

شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية



شرح مراجعة نهائية الأسئلة المهمة مع الإجابات

موقع المناهج ← المناهج الإماراتية ← الصف الرابع ← علوم ← الفصل الثاني ← الملف

التواصل الاجتماعي بحسب الصف الرابع



روابط مواد الصف الرابع على تلغرام

[الرياضيات](#)

[اللغة الانجليزية](#)

[اللغة العربية](#)

[التربية الاسلامية](#)

المزيد من الملفات بحسب الصف الرابع والمادة علوم في الفصل الثاني

[أسئلة الامتحان النهائي - انسباير](#)

1

[أسئلة الامتحان النهائي - بريدج](#)

2

[مراجعة مترجمة وفق الهيكل الوزاري - انسباير](#)

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[حل أسئلة الامتحان النهائي - انسباير](#)

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[حل نموذج أسئلة امتحان نهائي](#)

5



Khalifa City A School - Cycle 1

مؤسسة الإمارات للتعليم المدرسي
EMIRATES SCHOOLS ESTABLISHMENT

مدرسة مدينة خليفة أ / حلقة أولى

SCIENCE

TERM 2: EOT COVERAGE DOCUMENT

(SUMMARY+IMPORTANT QUESTIONS)



Created by- Nisha Tanwar

Lesson	No of questions in exam	Important Pages
Types of energy	4	14,15,17,23

SUMMARY: TYPES OF ENERGY

Pg:14

- ❖ **Stored energy:** Potential energy within the object.
- ❖ **Energy of motion:** Kinetic energy which moves from one place to another.

❖ Energy can take different forms.

❖ There are mainly 2 types of energy.

STORED ENERGY	ENERGY OF MOTION
Chemical energy	Electrical energy
Nuclear energy	Light energy
	Thermal energy

THERMAL ENERGY

- ❖ It is internal energy of an object due to its motion.
- ❖ Thermal energy increases as the substance gets warmer.

❖ Heater



❖ Rubbing hands



thermal energy

❖ Heating the pan



SOUND

ENERGY

- ❖ It is energy due to the vibration of particles.
- ❖ When the drummer beats the drum, the drum vibrates. It makes the air vibrate
- ❖ It travels in all the directions.

❖ **Drum**







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Label the Photo: Energy in the Classroom



- 1. Window with Sunlight:** The radiation from the Sun is converted to heat and light in the classroom.
- 2. Teacher Talking:** The teacher transforms chemical energy from food into kinetic energy and sound energy.
- 3. Computer:** The computer transforms electrical energy into light, sound, and thermal energy.
- 4. Students Building a Model:** The students transform chemical energy from food into kinetic energy when they use their hands to build a model.

Object	Name	Energy transfer or transformation	Types of energy
	Windup toy	Energy transformation	Potential to kinetic and sound
	Pom Pom launcher	Energy transformation	Potential to kinetic
	Dropped ball	Energy transformation	Potential to kinetic
	Marbles	Energy transformation and transfer	Kinetic to kinetic to sound

1. Which best describes how energy changes in a toaster?
 - A. chemical to thermal
 - B. electrical to light
 - C. electrical to thermal**
 - D. electrical to chemical
2. Dan made the following observations in his science notebook:
The radio sitting on the table made the water in my glass move.
What can he conclude?
 - A. Some types of energy cannot transfer through water.
 - B. The sound energy of the radio transferred to the water.**
 - C. The electrical energy of the radio transferred through the water.
 - D. Only light can move through water.

3.

Energy Transformation	Example
chemical to electrical	battery powered flashlight
light to thermal	sunlight heats the sidewalk
motion to sound	

Which example best fits in the last row of the table?

- A. burning candle heats up
- B. plucked guitar string makes noise**
- C. ball rolls down hill
- D. rubbing warms hands

MC GRAW HILL QUESTIONS:

1. For a flashlight to turn on, chemical energy from the batteries changes to electrical energy that flows to the lightbulb. The lightbulb changes electrical energy into light energy. What is this an example of?

- a) **energy transformation**
- b) energy exchange
- c) energy being created
- d) energy being destroyed

2. Fill in the blank:

A child hitting a drum creates vibrations that produce sound energy.

3. Energy is transferred from the Sun to Earth through _____ and _____ energy.

- a) **Light and thermal**
- b) Electrical and sound

4. Electrical energy is transferred when an iron is plugged into an outlet. What type of energy does the electrical energy become?



Thermal energy

5. Identify the statement that correctly explains what happens when energy transfers in a system.

- a) About 75% of the energy is transferred, while the rest is destroyed.
- b) All the energy is transferred in different amounts to different forms.
- c) Half of the energy is transferred in different amounts to different forms.
- d) Some of the energy gets transferred, while a portion is lost along the way.

6. Thermal energy is:

- a) the internal energy of an object due to the kinetic energy of its particles
- b) the external energy of an object due to its potential energy
- c) the internal energy of an object due to the stored energy of its particles
- d) the external energy of an object due to its exposure to the Sun

7. When a person plucks the string on a guitar, _____ energy is transferred.

Sound energy

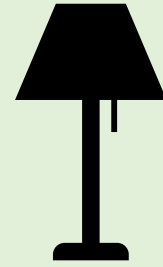
8. Which statement is true?

a) A lamp changes heat energy to electrical energy.

b) A lamp changes light energy to electrical energy.

c) A lamp changes electrical energy to light and heat energy.

d) You cannot change energy from one form to another.



9. Frank placed a metal spoon in a glass bowl of hot soup. He then went back to get crackers.

When he touched the spoon, he was surprised to find that it was hot. Frank knew that the spoon was not hot when he put it in the soup.



Which sentence best explains how this happened?

a) The radiation from the microwave bounced onto the spoon.

b) Spoons begin heating up when they are placed into liquids.

c) Thermal energy is transferred from the soup to the spoon.

d) Heat is created when metals and glasses combine with one another

10. Dolphins communicate using special vibrations and sounds. How is this possible?

a) Dolphins have very good hearing.

b) The energy can flow easily through water.

c) Dolphins make loud sounds only other dolphins can hear.

d) The energy is transferred from one dolphin to another through sound.

11. A pom-pom launcher _____

a) transfers kinetic energy to thermal energy

b) transforms kinetic energy to sound energy

c) transforms stored energy to energy of motion

d) transfers energy of motion to stored energy

12. When a student plays a guitar, how does the sound travel to reach your ears?

a) using echos

b) through potential energy

c) through thermal energy

d) through sound waves



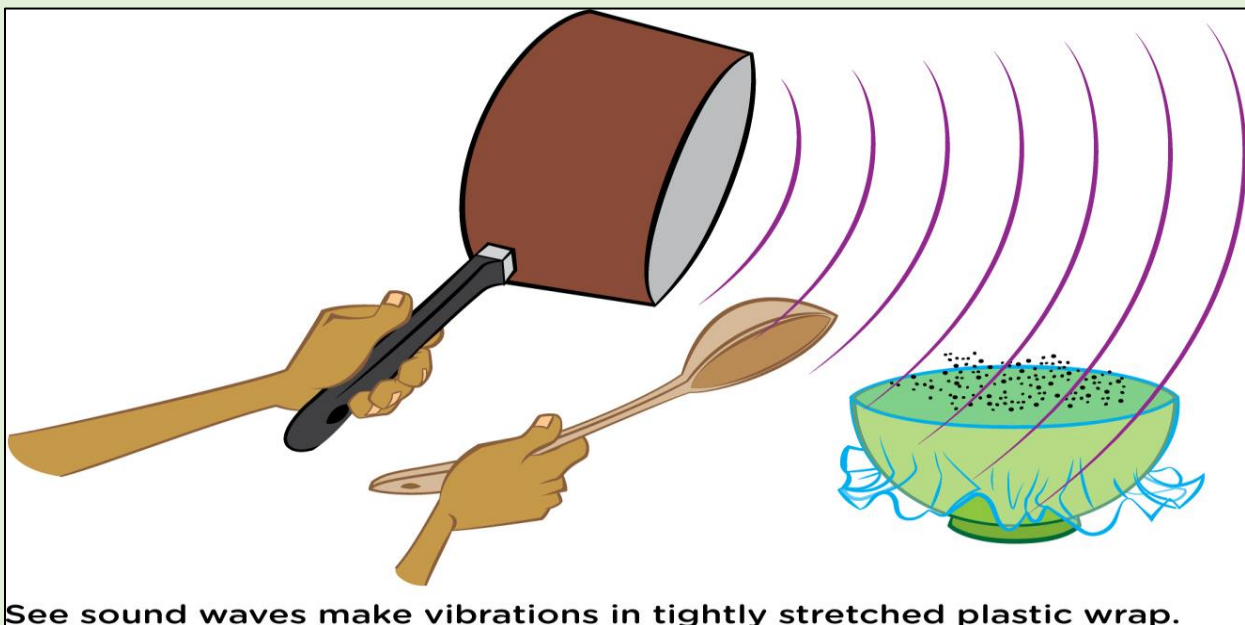
Lesson	No of questions in exam	Important Pages
Sound and Light	2	30,32

Pg:30

- ❖ Sound is a type of kinetic energy.
- ❖ It is produced by moving particles of a material.
- ❖ Air is made up of tiny particles which transmits sound.
- ❖ When you pluck the rubber band, the particle in the air moves back and forth rapidly.

