شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية

مراجعة مترجمة وفق الهيكل الوزاري - انسباير

التواصل الاجتماعي بحسب الصف الرابع

روابط مواد الصف الرابع على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الرابع والمادة علوم في الفصل الثاني

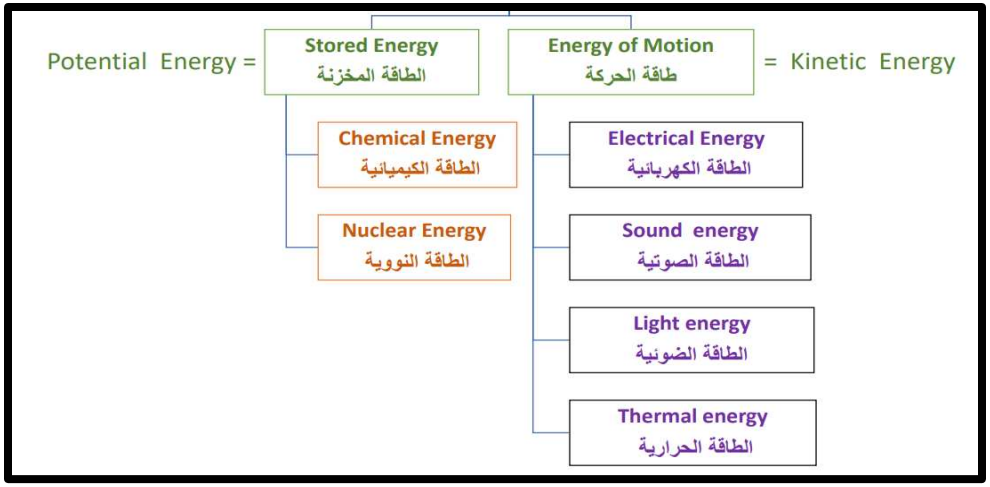
1	أسئلة الامتحان النهائي - انسباير
2	أسئلة الامتحان النهائي - بريدج
3	مراجعة مترجمة وفق الهيكل الوزاري - انسباير
4	حل أسئلة الامتحان النهائي - انسباير
5	حل نموذج أسئلة امتحان نهائي

هيكل العلومispire

الصف الرابع الفصل الثاني

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

The law of conservation of energy	قانون حفظ الطاقة
Energy cannot be created or destroyed .	الطاقة لا تفنى و لا تستحدث
It can only change form.	يمكن أن يتغيير شكلها فقط



Thermal Energy

Internal energy of an object due to the energy of motion of particles.

الطاقة الحرارية

الطاقة الداخلية لجسم ما بسبب طاقة حركة الجسيمات.

The faster the particles move, the warmer a substance get.

كلما تحركت الجسيمات بشكل أسرع ، زادت درجة حرارة المادة.

Thermal energy increase as a substance get warmer.

تزداد الطاقة الحرارية كمادة تزداد دفئا.

thermal energy

Sound Energy

Type of energy produced by vibration of material.

الطاقة الصوتية

نوع الطاقة الناتجة عن اهتزاز المادة.

Types of energy of motion.

من أنواع طاقة الحركة.

sound energy

Object	Name	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

Label the Photo: Energy in the Classroom

Read the description below. Use the numbers to label the type of energy present in the photo above.

GO ONLINE Explore what happens when different types of energy are applied to different objects in the *Energy Causes Change* simulation.

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 transforms chemical energy from food into kinetic energy when they use their hands to build a model.

Three-Dimensional Thinking

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.

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

Sound
الصوت

Type of kinetic energy

نوع من أنواع الطاقة الحركية

Vibration: is the back and forth motion.

الاهتزاز : حركة الجسم للخلف والأمام

Vibration produces sound.

الاهتزاز يولد الصوت

Sound wave: a wave that transfers energy through a material and spreads outward in all directions from a vibration.

