Attenzione: l'allievo ha risposto usando il colore rosso.

Allievo: Francesco B.

1. Read

1. Energy basics

Energy is in everything. We use energy for everything we do, from making a jump shot to baking cookies to sending astronauts into space.

There are two types of energy:

- Stored (potential) energy
- Working (kinetic) energy

For example, the food you eat contains chemical energy, and your body stores this energy until you use it when you work or play.

2. Energy sources can be categorized as renewable or non-renewable

When we use electricity in our home, the electrical power was probably generated by burning coal, by a nuclear reaction, or by a hydroelectric plant at a dam. Therefore, coal, nuclear and hydro are called energy sources. When we fill up a gas tank, the source might be petroleum or ethanol made by growing and processing corn. Energy sources are divided into two groups — renewable (an energy source **that** can be easily replenished or made again) and non-renewable (an energy source **that** we are using up and cannot recreate). Renewable and non-renewable energy sources can be used to produce secondary energy sources including electricity and hydrogen.

3. Renewable energy

Renewable energy sources include:

- Solar energy from the **which** can be turned into electricity and heat

- Wind
- Geothermal energy from heat inside the Earth
- Biomass from plants, which includes firewood from trees, ethanol from corn, and biodiesel from vegetable oil
- Hydropower from hydroturbines at a dam

Unlike fossil fuels, which are exhaustible, renewable energy sources regenerate and can be sustained indefinitely.

4. Non-renewable basics

The four non-renewable energy sources used most often are:

-Oil and petroleum products, including gasoline, diesel fuel and propane.
-Natural gas
-Coal
-Uranium (nuclear energy)

Non-renewable energy sources come out of the ground as liquids, gases, and solids.

Crude oil (petroleum) is the only commercial non-renewable fuel that is naturally in liquid form. Natural gas and propane are normally gases, and coal is a solid.

5. Fossil fuels are non-renewable, but not all non-renewable energy sources are fossil fuels

Coal, petroleum, natural gas, and propane are all considered fossil fuels because they were formed from the buried remains of plants and animals that lived millions of years ago.
Uranium ore, a solid, is mined and converted to a fuel used at nuclear power plants. Uranium is not a fossil fuel, but is a non-renewable fuel.

Source: U.S. Energy Information Administration (July 2009)

6. Energy sources: what are the pros and cons

Non renewable - The world's primary energy consumption is made up mainly of non renewable sources (84%). This poses problems as non renewable sources of energy production are not only exhaustible but also have various negative effects on the environment and climate, both of which have long term effects on the earth's system.

Thus the need arises to consider alternatives and to look towards 'greener' solutions.

Renewable - Renewable sources of energy such as solar, wind, geothermal, biomass and tidal are increasingly used in face of diminishing fossil fuel resources and concerns over their impacts on the environment. While the cost of renewable energy technologies remains high, increased demand can lead to economies of scale and a wider deployment —especially in developing countries where energy demand is increasing and many renewable resources are plentiful.

Source: DLIST Benguela

2. Complete the following exercises:

1. Put the correct title to each paragraph.

~~a) Non renewable basics b) Fossil fuels are non renewable, but not all non renewable energy sources are fossil fuels c) Energy sources: what are the pros and cons d) Energy basics e) Energy sources can be categorized as renewable or non renewable f) Renewable energy~~

2. Create a chart divided into two columns, copying in the first column the list of renewable sources and in the second that of non-renewable sources of energy.

RENEWABLE	NON RENEWABLE
Solar	Petroleum
Wind	Coal
Geothermal	Natural gas
Biomass	Propane
Tidal	Uranium
Ethanol	Oil
Biodiesel	Gasoline
Hydropower	Diesel fuel

Collocations

3. Find in the text five adjectives going with the word FUEL and create the couple (adjective + noun).

- Liquid fuel
- Solid fuel
- Fossil fuel
- Diesel fuel
- Non-renewable fuel

4. Find eight adjectives going with the word ENERGY.
   - Renewable energy

- Non-renewable energy
- Potential energy
- Kinetic energy
- Nuclear energy
- Secondary energy
- Primary energy
- Solar energy

5. The word POWER can be used either as an adjective or as a noun. Find two examples.

Electrical power (noun) power plants (adjective)

3. DEFINITIONS. Use *which* or *that* clause in a definition. *Which* is more formal than *that*. Look at the example:

Geothermal is a renewable resource which comes from heat inside the Earth

Find ways of giving definitions in the text and circle *which* or *that*. Copy them down here. Then add at least three definitions using information from the text.

(...-)Energy sources are divided into two groups — renewable (an energy source that can be easily replenished or made again) and non-renewable (an energy source that we are using up and cannot recreate).

(...-) Solar energy from the sun, which can be turned into electricity and heat.
(... -)Unlike fossil fuels which are exhaustible, renewable energy sources regenerate and can be sustained indefinitely.
(...-)Crude oil (petroleum) is the only commercial non-renewable fuel that is naturally in liquid

form.

- There are two types of energy which are the kinetic and the potential energy.
- Oil and petroleum are products, including gasoline, diesel fuel and propane which are defined as non-renewable energy.
- Chemical energy is a form of energy which comes from the food you eat.

4. FOCUS ON POINT 6

1. What are the problems in using non-renewable energy resources?

The problems of non-renewable resources are their various negative effects on the environment and climate, which can damage the Earth's system. In addition, they are exhaustible.

2. Why is the use of renewable resources increasing ?

The use of renewable resources is increasing because non-renewable energy sources are diminishing and because they have negative effects on the environment. Furthermore the general demand of energy is increasing and developing countries are plentiful of renewable resources.

3. Create a MIND MAP for ENERGY, following the concepts explained in the text.