



St Fatima Language Schools®
Al Hegaz

The Vision of the School: Distinct Environment for Refined Education

Work Sheet *Science*

Primary 4

2023 / 2024

Second Term

Name:

Class:



4.1 Concept

Devices and energy

Lesson (1)

➤ Write the scientific term of each of the following:

1. A robotic vehicle designed to explore the surface of Mars. [.....]
2. The energy produced from batteries. [.....]

➤ Complete the following sentences:

1. The energy can be from one form to another.
2. Some calculators can change solar energy into energy by using the sunlight.
3. To operate an electric mixer we use energy.

➤ Choose the correct answer:

1. The energy source in a toy car is the
 a- engine b- tires c- battery d- fuel
2. In the battery of a toy car energy is converted into electrical energy.
 a- chemical b- sound c- light d- thermal

➤ Give reasons for:

Mars rover Curiosity operates for a long period of time on Mars without any need to be recharged.

.....

➤ What happens:

Batteries of remote-controlled toy car run out.

.....

Lesson (2) 

➤ **Put (✓) or (X):**

- 1- Both the hair dryer and the washing machine depend on the same kind of energy to operate. ()
- 2- Energy can be destroyed inside some devices. ()
- 3- In electric power stations, sound energy produced from burning of coal is converted into electrical energy. ()

➤ **Choose the correct answer:**

- 1. When you use the hand bell, the energy is converted into sound energy.
a- light b- thermal c- kinetic d- electric
- 2. Electric wires are made of
a- copper b- glass c- paper d- wood
- 3. You feel warm when you rub your hands together, because energy is converted into energy.
a- kinetic – sound b- thermal – kinetic
c- light – electrical d- kinetic – thermal

➤ **Give reasons for:**

- 1- There is an energy change when you press the spring of a soap dispenser.
.....
- 2- Not all the energy that enters the energy chain completely reaches the device.
.....

➤ **Complete the following sentences:**

- 1. In any energy chain, some of the energy is wasted in the form of
- 2. In electric power stations, is burned to generate thermal energy.
- 3. When you eat, your body turns the energy found in food into energy that helps your body move.

Lesson (3)

➤ **Complete the following sentences:**

1. Energy can neither be nor but only from one form to another.
2. The electric lamp converts energy into and energies.
3. Some kinetic energy of the bicycle is converted into energy due to the of its tires with the road.

➤ **Give reasons for:**

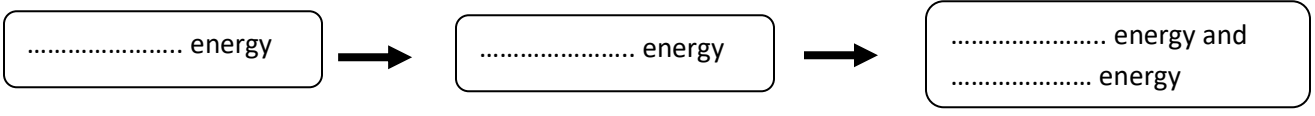
The presence of batteries inside a toy car.
.....

➤ **What happens if?:**

You put your hands near the lighted lamp.
.....

➤ **Complete the following:**

The energy chain that is produced due to inserting batteries inside flashlight and turning it on is:



➤ **Write the scientific term of each of the following:**

1. The energy produced from playing guitar. [.....]
2. Energy can neither be created nor destroyed, but only converted from one form to another. [.....]
3. The energy used to operate the electric fan. [.....]

Lesson (4)

➤ What happens if ?:

1. You use a mobile phone for a long time. (according to the wasted energy)
.....
2. You turn an electric heater. (according to the change of energy)
.....

➤ Give reasons for:

- 1- Sound energy and thermal energy are considered as wasted energy in the blender.
.....
- 2- The electrical energy that enters the hair dryer doesn't come out of the hair dryer in the same form of energy.
.....