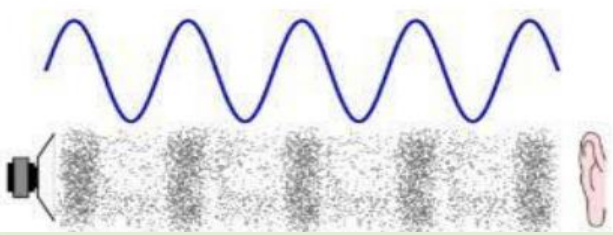
موجة صوتية موجة تنقل الطاقة من خلال مادة وتنشرها للخارج في جميع الاتجاهات من اهتزاز

Sound moves in Longitudinal waves

يتحرك الصوت في موجات طولية

Longitudinal wave:
a wave vibrating in the same direction that the energy moves

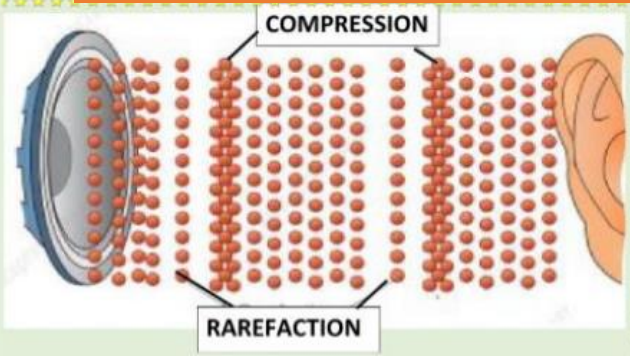
موجه طولية:
موجة تهتز في نفس الاتجاه الذي تتحرك فيه الطاقة



- 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.

الضغط: منطقة في الهواء لديها عدد كثير من الجزيئات

الفراغ: منطقة في الهواء لديها جزيئات قليلة.



light I is a type of energy of motion

هو نوع من أنواع الطاقة الحركية

الضوء Light

الضوء

Solar cells = photovoltaic cells

device that uses light from the sun to produce electricity

الخلايا الشمسية = الخلايا الضوئية

جهاز يستخدم ضوء الشمس لإنتاج الكهرباء

Can travel with or without a medium.

يمكنه الانتقال مع أو بدون وسيط.

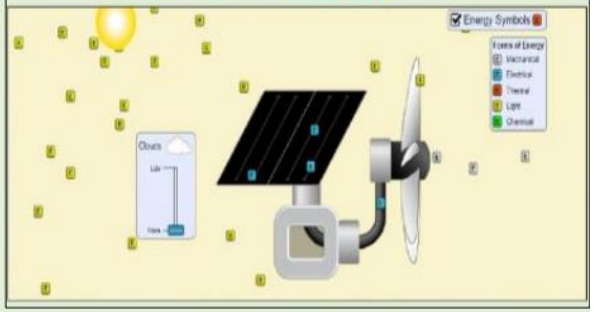
light travel fastest in a vacuum.

ت ينتقل أسرع في الفراغ.

الضوء

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.

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?

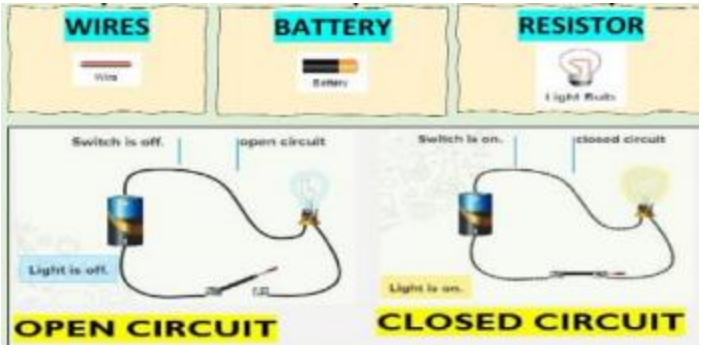
a) in strings
b) in beams
c) in pulses
d) in waves

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

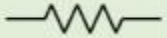
a) heat
b) light
c) solar energy
d) vision

