مشروع بناء برامج تعويضية

لصعوبات تعلم المواد الدراسية للاجئين السوريين

لبنان – الأردن – تركيا (الداخل السوري)

الدليل المرجعي

لصعوبات تعلم العلوم

للحد من الفاقد التعليمي لدى اللاجئين السوريين

4

الصف الرابع الابتدائي

الدليل المرجعي
لصعوبات تعلم العلوم
4
الصف الرابع الابتدائي

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معلمة العلوم في مدارس الكويت الخيرية

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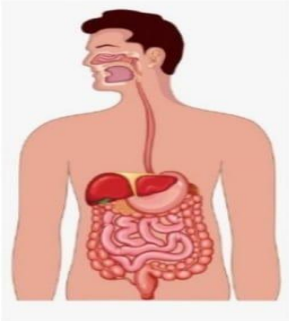
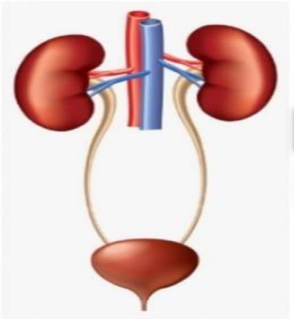
معلم العلوم في مدارس الكويت الخيرية

تدقيق ومراجعة

أ/ نسرين قاسم

منسقة العلوم في مدارس الكويت الخيرية





Worksheet 1

Topic: Systems of the body: Digestive System & Excretory system

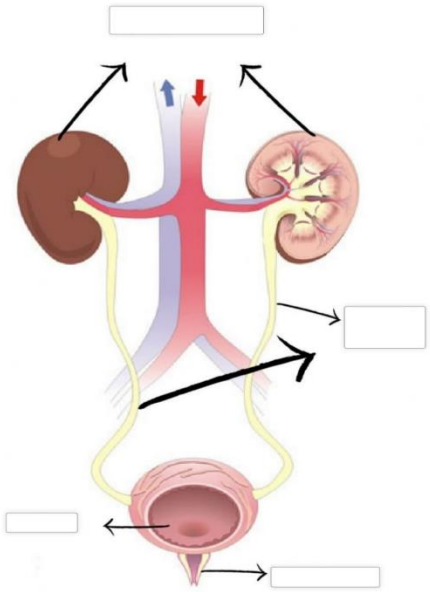
K	W	L
What do you know?	What do you want to know?	What did you learn?

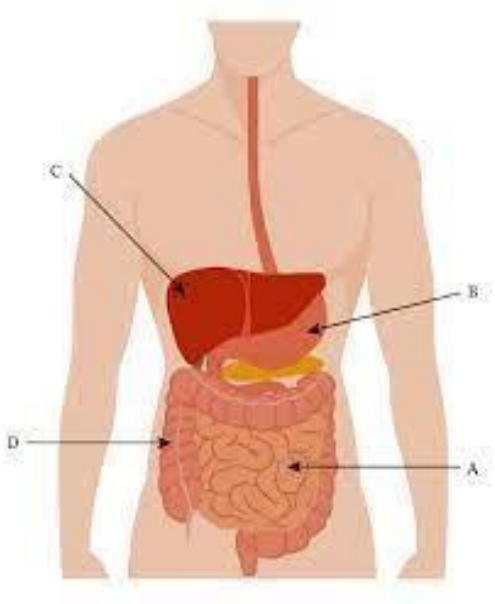
Worksheet 2

Dear student, given two systems of our body

1. Indicate which is digestive system and which is the excretory system.
2. Label each system by using words from the parenthesis.

(stomach, liver, kidneys, large intestine, bladder, small intestine, ureter, esophagus, anus).





Worksheet 3

Match the function in the column (A) to the organ responsible for it in (B)

Column (A)	Column (B)
Chewing food	Small intestine
Elimination of the waste such as urea.	Esophagus
Transfer food from mouth to stomach.	Teeth
Transfer urine to the bladder .	Skin
Absorption of water and get rid of the waste.	Bladder
Secretion of the digestive enzymes to mix food.	Kidneys
Eliminate the sweat and regulate body temperature .	Ureters
The duct which absorbs the nutrient.	Large intestine
Store the urine and eliminate it through urination .	Stomach

Slide 1

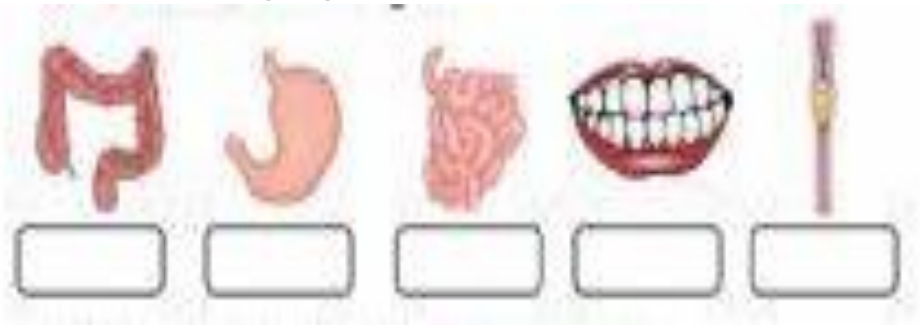
Below is a set of statements about the organs of the human body. Indicate which statement is true or false.

No	Sentence	Yes	No
1	The digestive system transports the oxygen to the cells of the body.		
2	The large intestine is responsible for absorbing food.		
2	The small intestine is responsible for excreting Waste .		
4	The intestine was found inside the stomach .		
5	Only the necessary food is absorbed in the intestines.		
6	Food is excreted through the intestine.		
7	The kidneys only transport urine to the bladder .		
8	The ureter collects urine .		
9	Kidney pain is always accompanied by back pain .		
10	Sweat is not considered as a form of excretion in the body .		
11	The skin is an outer covering that covers the human body. It is made up of unconsolidated small cells.		
12	The epidermis is the inner layer of the skin , and the dermis is the outer layer of the skin .		

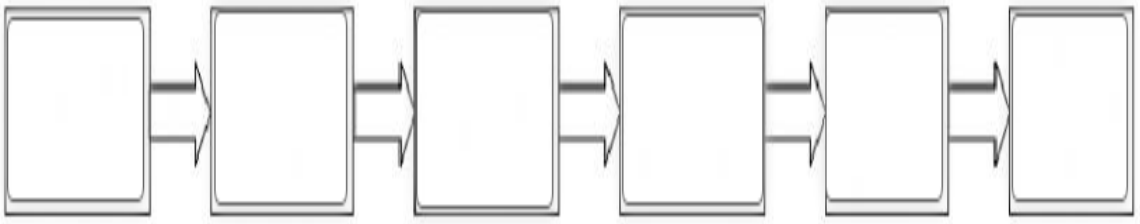
Worksheet 4

1. Circle the words that belong to the digestive system & to the digestive process:
   (Small intestine - Oxygen - Urine - Sweat - Stomach - Trachea - Waste - pancreas - Esophagus - Large intestine - Nose -Mouth -Teeth)

2. Name the following organs.



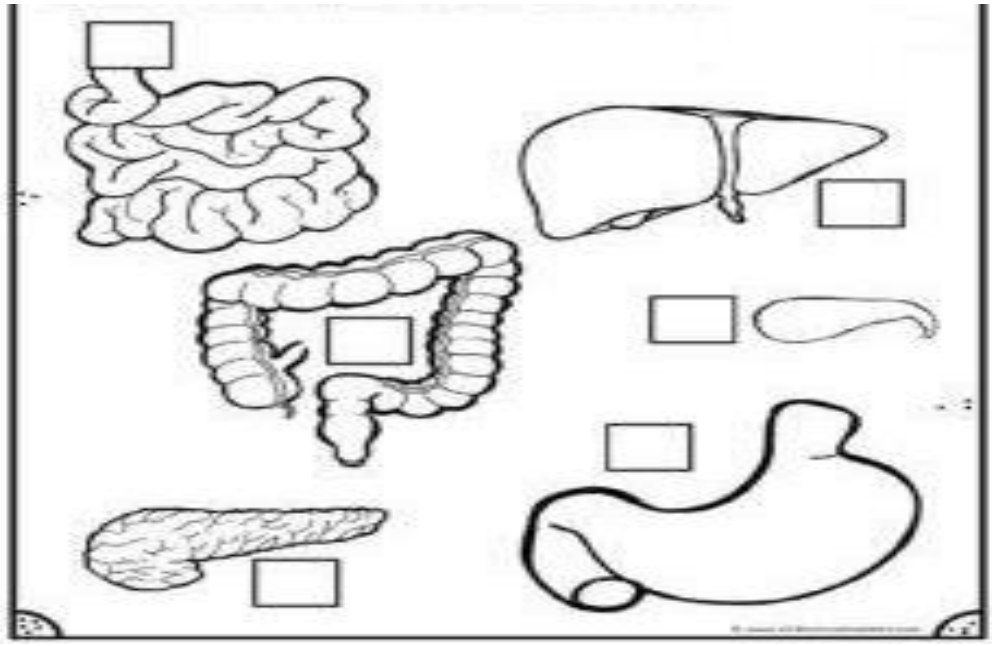
3. Complete the following diagram with the names of the organs of the digestive tract.
   (large intestine - rectum - mouth - small intestine -stomach - esophagus) .



Worksheet 5

Label the organs with the correct number.

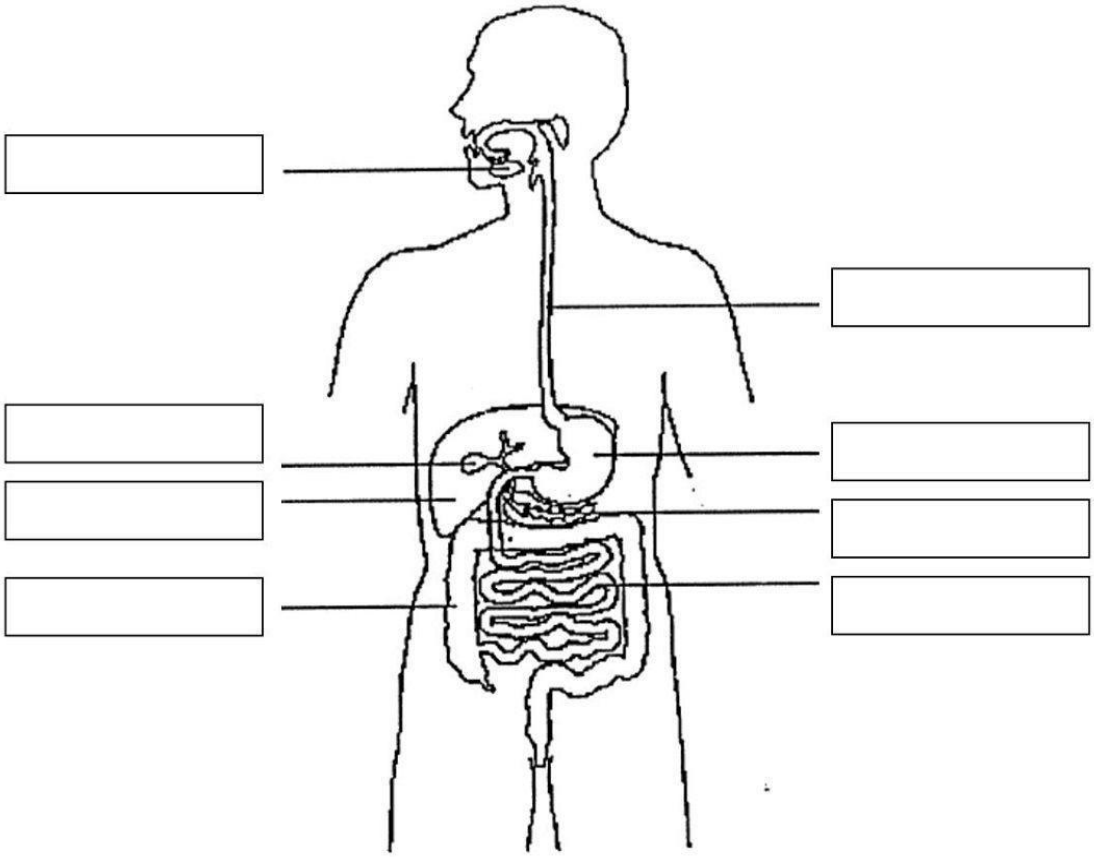
1. Liver
2. Small Intestine
3. Large Intestine
4. Gallbladder
5. Stomach
6. Pancreas



Worksheet 6

Label the digestive system by words from parenthesis.

(Esophagus - salivary glands - Stomach - Small intestine - Liver - Large intestine - pancreas - gallbladder) .



Worksheet 7

Indicate the parts of the digestive tube and color them in red, and indicate the digestive glands and color them in blue.

Esophagus	Liver	Mouth
Stomach	Rectum	Large Intestine
Salivary gland	Pancreas	Anus
	Gallbladder	Small Intestine

Worksheet 8

Read the following sentences of the function of the digestive system organs, and then choose the organ that is responsible for each of the following functions (You can choose from the organs in the parenthesis).
(Small intestine - Large intestine - Esophagus - Stomach - Liver - Pancreas - gallbladder - salivary gland).

1- (…….) transfers the food from mouth to stomach.
2- (…….) transfers the nutrient to the blood.
3- (……..) secretes acid to digest food.
4- (……..)Secretes the digestive enzymes in the small intestine.
5- (……..)Secretes saliva that helps the mouth in the digestive process.
6- (……..) Secretes the enzymes that regulate the average of sugar in the body.
7- (……..) Stores the bile secreted by the liver.
8- (……..) is responsible for absorption of water from undigested food.

Worksheet 9

Arrange the following sentence to describe the stages of digestion process:

	Digestive process
	Mix the food with the digestive juices in the stomach .
	Eliminate the waste through rectum.
	Crush food in the mouth and mix it with saliva
	Mix food with bile and absorb it in small intestine
	Transfer food to the stomach through esophagus
	Undigested food is transferred into the waste in the large intestine .

Worksheet 10

1- Choose the suitable word from the parenthesis to complete the steps of digestive process:
(Mouth - Teeth - Saliva - esophagus - enzymes - Small intestine - Blood - large intestine - Water - rectum - Anus) .

Digestion starts in ……. where food is broken down by ……. , then is secreted by ……. . Then the body swallows the food and it passes through …….. to the stomach, where …… is added to break the food. Then the food transfers to the ……. where the food is absorbed, then the food transfers to ……. , The undigested food passes through ……., where it is eliminated …….. before reaching the …….. then the undigested food is got rid of by …….

2- Choose the definition of digestion which is found in the parenthesis, then arrange its steps.

(eliminate waste - digestion - absorption)

(.....) The small intestine transports nutrients into the blood.
(.....) The mouth, esophagus and stomach have an important role in helping our body to do this process.
(.....) The large intestine and rectum transfer the undigested food into waste.

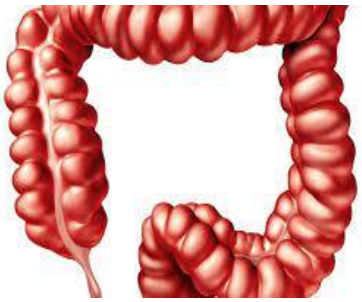
Worksheet 11

Dear student, choose the organs of the excretory system from the following pictures

Ear

Lungs

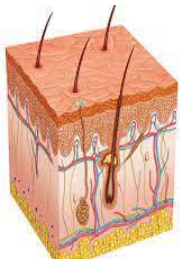
Large Intestine



Stomach

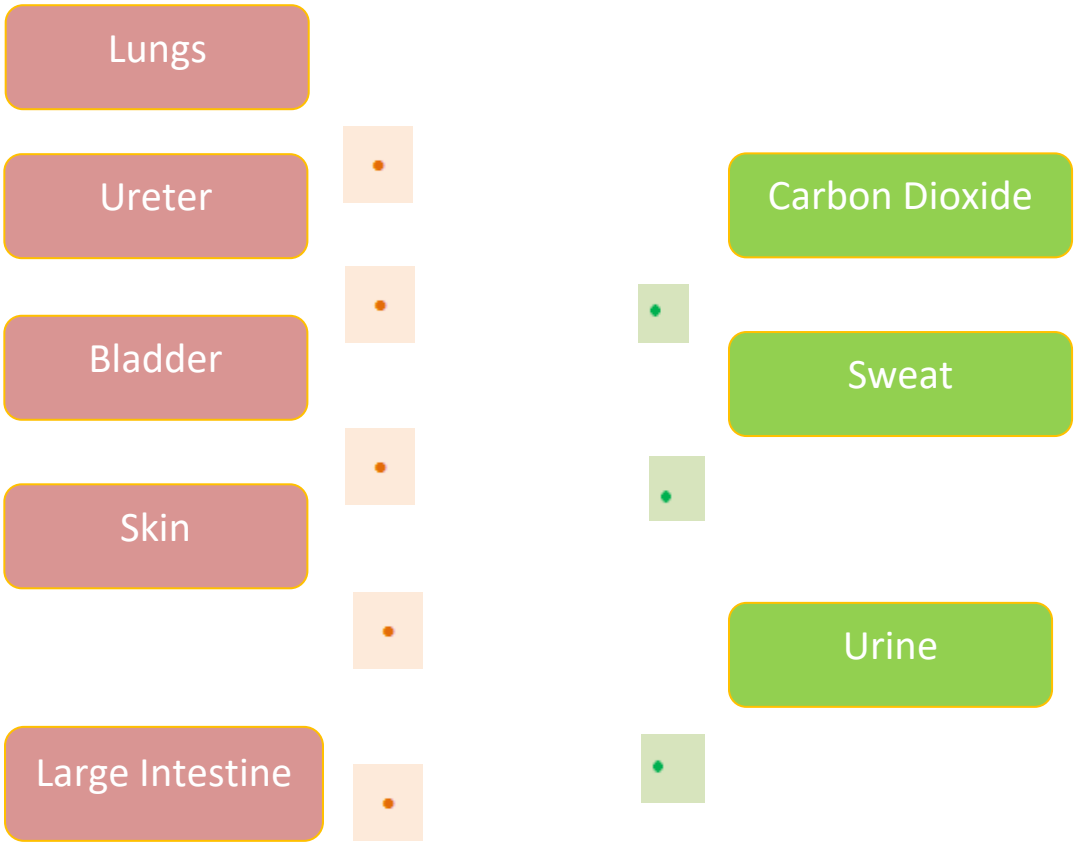
Kidneys

Skin



Worksheet 12

Dear Student, match each of the types of excretion in your body to the excretory organ responsible for.



Worksheet 13

Dear student, label the organ of urinary system.

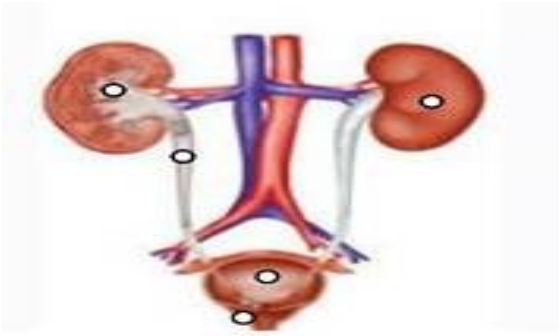
Ureter

Urethra

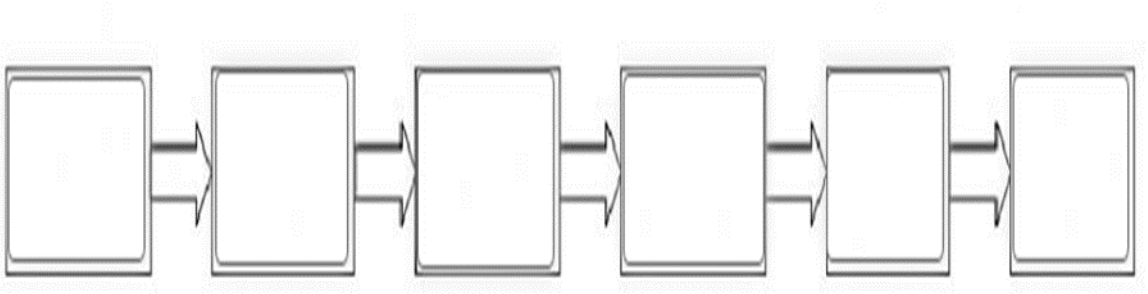
Right Kidney

Left Kidney

Bladder



Complete the pathway of the urine in the urinary system.