➤ Choose the correct answer:

- 1- The output energy when playing drums is the energy.
a) chemical b) light c) sound d) potential
- 2- Which form of energy is not an output energy when a hair dryer is used? energy.
a) Kinetic b) thermal c) electrical d) sound
- 3- The produced energy doesn't help the blender do its job.
a) Chemical b) sound c) light d) potential
- 4- During charging a mobile phone, the energy is converted into energy that is stored in the phone battery.
a) electrical – chemical b) chemical – thermal
c) electrical – thermal d) thermal – chemical

➤ Correct the underlined words:

1. There is as stored thermal energy inside the food we eat. [.....]
2. Most of energy chains start with the moon. [.....]

➤ Complete the following table:

Example	Energy used	Energy produced
 Hair dryer		
 Soap dispenser (Detergent bottle)		
 Washing machine		
 Battery powered clock		
 Electric heater (used in warming)		
 Speaker		
 Normal car		
 Food		
 Electric iron		
 Solar panels		
 Rub hands (you feel warm)		
 Green plants		



Concept 3.2

About fuels

Lesson (1)

➤ Choose the correct answer:

- On burning fuel, we obtain
 a) sound b) potential c) thermal d) electrical
- To move a car, the fuel must be the car engine at first.
 a) freezed inside b) cooled inside c) burned inside d) removed from
- We can use the energy obtained from burning of wood directly for all of the following purposes, except
 a) Warming houses b) operating television
 c) cooking food d) boiling water

➤ Give reasons for:

- 1- The fuel is very important for different means of transportation.

- 2- Gasoline is burned inside a car engine.

➤ Put (✓) or (X):

- Natural gas is a form of fuels that can be used in generating electrical energy. ()
- As the speed of a car increases, the amount of used fuel decreases. ()

➤ Write the scientific term of each of the following:

- The form of energy that is produced from burning fuel. [.....]
- It is any substance which produces thermal energy on burning. [.....]

➤ Mention three different forms of fuel:

.....

Lesson (2)

➤ **Complete the following sentences :**

1. Water is considered from resources of energy, while coal and are from nonrenewable resources of energy.
2. The type of fuel that is produced from living organisms that can be planted is called such as and
3. Wood chips and grass can be used to make a biofuel.
4. Different forms of fuel can be classified into two main types which are and
5. Oil formed from the decomposition of as a result of extreme heat and

➤ **Correct the underlined words:**

1. The nonrenewable resources of energy take a short period of time to be formed under the Earth's surface. [.....]
2. We can conserve oil by increasing the use of private vehicles. [.....]
3. We can use some animals to make a liquid biofuel. [.....]

➤ **Give reasons for:**

- 1- Coal and gasoline are considered as nonrenewable resources of energy while water and wind are considered as renewable resources of energy.
.....
.....
- 2- Using wood of trees as a fuel has negative effects on the environment.
.....

➤ **What happens if...?**

Decomposition of remains of sea animals under the Earth's surface.
.....

Lesson (3)

➤ Put (✓) or (x):

1. Turbines convert kinetic energy into electrical energy. ()
2. Oil, natural gas and coal can be used to produce electrical energy. ()
3. Turning off lights that we do not need is a way to conserve electricity. ()
4. The movement of generator in an electric power station produces potential energy. ()

➤ Write the scientific term of each of the following:

- 1- The matter that produces steam on heating, which is used to turn turbines in electric power station. [.....]
- 2- The type of fuel that is used inside the electric power station to produce electricity. [.....]
- 3- The device in the electric power station, that produces kinetic energy to operate generators. [.....]

➤ Choose the correct answer:

1. The generator inside the electric power station, turns
 - a. water into steam
 - b. steam into water
 - c. electrical energy into kinetic energy
 - d. kinetic energy into electrical energy
2. All the following are forms of fossil fuels, except
 - a. water
 - b. coal
 - c. natural gas
 - d. oil
3. The steps of forming fossil fuel don't include of the remains of the living organisms.
 - a. decaying
 - b. cooling
 - c. burying
 - d. heating

➤ What happens if?:

A generator in an electric power station is damaged.

.....