VIBRATION: Back and forth motion is called vibration.

- ❖ Vibrations produce sound.
- ❖ All sounds begin with vibration.



See sound waves make vibrations in tightly stretched plastic wrap.

SOUND WAVE

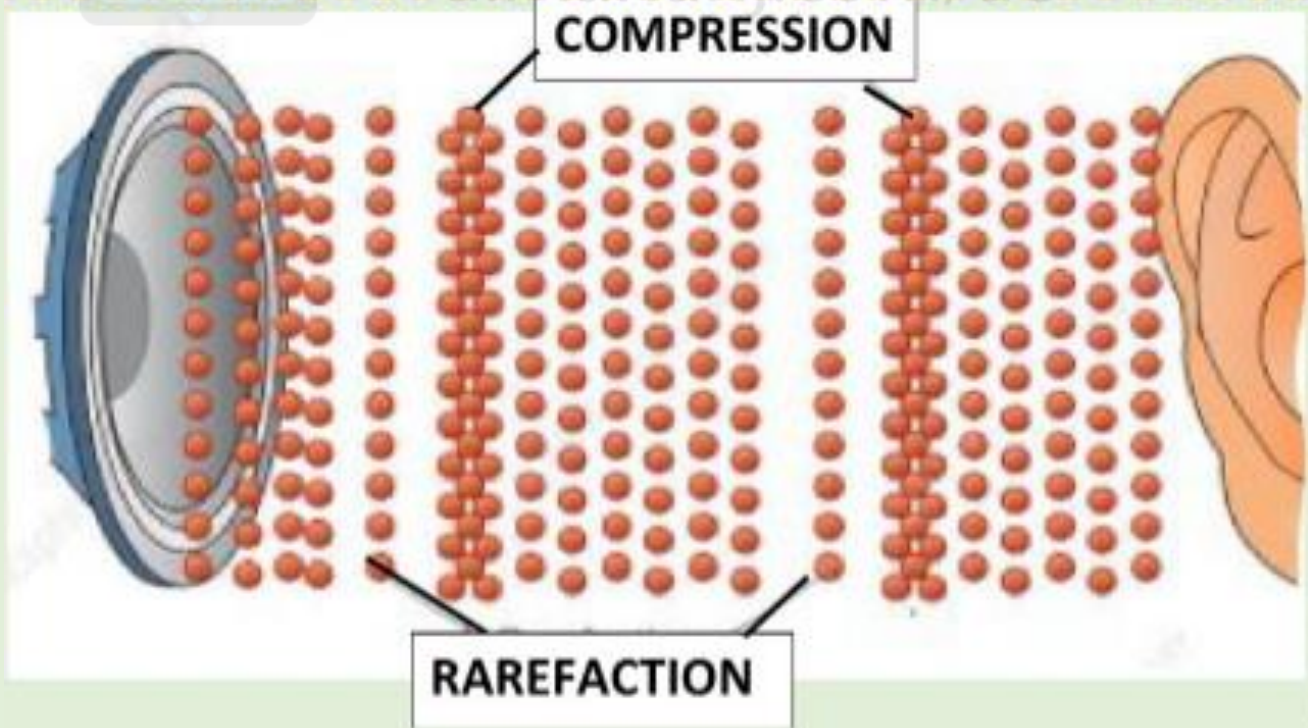
A wave that transfers energy through a material and spreads outwards in all the direction from a vibration.

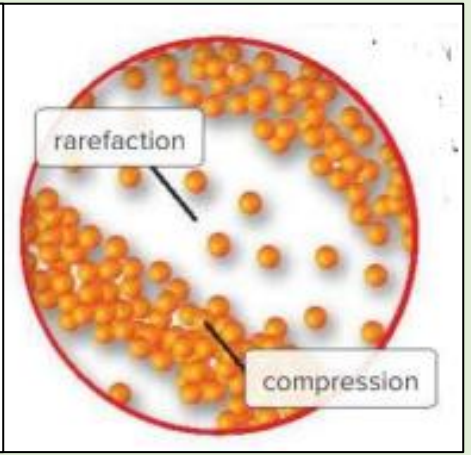
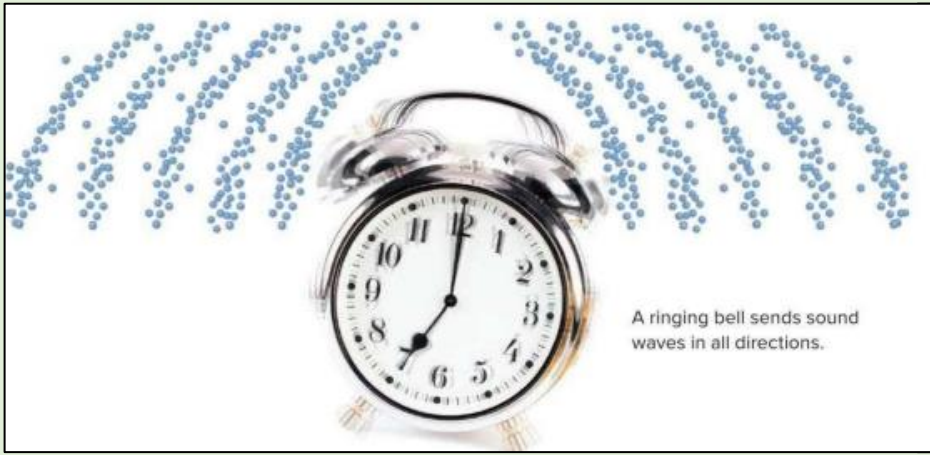
- ❖ Each sound wave is made of a series of compressions and rarefactions.
- **COMPRESSIONS:** Regions of air that have many particles.
- **RAREFACTIONS:** Regions of air with fewer particles.

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LIVEWORKSHEETS

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Pg:32

LIGHT ENERGY

- ❖ If we sit outside, we feel thermal energy on our face.
- ❖ This is evidence that light transfers energy.
- ❖ We use light energy for warmth, to heat water, to dry grains and fruits and many other purposes.
- ❖ In modern world, due to high demand of energy we use sun (solar energy) to produce electricity.

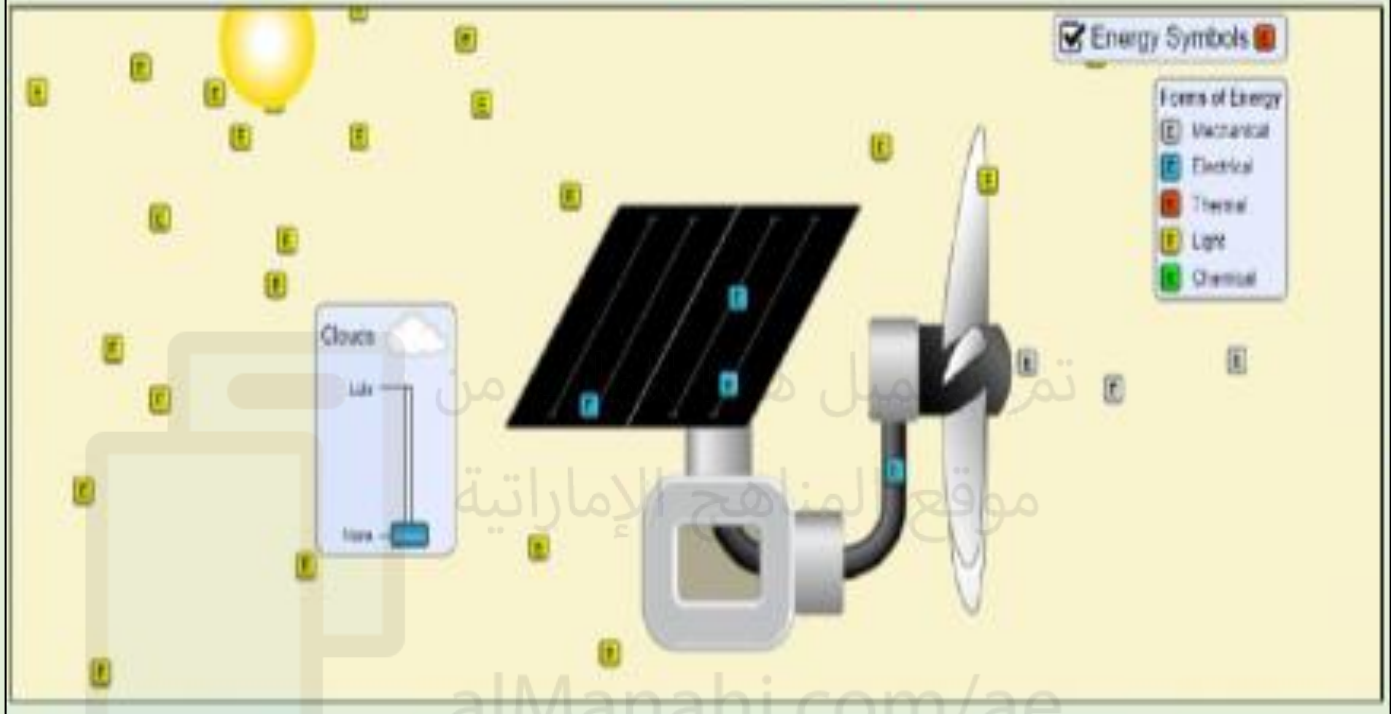
IMPORTANT



- ❖ Light can travel through space.
- ❖ Light does not need medium to travel.
- ❖ Light can travel in the form of waves as well as tiny particles of energy.

