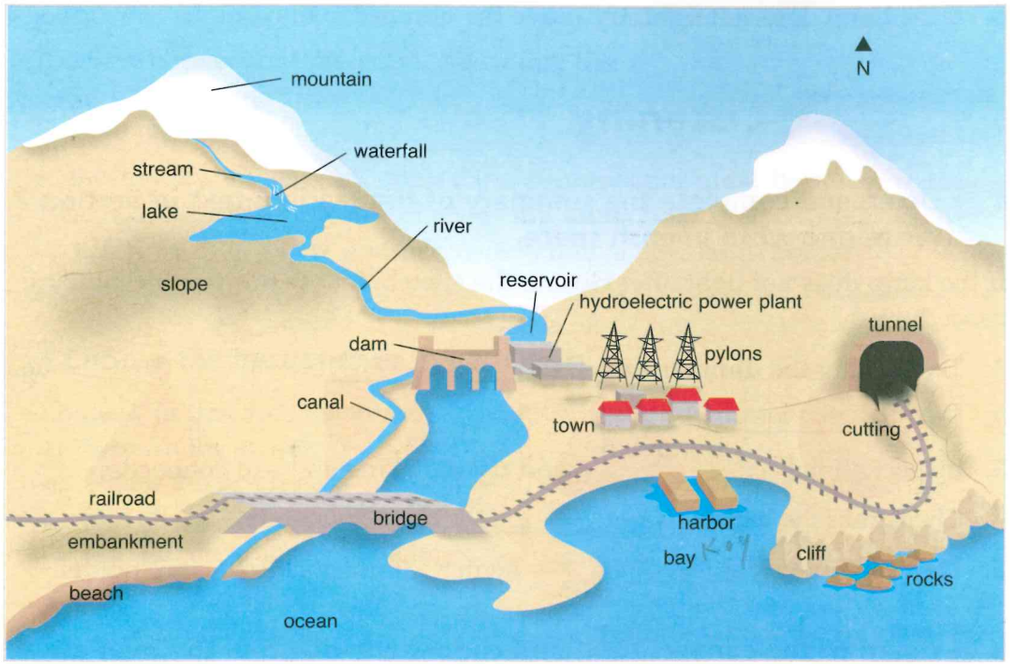
UNIT 12

Natural or man-made?

Section 1 *Vocabulary*

CD 2-01

A. Read the text and look at the picture.



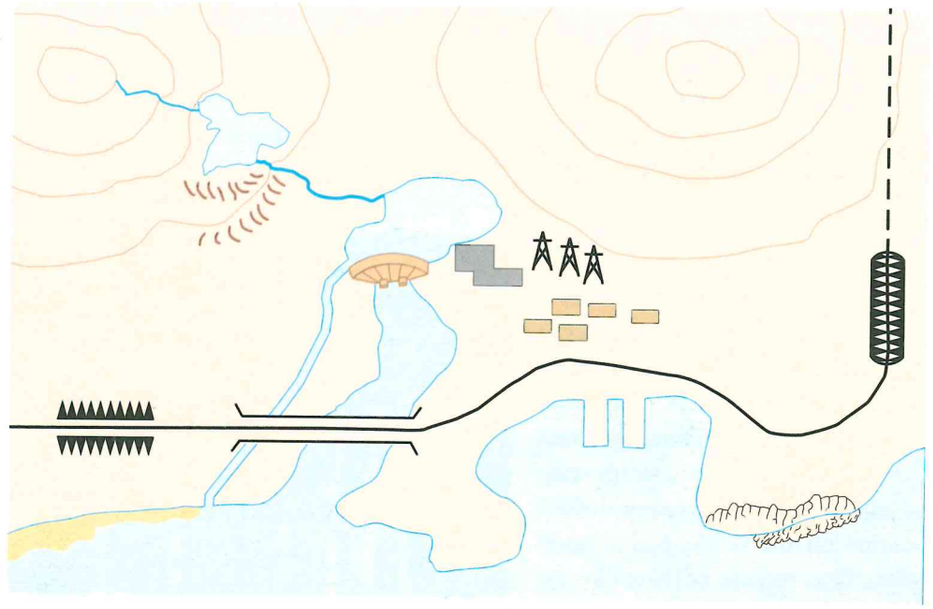
In any **landscape** there are **natural features** which are formed by **geological action** – movement from deep below the Earth's surface. Then the features are **weathered** by the sun, the wind and the rain, and by the movement of the ocean.

In most landscapes there are also **man-made** features. People use the natural features and they change them.

In the landscape above, we can see a natural **watercourse**. It begins as a **stream** in the **mountains** and runs over a **waterfall** into a **lake**. It continues down the **slope** of the **hills** into a **valley** where it grows into a **river**. At the **head** of the valley, there is a **dam** across the river to make a **reservoir**. From the reservoir, a **canal** runs down to the **ocean**. Beside the reservoir is a **hydroelectric power plant**. We can see the **pylons** carrying the electricity down to the town.