Worksheet 14

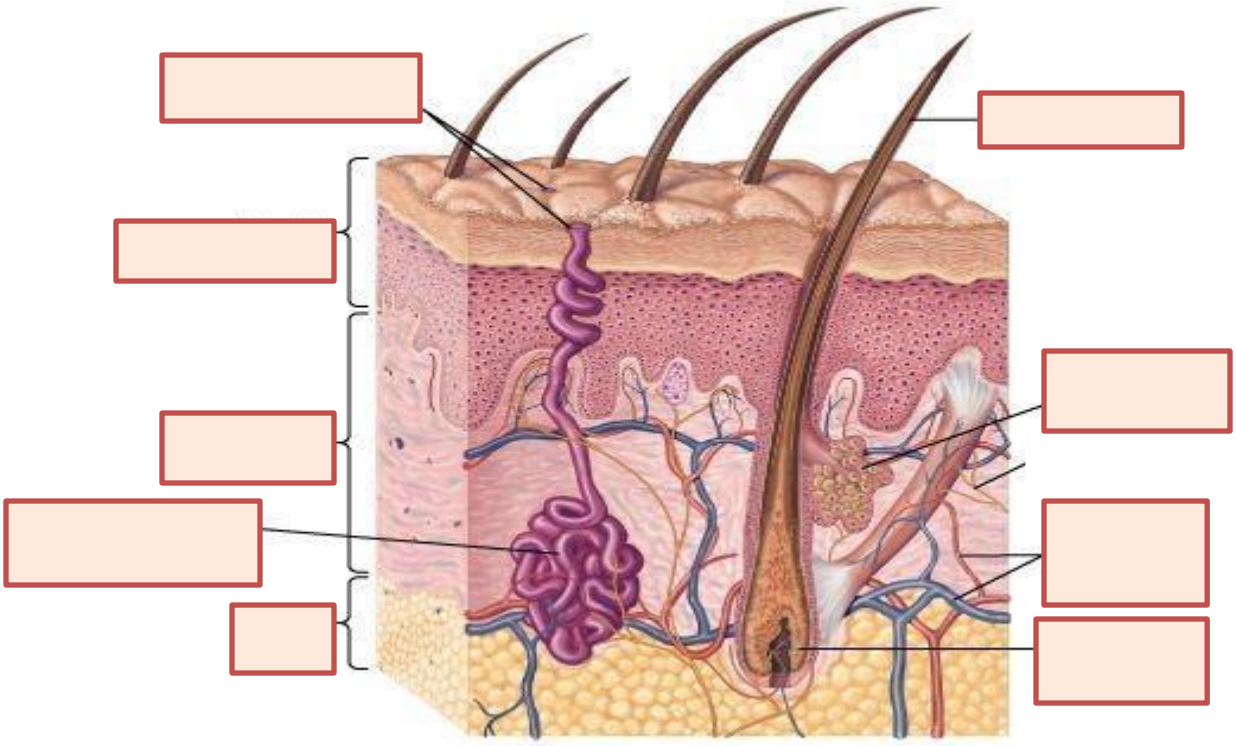
Dear student, read the following steps of excretory system, and arrange them in order.

- Transfer urine to the bladder
- Eliminate wastes from the body through anus
- Kidneys get rid of the wastes
- Blood goes to the kidneys
- Urine pass to the ureters
- Urine comes out from the urethra

Worksheet 15

1- Dear student, label the figure of skin .Use the words from the box:

Hair - Pores - Epidermis - Dermis - Fat - Sweat gland - Sebaceous gland - Hair follicle - Blood vessels .



Worksheet 16

Read the following daily habits and indicate the good and the bad one for the digestive and excretory systems.

1- Eat fast food like burgers.
2- Exercise regularly.
3- Drink enough water daily.
4- Drink juice with artificial sugar.
5- Don't sleep enough at night and lack of regulation of sleep hours.
6- Smoke
7- Eat Vegetables and fruit.
8- Brush your teeth with toothpaste.
9- Drink Soda regularly.
10- Eat a lot of Chocolate.
11- Take aspirins and paracetamols excessively.
12- Wash hands with soap & water.
13- Eat uncovered food.
14- Swallow food without chewing.

Good habits to the digestive and excretory system.	Bad habits to the digestive and excretory system.

Worksheet 17

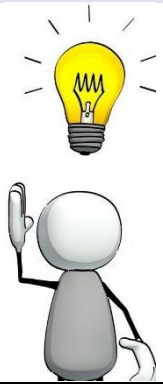
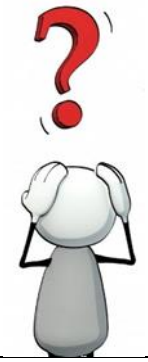
Read the following daily habits and indicate the good and bad habits for the Skin .

1-Use sunscreen with high protection.
2-Scratch the skin in case of a skin disease.
3- Clean the face frequently with soap and water.
4- Use cream for the skin of unknown origin.
5- Stay away from moisturizing creams.
6- Visit a doctor when you have a skin disease.
7- Continuous take care of the area around the eyes.
8- Always use alcohol to disinfect your hands.
9-Use burn ointments when you have a burn in the skin.
10- Avoid using a rough sponge on the skin.
11- Deal with all skin types in the same manner .
12- Use deodorants.

Good habits for skin	Bad habits for skin

Slide (1)

Learning Table

K What do you know about animals?	W What do you want to know about the animals?	L What did you learn about animals?
		

Worksheet (1)

Diagnosis Assessment

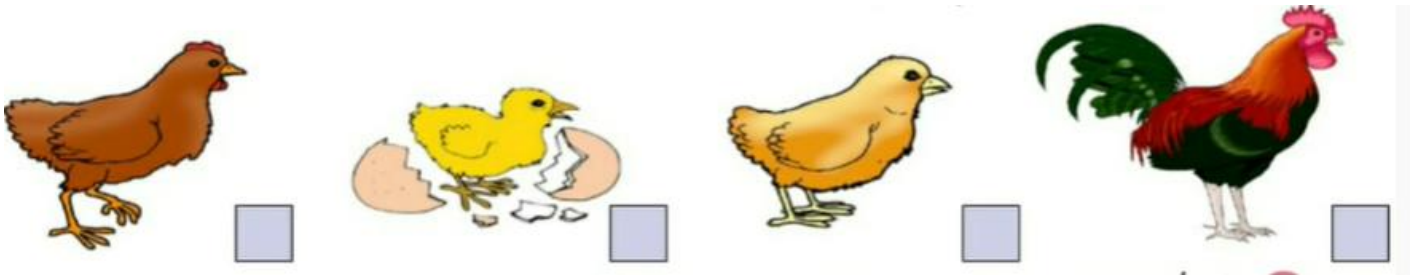
Here is a set of phrases describing animals, indicate which statement is true and which is false:

N	Statement	True	False
1	Animals do not change as they grow.		
2	Life cycle of an animal is birth, growth and death.		
3	Life cycle of an animal is the same in all animals.		
4	The stages of frog growth are: eggs- tadpole- young frog- adult frog.		
5	All animals are identical to their parents.		
6	Budding and fragmentation are two types of sexual reproduction in an animal.		
7	Sexual reproduction needs both male and female.		
8	Some insects including the grasshopper undergo complete metamorphosis.		
9	A bud forms quickly and transform into a new animal.		
10	The cell cycle of bee is egg- larva-pupa and adult. This is a complete metamorphosis.		
11	Animals increase in weight and height as they grow.		

Worksheet (2)

Growth of Animals

1. Arrange the stages of chicken growth by writing the numbers 1,2,3 and 4 in the appropriate box.



2. Fill in the blanks with the following:**(height – increase- weight)**
   During growth stage, chicken's body ……..in…… and ……..

Slide (2)

Growth of Animals

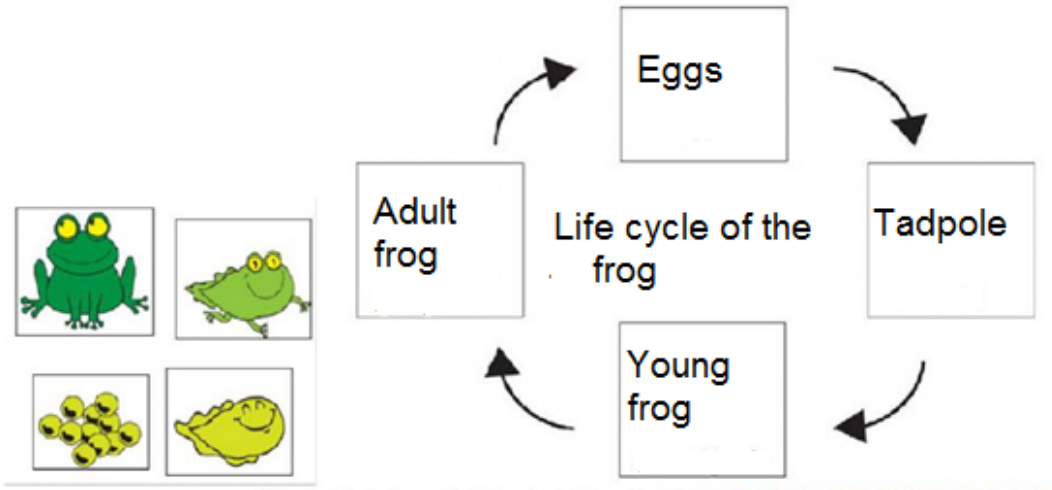
Worksheet (3)

Join the following link and arrange the animals according to their growth:

Worksheet (4)

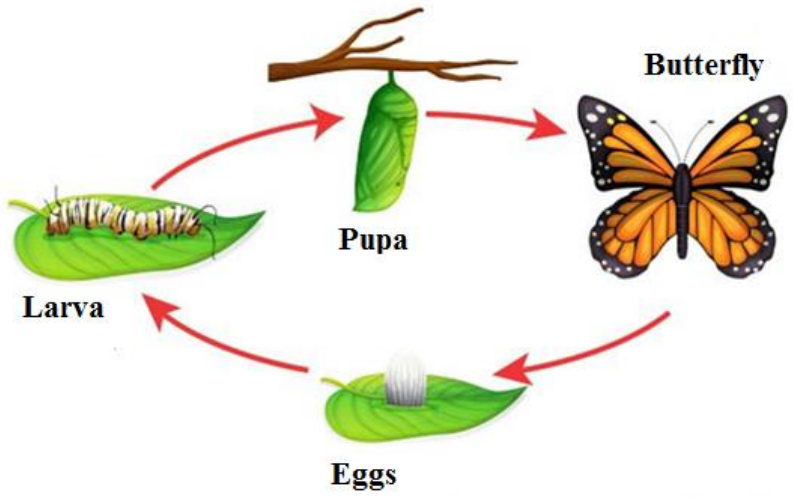
Life Cycle of the Frog

Cut and paste the picture in the suitable place according to the life cycle of the frog:

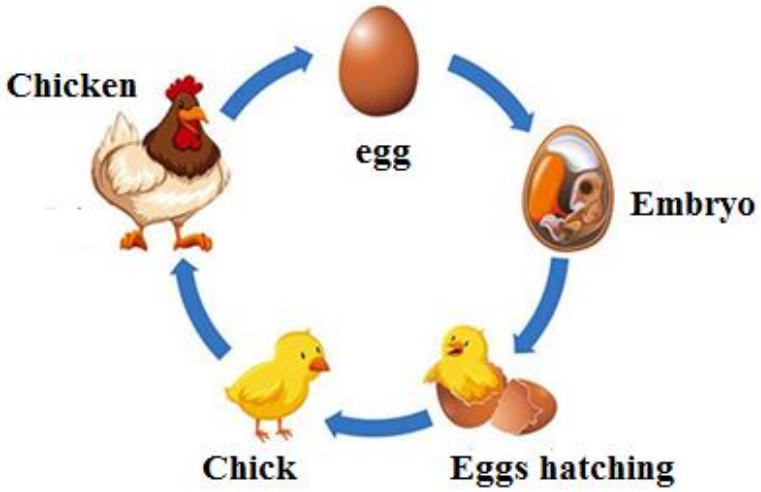


Slide (3)

Life Cycle of the Butterfly



Life Cycle of the Chicken



Worksheet (5)

Animal's Life Cycle

1. Observe the following figure:

1 2 3 4

a. What does this figure represent? .....

b. What is the name of the animal shown in the figure?

.....

c. Name the stages shown in the figure.

1: .....
2: .....
3: .....
4: .....

2. List the stages of the butterfly's life cycle.

.....

.....

.....

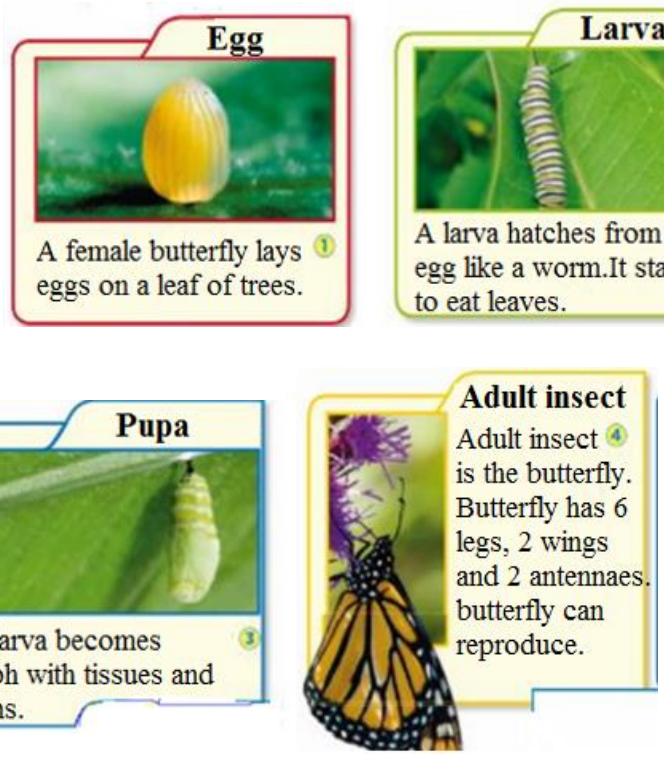
Worksheet (6)

Assessment

Choose an animal you prefer, then draw and color its life cycle.

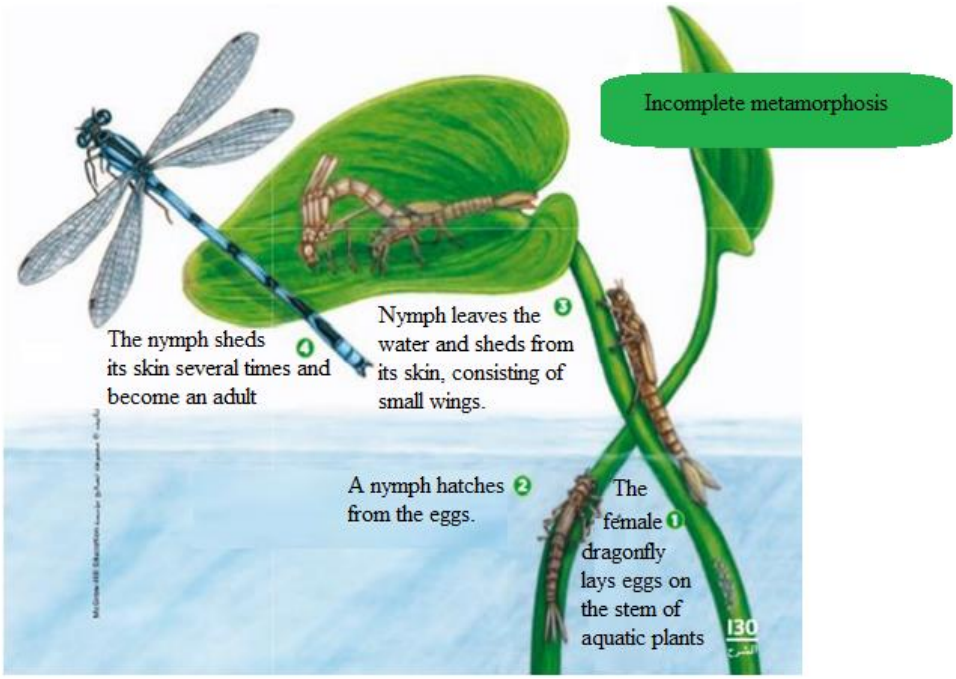
Slide (4)

Complete Metamorphosis



Slide (5)

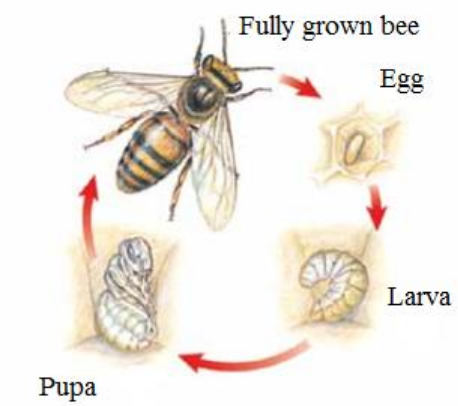
Incomplete Metamorphosis



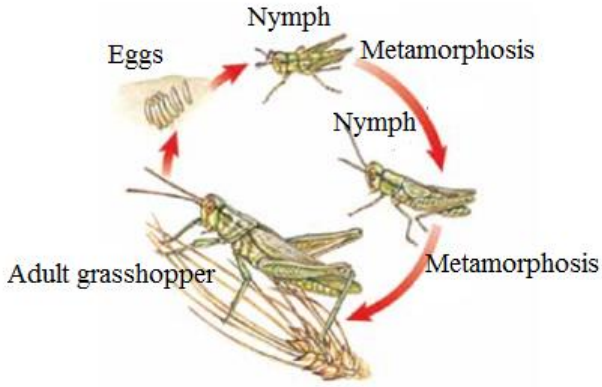
Worksheet (7)

Complete and Incomplete Metamorphosis

Observe the figure then fill in the Venn-diagram

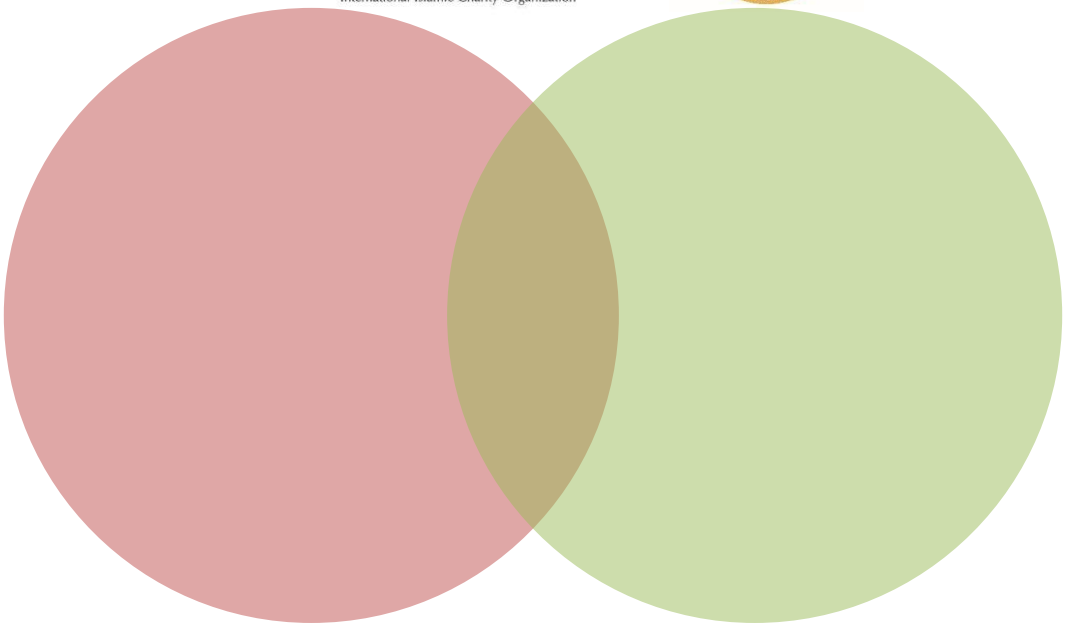


Bees and many insects go through four stages of complete metamorphosis.



Some insects including the grasshopper go through incomplete metamorphosis.