SOLAR CELLS (PHOTOVOLTAIC CELLS)

Devices that convert **light energy** from the sun to produce **electricity**.



MC GRAW HILL QUESTIONS:

1. What is the difference between sound and light energy?

Ans. Sound energy needs a medium to travel like air, water, solid however light does not. Light can travel in space.

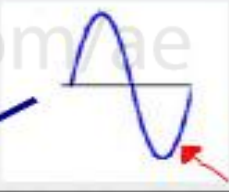
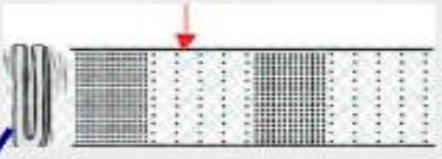

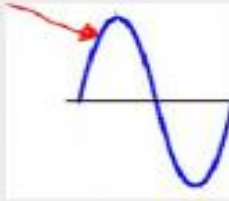
2. Sound energy is a type of:

- a) Stored energy
- b) Infrared energy
- c) Energy of motion**
- d) None of the above

3. How can light energy solve real life problems?

Ans: We can use light energy to create electricity using solar panels.

4. **MATCH THE FOLLOWING:**

COMPRESSION	
DIP	
PEAK	
RAREFACTION	

5. Light travels in a _____ path.

- a) Curved
- b) Straight**
- c) Random
- d) Zigzag

6. Why are sounds not heard in space?

- a) Space is too cold for sound waves to travel.
- b) There is too much matter to travel through in space.
- c) Space is a vacuum with few particles to travel through.**
- d) Energy cannot travel in space.

7. Sound waves cannot travel through empty space.

8. Which is the best description of how sound waves travel?

- a) in a straight path to your ear
- b) back and forth from the source
- c) outward in all directions**
- d) upward from the source

9. How are sound waves and states of matter (solid, liquid, gas) related?

a) Sound waves cannot travel through any states of matter.

b) Sound waves can travel through all three states of matter.

c) Sound waves can travel through solids, but not gasses or liquids.

d) Sound waves can travel through liquids, but not solids or gasses

10. A boy, who was at a very loud motorcycle race, said he could feel the motorcycles vibrate his body, even though he was not touching them. How is this possible?

a) The noise was too loud for the boy.

b) The boy was sitting very close to the motorcycles.

c) The energy was transferred to the boy's body through sound.

d) The motorcycles sent electrical currents through the boy's body.

11. Astronauts in space cannot talk to each other unless they use a radio to speak back and forth.

Why is this?

a) The air is too thick to carry sound waves efficiently.

b) The force of gravity is too strong to allow sound waves to travel.

c) There is no air in space, so there is no medium to carry sound waves.

d) It is very loud in space, so they can only hear each other through a radio.

12. A fire truck's siren and flashing lights are examples of _____ and _____ energy.

Choose two answers.

a) heat

b) light

c) sound

d) chemical

13. Sound _____ travel through outer space.

a) Does

b) Does not

14. To stop a drum from producing sound, you would

_____.

- a) hit it harder
- b) hit it softer
- c) **stop it from vibrating**
- d) place it in water

15. How does sound energy travel?

- a) in strings
- b) in beams
- c) in pulses
- d) **in waves**

16. A form of energy that allows you to see objects is

_____.

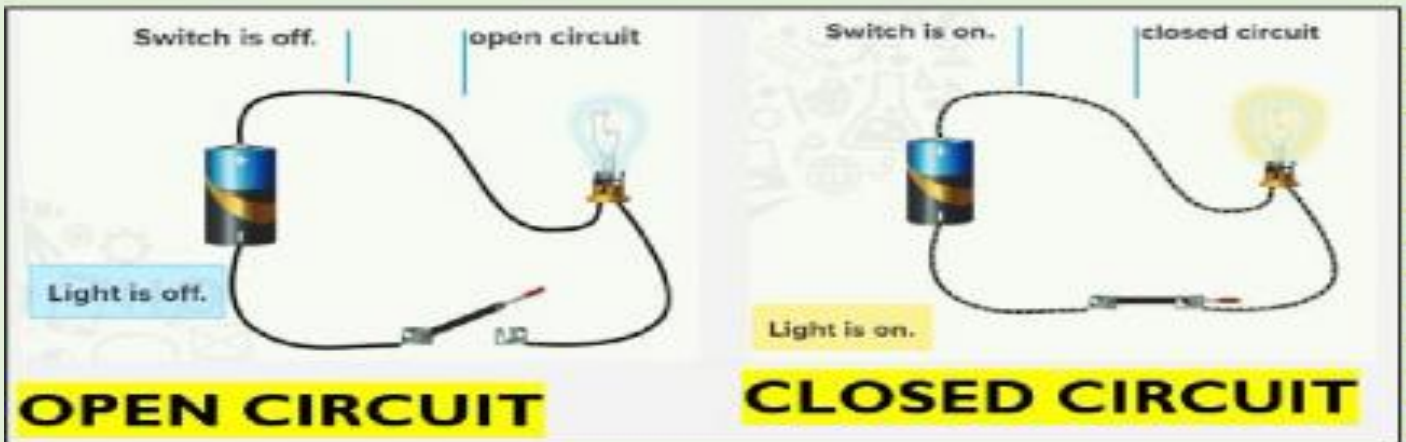
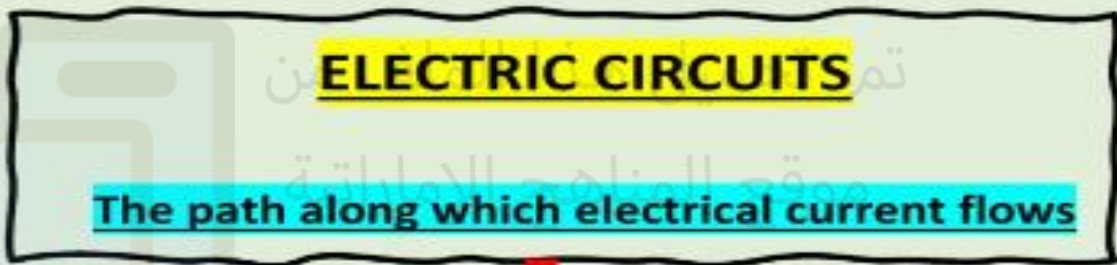
- a) heat
- b) **light**
- c) solar energy
- d) vision

Lesson	No of questions in exam	Important Pages
Electricity	3	48,50(Figure)

Pg:48

WHAT IS ELECTRICAL CURRENT?

❖ Flow of an electrical charge gives us electricity



TYPES OF MATERIALS

CONDUCTORS

❖ Materials through which electricity can pass through easily.

E.g.

- Metals
- Steel
- Wire

INSULATORS

❖ Materials through which electricity cannot pass through easily.

E.g.

- Plastic
- Cloth

RESISTOR

❖ Materials which resist the flow of electricity.

❖ It changes it into heat, light and thermal.






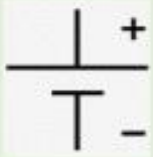
E.g.

- Bulb

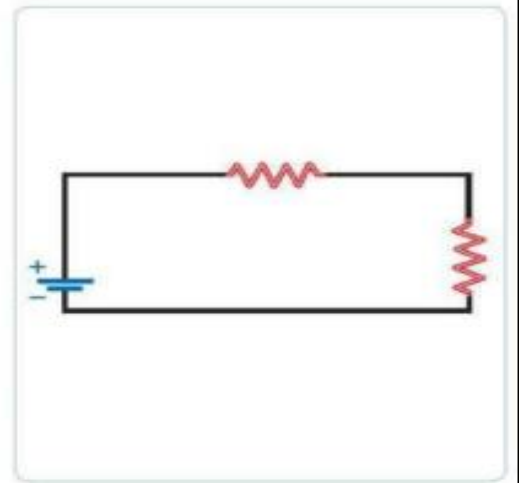
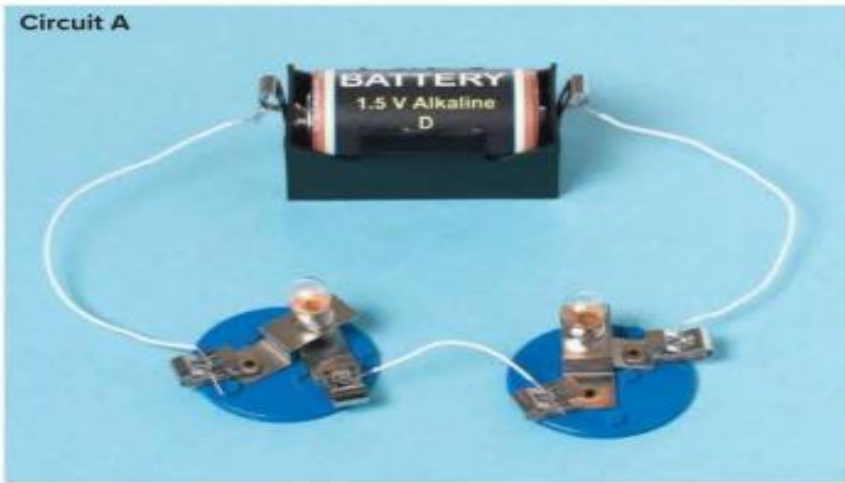
Wires	Helps to flow the electricity through the circuit.
Battery	Source of voltage source.
Switch	Open or closes the path in the circuit
Open circuit	In open circuit, switch is open, and lightbulb does not glow.
Closed circuit	In closed circuit, switch is closed and lightbulb glows.

