



Our Vision: Innovative education for a knowledge-based, pioneering, and global society.

Department of Science 2018 - 2019

Second Term: Worksheet 2

Topic 1 Plants: L-1.7 & 1.8 Seeds get around – wind, water, explosion and animals

Grade 5.....

Name:.....

Date:/...../2019

Q.1. Fill in the blanks. Write: **fibrous, fruit, light, hooks, reproduce, winged**

- 1- Plants make seeds in order to **reproduce**.
- 2- The part of the plant that protects seeds is the **fruit**.
- 3- Seeds dispersed by wind are usually **light** in weight.
- 4- Sycamore and maple have **winged** seeds.
- 5- Burdocks have fruits with **hooks**.
- 6- Coconut has a **fibrous** outer covering that helps it float in water.

Q.2. What is seed dispersal?

The spreading or scattering of seeds away from the parent plant is called seed dispersal.

Q.3. Why do seeds need to be dispersed?

Plants make seeds that can grow into new plants, but if the seeds just fall to the ground under the parent plant, they might not get enough sun, water or nutrients from the soil. Without sufficient sunlight, space and nutrients the new plants will die.

Q.4. What are the 4 ways seeds can be dispersal? Give two examples for each mechanism.

- 1- **Seed dispersal by wind – sycamore and dandelion**
- 2- **Seed dispersal by water – coconut and water lily**
- 3- **Seed dispersal by explosion – pea pods and squirting cucumber**
- 4- **Seed dispersal by animals – berries and burdock**

Q.5. Match the following.

1- Seeds dispersed by wind

4 explode when mature, touched, etc.

2- Large seeds

3 stick to animals' fur

3- Seeds with spikes or hooks

1 have hair-like bristles

4- Seed pods

2 store a lot of energy

SEED DISPERSAL

The spreading or scattering of seeds away from the parent plant is called seed dispersal. Plants make seeds that can grow into new plants, but if the seeds just fall to the ground under the parent plant, they might not get enough sun, water or nutrients from the soil. Because plants cannot walk around and take their seeds to other places, they have developed other methods to disperse (move) their seeds.

1- Seed dispersal by wind

Seeds which are often dispersed by wind are smaller seeds that have wings (such as sycamore, maple, pine and fir cones) or hair-like or feathery bristles (dandelions, milkweed and cottonwood trees). They are light and get carried by the wind to far away places.



Seeds in pine cones and fir cones have wings



Maple trees and Sycamore trees also have winged seeds



Dandelion seeds have bristles



Milkweed seeds have fluff of silky hairs that act like a parachute

2- Seed dispersal by water

Plants which grow in or beside water often rely on water to transport their seed. Coconut is fibrous and can float in the ocean for many kilometers till it reaches land. Water lily's flowers make a fruit that floats in the water for a while and then drops down to the bottom to take root on the floor of the pond.



Coconut is fibrous and floats in water till it reaches land and grows into a new plant.



Water lily fruit floats in water, then drops to the bottom of the pond. Some fruits ripen underwater until they rupture or decay and the seeds then float away or sink.

3- Seed dispersal by explosion or expulsion

Some plants such as peas and beans have pods that explode when ripe and the seeds are scattered. Violets, poisonous squirting cucumbers, and touch-me-nots or *Impatiens capensis* have an effective way of dispersing their seeds: They burst! The forceful ejection sends the seeds flying as far away as possible from the original plant.



Pea pods



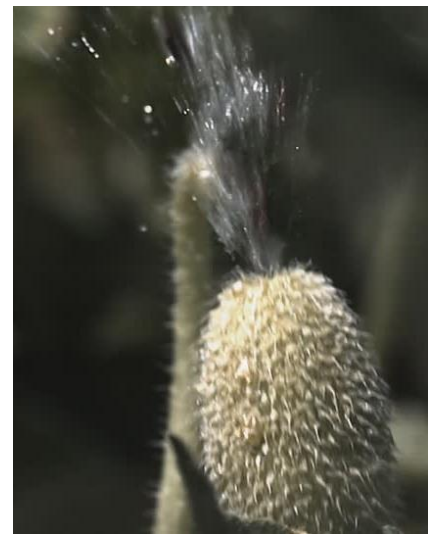
Violet flower pods with seeds



Jewelweed seed pod



Jewelweed seed pod after explosion



Squirting Cucumber refers to the cucumber shaped fruit and the squirting out of the seeds when ripe.