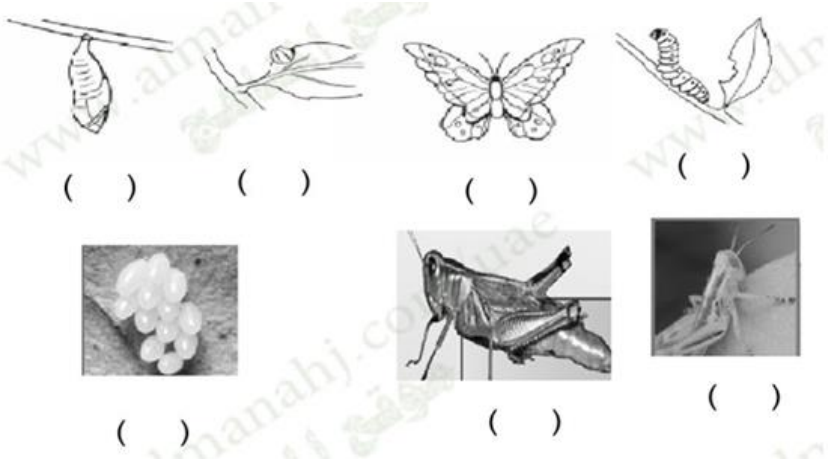
(Complete metamorphosis) (Similarities) (Incomplete metamorphosis)



Worksheet (8)

Complete and Incomplete Metamorphosis

Question1: Arrange the life cycle stages of butterfly (complete metamorphosis) from 1 to 6:



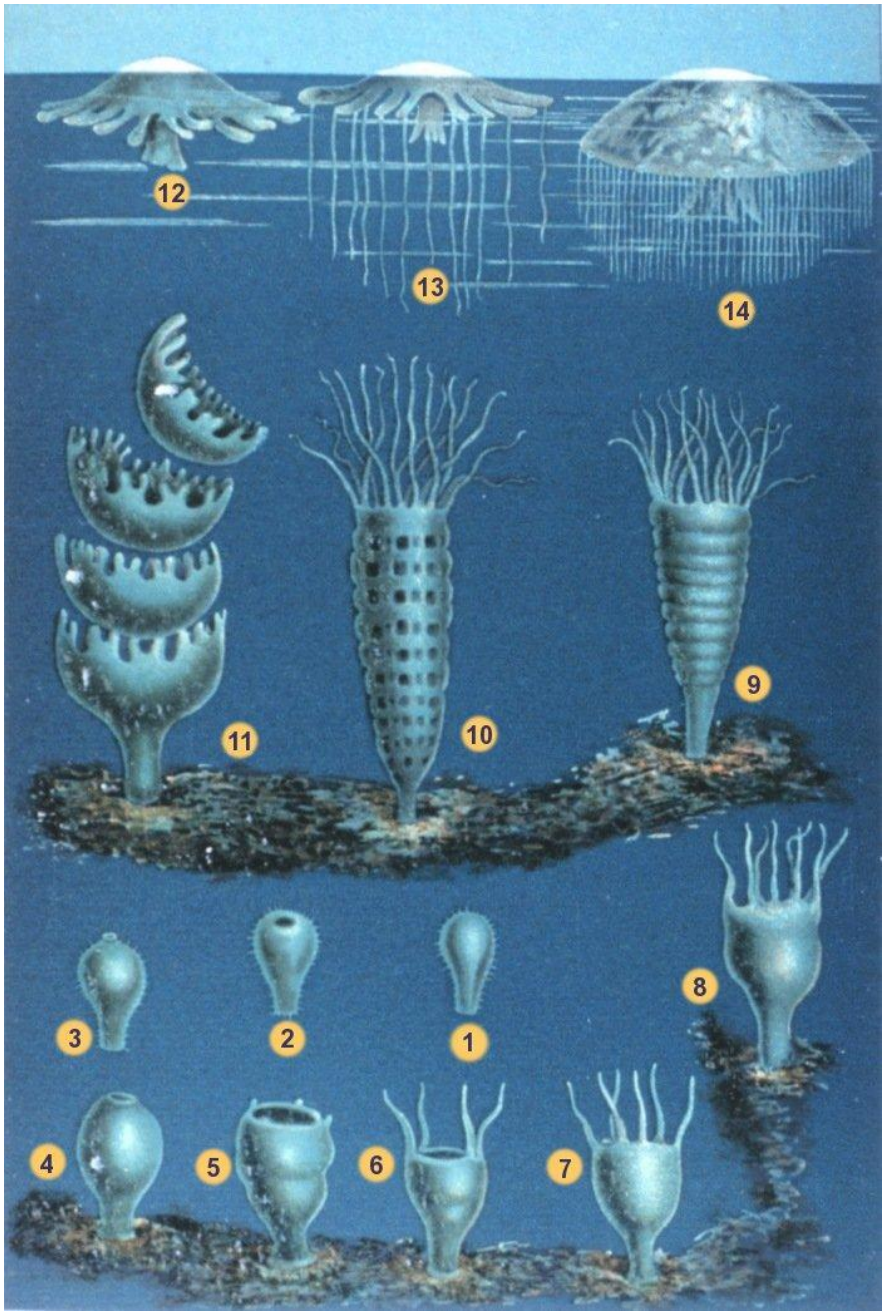
Question 2: Classify the following living according to type of metamorphosis

(Flies- White ants – Mites – Bedbugs – Locust – Beetles – Butterfly)

Complete metamorphosis	Incomplete metamorphosis

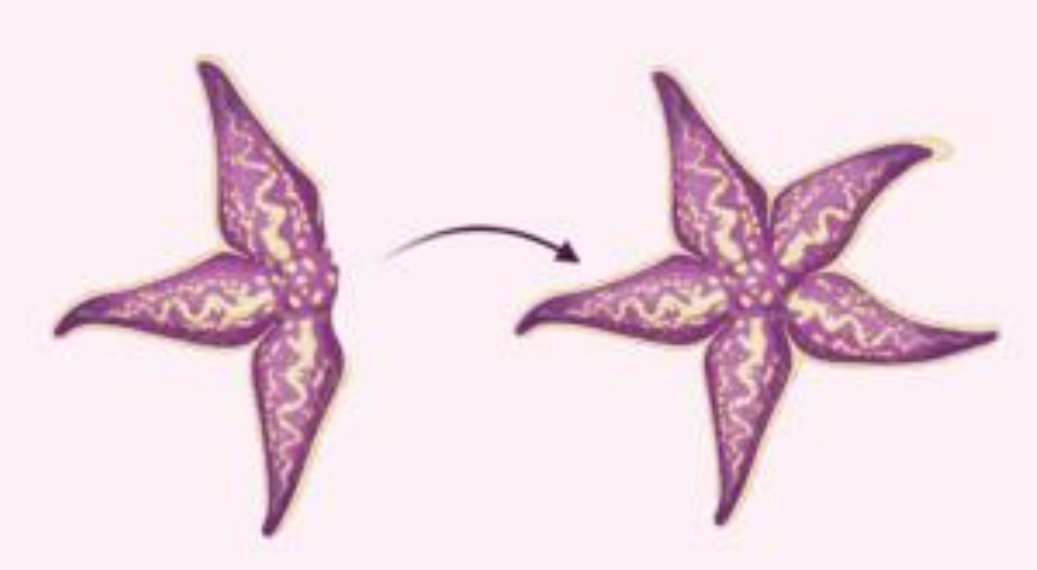
Slide (6)

Cnidarians Reproduction



Slide (7)

Fragmentation



Worksheet (9)

Fragmentation and Budding

Question 1: Put the correct method of reproduction under the appropriate picture:

Budding

Fragmentation

Question 2: Fill in the blanks with the suitable words

One parent | Identical | Starfish | Hydra

1- The offspring is ……..to her parents.
2- ……. reproduce by budding.
3- Reproduction in cnidarians and invertebrates occurs in the presence of a ……
4- ……. reproduce by fragmentation.

Worksheet (10)

Draw a scheme to show reproduction by fragmentation and reproduction by budding:

Reproduction by fragmentation	Reproduction by budding

Worksheet (11)

Final evaluation

Question one: Fill in the blanks with the suitable words:

a. The stages of animal growth are ..... , ... , ... , and .....
b. Animals reproduced by one parent is ..... reproduction.
c. Animals reproduced by both parents is ..... reproduction.
d. The types of asexual reproduction are ..... and .....
e. Bees undergo ..... metamorphosis while the grasshoppers undergo ..... metamorphosis.

Question two: match each animal to its reproduction type

Cnidarians	Fragmentation
Starfish	Budding
Invertebrates	
Echinoderms	

Question three:

Based on your acquired knowledge, write the similarities and the differences between the growth of a butterfly and that of frog.

.....
.....
.....
.....

Worksheet 1

Learning Table

Topic: Reproduction in Plants.

K W L

What do you know about plants' Reproduction?	What do you want to know about plants' Reproduction?	What did you learn about plants' Reproduction?
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
		

Worksheet

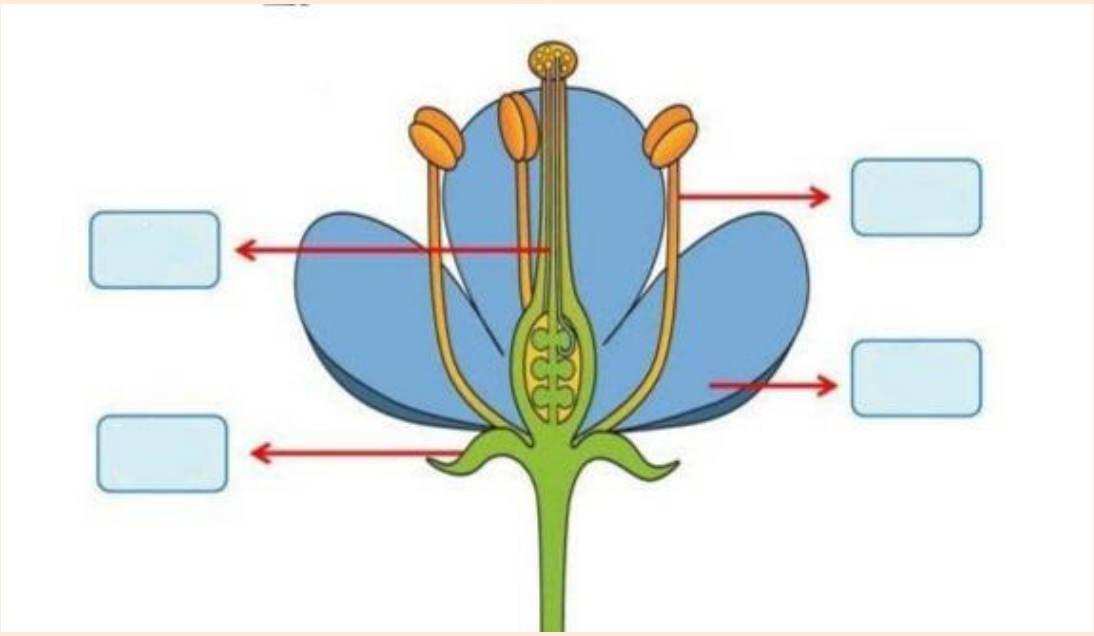
Here is a set of statements that describe plants. Indicate which statement is true and which is false:

No.	Statements	True	False
1	Flowering plants reproduce only by asexual reproduction.		
2	Sexual and asexual reproduction in a plant occur in flower.		
3	Seed-dispersal occurs by water only.		
4	Pollination is the transfer of pollen grains from the anther to the stigma.		
5	Asexual reproduction occurs in different parts of the plant.		
6	Grafting is one of the methods of asexual reproduction in plants.		
7	Propagation by Cuttings is one of the methods of sexual reproduction in plants.		
8	Plants fruits are made up of flowers.		

Worksheet 3

Dear student, Label the parts of the flower in the following diagram:

Pistil | Stamen | Sepals | Petals

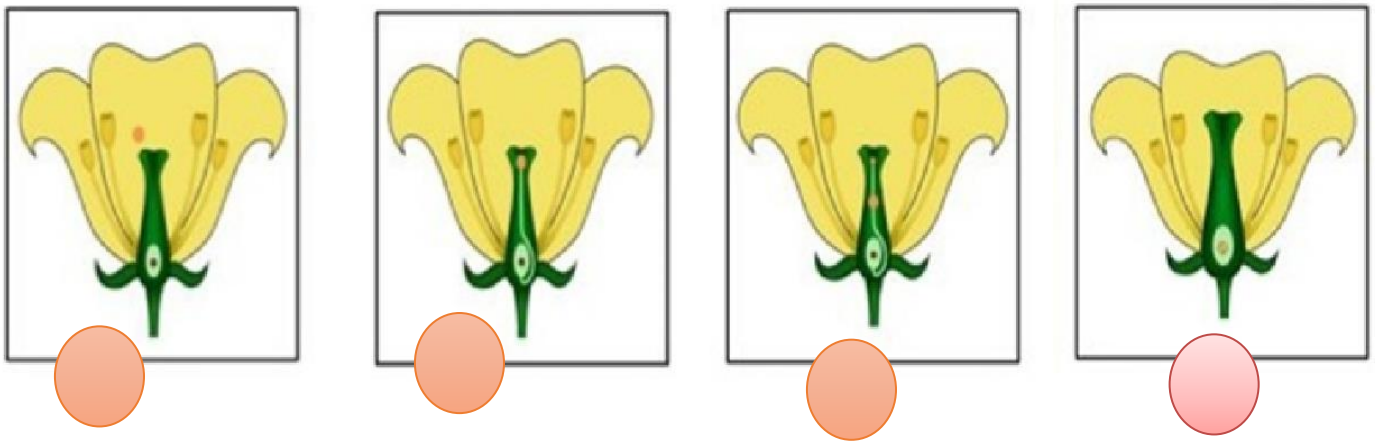


Worksheet 4

Dear student, match the words with the appropriate phrases:

Transfer of pollen grains from the anther of a flower to the stigma of the same flower.	Fertilization
The union of the pollen grain with the ovule.	Cross-pollination
Transfer of pollen grains from the anther of one flower to the stigma of another flower.	Self-pollinating

Arrange the stages of pollination in flowering plants



The union of the pollen grain with the ovule to form the seed

The growth of the pollen tube and its elongation to the ovary

Travelling of the pollen grain down the ovary through the tube

Transfer of the pollen from the stamen to the pistil

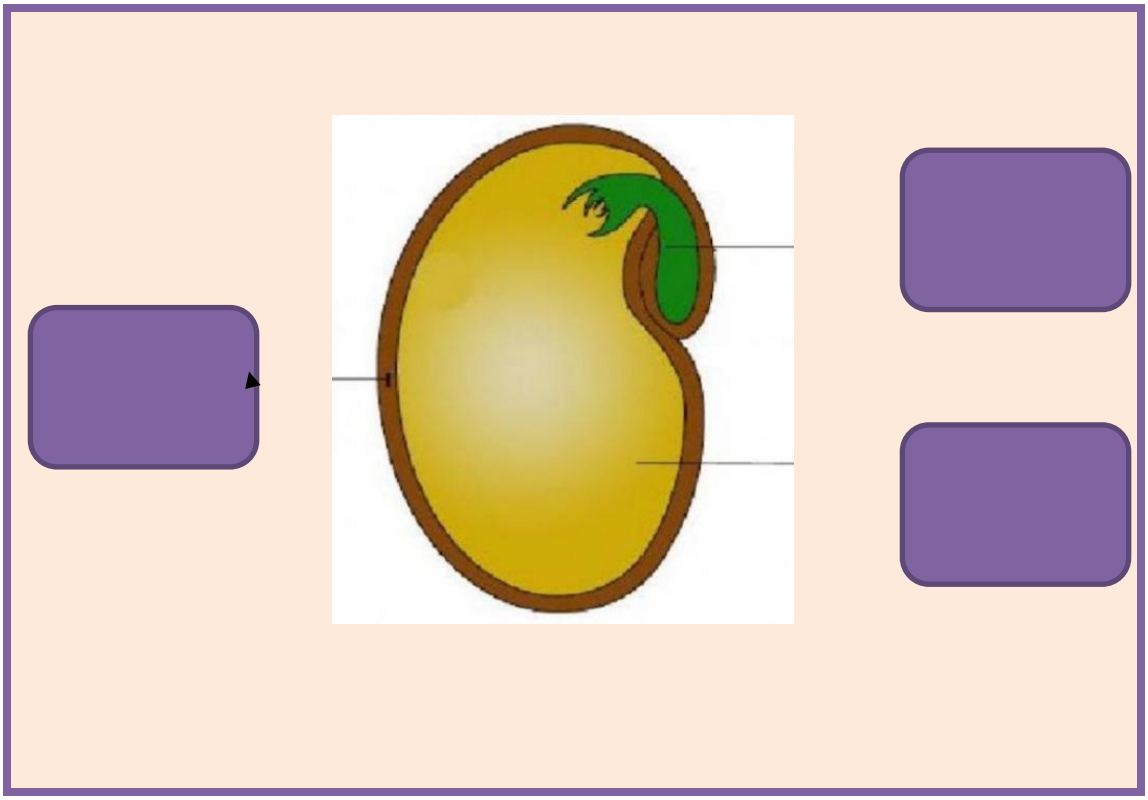
Worksheet 6

Dear student, label each part of the seed:

Seed Coat

Embryo

Stored Food



Worksheet 7

Dear student, match the seed with the way of its dispersion

Water

Animals

Wind

Worksheet 8

For both sexual and asexual reproduction in plants, put the appropriate term in the table:

pistil	the seed	Propagation by Cuttings	fertilization	Grafting	Pollen grain

Asexual reproduction in plants	sexual reproduction in plants
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

Worksheet 9

The figure shows the stages of the growth of apple tree, label the following figure

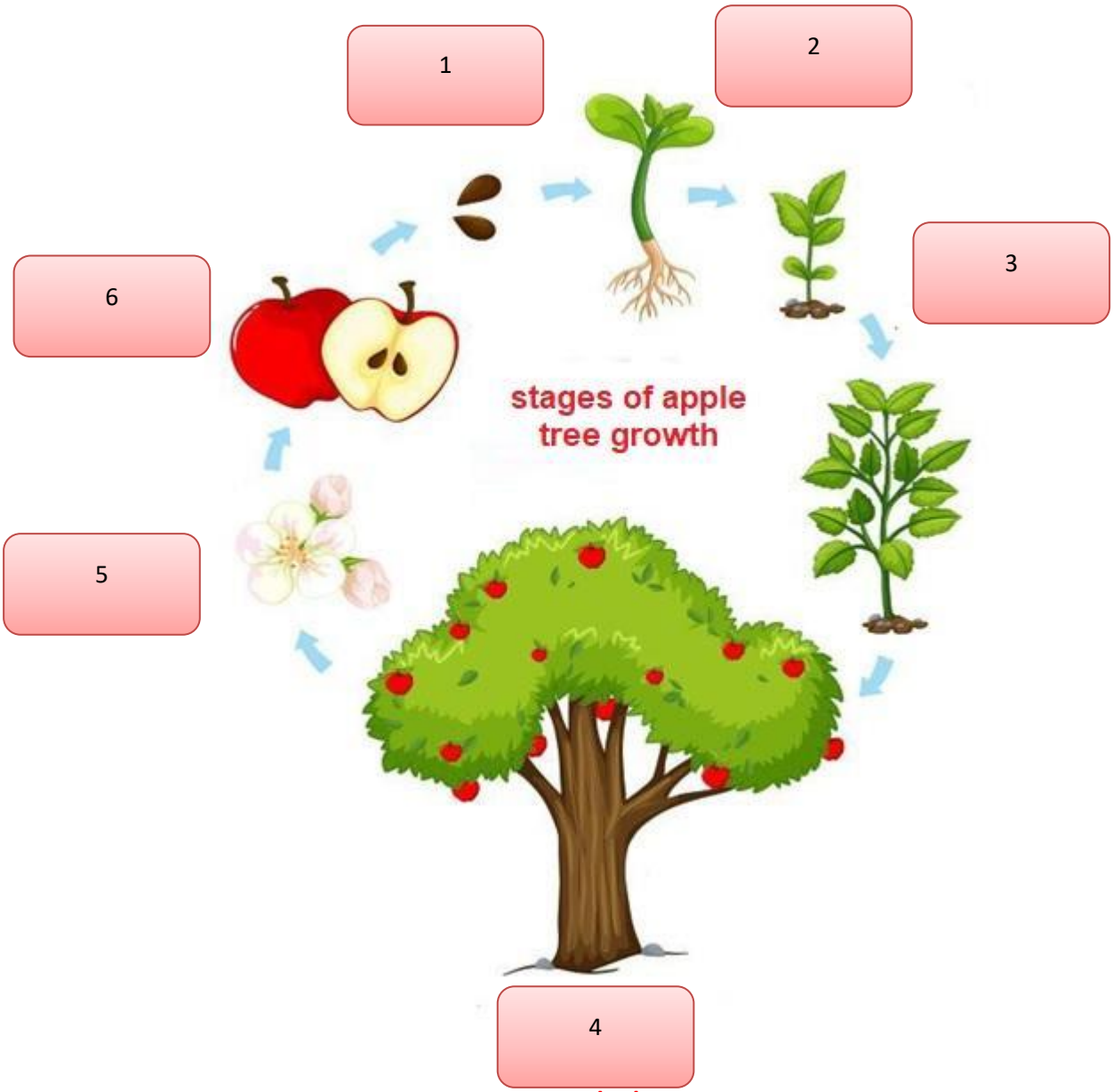
التميز الإنساني
Humanitarian Excellence

الهيئة الخيرية الإسلامية العالمية
International Islamic Charity Organization

ISFD

IsDB
البنك الإسلامي للتنمية
Islamic Development Bank

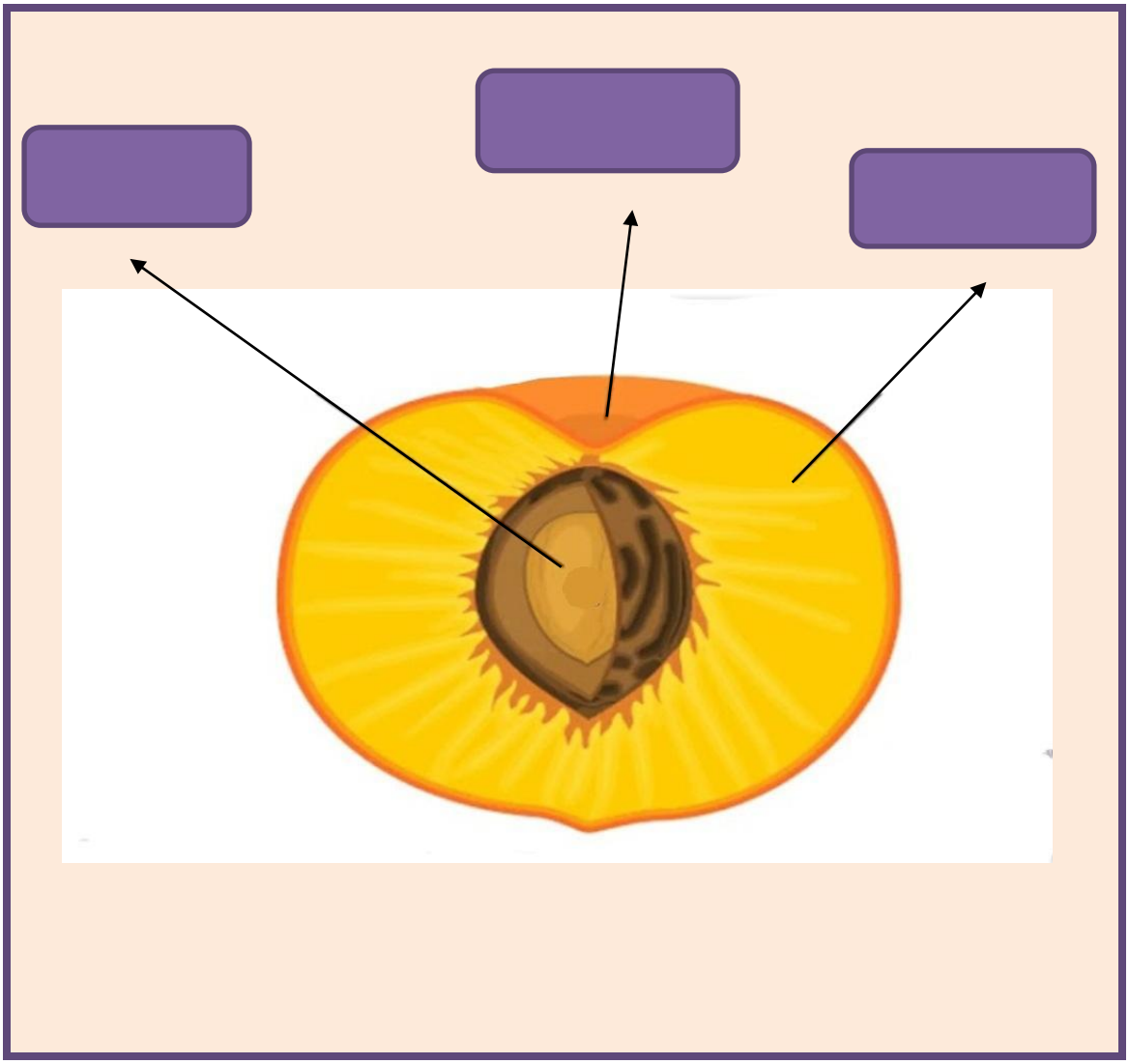
the fruit | the growth | Germination | Fruitful tree | Flower | the seed