Pg:50

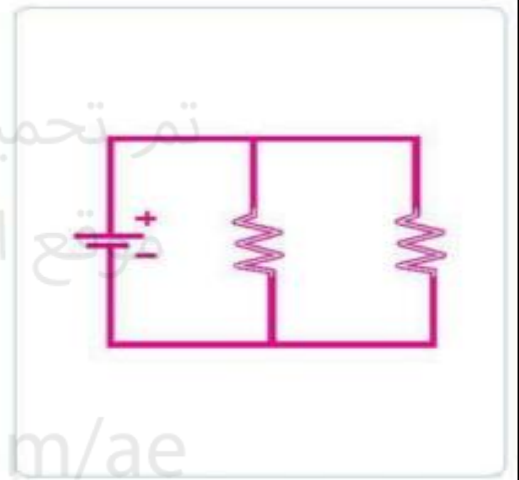
LABEL A DIAGRAM

COMPONENTS	PICTURE	KEY
WIRE		
RESISTOR		
VOLTAGE SOURCE		

Circuit A



Circuit B

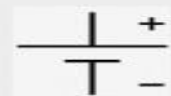


MATCH THE FOLLOWING:

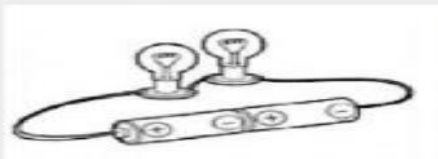
RESISTOR

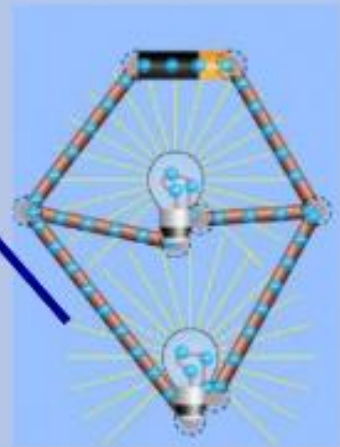
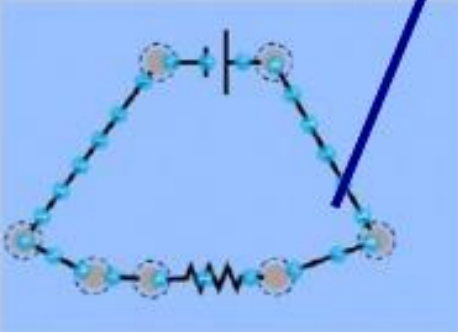
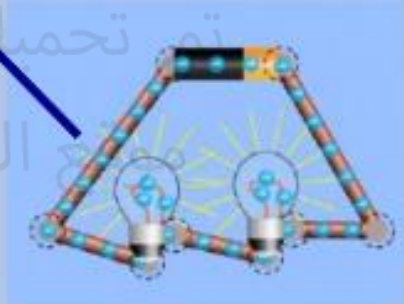
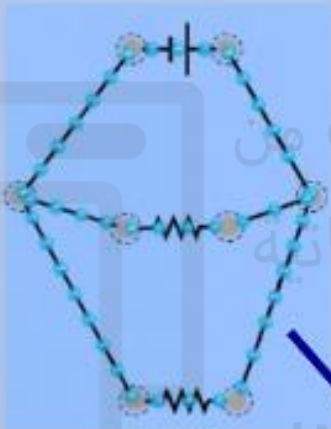
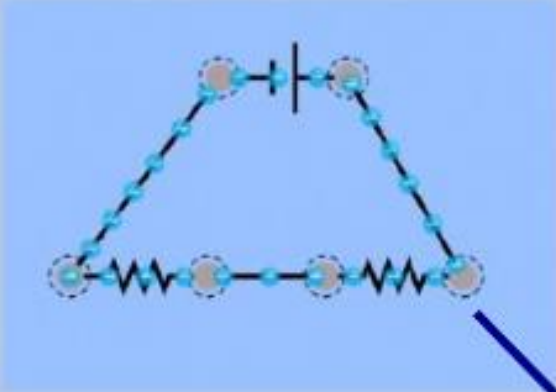


WIRE



VOLTAGE SOURCE





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MC GRAW HILL QUESTIONS:

1. A fan is plugged into an extension cord. The extension cord is plugged into a wall outlet. How does the extension cord help the fan work?



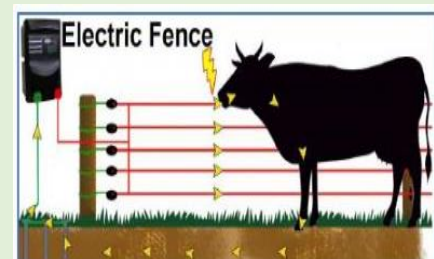
- a) The extension cord makes the fan more powerful.
- b) The extension cord makes the fan easier to operate.
- c) The extension cord transfers sound energy to the fan.
- d) The extension cord transfers electric currents from the outlet to the fan.**

2. A flow of electrical charges is known as _____.

- a) resistance
- b) electrical current**
- c) insulator
- d) voltage

3. An electric fence used to contain cattle works by transmitting energy through a conductor creating an electric _____

- a) Light
- b) Sound
- c) Current**



4. In an electric circuit, a battery can act as a _____.

a) voltage source

b) conductor

c) insulator

d) resistor

5. A conductor is a _____.

a) a material that increases the number of charged particles

b) material that increases the amount of electricity

c) material through which electricity flows easily

d) material that stops the flow of energy

6. You are asked to design a product that will change **electrical energy to heat energy.**

Choose the item you would research while developing your product.

a) Hair dryer

b) Alarm clock

c) Ceiling fan

d) Cell phone

7. A switch in a circuit _____.

- a) acts as an insulator
- b) absorbs electricity
- c) allows or stops the flow of electricity
- d) keeps the flow of electricity at a safe level



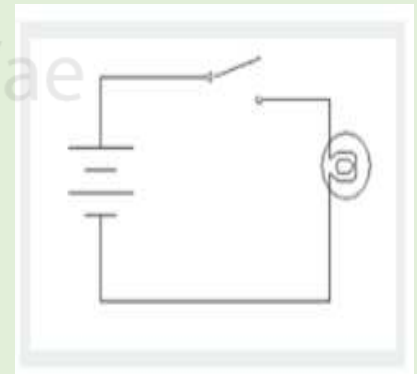
8. An object in an electrical circuit that resists the flow of energy is called _____.

- a) a magnet
- b) a compass
- c) a voltage
- d) a resistor

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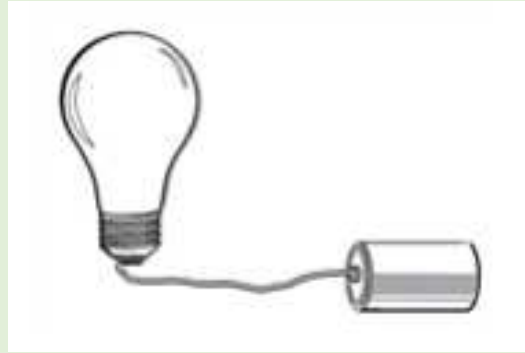
9. Will the light bulb in this circuit light and why/why not?

- a) no, because the switch is open
- b) yes, because it has two batteries
- c) no, because the bulb is burned out
- d) yes, because it is in a circuit



10. The path along which electrical current flows is called a(n) **CIRCUIT**.

11. A student made the circuit in the drawing below. Which does the student need to add to the circuit to make it work?



- a) another bulb
- b) another battery
- c) a switch
- d) another wire**

12. A _____ is a material that stops or slows the current.

- a) Conductor
- b) Insulator**
- c) Battery
- d) Flashlight

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Lesson	No of questions in exam	Important Pages
Heat	4	68,69,70,71(Figure)

Pg: 68,69

HEAT

It is the movement of energy from **warmer object** to **colder object**.

- ❖ Objects with higher thermal energy vibrate faster.
- ❖ Object with lower thermal energy doesn't vibrate as much.
- ❖ When a hot object touches cold object, their particles bump into each other and hot object transfers its heat to cold object.