Lesson (4, 5)



➤ Complete the following sentences:

1. Smog leads to pollution that causes irritation of and of human.
2. Increasing the burning of fossil fuel produces more gas that causes pollution.
3. When pesticides mix with water in canals, this causes the pollution of and
4. Burning coal and oil produces gas, which combines with in air forming acid
5. To avoid air pollution, we must use resources of energy such as, and energies.

➤ Give reasons for:

1. Farmers must decrease the use of pesticides.
.....
2. Global warming occurs due to increase of burning coal and oil.
.....
3. Acid rains have a bad effect on buildings in cities.
.....

➤ Choose the correct answer:

1. Both coal and charcoal are
 - a) Renewable resources of energy
 - b) nonrenewable resources of energy
 - c) examples of biofuel
 - d) produce thermal energy on burning
2. Coal is formed under the Earth's surface from the remains of
 - a) dead animals
 - b) dead plants
 - c) dead humans
 - d) dead insects

➤ **What happens if?:**

1. If acid rain falls on buildings for a long period of time.
.....
2. If pesticides mix water of canals and rivers.
.....
3. The amount of the fossil fuels if people don't conserve their usage.
.....

➤ **Give one example for each of the following:**

1. A disadvantage of using fossil fuels to produce energy:
.....
2. A method of conserving fossil fuels:
.....
3. A renewable resource of energy:
.....
4. A nonrenewable resource of energy:
.....
5. An advantage of using renewable resources to produce energy:
.....

➤ **Compare between the following:**

Points of comparison	Biofuel	Fossil fuel
Definition
Example
Kind of resources



Lesson (1)

➤ **Choose the correct answer:**

- All the following are examples of renewable energy resources, except
 - fossil foil
 - waterfalls
 - wind
 - sunlight
- Solar panels use solar energy to generateenergy which is used in lighting houses
 - sound
 - electric
 - potential
 - kinetic
- The wind movement hasenergy which moves the windmill blades
 - kinetic
 - solar
 - thermal
 - potential
- Both modern wind turbines and modern water turbines are similar in their.....
 - shape
 - ability to generate electric energy
 - blades number
 - ability to generate potential energy

➤ **Write the scientific term:**

- A mill that is turned by water flow. (.....)
- A mill that is operated by wind movement. (.....)
- The type of energy that is produced from wind turbines to operate different home devices (.....)

➤ **Complete the following sentences:**

- Wind turbines generate electricity by using theenergy
- The water flow has kinetic energy, which moves theof water turbines to transform this energy intoenergy
- We can use solar energy in cooking by usingwhich collected and focusonto metal pot to heat them

➤ **Give reason for:**

- Humans used windmills and watermills from hundred of years ago
.....
.....

➤ **What happen if:**

- Wind does not blow in an area that contains many modern turbines
.....

Lesson (2)

➤ Write the scientific term:

- 1- A natural movement of air that is resulted from the difference in temperature between cold and hot air (.....)
- 2- A turbine that uses the power of flowing air to generate electricity (.....)
- 3- An energy that is generated from wind turbines and is transmitted through wires to houses and factories (.....)

➤ Complete the following sentences:

- 1- Wind is formed is due to the effect ofenergy coming from thein the form of rays
- 2- Wind blows due to the difference inbetween the cold air and the hot air
- 3- The rotation of the blades of the wind turbines is caused by energy that is created by wind movement
- 4- When wind turbines rotate,energy is converted intoenergy

➤ Give reason for:

- 1- Kinetic energy of wind effects the speed of wind turbines blades rotation

.....
.....

- 2- Sometimes the wind turbines are useless

.....
.....

➤ What happens if :

- 1- The solar cells in calculator are exposed to sunlight

.....

Lesson (3, 4)

➤ **Write the scientific term**

- 1- A turbine that converts the energy of falling water into electrical energy
(.....)
- 2- A type of electrical energy generated by water turbines in dams
(.....)
- 3- The process in which the water of rivers evaporates , then condenses forming clouds and return back to river through rainfalls.
(.....)