Worksheet 10

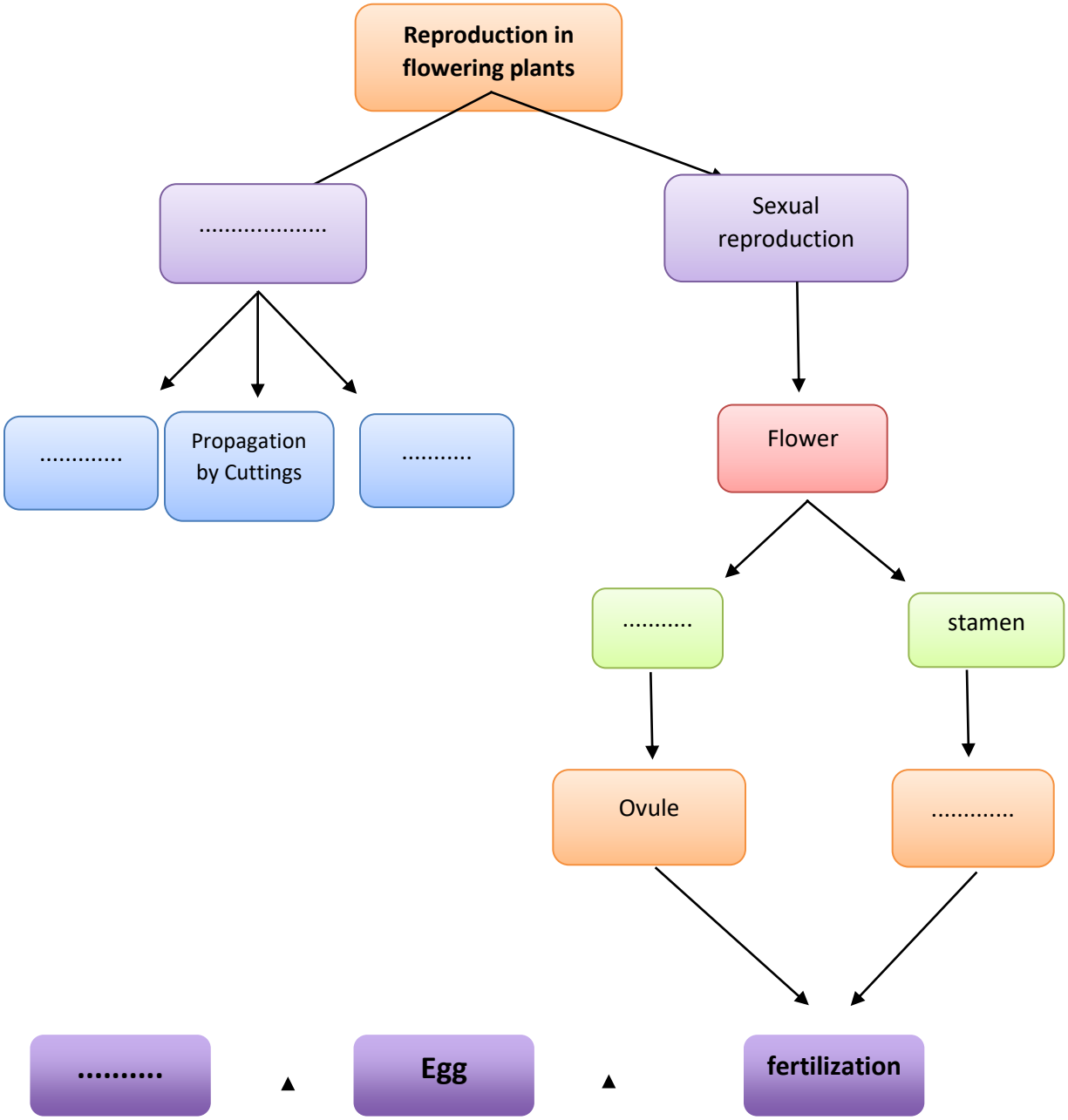
Dear student, label the figure

Skin **Flesh** **Seed**



Worksheet 11:

Dear student, complete the concept map of reproduction in flowering plants:

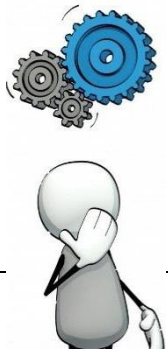


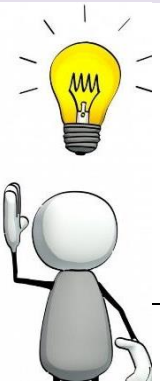
Worksheet 1

Learning Table

Topic: Density

K What do you know about Density?	W What do you want to know about Density?	L What did you learn about Density?

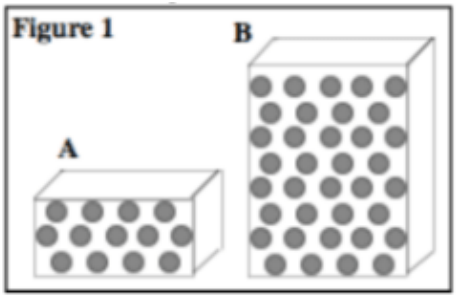




Worksheet 2

Test Your Knowledge

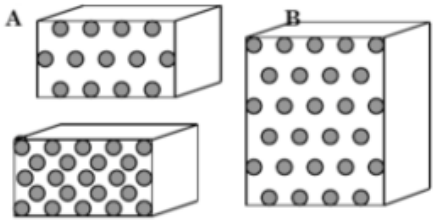
1- Observe the particles in figure 1.



Complete the table. (>, <,=)

Property	Relation	Interpret
Mass	A ..... B	.....
Volume	A ..... B	.....
Density	A ..... B	.....

2- Observe the particles of figure 2



Complete the table (<.>,=)

Property	Relation	Interpret

Mass	**A ..... B** **A ..... C**	.....
Volume	**A ..... B** **A ..... C**	.....
Density	**A ..... B** **A ..... C**	.....

Worksheet 3

Test your interpretation

Observe each of the following pictures and then answer the questions below:

1. **Why does the peeled Tangerine fruit immerse while the whole Tangerine fruit floats?**

.....

.....

.....

.....

.....

.....

2. **Explain why measuring the mass of the fruit using the 2 arms balance, the size of the iron cymbal in one of the two pans is greater than the size of the fruit in the other pan.**

.....

.....

.....

.....

.....

.....

3. **Why do iron ships float on water surface?**

.....

.....

.....

.....

.....

Worksheet 4

Test your ability on problem-solving

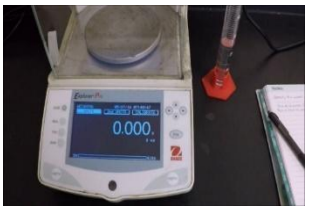
Answer the following questions:

1. **If you have a cube of marble with length 10 cm, and its mass is 5000 g. What is its density?**

.....

.....

.....



2. **Using an experiment to indicate the density of liquid : the mass of the empty cup is 80 g, the mass of cup filled with liquid is 120 g, and the volume of the liquid is 20 cm 3. What is the mass of liquid? What is its density?**

.....

.....

3. **What is the density of the brick piece shown in the figure, if its mass is 2160 g?**

.....

.....

.....

.....

4. **Given two similar balls. the first is made of pure copper, and the other is made of impure copper with Zinc, how you can indicate which ball is made of pure copper if the mass of 1 cm ^{3} of copper is equal to 8.9 g and the mass of 1 cm ^{3} of Zinc is equal to 7.1 g?**

.....

.....

Worksheet 5

The Effect of the Body Substance on its Mass

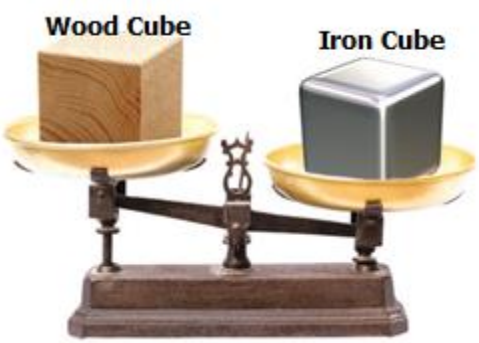
1. Given four cubes equal in size and made of the same substance (iron for example), use the balance to compare the masses of these cubes, then complete the table:

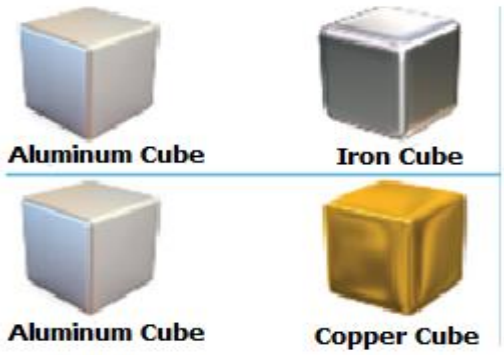
Cube	Cube 1	Cube 2	Cube 3	Cube 4
Mass	.....	.....	.....	.....

I conclude that

.....

2. Given four cubes are equal in size and made of different substances (such as: iron - copper - wood - aluminum), use the balance to compare the masses of these cubes and then complete the table:





Cube	Iron	Copper	Wood	Aluminum
Mass	.....	.....	.....	.....

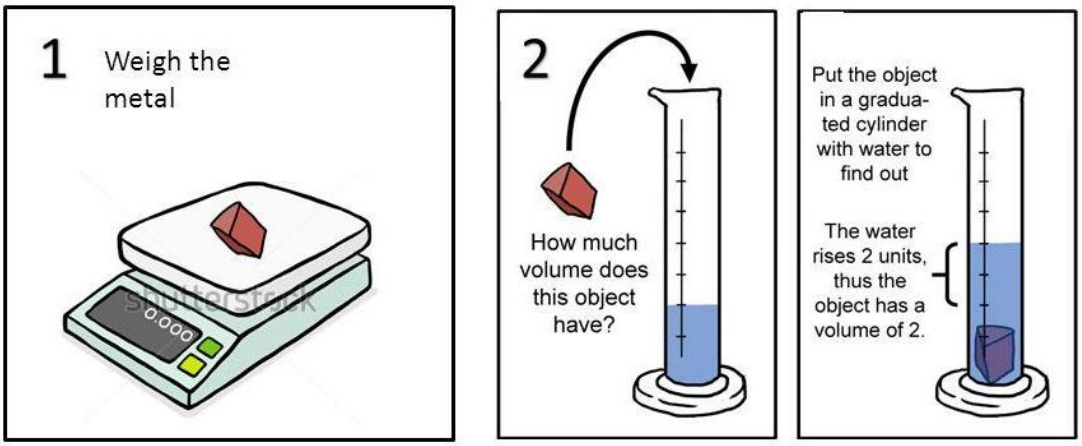
I conclude that .....

.....

Worksheet 6

Deducing Density

Measure the mass and volume of the given five pieces of metal and follow the steps:



Write down your results in the following table:

Cube	Mass	Volume	$\frac{Mass}{Volume}$
1	.....	.....	.....
2	.....	.....	.....
3	.....	.....	.....
4	.....	.....	.....
5	.....	.....	.....

What do you conclude?

.....

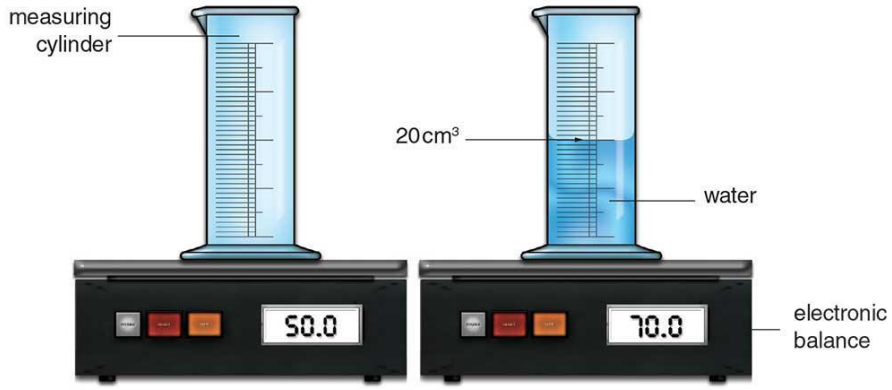
.....

Worksheet 7

Measurement of Liquid Density

Research question: How can the density of liquid be measured?

Tools: Graduated cylinder – Digital Balance – Liquid whose density will be measured.



Procedure

- Indicate the mass of the graduated cylinder when it is empty using a balance.
- Pour the liquid into the graduated cylinder a known volume of liquid(H).
- Indicate the mass of the graduated cylinder filled with the liquid using the balance.
- Find the mass of the liquid (M), by subtracting the mass of the empty graduated cylinder, from the mass of the graduated cylinder filled with liquid.

What do you notice?

- Mass of liquid (M) = Mass of graduated cylinder filled with the liquid .- Mass of empty graduated cylinder = ...
- Volume of liquid (H) = ...

What do you conclude?

$$Density\ of\ liquid = \frac{Mass}{Volume} = \cdots\ldots\ldots\ldots\ldots\ldots\ldots$$

Worksheet 8

Applications on Density

Answer the following questions:

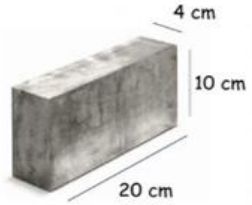
1. **Given a piece of stone with a mass of 2 g and a volume of 1.5 cm^3 Calculate the density of the stone**

   .....

   .....

   .....

2. **Given a brick of Lead with a mass of 9 kg and 120 grams. If its dimensions are as shown in the figure, what is its density?**

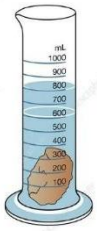


.....

.....

.....

3. **Given a piece of iron with a mass of 780 g that is placed in a 700 cm^3 of water, the level of water increases to 800 cm^3. Find the density of iron.**



.....

.....

.....

.....

4. **Given the density of petroleum oil is 0.82 g/ cm3, what is the mass of 2 liters of this oil?**

.....

.....

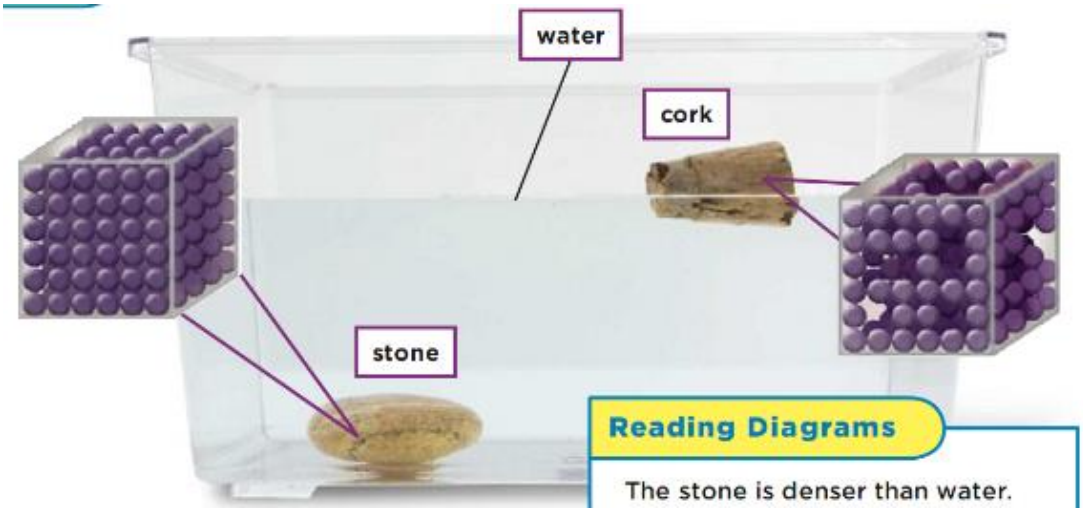
.....

.....

Worksheet 9

Floating and Immersion

Indicate which of the materials immerses and which floats:



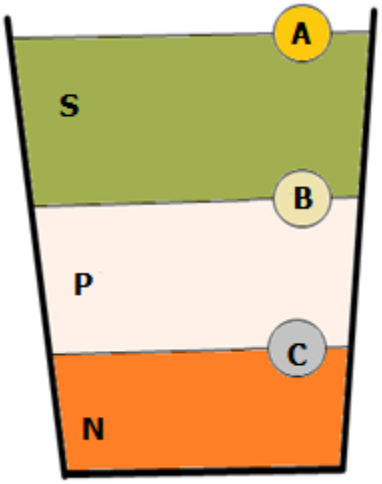
Material	Expectation		Observation	
	Float	Immerse	Float	Immerse
Ice	.....	.....	.....	.....
Rocks	.....	.....	.....	.....
Iron	.....	.....	.....	.....
Cork	.....	.....	.....	.....
Wood	.....	.....	.....	.....
Apple	.....	.....	.....	.....
Lead	.....	.....	.....	.....

.	.	.	.	.
..... .	..... .	..... .	..... .	..... .
..... .	..... .	..... .	..... .	..... .
..... .	..... .	..... .	..... .	..... .

Worksheet 10

Applications on Floating and Immersion

Given 3 balls (A, B, C) of different solid materials in a container that contains three layers of different liquids S, P, N, indicate the name of each ball and each liquid, then complete the table by writing the correct symbol next to each material.

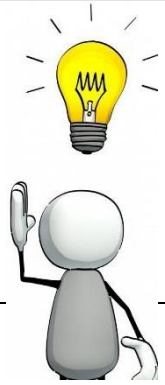


Material	Density	Symbol
Oil	0.8 g/cm^3	.....
Water	1 g/cm^3	.....
cork	0.25 g/cm^3	.....
Plastic	0.9 g/cm^3	.....
Mercury	13.6 g/cm^3	.....
Iron	7.85 g/cm^3	.....

Worksheet 1

Learning Table

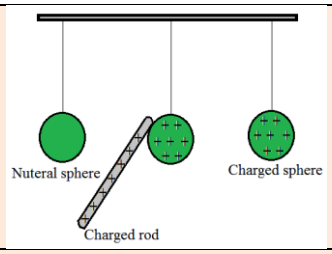
Topic:
Electrostatics

K What do you know about electrostatics?	W What do you want to know about electrostatics?	L What did you learn about electrostatics?
		