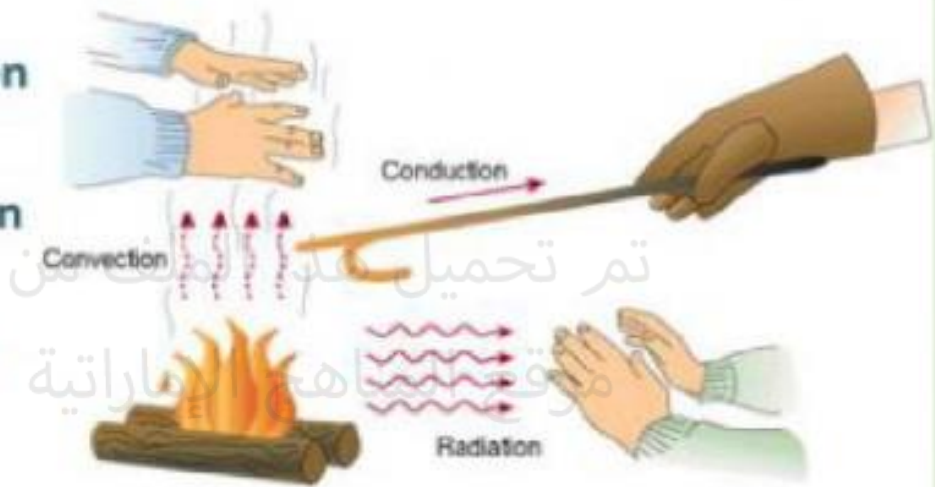
HOW DOES HEAT TRAVEL?

There are **THREE** ways heat can move.

– **Conduction**

– **Convection**

– **Radiation**



CONDUCTION

❖ Conduction happens **when two objects are touching**

CONVECTION

❖ Convection transfers heat through **liquids and gases**

RADIATION

❖ Radiation **does not need matter** to transfer heat.

HOW DOES HEAT TRAVEL?

CONDUCTION



On a summer day, when your cool feet touches the hot sand, your feet become warmer through conduction.

CONVECTION



It is caused by cool parts sinking and pushing warmer parts up into the liquid or gas. The current spread thermal energy throughout the material.

RADIATION



Sun doesn't need a material to transfer energy. Earth surface is warmed by the radiation.

conduction

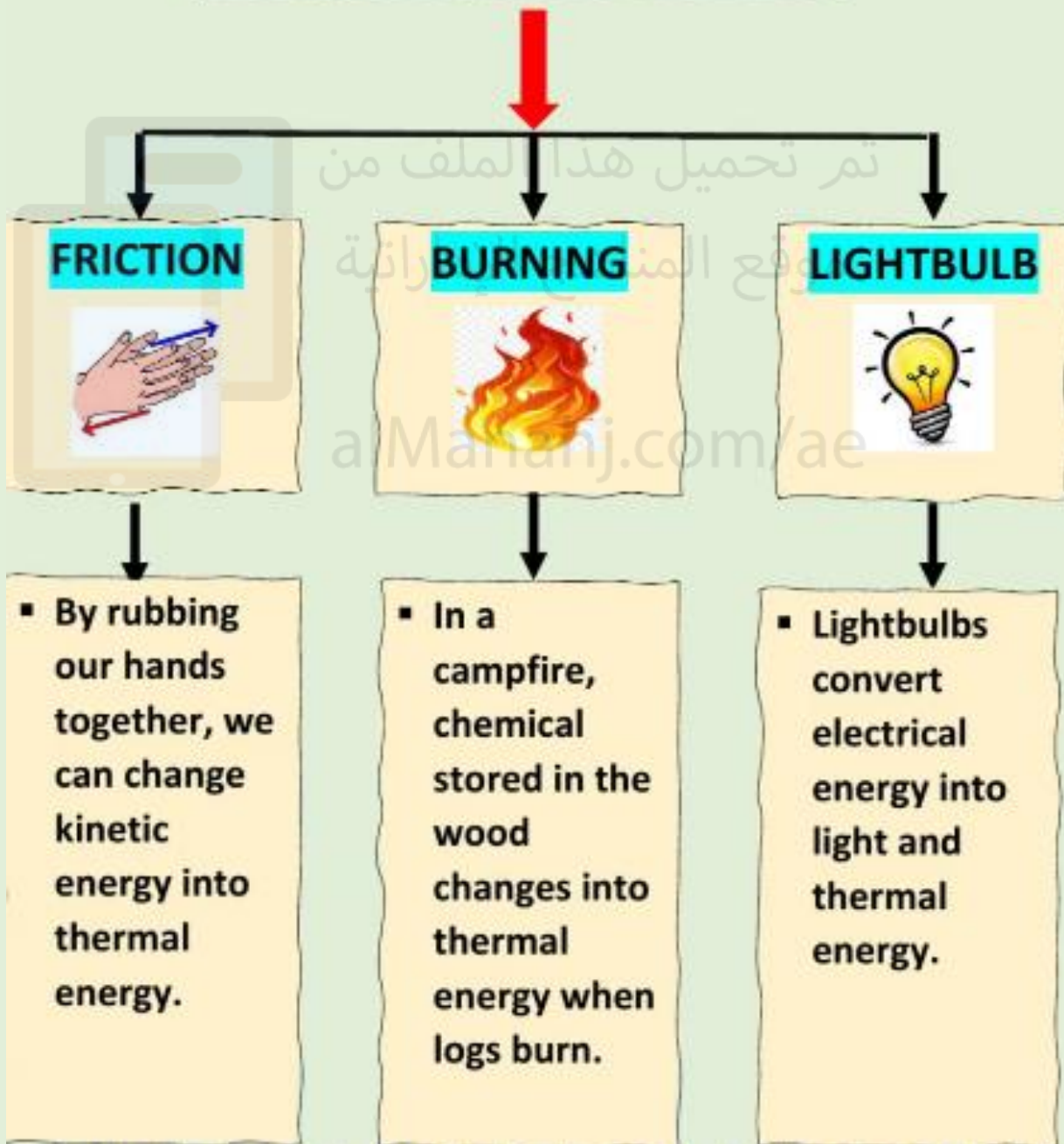
convection

radiation

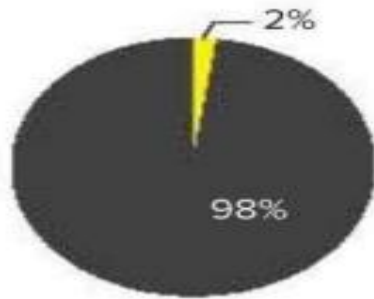


PRODUCING THERMAL ENERGY

Different ways to produce thermal energy

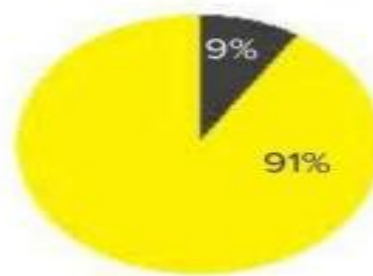


HOW TO SAVE ENERGY



Incandescent

■ Heat
■ Light



LED

■ Heat
■ Light



Incandescent bulbs

These bulbs get very hot and waste a lot of thermal energy.



LED bulbs

These bulbs use less electricity, waste less thermal energy and can last up to 20 years.

Q: How would using LED lightbulbs help save energy?

Ans: LED bulbs produce same amount of light energy without wasting some electrical into thermal energy.

MC GRAW HILL QUESTIONS:

1. A farmer needed to keep his baby chicks warm. He placed a light in their cage. Which sentence best explains the farmer's thinking of placing a light in the cage?



a) The farmer thought the light would transfer thermal energy to the chicks' cage.

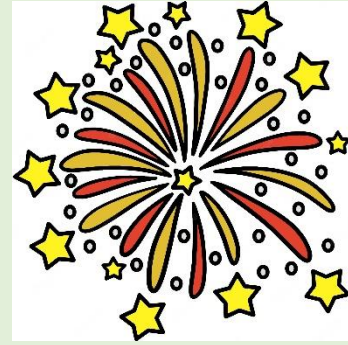
b) The farmer thought that the chicks would be healthier if they were not in the dark.

c) The farmer thought that the chicks would eat more to stay warm if they can see their food.

d) The farmer thought that the light would encourage the chicks to huddle together to keep themselves warm.

2. A **conductor** transfers heat easily.

3. You are watching fireworks on the fourth of July. When the fireworks are set off, they give off three forms of energy. Which three forms of energy are given off?



- a) light, sound, electrical
- b) light, sound, heat**
- c) sound, electrical, mechanical
- d) heat, mechanical, electrical

4. In the image, what evidence can you gather to prove that energy is being transferred?



- a) The smoke shows that the grill is transferring heat energy to cook the food.**
- b) The smoke shows that the grill is transferring sound energy to cook the food.
- c) The smoke shows that the grill is transferring electrical energy to cook the food.
- d) The smoke shows that the grill is transferring mechanical energy to cook the food

5. It is very hot outside, and you walk barefoot on hot pavement. Predict what will happen in this scenario.

a) The transfer of heat energy from the pavement will cause your feet to feel hot.

b) The transfer of light energy from the pavement will cause your feet to feel hot.

c) The transfer of light energy from the pavement will cause your feet to feel cold.

d) The transfer of heat energy from the pavement will cause your feet to feel cold.