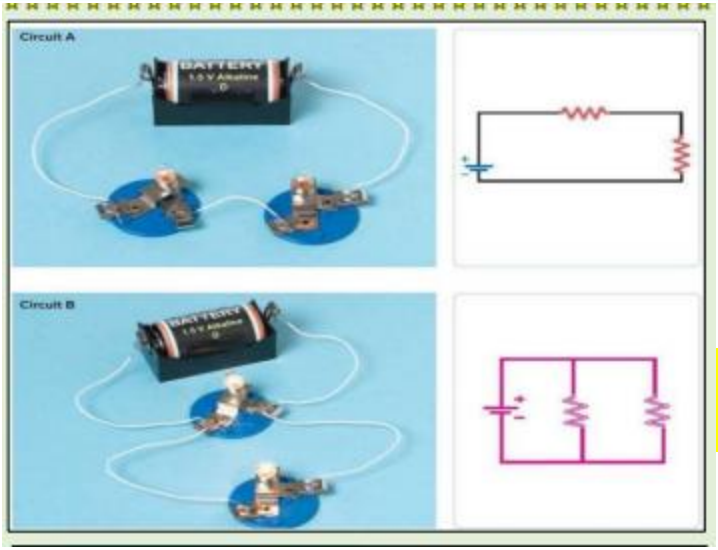
Lesson	No of questions in exam	Important Pages
Electricity	3	48,50(Figure)

Circuit a path through which electric current can flow		**الدائرة** مسار يمكن للتيار الكهربائي التدفق خلاله
Conductor a material through which electricity flows easily		**الموصل** مادة تتدفق الكهرباء خلالها بسهولة
Electric current a flow of electricity through a conductor		**التيار الكهربائي** تدفق الكهرباء عبر مُوصِّل للكهرباء
Insulator a material that slows or stops the flow of energy, such as electricity or sound		**العازل** مادة تمنع أو تُبطئ من تدفق الطاقة، مثل الكهرباء أو الصوت
Resistor an object that resists the flow of energy in an electrical circuit		**المقاوم** جسمٌ يقاوم تدفق الطاقة في دارة كهربائية



	Good Conductors allow energy to pass through	Insulators stop or slow down energy
Electrical	Metals e.g. copper, silver, gold, iron, steel, aluminum tap water 	rubber wood plastic glass paper cotton  distilled water polystyrene fabric

COMPONENTS	PICTURE	KEY
WIRE		
RESISTOR		
VOLTAGE SOURCE		



Series

Parallel

Voltage source increase the number of charged particles.

مصدر الجهد يزيد من عدد الجسيمات المشحونة.

Batteries are a voltage source .

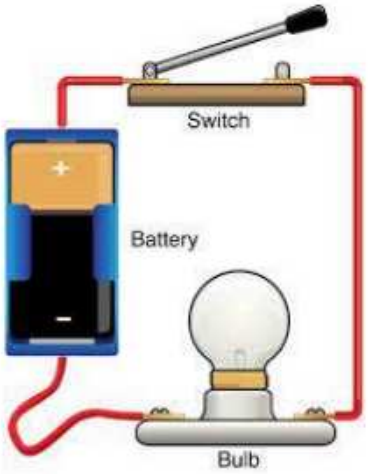
البطاريات هي مصدر جهد.

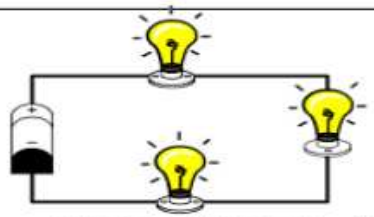
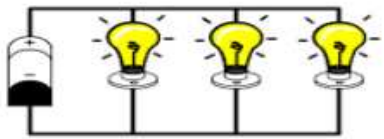
A **switch** is a device that can open or close the path in a circuit.

المفتاح هو جهاز يمكنه فتح أو إغلاق المسار في الدائرة.

Energy in a resistor is transformed into other forms of energy.

يتم تحويل الطاقة في المقاوم إلى أشكال أخرى من الطاقة.



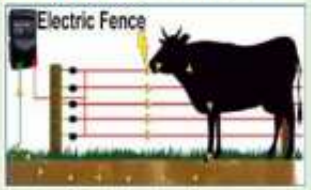
 **Series Circuit** دائرة متسلسلة	 **Parallel Circuit** دائرة متوازية
One conductive path مسار موصل واحد	More than one conductive path أكثر من مسار موصل
The brightness of all the bulbs decreases. سطوع جميع المصابيح ينخفض.	**The brightness remain the same with each bulbs added.** يظل السطوع كما هو مع إضافة اللمبات.
If one light goes out, the others will go out too. إذا تعطل ضوء واحد فإن بقية الأضواء ستتعطل.	If one path is broken, the current flow through the remaining paths. إذا تعطل مسار واحد ، فإن التيار يتدفق عبر المسارات المتبقية.