➤ **Give reason for:**

- 1- Hydroelectric dams are built on river
.....
.....
- 2- Water turbines are placed in waterfalls area
.....
.....

➤ **Complete the following sentences:**

- 1- When rivers flow downhill, energy of water is converted intoenergy that rotates water turbines
- 2- Water andare from renewable resources of energy which usedenergy to operate turbines and generate
- 3- Water turbines are used to generate electricity in places which have waterfalls or, while wind the turbines are used in places with strong
- 4- In water turbines, theenergy of water movement is converted into a type of electrical energy which is called.....energy

➤ **What happens if :**

1- Water turbines are placed in a dams

.....

2- Potential energy of water increases behind a dam that has water turbine

.....

➤ **Compare between the following:**

Points of comparison	Wind turbines	Water turbines
Energy used
Type of resources of energy
Produced energy



Concept

Breaking down and moving rocks

Lesson (1)

➤ Write the scientific term of each of the following:

3. The disappearance of a sandcastle as a result of its hitting with the sea waves. (.....)
4. They are deep valleys carved by flowing water. (.....)
5. Rocks that are found near seashores and broken by the effect of wind and water over long periods of time. (.....)

➤ Give reasons for:

Formation of canyons is considered as an example of slow changes.

.....

➤ What happens if?

Sea waves hit costal rocks over a long period of time.

.....

➤ Choose the correct answer:

1. Sand is formed due to breaking down of
 a. glass b. wood c. rocks d. plastic
2. Among the changes which are happened very fast, is
 a. formation of deep canyons b. disappearance of a sandcastle
 c. breaking down of coastal rocks d. breaking down of mountain rocks
3. The force of wind plays an important role in erosion, because it can transfer ...
 a. sound energy b. very large pieces of rocks
 c. small sized particles of sand d. light energy

Lesson (2)

➤ Put (✓) or (X) :

1. Limestone caves are formed by the action of mechanical weathering. ()
2. Shaping the Earth is usually starts by deposition process. ()
3. Oxygen in air reacts with iron of some rocks forming green-colored rust. ()

➤ Give reason for:

1. Water play an important role in the formation of limestone caves.

.....

2. Iron in rocks may rust.

.....

➤ What happen if ...?

1. A red-colored rust is formed on some rocks.

.....

2. Lichens growing on rocks produce acids.

.....

➤ Write the scientific term of each of the following:

1. It is a type of caves that is formed when dissolved minerals of rocks combine again in new shapes. [.....]
2. It is a process through which water forming ice in cracks of rocks. [.....]
3. A process in which the sediments are dropped in a new location by the action of wind, and gravity. [.....]
4. The condition of atmosphere at a specific time and place. [.....]

➤ Classify the following examples into mechanical or chemical weathering:

- 1- Rusting of iron rocks due to the reaction between iron and oxygen. (.....)
- 2- Breaking down of rocks by the effect of growth of plant roots inside the cracks of rocks. (.....)
- 3- Breaking down of rocks by the effect of acids produced by lichens. (.....)
- 4- Breaking down of rocks by the effect of freezing of water and melting of ice inside their cracks. (.....)



Lesson (3)

➤ Write the scientific term of each of the following:

1. A process that takes place in rocks and can be explained by pressing strongly on cubes of sugar until it becomes a powder. [.....]
2. A process in which a large rock is broken into small pieces. [.....]
3. A process in which the colors of paints of houses are changed as a result of falling of acid rains. [.....]

➤ Complete the following sentences:

1. In the weathering, the chemical structure of rocks doesn't change.
2. The cracks caused by freezing of water and melting of ice represents weathering.
3. Putting some biscuits in a cup of water that contains antacid is like the weathering of rocks.