6. _____ is an excellent thermal conductor because it conducts heat easily.

a) Wood

b) Plastic

c) Aluminum

7. How does heat travel from the Sun to Earth?

a) conduction

b) convection

c) radiation

d) conduction and convection

8. A classroom has a tropical fish tank. The students notice that the tank has a light in it.



The teacher says the light is to keep the fish warm. Which sentences best explain how the light keeps the fish warm? Select all that apply.

- a) The light transfers energy to the water.
- b) The light makes it easier to see in the tank.
- c) The light helps keep the tank clean for the fish.
- d) The light's energy provides food for plants in the tank.
- e) The light's energy increases the temperature of the water.

Lesson	No of questions in exam	Important Pages
Nonrenewable resources	3	94,95

Pg:94

NATURAL RESOURCES

Something that is found in nature but valuable to humans

- ❖ Natural resources can be living or non-livings.
- ❖ Example: Air, Water, Sunlight, Soil, Rocks, Minerals, Plants, and animals.



FOREST RESOURCES



MINERAL RESOURCES



OIL RESOURCES



WATER RESOURCES



WIND AND SOLAR ENERGY



NATURAL GAS RESOURCES

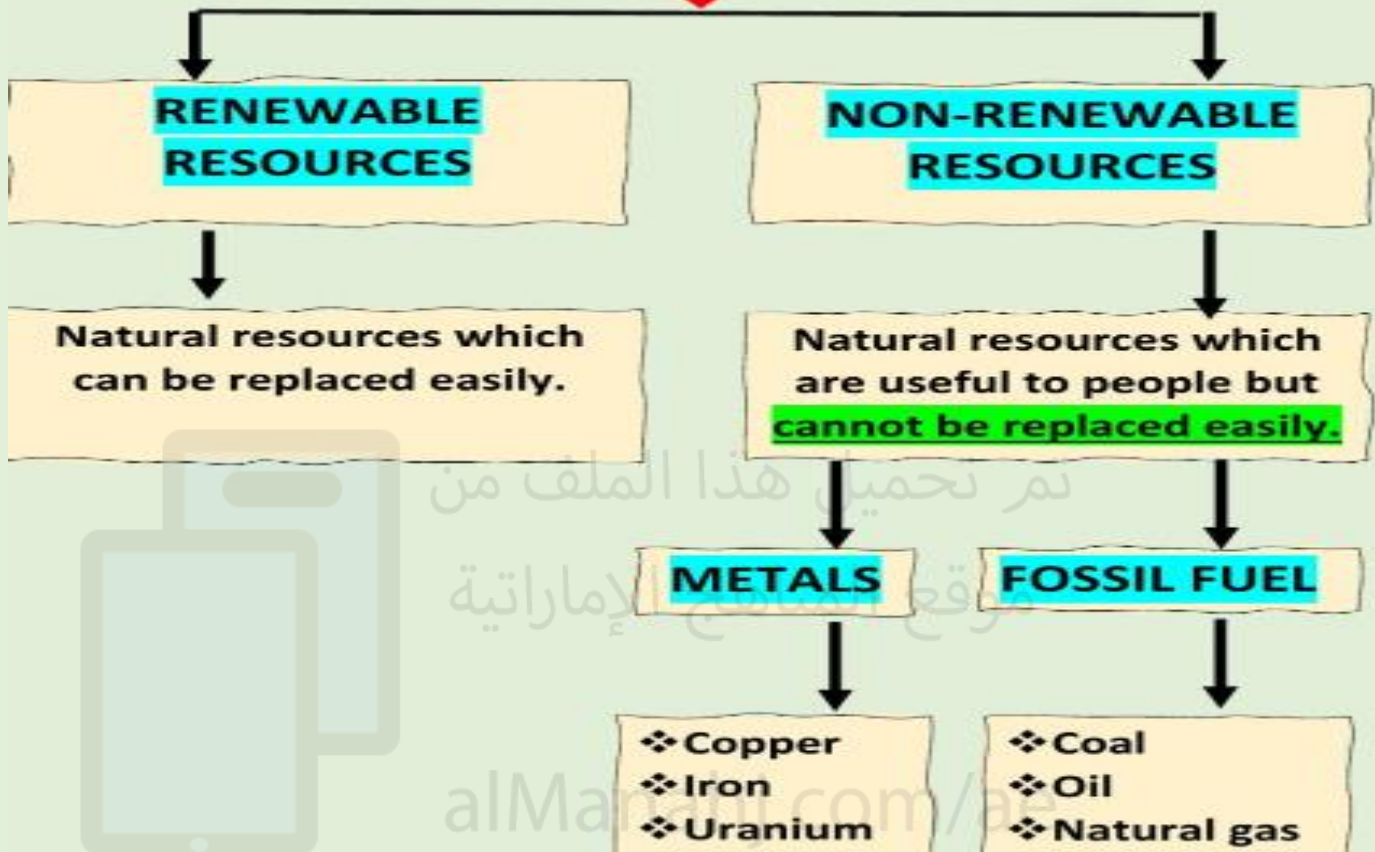


LAND RESOURCES



ANIMAL RESOURCES

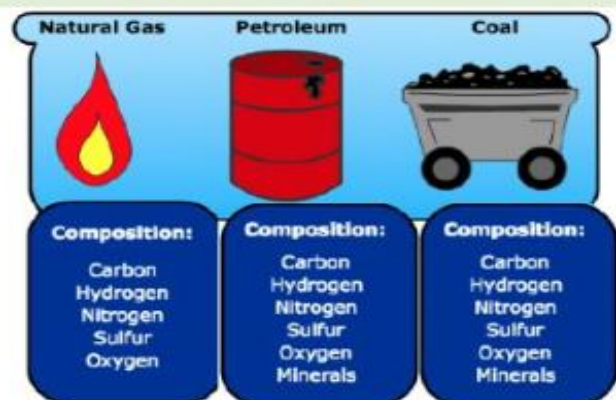
TYPES OF NATURAL RESOURCES



NON-RENEWABLE RESOURCES

- ❖ It takes millions of years to form non-renewable resources.
- ❖ They cannot be replaced easily.

FOSSIL FUELS: It is the source of energy made from the remains of ancient, once living things.



METALS



- People mine metals from the inside of earth surface.
- Copper, iron, silver, gold is present in limited amount inside earth.
- They are used for building and manufacturing.

COAL



- It is the most plentiful fossil fuel.
- It is found between rock layers.
- It is mainly used to make electricity.
- It is used to power the steam engines in locomotives and steamboats.

CRUDE OIL AND NATURAL GAS

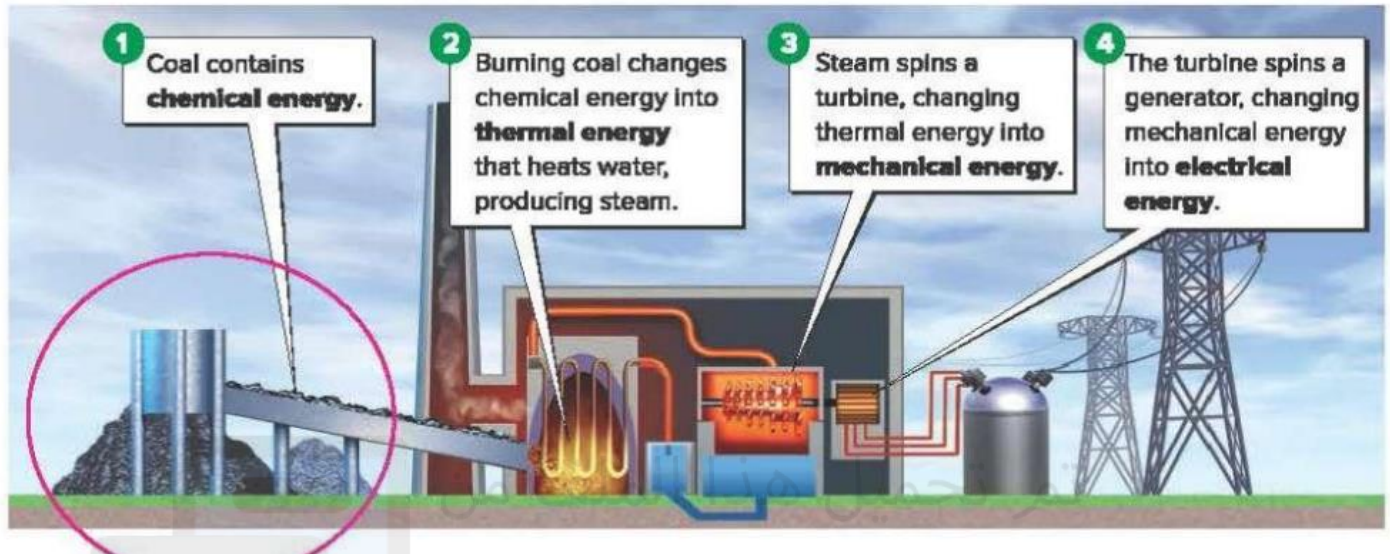


- Crude oil is a thick, black substance that is also called petroleum.
- People drill into rocks to find oil and pump it to the surface.
- Natural gas can be found where oil is found.
- Natural gas is used for cooking and heating our homes.