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

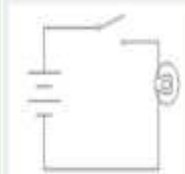
7. A switch in a circuit _____.

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

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?

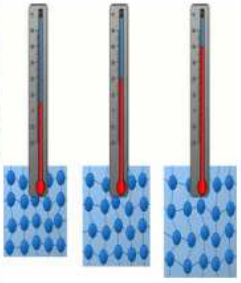
a) another bulb
b) another battery
c) a switch
d) another wire

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

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

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

Conduction transfer of energy between two objects that are touching		**توصيل** انتقال الطاقة بين جسمين متلامسين
Convection transfer of energy in moving gases or liquid, such as warm air rising above a heater		**حَمْل حراري** انتقال الطاقة الحرارية عن طريق تدفق الغازات أو السوائل، مثل صعود الهواء الدافئ من المدفأة
Heat the movement of energy from a warmer object to a cooler object		**حرارة\\ سخونة** انتقال الطاقة من جسمٍ أكثر دفئًا إلى جسمٍ أكثر برودة
Radiation energy that comes from a source in the form of waves or particles		**إشعاع** شكلٌ من أشكال الطاقة يأتي من مصدر في شكل موجات أو جسيمات



Thermal energy- Energy of moving particles of matter

الطاقة الحرارية - طاقة جزيئات المادة المتحركة

Heat- movement of thermal energy

الحرارة - حركة الطاقة الحرارية

Heat energy moves from higher temperature to lower temperature

تنتقل الطاقة الحرارية من درجة حرارة أعلى إلى درجة حرارة منخفضة

Particles moved faster in hot water as the food color spread faster

تتحرك الجزيئات بشكل أسرع في الماء الساخن حيث ينتشر لون الطعام بشكل أسرع

Thermal conductivity is the ability of matter to transfer heat.

الموصلية الحرارية هي قدرة المادة على نقل الحرارة

Most metal are thermal conductors

معظم المعادن موصلات حرارية

Solid are better conductor than liquids and gases.

المواد الصلبة هي موصل أفضل من السوائل والغازات.

Thermal insulators are material that conduct heat poorly.

العوازل الحرارية هي مادة موصلة للحرارة بشكل سيئ.

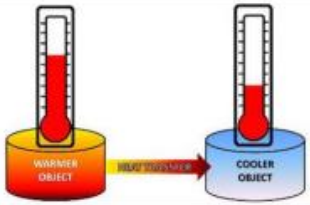
Air is a thermal insulator.

الهواء عازل حراري.

- 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.

- الأجسام ذات طاقة حرارية أعلى تهتز بسرعه.
- الأجسام ذات طاقة حرارية منخفضة لا تهتز كثيرا.
- عندما تلامس الجسم الحار بجسم بارد تصطدم الجزيئات ببعضها البعض و ينتقل حرارة الجسم الحار الى الجسم البارد.

IMPORTANT
Heat always moves from a warmer object to a cooler object



Heat
the movement of energy from a warmer object to a cooler object
سخونة انتقال الطاقة من جسم أكثر دفئًا إلى جسم أكثر برودة

Conduction
_the transfer of energy between two objects that are touching
توصيل انتقال الطاقة بين جسمين متلامسين

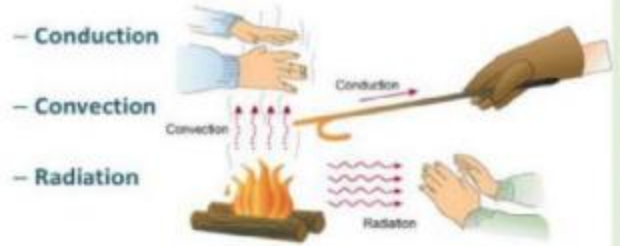
Convection
_the transfer of energy in moving gases or liquid, such as warm air rising above a heater
حَمْل ح اررِي انتقال الطاقة الحرارية عن طريق تدفق الغازات أو السوائل، مثل صعود الهواء الدافئ من المدفأة

Radiation
energy that comes from a source in the form of waves or particles
إشعاع شكلٌ من أشكال الطاقة يأتي من مصدر في شكل موجات أو جسيمات

Pg: 70

HOW DOES HEAT TRAVEL?

