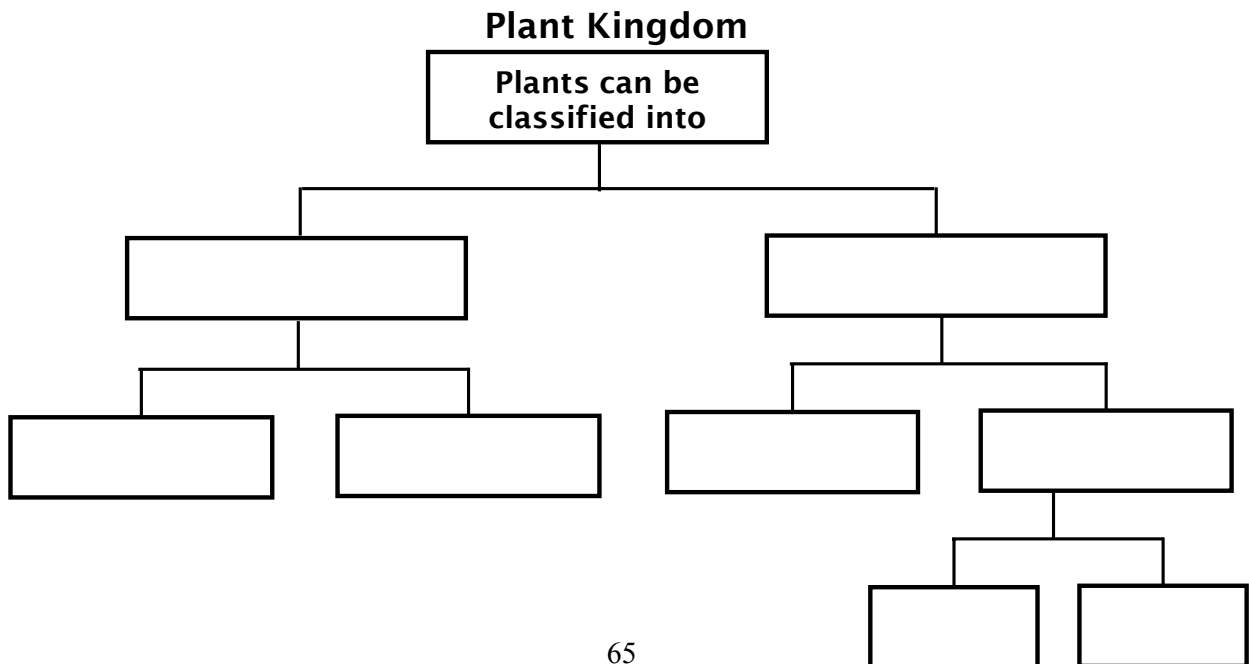
d. Conifers

- | | |
|---|-----------------------------|
| _____5. Plants that grow in bunches and form dense | e. Liverworts |
| _____6. Higher form of plants which have true roots, stem and leaves. | f. Rhizoids |
| _____7. Plants with true roots, leaves and stem can develop flowers | g. Alteration of Generation |
| _____8. The process of reproduction of ferns. | h. Spores |
| _____9. Hairy root-like structures of Some form of plants. | i. Angiosperms |
| _____10. The special cells used in the reproduction of ferns. | j. Seed plant |



Let's Do More

A. Complete the illustration below on the classification of plants. Choose your answer from the box.



Flowering Plants	Tracheophytes	Cone- bearing Plants
Moss Plants	Bryophytes	Fern Plants
Seed Plants	Liverworts	

B. Underline the correct example of a given group of plants.

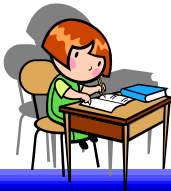
1. Seed plant (fern, moss, cypress, mango)
2. Bryophyte (pine tree, tamarind, liverwort, narra)
3. Cone-bearing plant (cypress, fern, coconut, moss)
4. Flowering Plant (liverwort, gumamela, fern, pine tree)
5. Tracheophyte (moss, liverwort, fern, hornwort)



Let's Remember This

Plants are generally classified according to the absence or presence of plant parts such as the flowers, seeds, fruits, leaves, or stem. They are grouped according to the similarities or differences of the plant parts.

- Plants are classified into bryophytes (simple plants) and tracheophytes (higher plants) based on the presence or absence of true plants parts.
- Bryophytes consist of simple plants: mosses and liverworts. They lack vascular tissues, true roots, stems and leaves.
- Tracheophytes are classified into: Fern plants and seed plants. They have true roots, long stems and leaves.
- Seed plants are classified into: Flowering and Non-flowering plants. They both produce seeds for reproduction.



Let's Test Ourselves

Choose the letter of the correct answer.