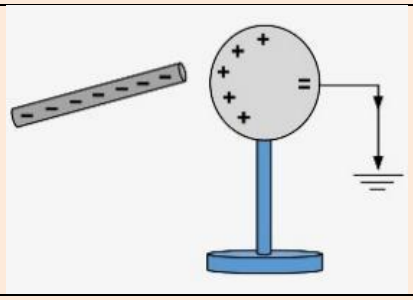
W t 2

Types of Electrification

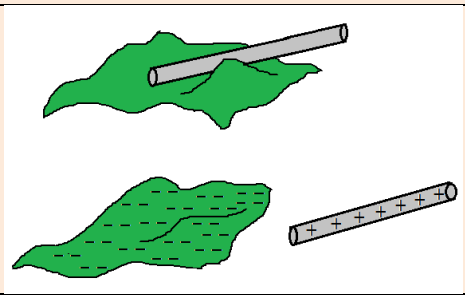
1- Name the type of electrification/charging (Friction- Contact-Induction) in each of the following picture.



Charging by
.....



Charging by
.....



Charging by
.....

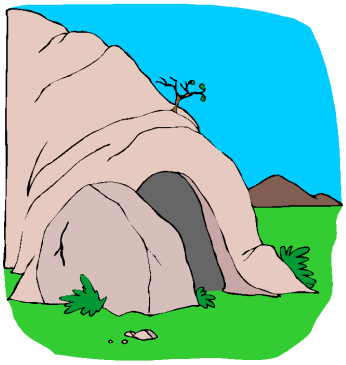
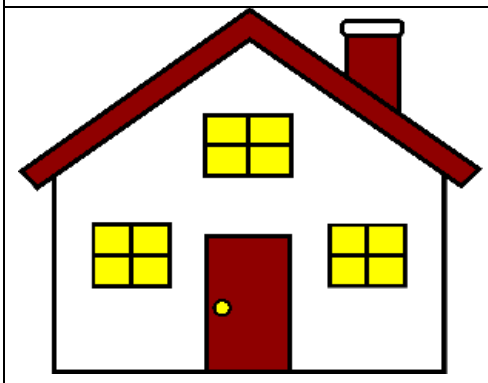
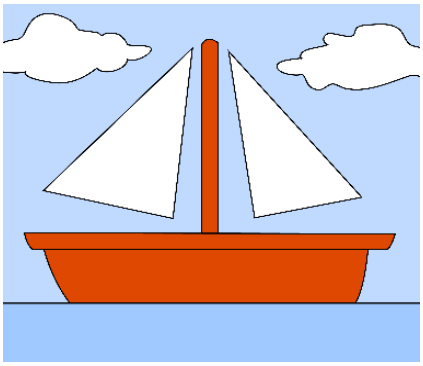
2- Compare the types of electrification by completing the below table.

Contact	Friction	Induction
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Worksheet 3

Protection from Lightning Strikes

While Omar was on the street, a thunderstorm suddenly occurred, and he needed a safe place to protect from the lightning strikes, click the safe protection picture for Omar.

<table>
<tr>
<td> 
Inside a cave</td>
<td> 
Under the tree</td>
<td rowspan="3">  </td>
</tr>
<tr>
<td> 
Inside the house</td>
<td> 
Inside a boat</td>
</tr>
<tr>
<td> 
Inside the phone room</td>
<td> 
Inside the car</td>
</tr>
</table>

Worksheet 4

Electrification by Friction

Steps:

1. Rub the tip of a plastic ruler several time with a piece of wool.
2. Approach the rubbed tip to paper strips, sugar, and black pepper. What do you observe?
3. Approach the piece of wool to the paper strips, sugar and black pepper, what do you observe?
4. Repeat the previous steps using a glass rod and a piece of silk.

Observations:

Subject	Attracts	Does not attract
Plastic ruler	.....	.....
Wool	.....	.....
Glass rod	.....	.....
Silk	.....	.....

Conclusion:

.....

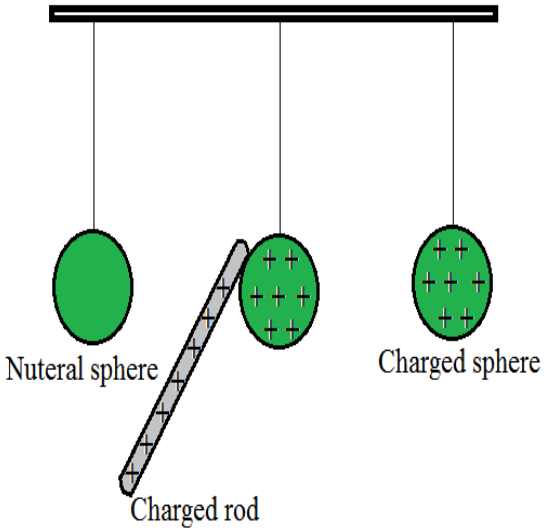
.....

Worksheet 5

Electrification by Contact

Steps:

1. **Hang a metal ball from a string on a wooden rod.**
2. **Approach the paper strips to the metal ball. What do you observe?**
3. **Rub a glass rod with silk.**
4. **Put the end of the glass rod in contact with the metal ball.**
5. **Approach the paper strips to the metal ball again. What do you observe?**



Observations:

State	Attracts	Does not attract
The ball before touching the glass rod	.....	.....
The ball after touching the glass rod	.....	.....

Conclusion :

.....

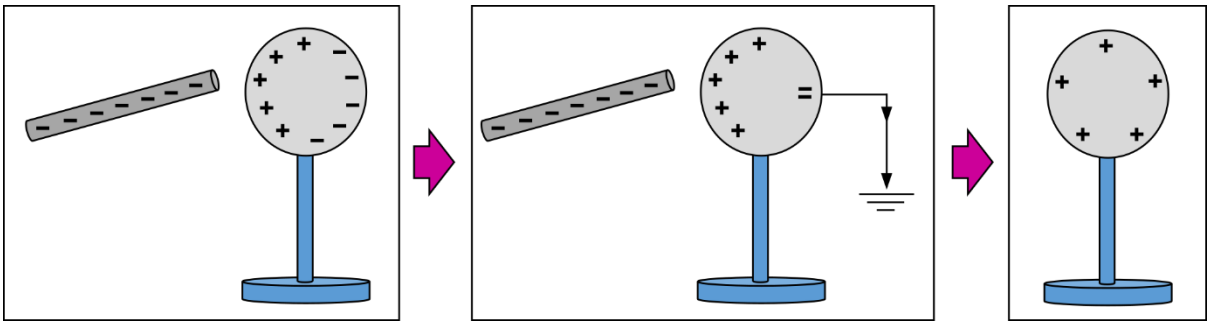
.....

Worksheet 6

Electrification by Induction

Procedure:

1. **Hang a metal ball on a wooden rod using a string.**
2. **Approach paper strips to the metallic ball. What do you Observe?**
3. **Rub a plastic ruler with a piece of wool.**
4. **Keep the rubbed end of the ruler close to the metallic ball.**
5. **Connect the metallic ball with the ground using a copper wire as shown in the figure.**
6. **Approach paper strips to the metallic ball again. What do you observe?**



Observations :

State	Attracts	Does not attract
The ball before approaching the ruler	.....	.....
The ball after approaching the ruler	.....	.....

Conclusion:

.....

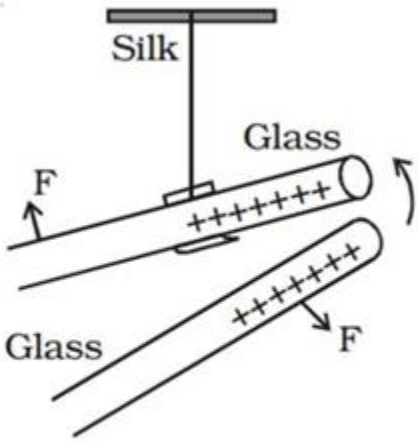
.....

Worksheet 7

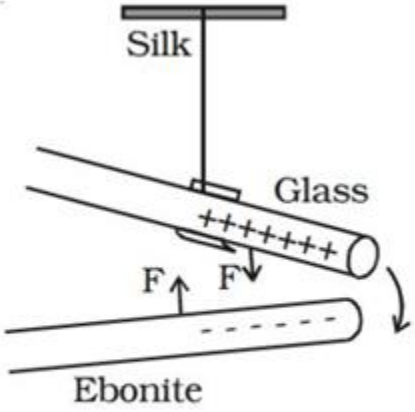
Attraction and Repulsion between Charged Bodies

Procedure:

1. **Tie a glass rod in the middle with a string hold to the stand freely.**
2. **Rub the end of the glass rod with silk, and the end of a plastic ruler with wool.**
3. **Approach the end of the plastic ruler to the end of the hung rubbed glass rod without being in contact, what do you observe?**
4. **Repeat the previous experiment using two glass rod that were rubbed with silk.**



Two charged rods of same charge



Two charged rods of opposite charge

Observations:

Body hung with thread	The approached body	Attraction	Repulsion
Silk-rubbed glass rod	Wool-rubbed plastic ruler	.....	.....
Silk-rubbed glass rod	Silk-rubbed glass rod	.....	.....

Conclusion:

.....

.....

Slide 1

Phenomena of life

The following is a group of life observations for the law of attraction and repulsion:

After combing hair using a comb, it will attract light paper strips.

When a child is in contact with a slide, his hair is charged with similar charges so hair will repel each other

Pieces of dust or paper are attracted to the window glass after wiping it with dry paper.

Sticking of clothes together in dryer.

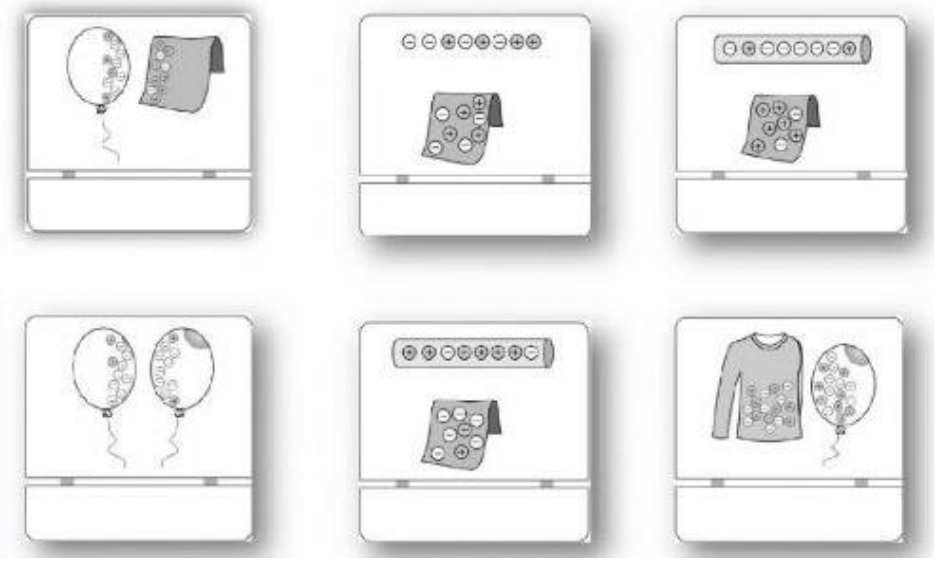
The little girl's hair repels when after putting her hand on the generator. (Van de Graaff) .

Rubbing a balloon with a piece of wool and approaching it to your hair, it will attract the balloon.

Assessment 1

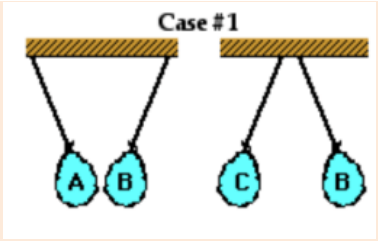
Law of Attraction and Repulsion

1- Write " attraction" or "repulsion" under the suitable picture.

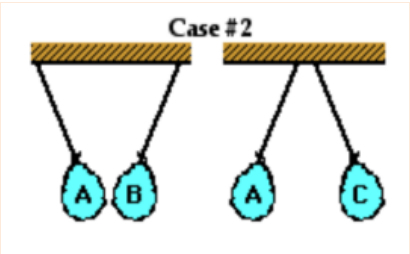


2- Observe the figure and complete the table:

Subject	Charge
A	.....
B	Negative
C	.....



Subject	Charge
A	.....
B	Negative
C	.....



Worksheet 8

Electroscope Design

Procedure:

1. **Insert a thick copper wire into the lid of the jar so that its tip is 2cm above.**
2. **Fix the upper end of the copper wire with an aluminum foil ball.**
3. **Bend the other end of the wire to seen as clothes hanger.**
4. **Fold the aluminum foil and put it on the bent end of the wire inside the glass container.**
5. **Cover it tightly.**
6. **Rub the glass rod several times with a piece of silk.**
7. **Approach the glass rod to the metallic rod outside. What do you observe?**

Observations:

.....

.....

.....

.....

Conclusion:

.....

.....

.....

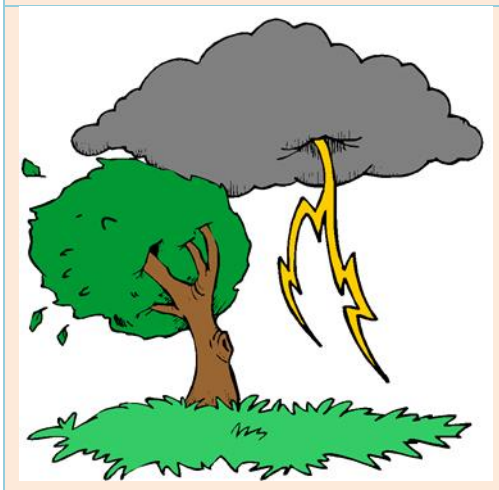
.....

Slide 2

Preventing the Dangers of Lightning

To assure excellent protection from thunder, do not go out of the house, and if you are in the car do not get out of it.

Do not touch anything that can conduct electricity, such as: electrical wires, water pipes, landlines, television .... because lightning strikes may reach you through these things.



If you are outside, find shelter from the lightning, such as buildings, but if there are no buildings available, avoid the tallest ones and stay away from trees.

Get away from water; Because it is more likely to be struck by lightning.

Slide 1

Learning Table

Name :

Class :

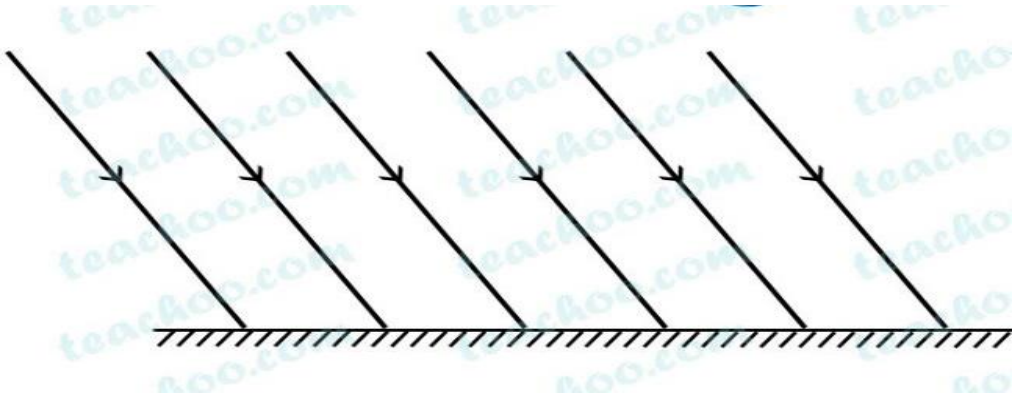
Topic :

What do you know about Light? (K)	What do you want to learn about Light? (W)	What did you learn about Light? (L)
		

Worksheet 1

Draw the path of light falling on a smooth reflective surface such as a mirror and on a rough surface. Use arrows to show vision

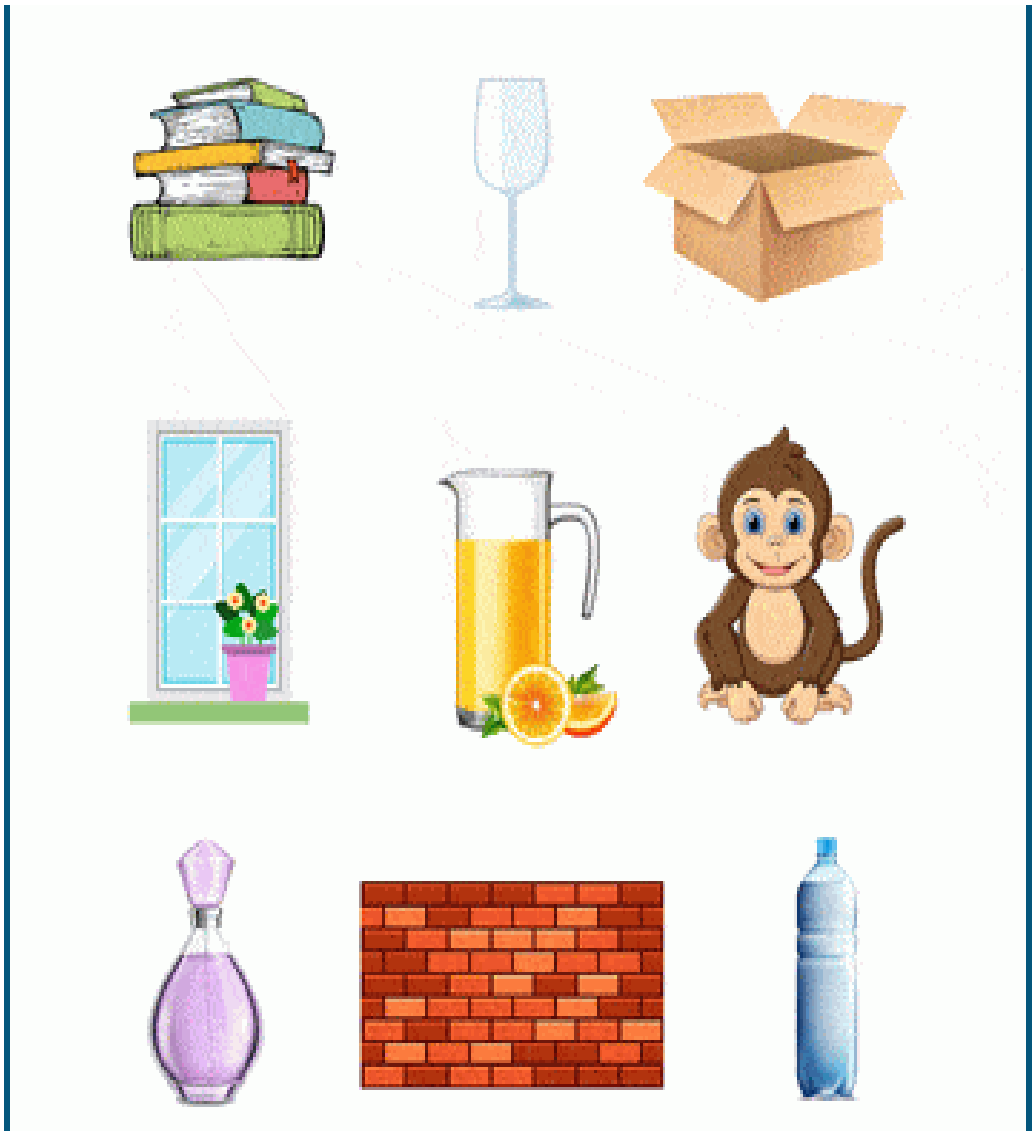
1-When light falls on a smooth surface:



2-When light falls on a rough surface:

Worksheet 2

Circle the materials through which the light passes:



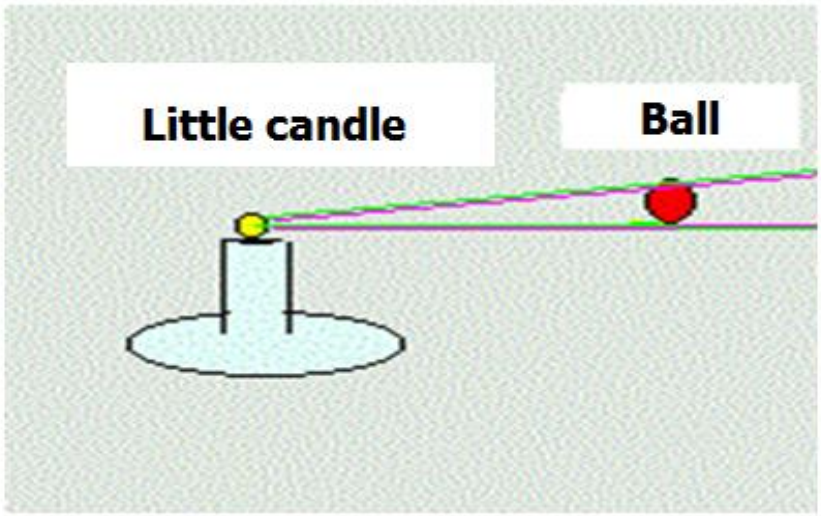
Slide 2

Indicate the true or false property of light

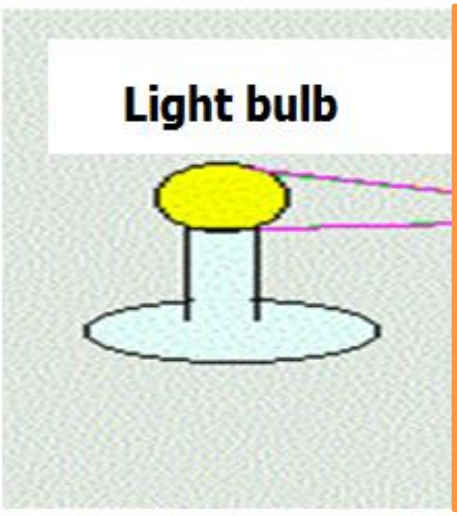
No	Phrase	True	False
1	Light needs air to travel.		
2	Sunlight is yellow.		
3	Light travels a longer distance during the day.		
4	Shadow is formed by reflection of sunlight.		
5	Light spreads instantly everywhere.		
6	Whenever the source of light is stronger, the shadow is larger.		
7	Light Reflective Objects are sources of light.		
8	White is one of the colors of the spectrum.		
9	Light passes through transparent objects in straight lines.		
10	Reflection of light occurs only when it falls on shiny surfaces.		
11	Light is neither reflected nor absorbed.		