Read a Diagram: Power Plant

Circle the nonrenewable resource used to produce electrical energy in the diagram below.

GO ONLINE Explore *The Energy Sequence* to learn more about how coal is used to generate electricity.



MC GRAW HILL QUESTIONS:

1. Fossil fuels are _____.

- a) nonrenewable resources
- b) renewable resources
- c) unlimited resources
- d) inexpensive resources

2. How are fossil fuels formed?

a) Heat and pressure turn animal and plant remains into fuels.

b) Scientists collect fossils and turn them into fuels.

c) On the surface of Earth, wind and rain turn fossils into fuels.

d) Fossils sink into swamps and take between five and ten years to turn into fuels.

3. _____ is pumped out of the ground and can be used for cooking and heating our homes.

a) Crude oil

b) Natural gas

4. Which is not a fossil fuel?

a) oil

b) natural gas

c) wood

d) coal

5. A material that formed from ancient organisms and is used today as a source of energy is a(n)_____.

- a) fossil fuel
- b) fissile material
- c) sediment
- d) alternative energy resource

6. Which is an example of a nonrenewable resource?

- a) wind
- b) sunlight
- c) oil
- d) water

7. Coal is mainly used to generate_____ and has been used to power steam locomotives.

- a) Electricity
- b) sound energy

8. **Corn, crabs, natural gas, and soybeans** are natural resources found in Maryland.

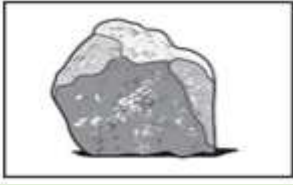
Which is a nonrenewable resource?

- a) corn
- b) crabs
- c) soybeans
- d) natural gas**

9. Nonrenewable resources are resources that _____.

- a) take so long to form that they cannot be replaced quickly**
- b) are so plentiful in nature that they can be used without worry
- c) cause no pollution to the environment, so they are the best kind to use
- d) cause so much pollution that they are never used

10. Coal is a nonrenewable natural resource.



Which best describes how humans use coal?

- a) Humans use coal for food.
- b) Humans use coal for clothing.
- c) Humans use coal for medicine.
- d) Humans use coal to produce electricity.**

11. Lilly learned that fossil fuels contain a lot of energy.

Why are fossil fuels considered nonrenewable resources?

- a) Fossil fuels are essential to civilization.
- b) Fossil fuels cannot be replaced fast enough for future use.**
- c) Fossil fuels are easily renewed.
- d) Fossil fuels are alternative energy sources

12. Which statement is not true about nuclear energy?

- a) Nuclear energy is created using fossil fuels.**
- b) Nuclear energy is a nonrenewable resource.
- c) Nuclear energy is used to generate electricity.
- d) Nuclear energy waste may damage the environment

13. What is one effect of using coal to meet our energy needs?

- a) It cleans the air.
- b) It will not run out.
- c) It does not disturb wildlife.
- d) It pollutes the environment.**



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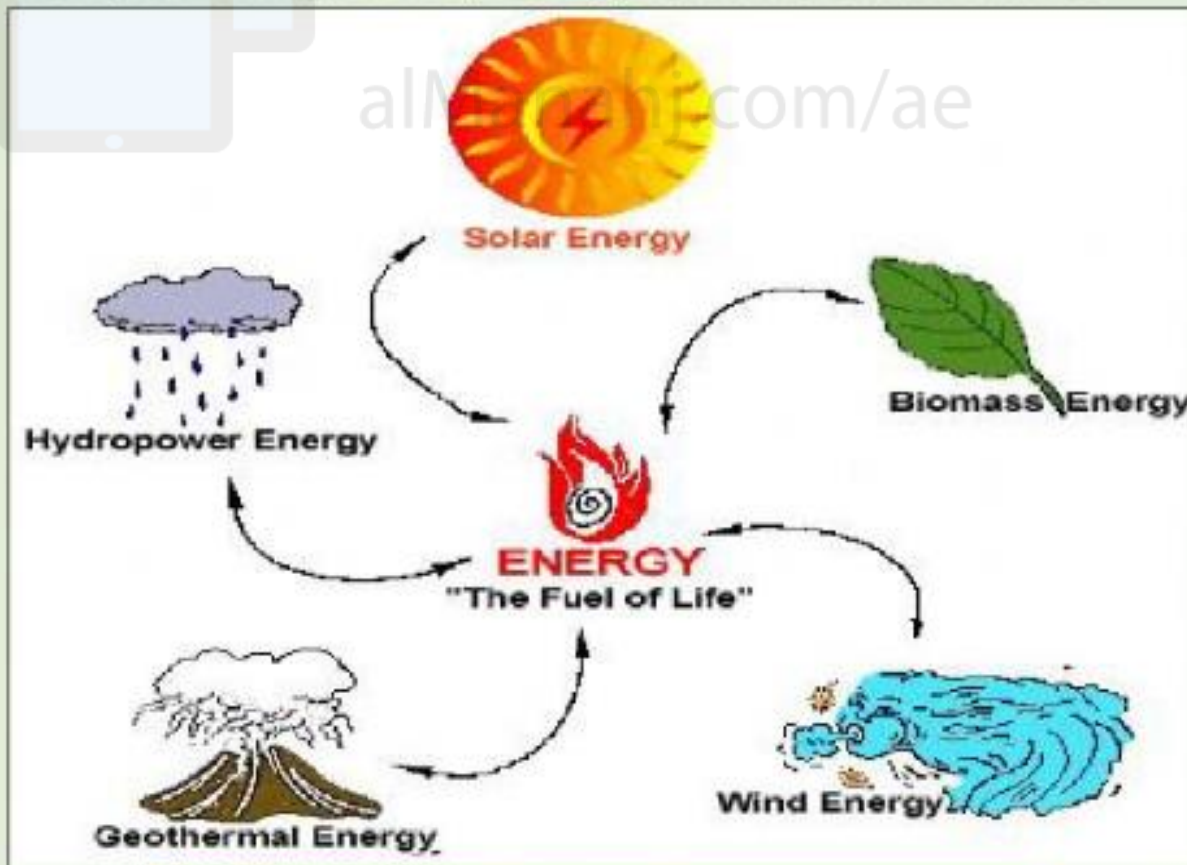
Lesson	No of questions in exam	Important Pages
Renewable resources	3	110,111,114

Pg: 110

RENEWABLE RESOURCES

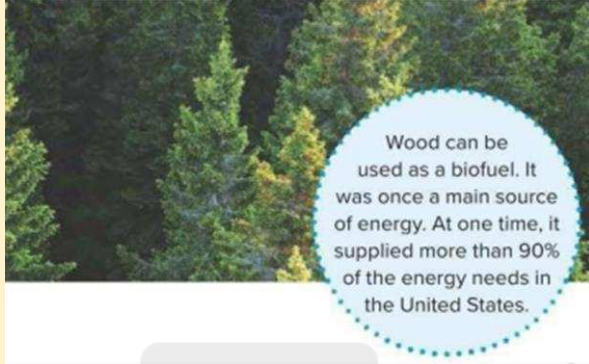
Something that is found in nature that can be replaced quickly

- ❖ Renewable resources can be living or non-livings.
- ❖ Example: Wind, Water, Sunlight, Plants and Animals

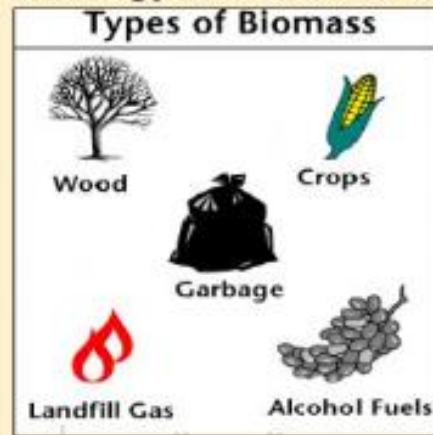


BIOMASS

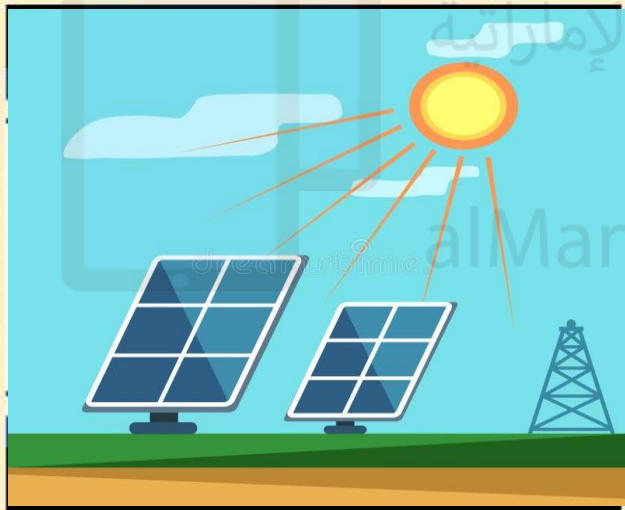
A type of fuel made from biomass is called **biofuel**.