There are THREE ways heat can move.



تحدث عندما تتلامس الاجسام

CONDUCTION

❖Conduction happens when two objects are touching

تنقل الحرارة في السوائل و الغازات

CONVECTION

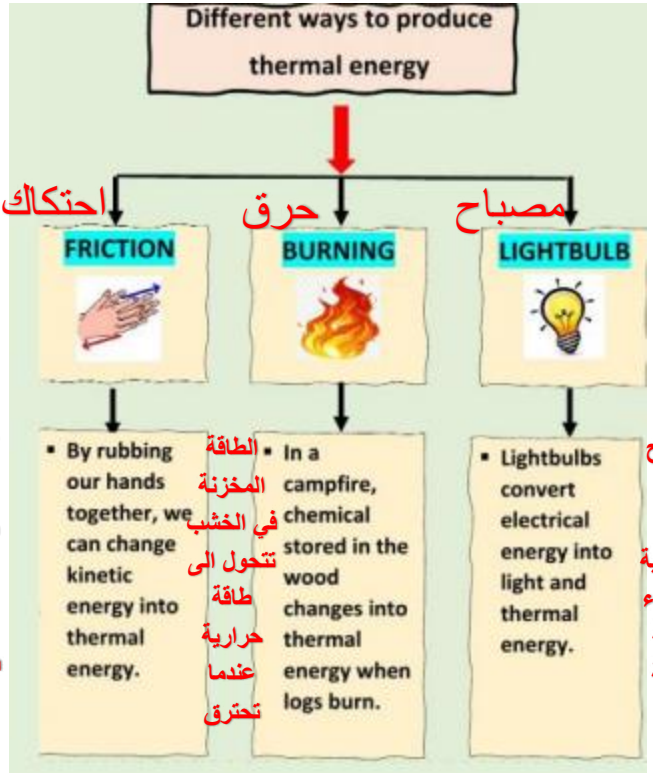
❖Convection transfers heat through liquids and gases

لا تحتاج الى وسط لنقل الحرارة

RADIATION

❖Radiation does not need matter to transfer heat.

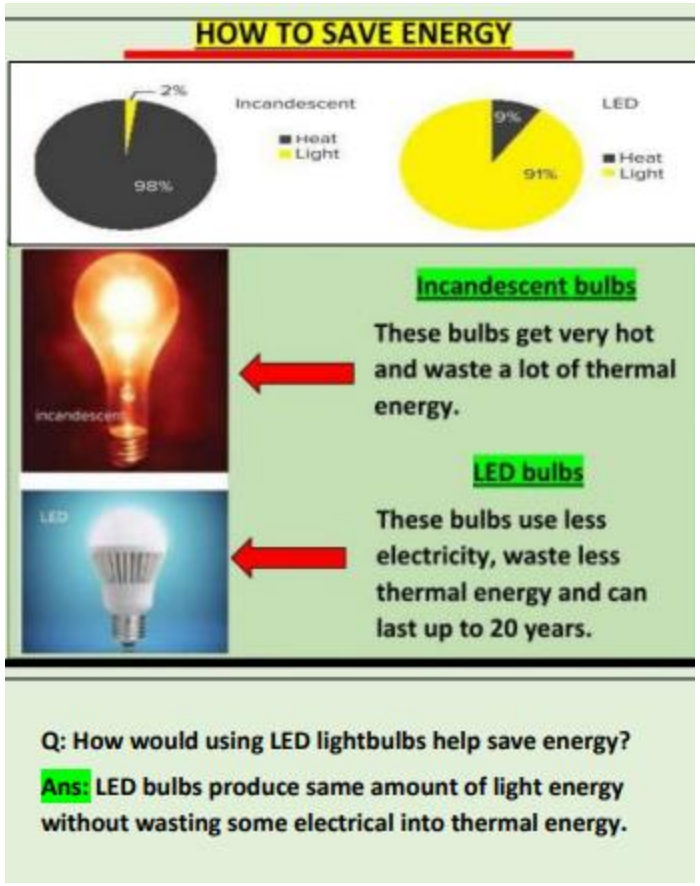
طرق لانتاج الطاقة الحرارية



عندما تحتك اليدين مع بعض تتحول الطاقة الحركية الى طاقة حرارية

الطاقة المخزنة في الخشب تتحول الى طاقة حرارية عندما تحترق

المصباح تحول الطاقة الكهربائية الى ضوء و طاقة حرارية



المصابيح المتوهجة تصبح أكثر حرارة و تفقد الكثير من الطاقة

المصابيح led تصرف القليل من الكهرباء ف بتالي تقلل من فقدان الطاقة الحرارية و تستمر ال 20 سنة.