Worksheet 3

Specify the clarity of the shadow of the ball in each case by drawing it on the white screen.



White screen to draw the shadow of the ball

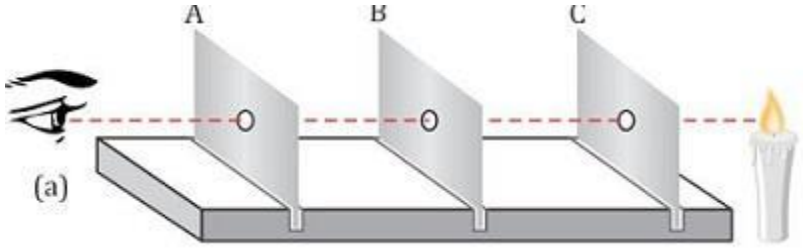


White screen to draw the shadow of the ball

Worksheet 4

Dear student, follow the following procedure, then write down your observations and conclusions.

1- Install the cardboard pieces as shown in the following figure:



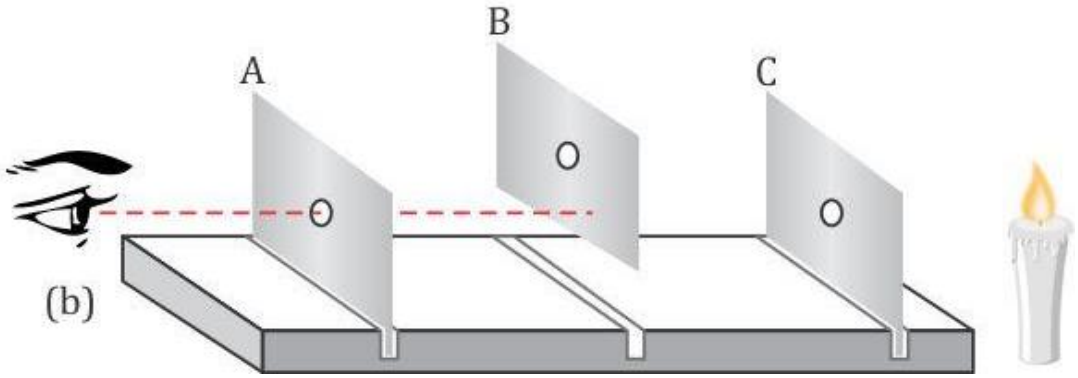
2- Place the candle in front of one of the cardboard pieces (piece C).

3- Look at the candle light from the side of the board (A).

4- Have you seen the light of the candle? .....

5- Write down your conclusions.....

6- Move the piece of cardboard (B) so that it does not allow the light to pass through the opening of the piece of cardboard (B) as in the following figure:



7- Do you see the light of the candle? .....

8- Interpret your observations.....

Worksheet 5

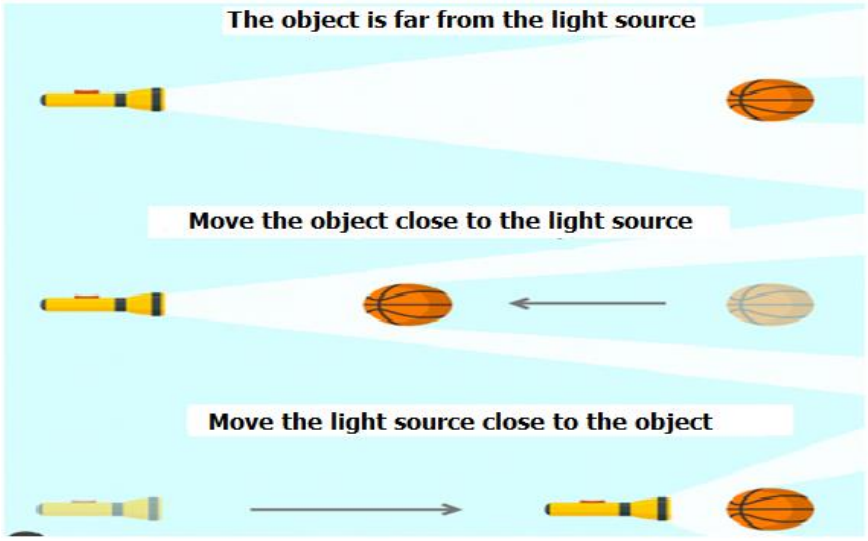
Dear student, follow this procedure then write down your observations and conclusions:

1- Use a lamp, a tennis ball, and a white piece of cardboard.

2- Put the ball in front of the lamp and notice the formation of the shadow, and draw it.

3- Use another white piece of cardboard, move the ball near the lamp, and draw the size of the shadow formed.

4- Move the ball away from the lamp, and note the size of the shadow as shown in the following figure:



5- Write down your observations

.....

6- Do you think the shadow of the ball is different if the flashlight is replaced with a small candle?

7- Is the shade being larger or smaller?

8- Install the ball in one place, then light the small candle.

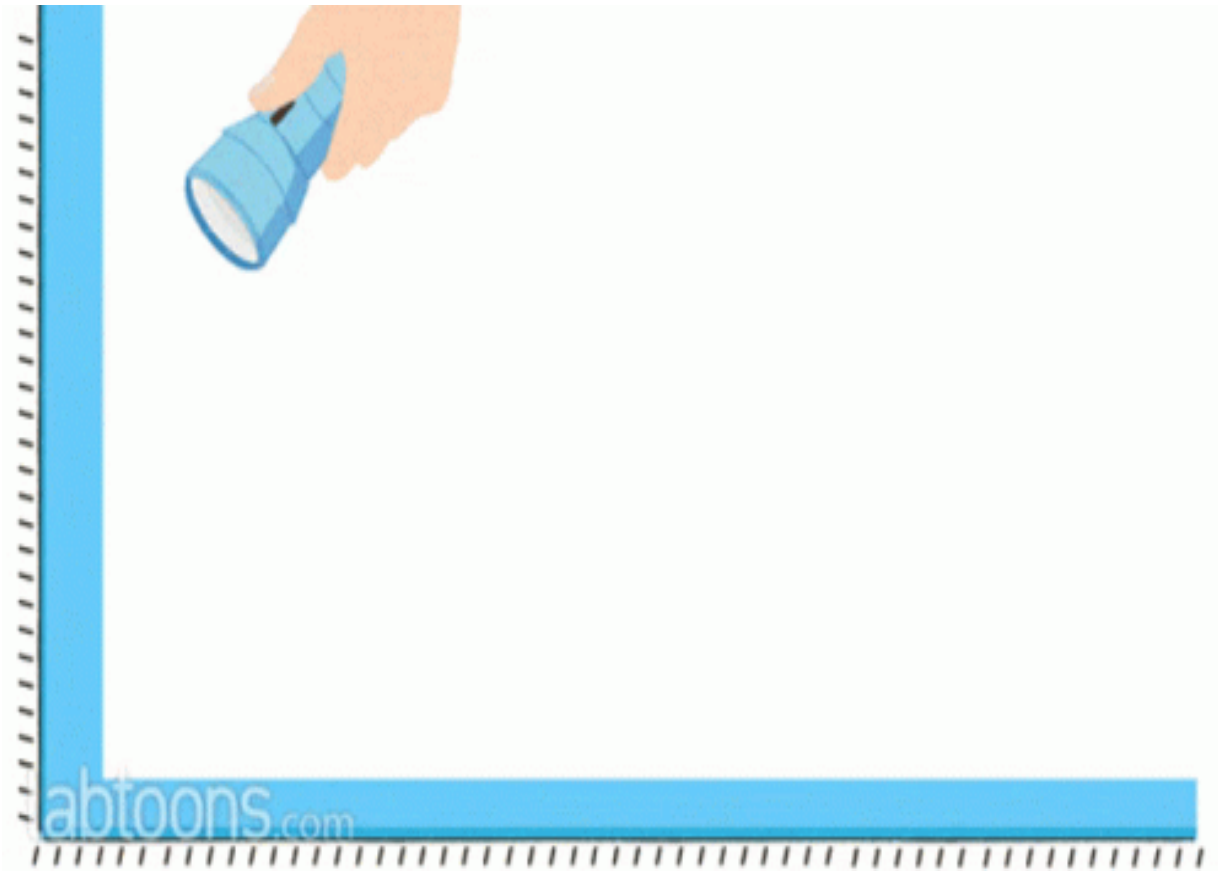
9- Describe the shadow of the ball formed .....

10- Replace the candle with the lamp describing the shadow formed.

11- Compare the shadow formed in the case of a candle, and in the case of a lamp.

Worksheet 6

Draw the path of the light ray falling from the flashlight on the following mirror surfaces:



Worksheet 7

Observe the following pictures, then put (√) below the pictures that show surfaces that reflect light.

Worksheet 8

Indicate which of the following surfaces produce regular reflection or irregular reflection:

Surface	Regular reflection	Irregular reflection
Tree leaf		
Aluminum foil		
Piece of wool		
Surface of water		
Piece of wood		

Worksheet 9

Classify the following objects into: transparent, translucent, and opaque.

Transparent objects

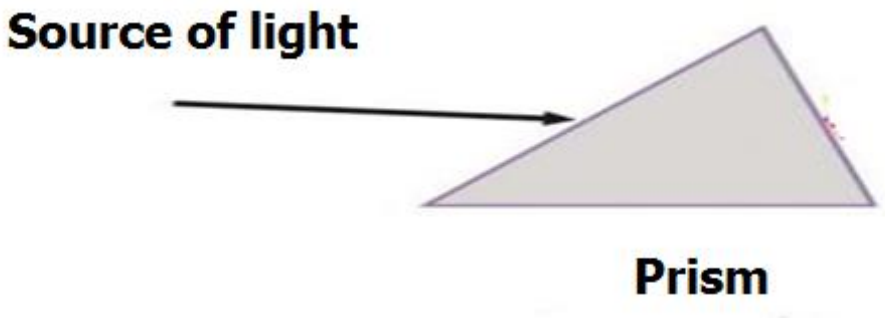
Opaque objects

Translucent objects

Worksheet 10

1- Have the following tools: Triple prism – light bulb – black screen.

2- Drop the beam of the lamp on one side of the prism as shown in the following figure:



3- Write down your observations.

……

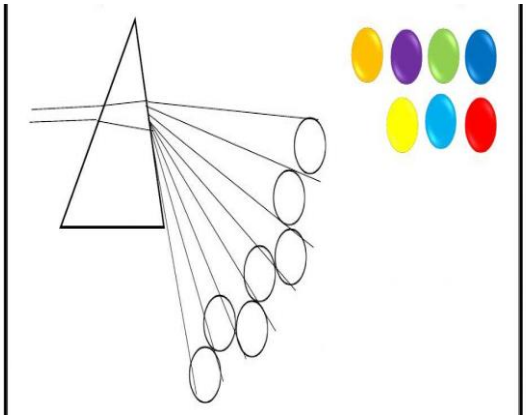
4- How many colors do you get?

……

5- Indicate the colors that you see during the activity.

……

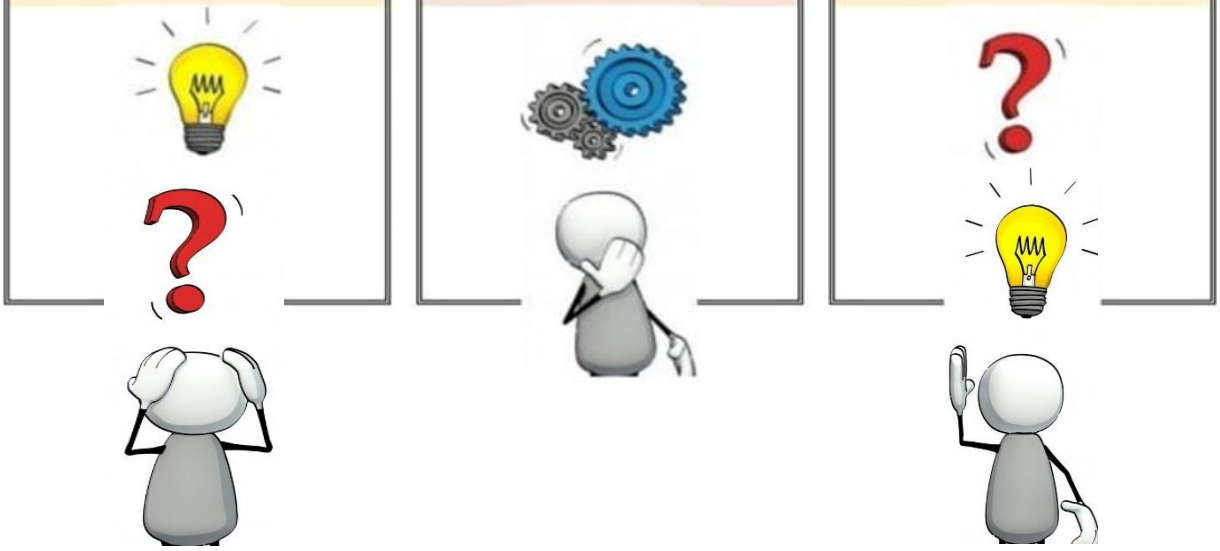
6- Arrange the colors in order .



Slide (1)

KWL table

What do you know about heat conduction?	What do you want to know about heat conduction?	What did you learn about heat conduction?



Slide (2)

Indicate by true or false.

No	Statements	True	False
1	All solids conduct heat		
2	Glass is a heat conductor because the mug gets hot with hot tea in.		
3	Plastic conducts heat faster than wood, iron and glass because it melts quickly.		
4	All solids conduct heat at the same degree.		
5	All thermal insulators insulate heat at the same degree.		
6	When snow covered with insulators , it melts faster.		
7	Heavy clothes provide our bodies with heat.		
8	Only solids conduct heat, whereas liquids and gases do not.		
9	Air is a good conductor of heat because it expands easily.		
10	Thermal insulating glass is made up of many layers of glass.		

Worksheet (1)

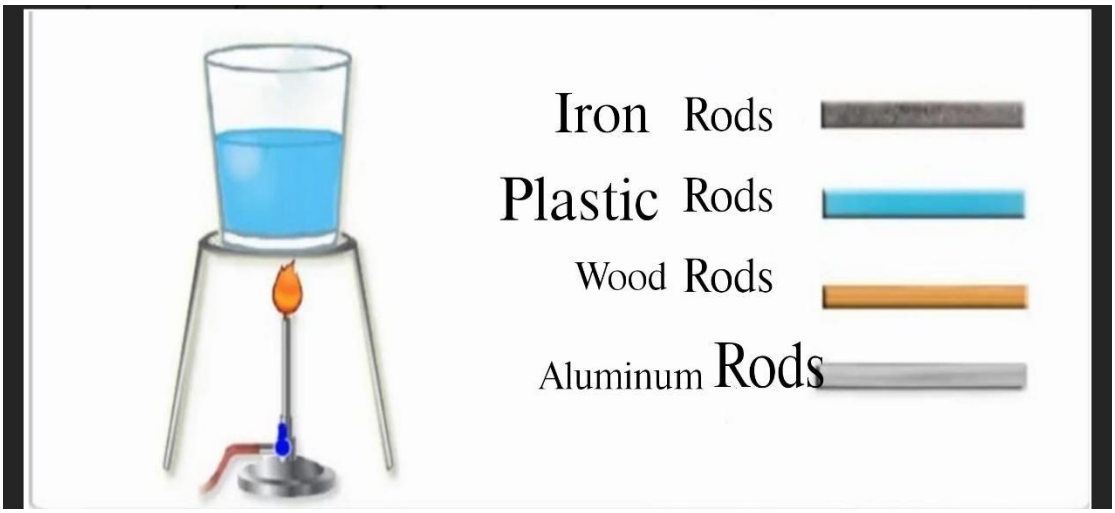
Conductors and Insulators of Heat

Dear students, classify the following materials into conductors or insulators of heat after the experiment.

Worksheet 2

Effect of heat ln Solid materials

Dear students, predict what happen to each rod if it is put it in hot water.



Iron rod……

Plastic rod.....

Wooden rod.....

Aluminum rod.....

Worksheet 3

Metal differ in heat conduction

Dear students, Observe the following pictures then answer the questions below:

- **Compare these materials according to their ability to conduct heat.**

.....

.....

- **If they differ, arrange them in decreasing order of conductivity of heat.**

.....

.....

.....

Worksheet 4
Thermal Insulators

Dear students, you have learned that thermal insulators don't allow heat to transfer within it.
Predict what will happen to the following thermal insulators, when heat is transferred to them.

- **Compare these materials according to their ability to conduct heat.**
- **If they differ, arrange them in decreasing order of conductivity of heat.**

.....
.....
.....
.....

Worksheet 5
Water Cooler

Dear students, put each of the three same- sized ice cube in three different glasses.
1st glass: Left in air
2nd glass : Surrounded with thermal insulator(Cotton- Cork-Gauze).
3rd glass: Surrounded with thermal conductor (Iron-Copper)

Predict what with happen to the ice cube in each glass.
1st glass: …….
2nd glass: …….
3rd glass: ……

Worksheet 6

Daily-Life Examples of Thermal Conductors and Insulators

Dear student, tell if each of the following materials is thermal conductor or thermal insulator.

Food preservative Refrigerator	.....
Coat	.....
Kitchen glove use	.....
Fryer	.....
Solar Energy Heater	.....
Iron	.....
Electric kettle	.....
Conditioning	.....
Water cooler	.....





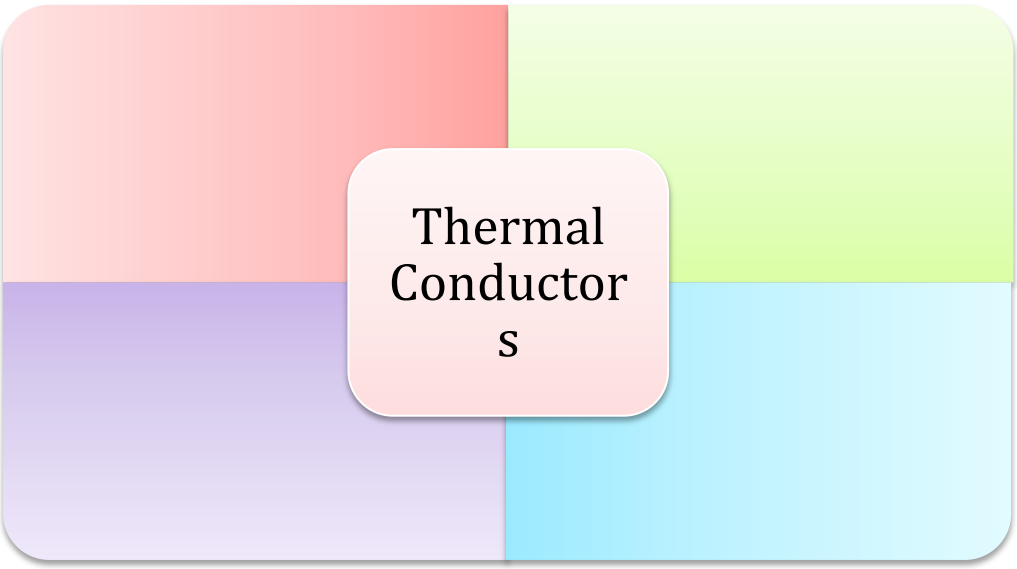


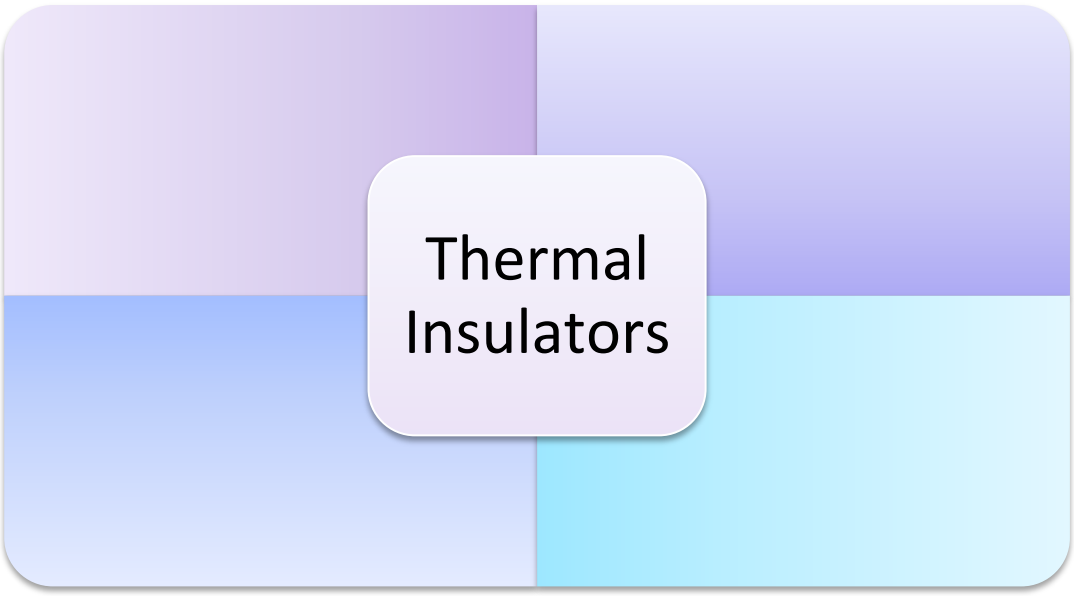


Worksheet 7

Daily-Life Applications of Thermal Conductors and Insulators

According to your acquired knowledge about thermal conductors and insulators, give examples on each from your environment.