There is a **railroad track** that runs across this landscape. It runs on top of an **embankment** in the west to a **bridge** over the river, then around the **bay** and past the **harbor**. It climbs to the top of the **cliff** and then runs through a **cutting** into a **tunnel** under the mountains in the east.

B. Look at this map of the landscape picture on page 54. Complete the key by matching each symbol to a label in the box.



cutting / bridge / beach / cliff / canal / harbor / tunnel / lake / river / mountain / rocks / embankment / slope

Key:

a. _____ *f.* _____ *j.* _____

b. _____ *g.* _____ *k.* _____

c. _____ *h.* _____ *l.* _____

d. _____ *i.* _____ *m.* _____

e. _____

C. Natural or man-made feature? Complete the table with words from Exercise B.

Natural	Man-made
valley	
	reservoir
river	
bay	
slope	

CD 2-02

Section 2 Reading

For centuries man has used the fossil fuels of coal, oil and gas to provide energy, but these sources of energy will run out because they are not renewable. There are other renewable sources in nature. In this article we look at three, with the advantages and disadvantages of each one.

Wind power

Wind is one of the oldest sources of energy. New windmills are 100 meters high and make electricity directly. A "farm" of new windmills can provide enough power for a large city. However, if you try to build wind farms on the land, local farmers complain because of the noise and the damage to farming. If you put them out at sea, local fishermen complain because of the damage to fishing.

Water power

Water is another old source of energy. Old watermills used the power of rivers and streams, but modern hydroelectric plants (HEP) need huge reservoirs. These plants could meet 30 – 40% of world energy needs.

However, the HEP reservoirs destroy the rivers that supply them because they take the oxygen out of the water that is returned to the rivers.

Solar power

The amount of sunshine the U.S. receives in 40 minutes could make more electricity than the country uses in a year. In solar cells, sunlight pushes electrons out of atoms and leaves holes which are filled by other electrons. The movement of electrons is electricity. Solar cells are reliable and do not need a lot of maintenance. However, solar power is not the answer for some areas because they do not get enough sunshine.

A. Choose the best answer in each case.

1. This text is about:
   a. wind power
   b. water power
   c. renewable energy sources
   d. solar power
2. Fossil fuels are energy sources that:
   a. have run out
   b. will never run out
   c. are renewable
   d. are not renewable
3. How many renewable sources are mentioned?
   a. three
   b. four
   c. five
   d. six
4. What is one disadvantage of HEPs?
   a. They need a large reservoir.
   b. They could meet 30 – 40% of energy needs.
   c. HEP reservoirs destroy the rivers.
   d. They need oxygen.
5. What is the disadvantage of solar power?
   a. It pushes electrons out of atoms.
   b. Some areas do not get enough sunshine.
   c. Solar cells do not need a lot of maintenance.
   d. There is a lot of sun in the U.S.

B. Study the following example sentences.

Joining ideas in sentences

Solar cells are reliable **and** do not need a lot of maintenance.
Man has used fossil fuels to provide energy **but** these sources will run out.
The reservoirs destroy the rivers **because** they take the oxygen out.
Local fishermen complain **because of** the damage to fishing.

Joining ideas in a paragraph

New windmills can provide power for a large city. **However**, people complain about them.

C. Choose a suitable word or phrase from the box to join the ideas. Use each word or phrase only once.

but / and / however / because of / because

1. Local farmers complain _____ the damage to farming.
2. New windmills are 100 meters high _____ make electricity directly.

3. Old watermills used the power of rivers, _____ modern HEPs need huge reservoirs.
4. HEPs could supply 30 – 40% of our energy. _____, they destroy rivers.
5. Solar power is not right for some areas _____ they do not get enough sunshine.

CD 2-03

Section 3 *Listening*

A. Listen and complete the summary of the reading text in Section 2. Write one word in each space.

The _____ fuels – coal, oil and gas – are not renewable so they will run out. Three renewable sources of energy are wind, water and sunshine. Windmills, _____ plants and solar cells are all used to make electricity. These _____ sources have many advantages, _____ they also have disadvantages. The windmills are noisy and damage farming land and fishing areas. The _____ used by hydroelectric plants destroy the rivers that supply them with water. And solar power cannot be used in areas that do not get enough sunshine.

CD 2-04

B. Listen and decide. Circle the renewable energy source which is said to be the most important.

solar power / geothermal power / water power / wave power / wind power

CD 2-05

C. Listen again and complete the summary. Write one word in each space.

Geothermal _____ comes from the Earth's core. Atoms are constantly breaking up and producing huge amounts of _____. We can pump water down and turn the water into _____. The steam can turn turbines and make _____. There is enough _____ power to meet the world's energy needs for 35 billion years.