المصابيح led

أفضل من المصابيح المتوهجه

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.

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

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

Pg:94

مصادر طبيعية

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.

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.

مصادر الغير متجددة تأخذ ملايين السنين لتتكون و لا تجدد بسهولة

- الوقود الاحفوري هو مصدر للطاقة يتكون من بقايا كائنات حية .

nonrenewable resource
a natural material or source of energy that is useful to people and cannot be replaced easily مَوْر دغ م ريتجدد مادة طبيعية أو مصدر طبيعي للطاقة مفيد للبشر ولا يمكن استبداله بسهولة
fossil fuel
_a source of energy made from the remains of ancient, once-living things وقو دأحفوري مصدر من مصادر الطاقة يتكوّن نتيجة تحلل بقايا الكائنات الحيّة القديمة

- Natural Resources can be living or non-living

Natural Resources	
LIVING	NON-LIVING
Animals	Air
plants	Water
	Sunlight
	Soil
	rocks
	Minerals

Renewable and Non-Renewable Energy Sources

- Natural Resources are divided into 2 groups:
- RENEWABLE RESOURCES طاقة متجددة
- NON-RENEWABLE RESOURCES طاقة غير متجددة
- Non-renewable resources cannot be easily replaced

طاقة غير متجددة لا تجدد بسهولة

FOSSILS FUELS الوقود الأحفوري

- Coal الفحم
- Oil- also called petroleum النفط و البترول
- Natural Gas الغاز الطبيعي

المعادن

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.

المعادن : يستخرج الناس المعادن من تحت الأرض.
النحاس و الحديد و الفضة و الذهب تتوفر بكميات محدودة تحت الأرض .

COAL

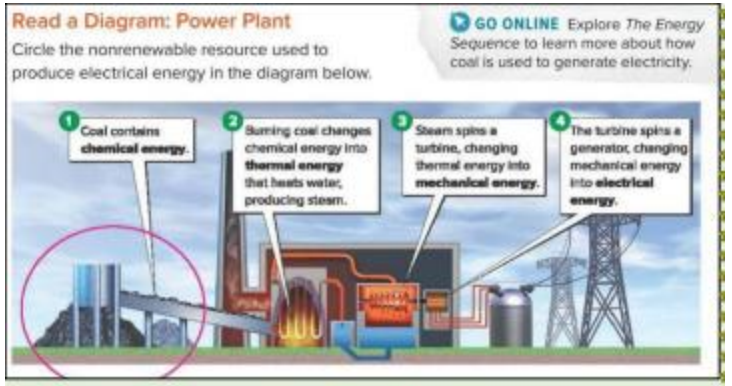
- It is the most plentiful fossil fuel.
- It is found between rock layers.
- It is mainly used to make electricity.
- It is used to power the steam engines in locomotives and steamboats.

- الفحم: أكثر توافرا .
- نجده بين طبقات الصخور.
- تستخدم لانتاج الكهرباء.
- يستخدم لتشغيل القطار البخاري

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.

- النفط يكون ثقيلا و أسود اللون و تسمى بترول.
- الناس تحفر للصخور لاستخراج النفط
- الغاز الطبيعي نجده نفس مكان النفط.
- الغاز الطبيعي يستخدم للطبخ و للتدفئة المنازل



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.