➤ Choose the correct answer:

1. Which of the following doesn't cause mechanical weathering?
a) Roots of plants b) Acid rains
c) Wind movement d) Water movement
2. Crushing a piece of biscuit by hands is similar to of rocks.
a) mechanical weathering b) chemical weathering
c) erosion d) deposition
3. The breakdown of rocks either mechanically or chemically is called
a) rusting b) weathering c) deposition d) erosion

➤ Put (✓) or (X):

1. Grinding of biscuits by hands into fine powder has the same effect of mechanical weathering of rocks. ()
2. When water freezes, its volume increases. ()
3. Roots of plants can slowly grow over time through small cracks in rocks causing chemical weathering. ()



Lesson (4)

➤ Give reasons for:

1) Formation of small sand dunes on a beach.

.....

2) Formation of a delta when a river meets a sea.

.....

➤ Complete the following sentences:

1. Sand grains fall on the ground when the carrying it stops.

2. Strong wind and hurricanes carry for a long distance.

3. Wind, and are natural factors that control erosion process.

4. Sediments are moved by the effect of and then settles on the surface of land or the bottom of water.

➤ What happens if?

A river carries sediments meet a sea.

.....

➤ Choose the correct answer:

1- Moving of sediments from a place to another represents process.

- a. weathering b. photosynthesis c. erosion d. deposition

2- Gentle wind can carry for a short distance.

- a. a large rock b. a large body of water
c. a big mass of mud d. sand grains

3- Pulling down broken weathered rocks at mountainsides occurs by the effect of

- a. Gentle wind b. Earth's gravity
c. Freezing of water d. chemical weathering

➤ Write the scientific term of each of the following:

1. A hill of sand created by the wind. [.....]

2. A fan-shaped mass of sediment that is formed where a river enters a larger body of water like seas. [.....]



Lesson (5)

➤ Complete the following sentences:

1. The cracks caused by heating and cooling of water represent a type of weathering known as weathering.
2. The origin of sand is the breaking down of some types of

➤ Choose the correct answer:

1. Conditions of atmosphere including temperature, wind and rains are known as
a. weather b. weathering c. deposition d. erosion
2. As a result of breaking down of, sand is formed.
a. rubber b. plastic c. rocks d. glass
3. When a river meets a sea or an ocean, a is formed.
a. canyon b. volcano c. mountain d. delta

➤ Put (✓) or (X):

1. The volume of water decreases when it freezes. ()
2. The surface of the Earth never changes. ()
3. Limestone caves are formed as a result of chemical weathering. ()

➤ Write the scientific term of each of the following:

1. A process in which the moving sediments are dropped in a new place.
[.....]
2. They are deep valleys carved by flowing water. [.....]
3. A process in which small broken rocks move from a place by the help of wind or water.
[.....]



Concept 4.2

Changing landscapes

Lesson (1)



➤ Write the scientific term:

1. It is the landform that is formed by the effect of weathering and erosion due to wind, water or other factors (.....)

2- The two processes that have the main role in formation of canyon (.....)

➤ Give reason for:

Trees and other plants are growing on both sides of small canyons

.....

➤ What happens to:

1- A flat land, if a water stream flows over it.

.....

2- A small canyon if it rained a lot and water ran through it for a longer time.

.....

➤ Put (✓) or (x):

1- A canyon is formed due to the effect of water stream on a flat land. ()

2-Wadi rum in Jordan is an example of dune. ()

3- When the water is moving over the sand, it leaves an impression on it.

()

➤ **Choose the correct answer:**

1- Wadi nakhr in Oman is formed because water move away by the effect of erosion.

- a. sunlight b. wind c. sediments d. mountains

2- If the rain falls over a small canyon for several times per year,.....

- a. its depth increases b. its depth decreases.
c. it becomes flat c. it is not be affected



Lesson (2)

➤ **Complete the following sentences by using the words below:**

(Speed – wind – sediments – valleys – gravity)

- 1- The sides of a mountain could be broken down by the effect of and weather erosion.
- 2- Canyon is a special type of that has steep sides.
- 3- When the water of a river travels down a steep slope, its increases.
- 4- The force of water stream can erode a lot of of a mountain and carry them away.
- 5- Rainwater is pulled downhill forming small streams due to the effect of

➤ **Give reason for:**

- 1- It might be useful to recognize signs of weathering, erosion and deposition.
.....
- 2- Valleys have different shapes.
.....