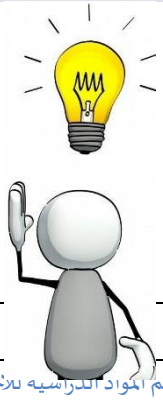


Slide 1

Learning Table

Topic:

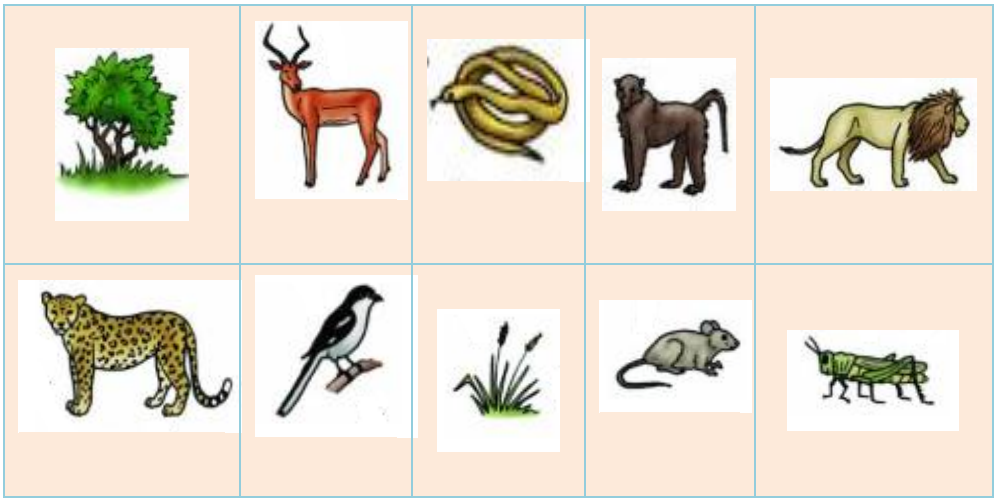
Flow of Energy in an Ecosystem

K	W	L
What do you know about the flow of energy in an ecosystem?	**What do you want to know about the flow of energy in an ecosystem?**	**What did you learn about the flow of energy in an ecosystem?**
		

Worksheet 1

Classification of Living Things

Cut and paste the following pictures in order to classify into herbivore, carnivore or producer in the below table.



Producer	Carnivore	Herbivore

Worksheet 2

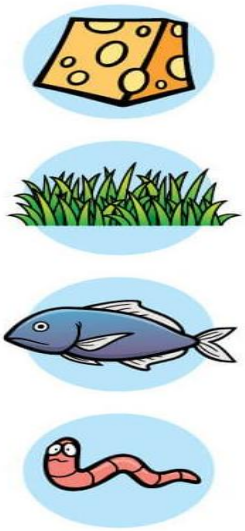
Producers

Color the producers.

Worksheet 3

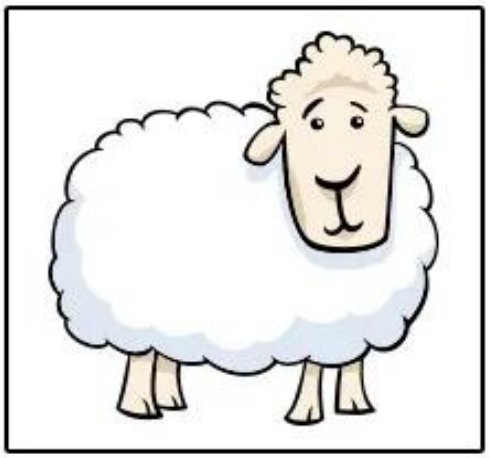
Herbivores

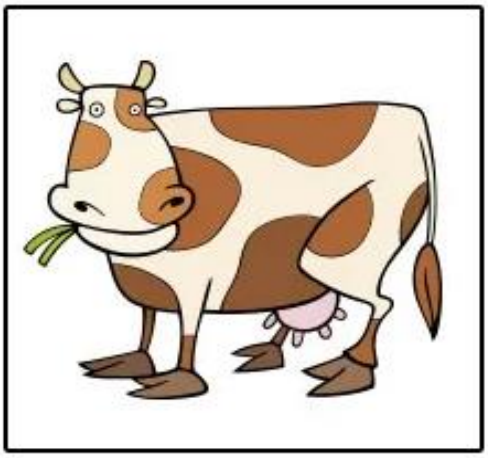
Match each animal with its food:

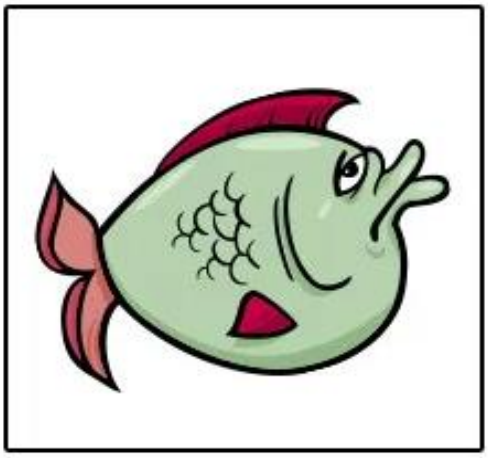
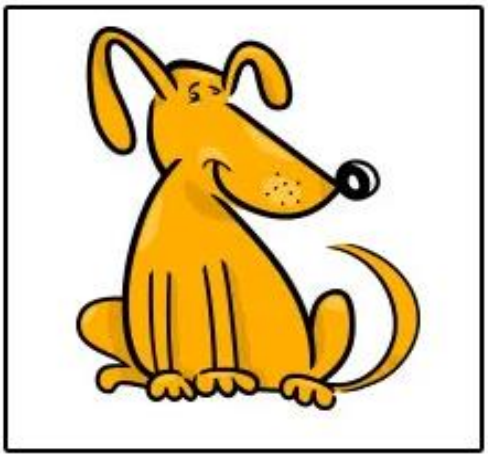


Slide 2

Energy Source of Living Things



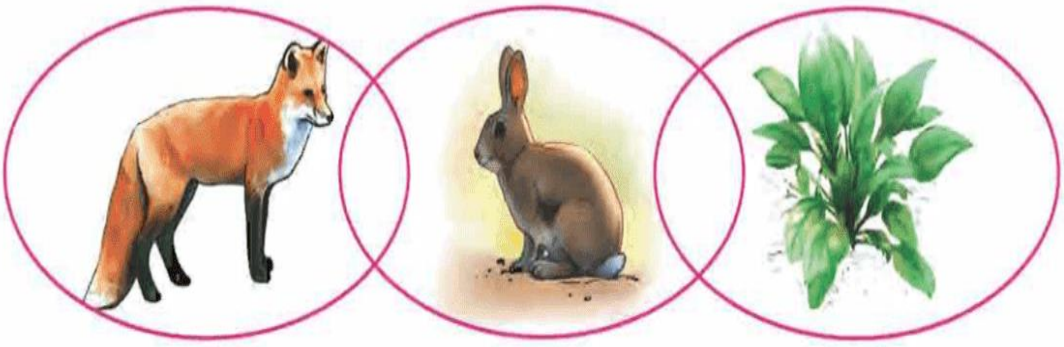


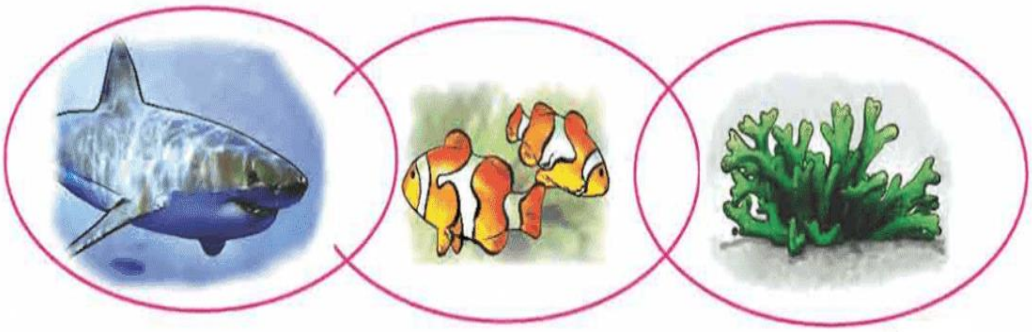



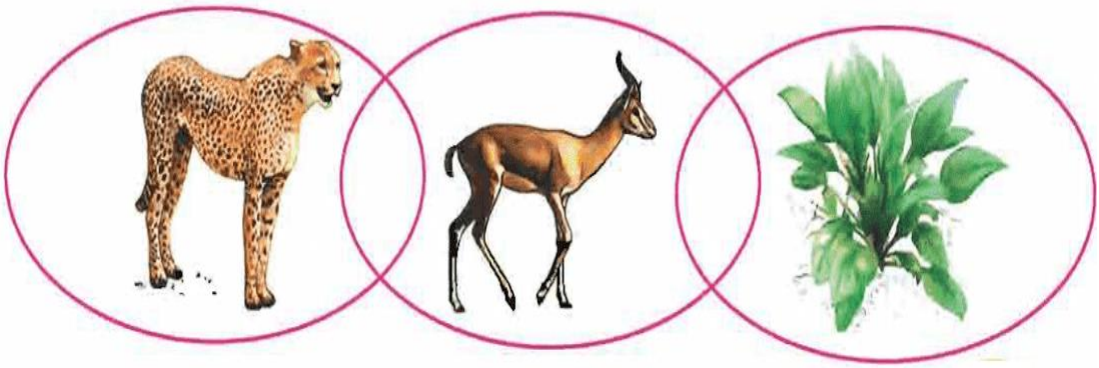
Slide 3

Food Chain

Indicate (who eats whom?) in each group?



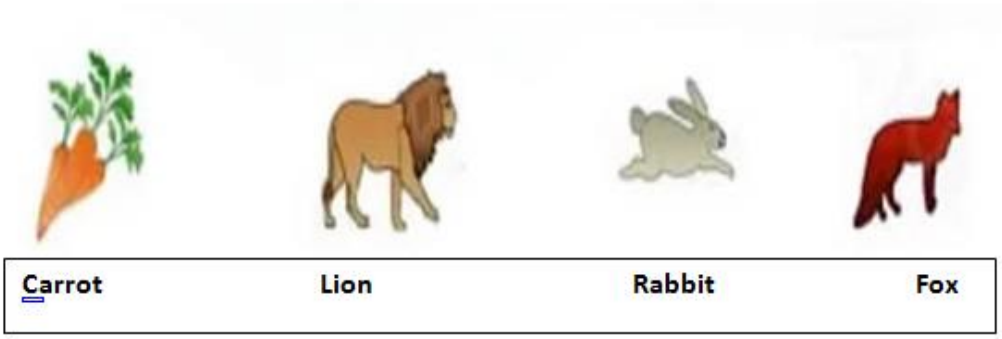




Worksheet 4

Matter and Energy cycle in an Ecosystem

1. Use the following pictures to fill in the blanks and complete the cycle.



Carrot	Lion	Rabbit	Fox

....

2- What does the arrow mean in the food chain? Example (grass Elephant) Then indicate the pathway of energy

.....

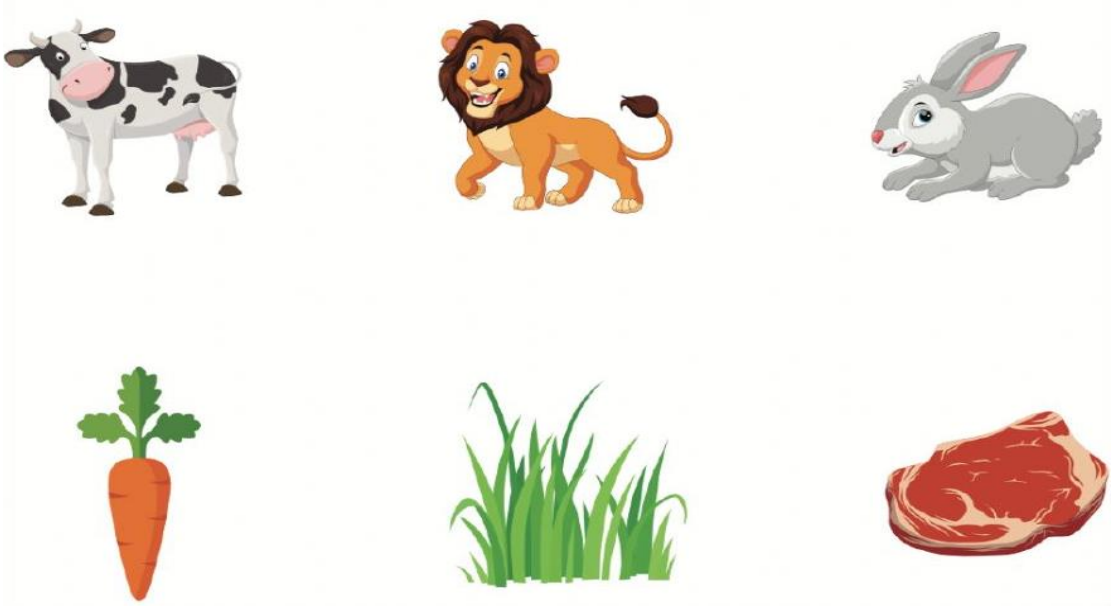
.....

.....

Worksheet 5

Producers and Consumers

Match each animal with its food :



Define each of the following:

1- Producer:

.....

2- Consumer:

.....

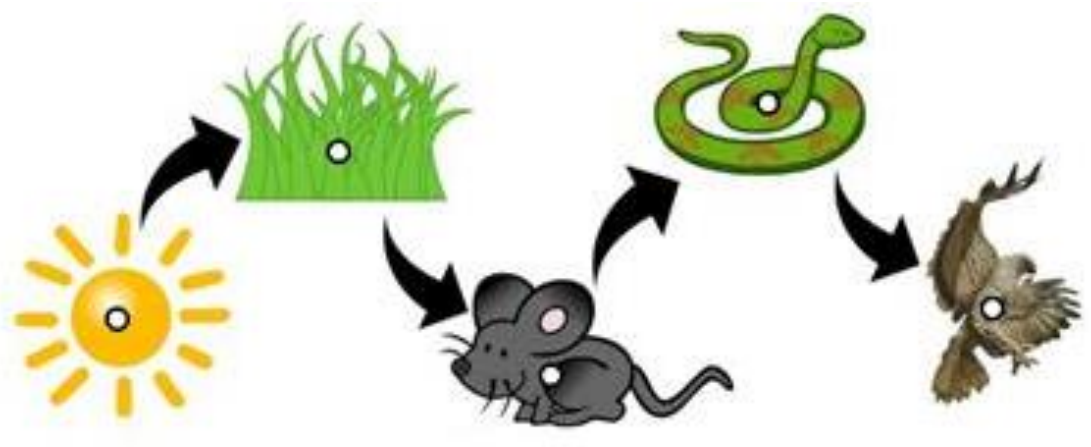
3- Give an example of consumer from the previous pictures: .....

4- Give an example of producer from the previous pictures: .....

Worksheet 6

Food Chains

1- Describe the relationship between living and non-living things in the following food chain.



……

……

……

2- What will happen to this chain if there is a lack of water for many years?

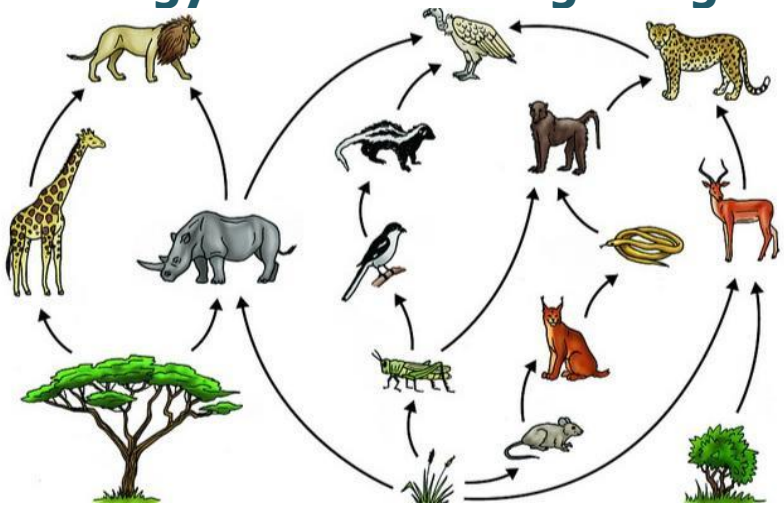
……

……

Slide 3

Food Web

A simple food web showing the transfer of energy between living things



1- Give the pathway of the energy from the grass to the lion.

.....

.....

2- List two food chains from this food web.

.....

.....

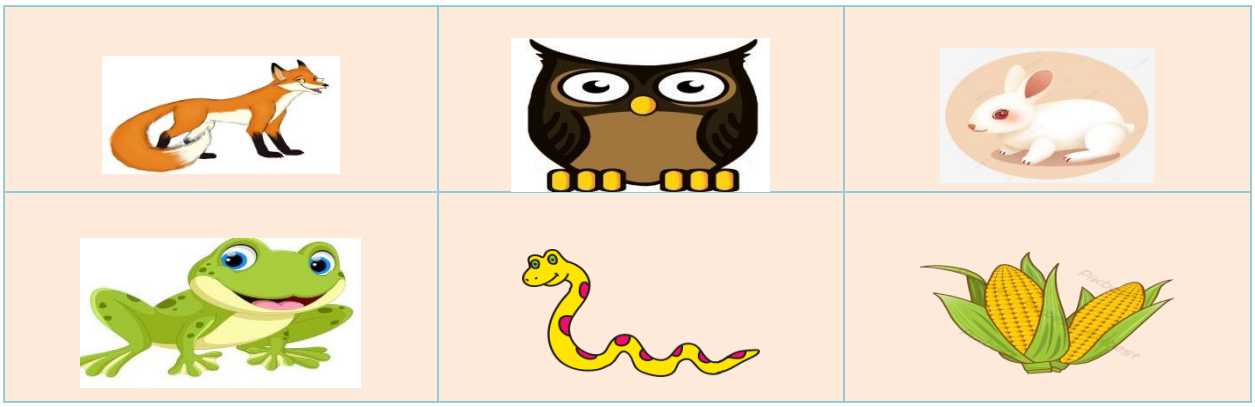
.....

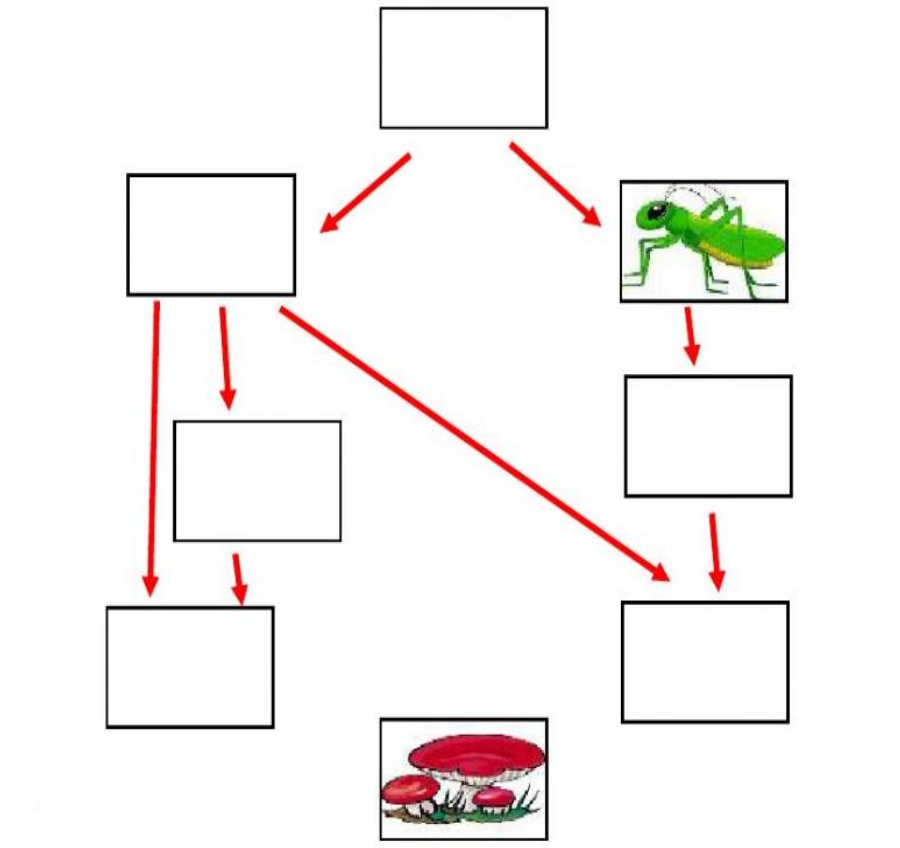
.....