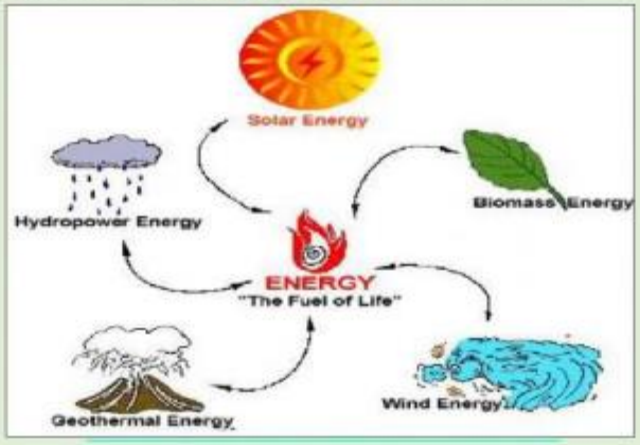
Lesson	No of questions in exam	Important Pages
Renewable resources	3	110,111,114

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



renewable resource

a useful material that is replaced quickly in nature

مَوْر م دتجدد مادة مفيدة تُستبدل بصورة سريعة طبيعيًا

alternative energy source

a source of energy other than the burning of a fossil fuel

مصدر طاق ب ةديل مصدر للطاقة بخلاف حرق الوقود

solar power

power obtained from solar energy to generate electricity using solar cells

لاطاق لا ةشم ةيس الطاقة المأخوذة من طاقة الشمس

لتوليد الكهرباء باستخدام الخلايا الشمسية

geothermal energy

energy obtained from Earth's interior

لاطاق ا ةلأرض لا ةيح ارية الطاقة التي يمكن الحصول عليها من داخل الأرض

hydroelectricity

electricity produced by waterpower

لاكه براء لا هيدرو يلك ةي الكهرباء الناتجة عن طاقة المياه

Renewable

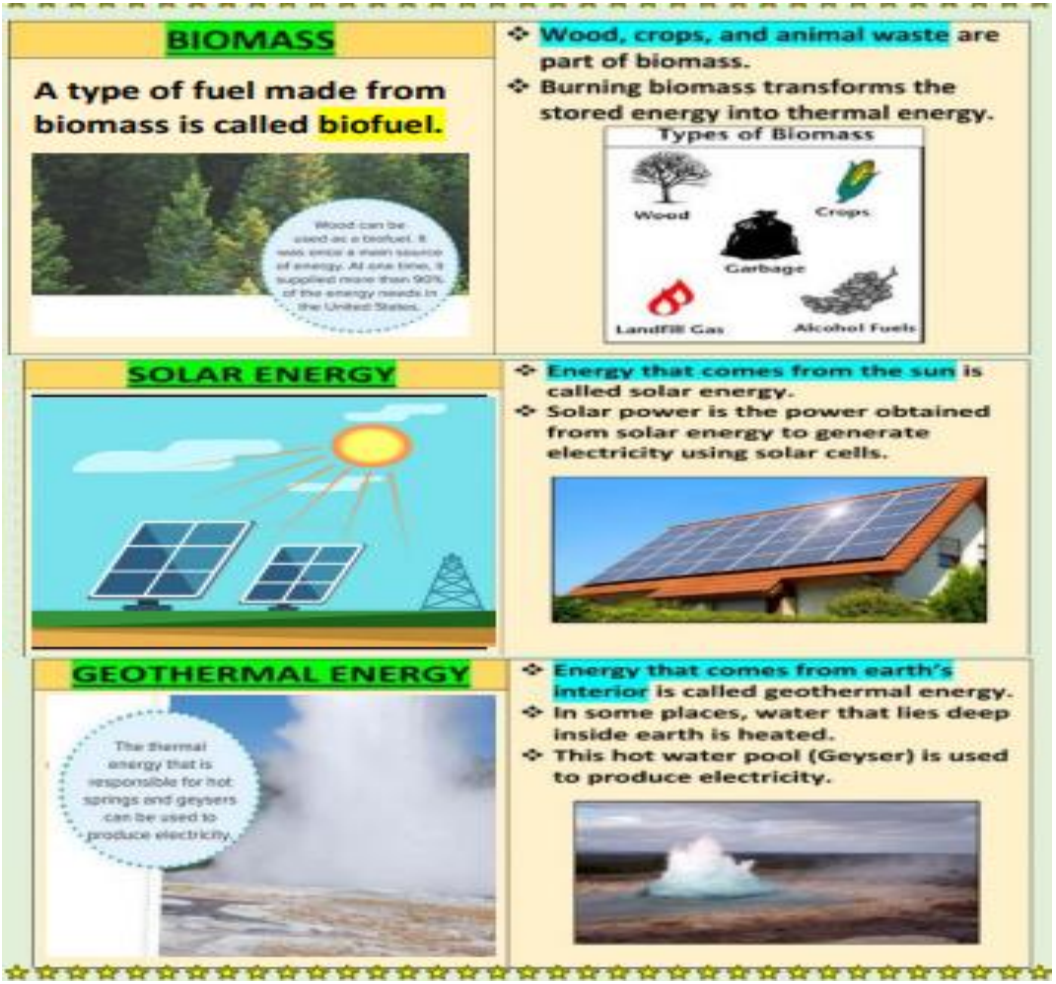
Solar 

Wind 

Hydro 

Biomass 

- A renewable resource can be quickly replaced
- Water, wind, Sunlight, plants and animals are renewable resources
- Biomass- Comes from living or formerly living material
- Solar Power comes from the Sun
- Geothermal Energy- comes from inside the Earth