4- Seed dispersal by animals

The seeds of many plants are dispersed after passing through the digestive system of animals such as birds, monkeys, etc. that have eaten them. Some species of plant use hooks or spines on their fruits to attach themselves to the fur of mammals or feathers of birds... or even the clothes of humans! Hard nuts are usually destroyed if chewed or eaten. However, animals such as squirrels may store them to eat later and forget to go back to get them, giving them a chance to germinate. On rare occasions, birds such as blue jays can transport acorns long distances







Fruit eating animals and birds disperse seeds in their droppings.



The fruits of cocklebur (left) and burdock (right) have many spines or hooks.

**Q.6. Write characteristics of seeds dispersed by wind, water, animals and explosion.
Draw and name one example for each.**

Seed dispersal	Dispersed by wind	Dispersed by water	Dispersed by explosion	Dispersed by animals
Characteristics of fruits / seeds.	Seeds are dry, small and light. Some have wings, hair-like bristles or parachute-like fluff of silky hairs.	Have waterproof outer layer or fibrous husks to help stay afloat in water.	Have fruit walls or pods that split open with a sudden force on contact or when ripe.	Juicy, fragrant, sweet or brightly coloured fruit with hard seeds that pass out through animal droppings. Some have spines or hooks that stick to animals' fur or feathers.
Draw examples	 dandelion	 coconut	 pea pods	 burdock

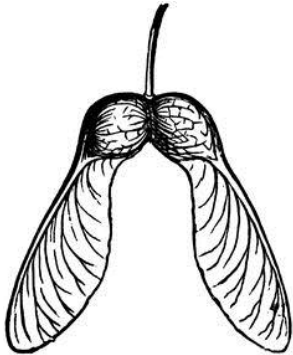
Q.7. What happens when people throw their apple cores or orange pips on the ground when they have finished eating?

.....If the seeds get water and nutrients, they may germinate and grow into a new plants..

.....

Q.8. Identify the following fruits/seeds. Use the words in the box. Write how they are dispersed.

water lily, jewelweed, burdock, dandelion, pea, squirting cucumber,
 pine cone, violet, cocklebur, milkweed, sycamore / maple,



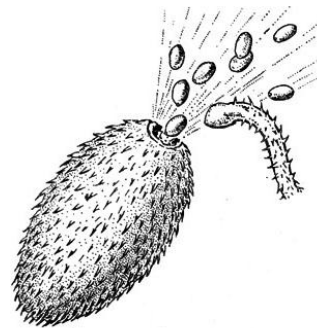
sycamore / maple

wind



dandelion

wind



squirting cucumber

explosion



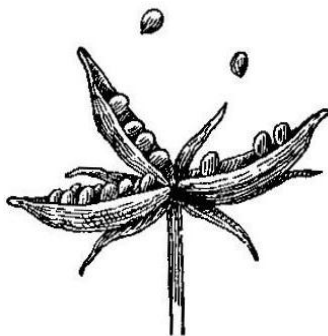
cocklebur

animal



burdock

animal



violet

explosion



pine cone

wind



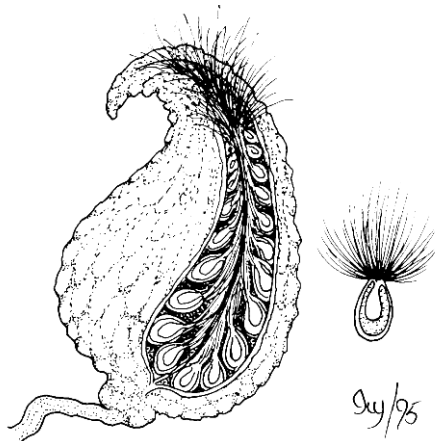
jewelweed

explosion



pea

explosion



milkweed

wind



water lily

water

Watch these important links:

<https://www.youtube.com/watch?v=qRIb7cYWc8k> (Seed dispersal)

<https://www.youtube.com/watch?v=X1Muoz3x3fo> (seed dispersal)

<https://www.youtube.com/watch?v=TpzHF5arj4> (seed dispersal)

<https://www.youtube.com/watch?v=V9NOhqWqz-4> (Tree seed dispersal by wind)

https://www.youtube.com/watch?v=OB0P3mx_lxY (seed dispersal by explosion)

<https://www.youtube.com/watch?v=nHqHSpZhjeY> (exploding seed pods)

<https://www.youtube.com/watch?v=4WCkHVwRaCs> (exploding pod – slow motion)

<https://www.youtube.com/watch?v=8ZLv3xAjH3Q> (seed dispersal by animals- seeds with hooks and spikes)