Worksheet 7

Assessment

1- Using the following pictures, complete the given food web.





Slide 4

Effect of Human Activities on Food Chains

Overfishing

Cutting trees

Air pollution

Urban Expansion

Mines and mining

Waste

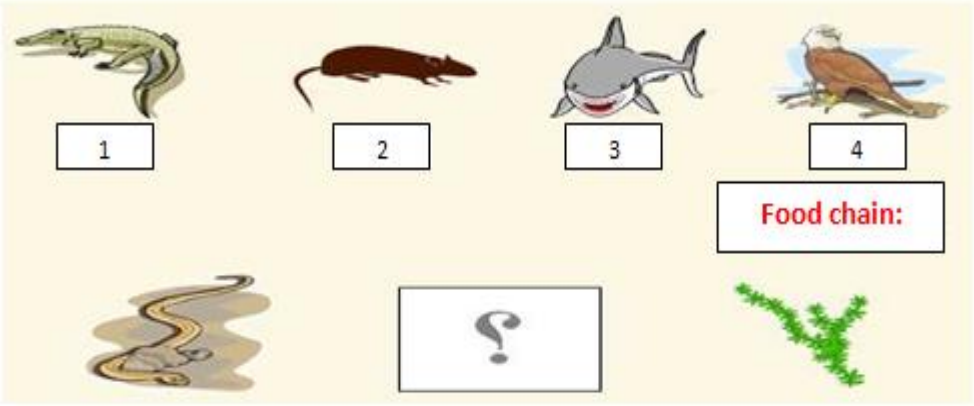
Worksheet 8

Assessment

1- Arrange the following food chain from 1-4.




2- Choose the correct animal number to complete the food chain.



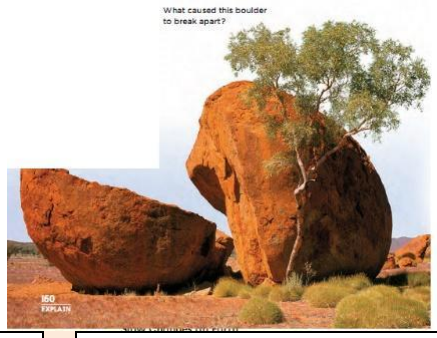
3- Consider the previous food chain:

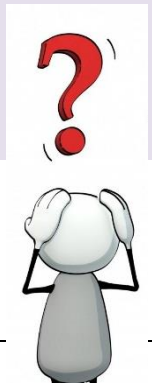
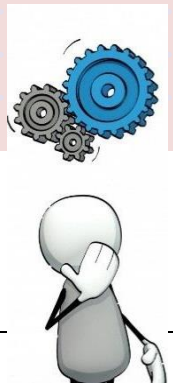
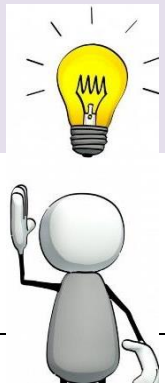
In your opinion: what will happen to the snakes in the field if all the mice died?……
……

Worksheet 1

Learning Table

Topic: Earth's Surface Formation

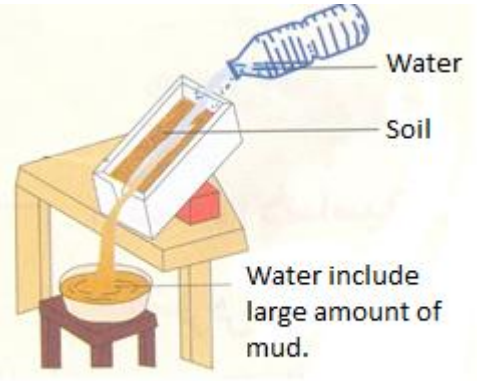


K What do you know	W What do you want to know?	L What did you learn?
		

Worksheet 2

Water changes the Earth Surface

Procedure



-Fill a wooden box with suitable amount of soil

-Fix the box in an inclined position.

-Pour water over the top of the soil

-Collect the water passing through a container

-Note the water collected in the bowel, is it pure water?

What do you observe?

.....

.....

Conclusion:

Running _____ above the surface of the earth erodes sand away like rivers and seas and after falling rain.

Worksheet 3

Temperature Changes Earth Surface

Procedure

- Fill a plastic bottle with water and cover it, place it in the freezer.
- Put a piece of sandstone in the water until it absorbs water completely, then store it in a plastic bag and put it in the freezer.
- Leave them for several hours until they freeze completely. Check them both. Does the snow break the rocks? Explain

What do you observe?

.....
.....
.....

What do you conclude?

- _____ leaks through the crack in the piece of stone, then it freezes and increase in size, which leads to the fragmentation of the piece of stone.

Worksheet 4

Factors of the formation of Earth's Surface

Given pictures that show how the earth's surface is formed.

Write down the suitable factor (wind, water, temperature).

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.....

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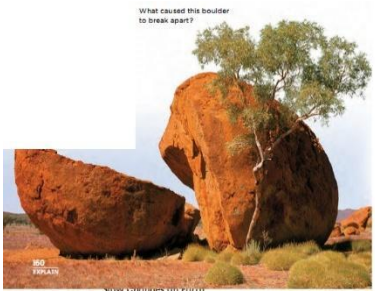
.....



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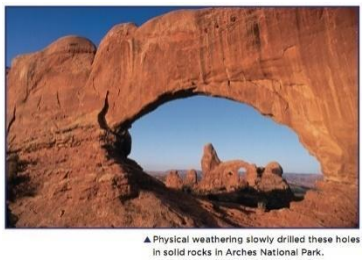

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Worksheet 5

Rock classification

Searching for rocks is a very interesting. You can find rocks everywhere. Rocks are scaltered or roads, gardens, next to the river even under the water. Rocks are different shapes, sizes and colors.

In order to recognize the collected rocks from your environment , classify them in the following table.

:

Texture		Color		Size		Crystals	
Smooth	Rough	Light	Dark	Large	Small	Exist	None

What do you conclude?

- We can classify different …… according to their properties and features.

Worksheet 6

Types of Rocks

Examine your collection of rocks and classify them into three groups according to the following table.

Rocks have large crystals or air bubbles.	**Rocks contains layers above each other or pebbles in it.**	**Rocks have a glassy appearance or formed from pressed strips**

According to the table there are three types of rocks:

Name	**Shape**	**Appearance**	**Origin**	**Examples**
Igneous rocks		Rocks have crystals, air bubbles	Formed from the freezing of molten rock.	**Granite**
Sedimentary rocks		Rocks contains layers above each other or pebbles in it.	Formed by the deposition of some materials such as sand and clay.	**Sandstone**
Metamorphosis rocks		Rocks have a glassy appearance or formed from pressed strips	Formed by exposure of rocks to pressure and heat.	**Marble**

Worksheet 7

Earth Treasures

Rocks are one of earth's treasures and an economic resource for human.

Rocks have many uses, such as:

-Bricks and stones: building works

-Marble: floor tiles

-Diamonds: jewelry industry

-Sand: Manufacture of glass

-Quartz: Watch industry

-Clay: Pottery industry

Fill with the appropriate use of rocks.

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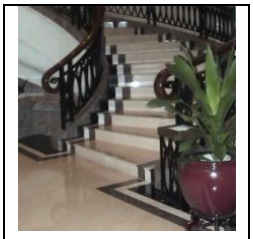

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Conclusion: _____ is used in many industries, such as : ceramics and jewelry .

Worksheet 8

Minerals Properties

Rock consists of several minerals; solid materials that make up the surface of the earth's crust. To indicate the properties of different minerals, examine the metals and fill the table below.

Procedure

Check the color and luster of minerals using a lens.

Check the hardness of the minerals by scratching it with a nail.

Check magnetism by approaching it to magnets.

Aluminum-containing metal

Iron containing metal(hematite)

Sand (Quartz)

What do you notice?

Mineral	Color		Luster		Hardness		**Attraction to magnets**	
	Light	dark	Shinny	matte	big	small	Attract	None
Sand	....	....	....	....	....	....	.....	
....	....	....	....	....	....	....	.....	
....	....	....	....	....	....	....	.....	

What do you conclude?

Conclusion: Minerals differ according to _____, _____, _____ and _____

Worksheet 9

Soil Components

Procedure

-Wear gloves before the activity

-Take some soil from school garden soil, then observe under the magnified glass. What do you see?

-Fill the graduated cylinder half with soil and the other half with water and close it properly.

- Shake the cylinder for 3 minutes then put it vertically above the desk to assure the mixing of the components.

What do you notice?

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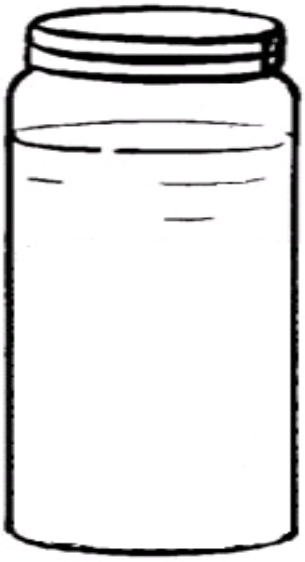


Draw what you observe in the graduated cylinder. What do you conclude?

.....

Worksheet 10

Soil water Retention

Procedure

- Bring three identical funnels and put a small piece of cotton to close its inner hole.
- Place three equal amounts of clay, sand and silt soils.
- Put graduated cylinder under each funnel
- Pour three equal amounts of water into the funnels.

What do you notice?

- Which type of soil does water penetrate quickly?
- Which soil allows water to penetrate slowly?
- Which soil holds the greatest amount water?
- Which one keeps the least amount?
- According to your observation, complete the following table:

Type of soil	Sandy soil	Clay soil	Silt soil
Volume of water that penetrates the soil	.....	.....	…….

What do you conclude?

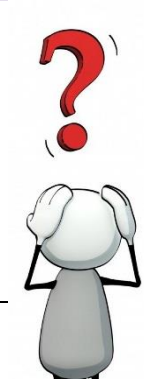
.....

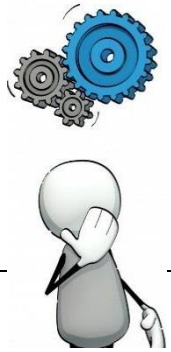
Worksheet 1

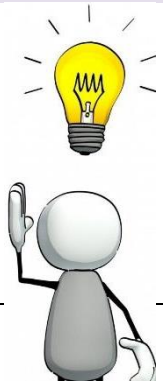
Learning Table

Topic: Earth Movement

K What do you know about the earth movement?	W What do you want to know about the earth movement?	L What did you learn about the earth movement?







Worksheet 2

Diagnosis Assessment

Below is a set of phrases on the movement of earth, specify which phrase is correct and which is wrong:

No	Phrase	True	False
1	The sun actually moves from east to west during the day.		
2	The moon and stars actually moves from east to west during the night.		
3	The moon and stars do not exist during the day.		
4	All objects consist of shadow.		
5	Shade appears only in the day with the sunlight.		
6	The position of shade doesn't change during the day.		
7	The length of shade doesn't change during the night.		
8	The ground is flat like a pie.		
9	We live in the middle of the flat earth.		
10	The sun revolves around the earth.		
11	The earth is carried by something (such as bull's horn or water.....).		
12	The earth is larger than the sun.		
13	The moon and the sun have the same size.		
14	Day and night occur due to the rotation of the sun around the Earth.		
15	Day and night occur due to the rotation of the earth around the sun.		
16	The sun doesn't exist at night.		
17	The Earth is very close to the sun in summer and away from the sun in winter.		

Worksheet 3

Day and Night

1-Describe each picture and arrange them in order.

.....

.....

.....

.....

.....

.....

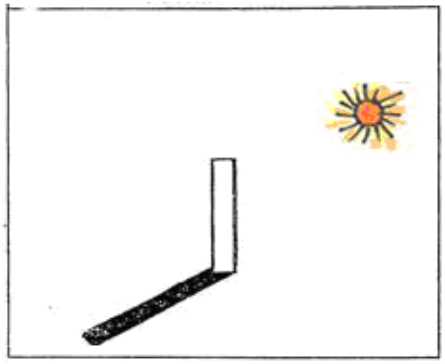
2-Describe what you will see when you look at the sky during the day and at night:

What do you see in the sky during the day?	What do you see in the sky at night?
....	....

Worksheet 4

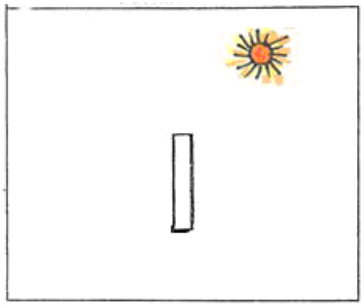
How Does the Length of the Shadow Change During the Day?

Choose a bright day, then fix a one-meter-long stick in the schoolyard, draw the shadow of the stick during the day hours, recording the length of the shadow using the following pictures:



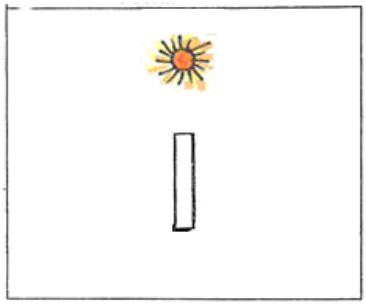
Eight o'clock in the morning

Shadow length= .....



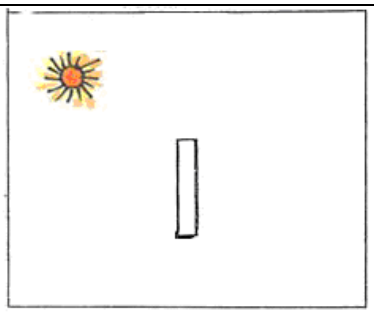
Ten o'clock in the morning

Shadow length= .....



Twelve o'clock in the afternoon

Shadow length=.....



Two o'clock in the afternoon

Shadow length=.....

We conclude that ----------

Worksheet 5

Designing a sundial

I learned from the previous activity that the length of the shadow changes during the day depending on the position of the sun, and man benefits from this phenomenon to recognize time so sundial is invented. To design a sundial, use the following simple materials and follow the given procedure.

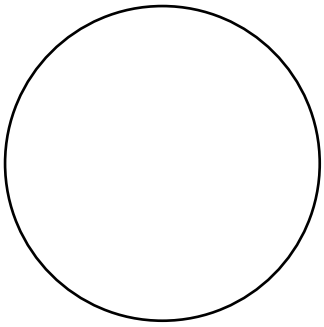
1- Place a piece of white paper on a piece of wood.

2- Draw a circle on the white paper.

3- Place a pencil or a stick at the center of the circle.

4- Place the piece of wood with the pen on it in an open place exposed to sunlight.

5- Draw a mark with a pen showing the place of the pen's shadow on the white paper every 15 minutes.

6- Use the given circle to mark what  **is written in white paper.**

Worksheet 6

Shape of the Earth

What does planet Earth look like?

I think it's flat like a pie.

Look at the picture taken from outer space, and describe what it looks like to your classmates.

Oh my god! The Earth planet looks almost spherical in shape.

The earth planet seems, from the surface of the moon,

……

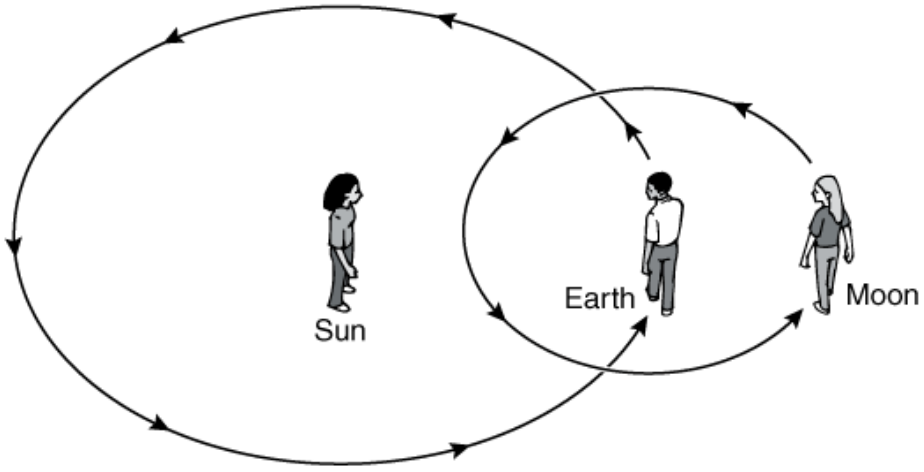
……

Worksheet 7

Movement of the Sun, the Earth and the Moon

Cosmic phenomena are produced by the movement of sun, earth, and moon that affects human and other living things. Examples on such phenomena are: day and night, four seasons. To understand this movement, share with your classmates the following activity.

What do you do?



- One of your classmates plays a role of the sun, the second plays the role of the earth and the third plays the role of the moon.
- Students move as follows:
    - Earth: moves around its axis and revolves around the sun.
    - The moon: moves around its axis and revolves around the earth.

What do you conclude?

- .....

Worksheet 8

Day and Night

Knowing the exact shape of the earth planet and its rotation around the sun. Discuss the following opinions for day and night phenomenon and which one are you with? Justify

I think that the sun rotates around the earth, and when the sun is on the other side, it is night.

No, the earth rotates around the sun every 24 hours, and when the sun is on the side away from the earth, it is night.

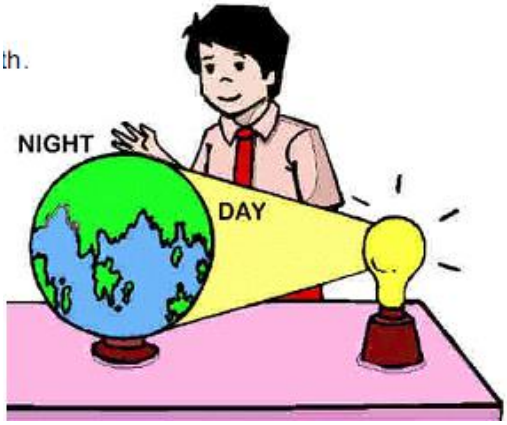
This is not true, the earth rotates around itself every 24 hours, and when the sun is on the other side, it is night.

Worksheet 9

Day and Night Phenomenon

What will you do?

- Keep the room or the lab dark.
- Put the globe model on the table.
- Point the lamp or battery light towards the side of the globe.



What do you notice?

- Which part of globe is lighted? .....
- Which part of globe is dark? .....
- Rotate the globe slowly, what do you observe? .....
- Have the light and dark sides changed? .....

What do you conclude?

- From the previous activity, day and night occurs due to.....
  .....

Worksheet 10

Four Seasons

1-Given four pictures of seasons of the year, write under each picture the name of the season then write its main properties.

			
Season: ..... **Property: .....**	**Season: .....** **Property: .....**	**Season: .....** **Property .....**	**Season: .....** **Property: .....** ....

2-The data in the following table shows the average temperature and the number of hours during a day in a particular place.

Number of hours per day	Average temperature	Date
12:50 hours	5.3°C	21th of March
14:05 hours	14.25°C	21th of June
12:06 hours	12.25°C	21th of September
10:12 hours	3°C	21th of September

- Indicate which month has:
  - Highest temperature:
  - Lowest temperature:
- Indicate which month has:

  -Longest day:

  -Shortest day:
- Indicate the season of each given months.

Worksheet 11

Four Seasons Phenomenon

What will you do?

- Spot the flashlight towards the globe, (the Northern part is close to the lamp).
  - Does more light fall on the Northern or Southern hemisphere?
  - Which hemisphere has higher temperature (Northern or Southern)?
  - Name the season of the Northern hemisphere.
- Move the globe in a semicircle around the flashlight, and then spot the light on it.
- Move the globe in a semicircle around the flashlight, so that the hemisphere is on the opposite side and close to the southern part.
  - Does more light fall on the northern or southern hemisphere?
  - Which hemisphere has the greater temperature? (Northern-Southern)
  - Name the season of the Northern hemisphere.