الخشب و المحاصيل و فضلات الحيوانات.

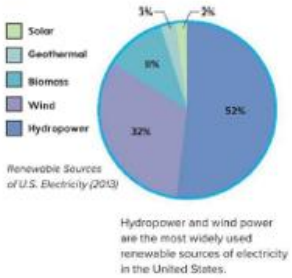
حرق الكتلة الحيوية تحول الطاقة المخزنة الى طاقة حرارية

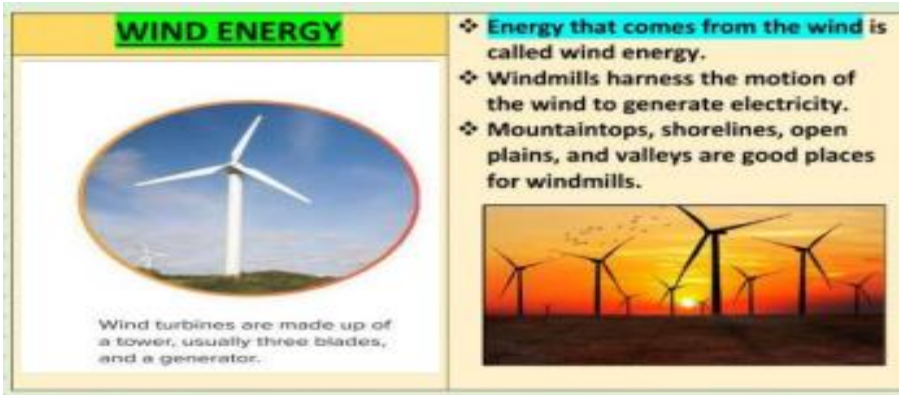
طاقة تأتي من الشمس تسمى الطاقة الشمسية.

الطاقة الشمسية هي طاقة نحصل عليها من الشمس لانتاج الكهرباء باستخدام الخلايا الشمسية

طاقة تأتي من باطن الأرض تسمى الطاقة الحرارية الأرضية.

و تستخدم هذا الطاقة لانتاج الكهرباء





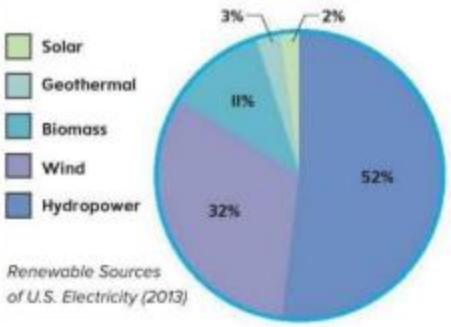
طاقة تأتي من الرياح تسمى طاقة الرياح.

تستخدم لانتاج الكهرباء مثل الطواحين

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

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.

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

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.

ةة

POLLUTION التلوث

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

مواد ضارة تؤثر على سطح الأرض و الهواء و الماء

- 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.

- حرق الوقود الاحفوري تسبب تلوث الهواء
- تلوث الهواء تسبب مشاكل التنفس و النظر
- حرق الوقود تسبب التلوث.
- الطاقة النووية لا تسبب التلوث بل يجب حفظها بعناية

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.

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.