- ❖ **Wood, crops, and animal waste** are part of biomass.
- ❖ Burning biomass transforms the stored energy into thermal energy.



SOLAR ENERGY



- ❖ **Energy that comes from the sun** is called solar energy.
- ❖ Solar power is the power obtained from solar energy to generate electricity using solar cells.



GEOHERMAL ENERGY

The thermal energy that is responsible for hot springs and geysers can be used to produce electricity.



- ❖ **Energy that comes from earth's interior** is called geothermal energy.
- ❖ In some places, water that lies deep inside earth is heated.
- ❖ This hot water pool (Geyser) is used to produce electricity.



WIND ENERGY



Wind turbines are made up of a tower, usually three blades, and a generator.

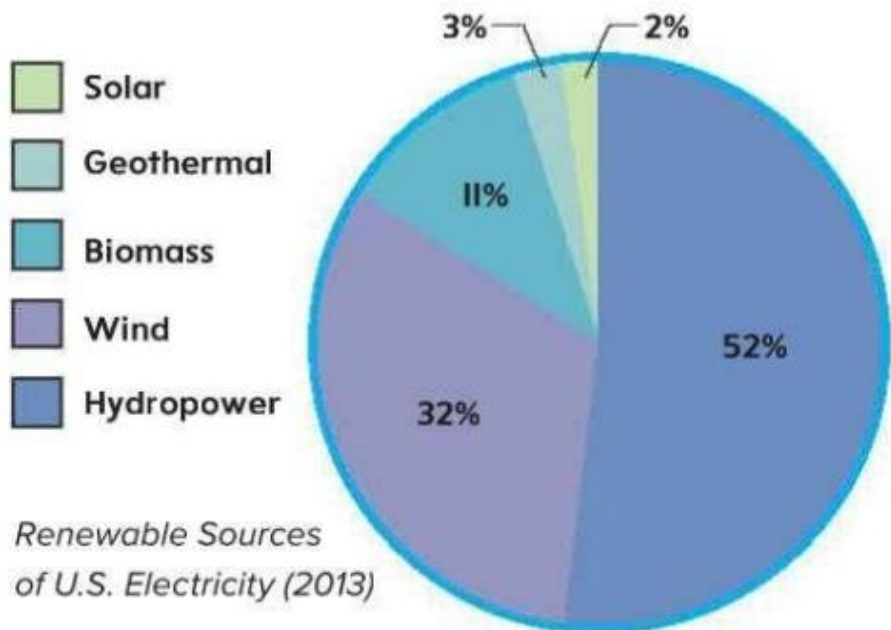
- ❖ Energy that comes from the wind is called wind energy.
- ❖ Windmills harness the motion of the wind to generate electricity.
- ❖ Mountaintops, shorelines, open plains, and valleys are good places for windmills.



MC GRAW HILL QUESTIONS:

1. Which type of renewable source is used the most in United states?

- a) Hydropower
- b) Solar
- c) Biomass
- d) Wind



2. _____ is useful material that can be replaced quickly in nature.

a) Alternative energy source

b) Renewable resource

c) Nonrenewable resource

d) Coal

3. Wood is renewable resource. What can make it scarce (limited)?

If we use it faster than grow trees.

4. What condition will determine if hydropower and wind should be used in community?

Hydropower: If the community is near the river

Wind: If there is high ground or mountains nearby.

5. Geothermal energy is obtained and used by harnessing the heat from Earth's surface.

a) above

b) below

6. A device that produces electricity from sunlight is a(n) _____ solar energy.

7. Which type of energy would best be used in an area with a lot of hot springs?

a) hydroelectricity

b) solar energy

c) wind energy

d) geothermal energy

8. Wind energy, water energy, and solar power are all examples of energy solutions.

a) Renewable resources

b) Nonrenewable resources

9. Which is not a source of renewable energy?

a) thermal energy

b) wind energy

c) solar energy

d) fossil fuels

10. Wind energy, harnessed by windmills, is one type of _____ energy source.

a) Renewable

b) Nonrenewable

11. Which method is used to change plant and animal materials into usable fuel?

- a) hydroelectricity
- b) recycling
- c) biomass conversion**
- d) solar collection

12. Which is where geothermal energy comes from?

- a) inside Earth**
- b) the Sun
- c) wind turbines
- d) hydroelectric dams

13. Geothermal power plants use _____ from the Earth's interior to generate power.

- a) heat**
- b) water
- c) wind

14. Which of the following are renewable resources?

Select all that apply.

a) fossil fuels

b) hydroelectricity

c) wind energy

d) copper

15. Which of the following is not an advantage to renewable energy?

a) Solar power is abundant as a resource.

b) Hydroelectric dams block rivers and streams.

c) Biomass energy uses waste products to create energy.

d) Wind energy can be generated day and night.

16. Why is solar power a renewable energy source?

a) It cannot be used up.

b) It is a natural resource.

c) It creates extra sunlight.

d) It creates new sources of gasoline.

Lesson	No of questions in exam	Important Pages
Impact of energy use	1	128

Pg:128

EFFECTS OF OBTAINING AND USING ENERGY RESOURCES

- ❖ All organisms in the environment need clean air, water, and soil to survive.
- ❖ Using energy can have negative impact on the environment.

NEGATIVE EFFECT ON THE ENVIRONMENT:->

➤ POLLUTION

It is any harmful substance that effects earth's land, air, and water.

Smog is a problem in major cities, where fumes given off by cars, trucks, and buses pollute the air.

Solar, geothermal, hydroelectric, and wind power do not cause air or water pollution. Burning biofuels, however, does cause air pollution.



POLLUTION

It is any harmful substance that effects earth's land, air, and water.

- **Burning fossil fuels cause air pollution.**
- **Air pollution cause breathing problems and eye irritation.**
- **Burning biofuels cause pollution.**
- **Nuclear power plants do not cause pollution, but waste products must be stored carefully.**

MC GRAW HILL QUESTIONS:

1. Fossil fuels used in transportation can cause problems. Which is a possible solution to these problems?

a) Use renewable energy sources in cars, such as biofuels and solar power.

b) Have car and truck drivers use more fossil fuels in their vehicles during rush hour traffic.

c) Make hybrid cars, which use both gas and electricity, illegal.

d) Do not build fuel-efficient cars.

2. Which is not a source of renewable energy?

a) thermal energy

b) wind energy

c) solar energy

d) fossil fuels

3. Which method of powering a vehicle will help to reduce air pollution?

a) using oil

b) using biofuels

c) using gasoline

d) using diesel fuel

4. The overuse of fossil fuels leads to _____.

- a) flooding
- b) pollution**
- c) fertile soil
- d) good crops

5. Our society uses up vast amounts of nonrenewable sources of energy.

What should we do about energy sources in the future?

- a) Nothing; all energy sources are replaceable.
- b) We will need to develop new ways of using oil.
- c) We will need to develop more technology that relies on fossil fuels.
- d) We will need to find ways to use renewable sources of energy.**



6. What is one effect of using coal to meet our energy needs?

- a) It cleans the air.
- b) It will not run out.
- c) It does not disturb wildlife.
- d) It pollutes the environment.**



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Lesson	No of questions in exam	Important Pages
Design energy solutions	0	None mentioned

MC GRAW HILL QUESTIONS:

1. Scientists are designing a new car that runs on renewable energy sources. How would a prototype be used during the design process?

- a) to show the final design
- b) to change the original design
- c) to collect data about the design**
- d) to show how fossil fuels are used

2. Which method of powering a vehicle will help to reduce air pollution?

- a) using oil
- b) using biofuels**
- c) using gasoline
- d) using diesel fuel

3. Kelly is making a solar cell to provide power using a plastic bottle, copper, and salt water. What can Kelly test to make her solar cell better?

a) How do additional hours in the sun improve the solar cell?

b) How does humidity in the atmosphere improve the solar cell?

c) How does adding more salt to the water improve the solar cell?

d) How does the difference in outside temperature improve the solar cell?

4. Suppose you connect a solar cell to the connectors of a lightbulb. Which factor would increase the brightness of the lightbulb?

a) the width of the connectors

b) the size of the lightbulb

c) exposure to full sun

d) exposure to partial sun

5. How does the solar panel solve a design problem?

a) It transforms energy without producing air pollution.

b) It transforms sunlight energy to wind energy.

c) It uses nonrenewable resources for power.

d) It uses biofuels to transform energy.



an original or first model of something from which other forms are developed



prototype

something that limits or restricts someone or something



constraint

a series of steps that engineers follow to solve a problem



design process

one who designs solutions to problems



engineer

a standard on which a judgement or decision is based



criteria



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