➤ **Choose the correct answer:**

1-..... can erode valleys and form canyons across them.

- a. rivers b. mountain c. dunes d. rocks

2- When the water of a river travels downhill on a steep slope, its speed

- a. stays constant b. decreases to half
c. decreases to quarter d. increase

3- Rivers that flow fast can cause more than rivers with slow flow.

- a. chemical weathering b. erosion
c. deposition d. formation

Lesson (3)

➤ **Put (✓) or (x):**

- 1- Both canyons and valleys often have rivers in their bottom ()
- 2- The walls of valleys are vertical and steep ()
- 3- Nile river delta has a rectangular shape ()
- 4- Delta is formed when a running water meet a still water. ()

➤ **What happen if**

A river streams enters a sea

.....

➤ **Give reason for:**

Plants of wetland areas help in formation of deltas.

.....

.....

➤ **Write the scientific term**

1- They are lowland areas in between mountains and have gently sloped sides (.....)

2- A land areas that is formed by deposition process when a river enters a lake or a sea (.....)

➤ **Choose the correct answer:**

1- The main difference between valleys and canyons is that valleys have ...

- a. many rock layers
- b. steep slope walls
- c. gently sloped sides
- d. vertical walls

2- Walls of canyons are characterized by all the following, except that they

- a. are very high
- b. are gently sloped
- c. have great depth
- d. consist of many rock layers

Lesson (4)

➤ **Write the scientific term:**

- 1- It is the process by which the wind carves the rocks into different shapes
(.....)

- 2- It is the landform that is formed by erosion and deposition of sand in sandy desert environment
(.....)

➤ **What happens if ?**

Wind that is carrying sand particles hits a big rock

.....

.....

➤ **Arrange the following sentences to show the steps of how wind can erode a rock:**

- (.....) flying sediment hits the rock.
- (.....) blowing of wind across.
- (.....) the sediment carves the rock into different shapes.
- (.....) wind starts to pick up sand and other rock particles and carries them away.

➤ **Put (✓) or (x):**

1- Sand travels for a short distance when wind blows with a great force ()

2- Wind can't break down rocks ()

3- Mountains are formed when something block the path of wind carrying Sand ()

➤ **Give reason for:**

1- A sand dune may be formed in front a large rock in desert

.....
.....

2- The distance that the sand travels depends on the force of the wind.

.....
.....

REVISION

**St. Fatima Lang. School
Heliopolis**

**Form:4th Primary
Subject: Science
Time: 1½ hours**

Final Exam 2022 / 2023

Answer the following questions:-

[1] A) Choose the correct answer:-

- 1- In the battery of a toy car energy is converted into electrical energy.
a) chemical b) sound c) light d) thermal
- 2- Curiosity rover is designed to explore
a) Earth b) Mars c) The sun d) The moon
- 3- On burning fuel, we obtain
a) Sound energy b) electrical energy
c) potential energy d) thermal energy
- 4- All the following are processes that can change the Earth's surface except.....
a) digestion b) erosion c) weathering d) deposition

B) Give reason :-

- 1- The used amount of fossil fuel cannot have replaced as quickly as it is consumed.

.....

[2] A) Put (√) or (x):-

- 1- There is a stored chemical energy inside the food we eat. ()
- 2- You need gasoline to move a bicycle. ()
- 3- Wind can pick up sand grains informing sand dunes. ()
- 4- The amount of oil on Earth is limited. ()

B) What happen if:-

- 1- A generator on an electric power station is damaged.

.....

[3] A) Write the scientific term of each the following:-

- 1- The energy produced from batteries. (.....)
- 2- A process in which rocks are broken down into smaller particles. (.....)
- 3- A device used to convert electrical energy into light energy. (.....)

B) Complete the following:-

- 1- The energy can be from one form to another.
- 2- Blowing of strong in the desert may form large sand dunes.