1. Which of the following plants bear flowers?

- a. fern b. moss c. cypress d. acacia

2. Which plant does not belong to the group?

- a. corn b. mango c. fern d. banana

3. Why is it important to classify plants?

- a. to preserve their species.
b. to provide work for scientists.
c. to trace the origin of the plants.
d. to show their similarities and difference.

4. How are pine tree, cypress and agoho plant similar?

- a. They live in water.
b. They are cone-bearing plants.
c. They do not have true leaves.
d. They grow in shady and moist places.

5. Here are two groups of plants



I

II



With what group will you put rice? Why?

- a. I, because it has chlorophyll.
- b. I, because it develops flowers that make seeds.
- c. II, because it has cones that produce seeds.
- d. II, because it has true roots, stems and needle like leaves



Science Fact File

Most gymnosperm are trees. Sequoia is a conifer having age of more than 4, 000 years.

Gingko tree in China is an unusual relative of the conifers. Gingko is the only existing living member of an order of gymnosperms common at one time; hence it is called a “living fossil”. Only one specie exist today, Gingko biloba. The Gingko trees are cultivated in the United States as ornamental plants.



Answer Key

Let's try this

A.

Flowering	Non- Flowering
mango	pine trees
coconut	conifers
tamarind	cypress

B.

Aerial	Terrestrial	Aquatic
cattleya	narra	lotus
spanish mess	bougainvilla	Waterlilly

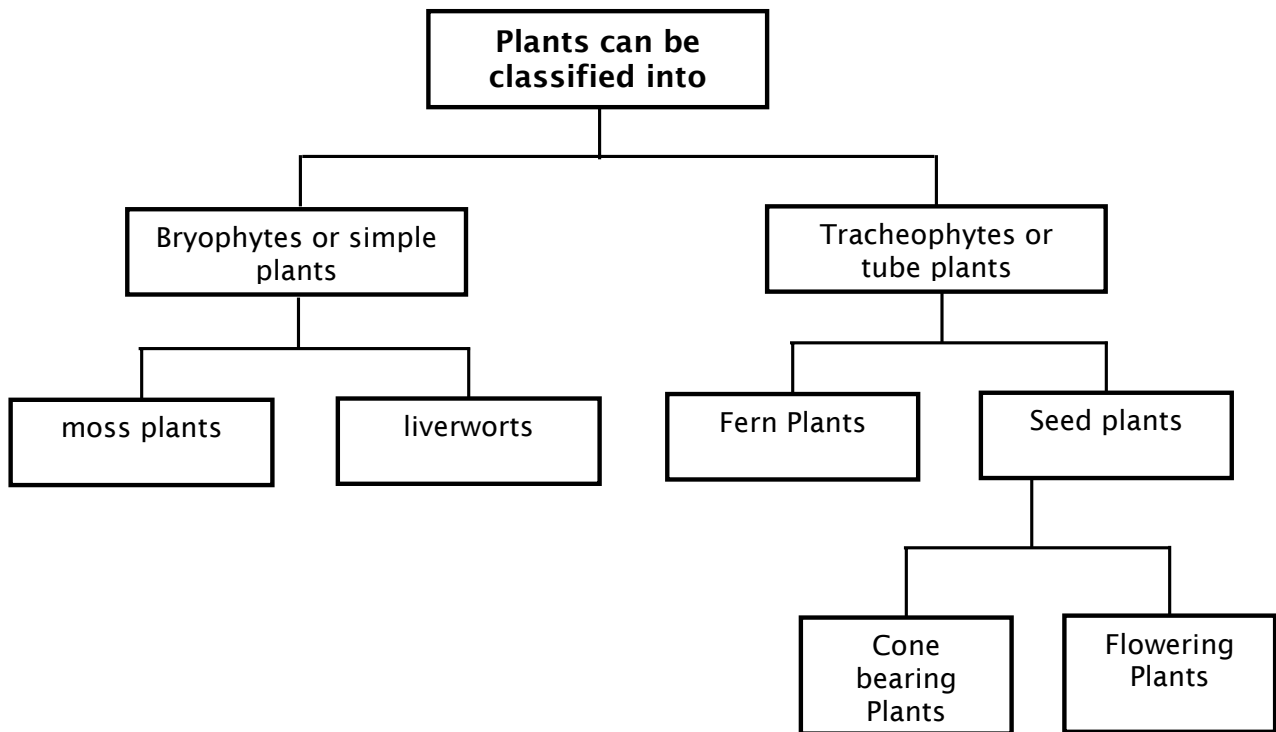
Let's Do This

- A.
1. T
 2. T
 3. B
 4. B
 5. T

- B.
1. d
 2. j
 3. e
 4. a
 5. b
 6. c
 7. i
 8. g
 9. f
 10. h

Let's Do More

A.



B.

1. mango
2. liverwort
3. cypress
4. gumamela
5. Fern

Let's Test Ourselves

1. d
2. c
3. d
4. b
5. b