

Resources

When we speak of **resources**, we are talking about things we can take from the **environment** and use to make our lives better. Some of these resources, like solar energy, air, water from rivers and lakes, and plants and the animals found in the wild, are immediately available. Other resources, such as underground water, fossil fuels like oil and coal, and minerals like iron ore, which we use to make steel, are only available after we extract them or convert them into a more useful form.

We think of resources as either **renewable** or **non-renewable**. Although they are not infinite, renewable resources replenish themselves over time. We can harness the wind to make energy, for example, and tomorrow there will be more wind.

Non-renewable resources, on the one hand, will run out once we have used them. There is only so much oil in the earth, and once we have used it up it is gone forever. Although people argue about how much fossil fuel and other non-renewable resources are actually left for us to find, everyone agrees that they will run out one day and that sooner or later we will need to find alternatives. Conserving resources by using less, by reusing what we already have, and by recycling materials to be used again can slow the process of depletion.

Recently, and in connection with the fast rates of development in production and consuming of goods and services, a new concept has been introduced: **potentially renewable resources**. Scientists include in this group clean air, drinking water, fertile land, and biological diversity, which is the variety of plants and animals in the world. All of these are of crucial importance to preserving life on earth. Until recently their depletion was considered to be practically impossible, that is they were thought of as renewable resources. And indeed, if used sensibly, they can be renewed in nature.

However, if our air, water, soil and biodiversity are used carelessly, these potentially renewable resources could be exhausted. This is why modern society has introduced the concept of **sustainable use of resources**, which is the maximum amount of a resource that can be taken for our purposes that does not endanger its natural regeneration. Using more of the resource results in **environmental degradation**.



Lesson Plan: **Natural resources**

Duration	1-2 teaching hours
Time of year	Any
Place	The classroom
Materials	Blackboard (flip chart)
Aims	<ul style="list-style-type: none"> To teach the concept of natural resources and the types of natural resources To raise awareness about the need to use natural resources in a sustainable way
Methods	Discussion, game, case study analysis

Part I: Natural resources (Discussion)

1 Ask the students to name some things that people take from nature in order to satisfy their needs (e.g. food from plants or animals, water, air, energy). Write their answers on the blackboard or flip chart.

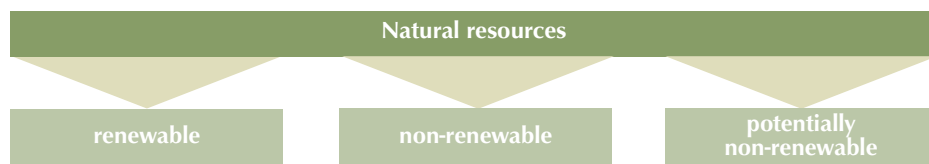
2 Explain to the class that natural resources can be renewable or non-renewable, and a new concept has recently appeared: potentially renewable resources (see the introduction).

3 On separate flash cards write the names of the following energy and material resources:

- ore, oil, natural gas, solar energy, wind energy; and
- plants, animals, fresh water (rivers, lakes, wells), soil, air, ore (iron, other metals), construction materials (clay, stone, sand), etc.



Draw the following grid:



Begin the discussion and categorise the resources from the flash cards, distributing them in the three columns. Explain to the students the advantages and disadvantages of various natural resources. Give examples. Explain that people nowadays use much more resources than at any other time in human history. Together with the students, decide which of the mentioned resources are the most available in your country.

4 Pay special attention to the potentially non-renewable resources by giving several examples for sustainable extraction of natural resources:

- The quantity of fish caught should not exceed its sustainable regeneration in fishing grounds.
- The quantity of extracted water should not exceed its regeneration in underground aquifers.
- The cutting down of trees should not exceed the planting of new trees.
- A sustainable economy does not destroy plant and animal species faster than the rate of their regeneration.



- 5 Hand out copies of the matching game Sustainable – Non-sustainable.

Part II: About the hen and the golden eggs

- 1 Explain to the students that it is a modern notion for people to continually strive towards a better life. They want to satisfy their needs quickly and permanently. Many of them prefer activities and services with immediate returns, which they imagine will bring them instant prosperity without thinking about the consequences of these actions. The effects often lead to problems and negative impacts on the environment and society.



- 2 Give the class the case study Lovely Town on page 92.
- 3 Ask the students what thoughts and feelings this story evokes in them.
- Did the people of Lovely make any mistakes?
 - What can go wrong when people act without thinking or when they seek quick earnings?

Discuss and summarise how the needs of people are balanced with those of nature. Try to show that the key is to use natural resources sensibly.

Other activities

- Ask the students to discuss the stories about Lovely and the hen that laid golden eggs with their families. Together with their parents they could think of similar stories coming from your country, region or town.
- Find time during the next lesson to discuss some of the most interesting stories.
- Hand out copies of the test What Do We Know about Resources? and ask the students to do it as an individual task.
- Ask several volunteers to form a small group and to discuss in front of the others the dilemma To Fish or not to Fish.
- Make copies of the picture on page 134 and hand them out to the students to colour in.





DILEMMA

To Fish or not to Fish

You and your parents take a three-day trip to a beautiful lake where you can go fishing. Fishing rules say that your family can catch no more than 10 fish during you stay. The first day fishing goes slow and you manage to catch only three fish, and very small ones at that. However, the second day you get luckier, and in just a couple of hours you have managed to catch seven big ones. You remember that there are rules about how many fish you can take. What should you do?



- Go on fishing no matter what.
- Throw out the small fish from the previous day and go on fishing, hoping the next three will be bigger.
- Stop fishing and cook the fish you have caught.
- Stop fishing and decide to rest and enjoy the view.
- Something else.



TEST

What Do We Know about Resources?

	TRUE	FALSE
1 Resources are things we take from nature in order to satisfy our needs and wishes.	<input type="checkbox"/>	<input type="checkbox"/>
2 We can take as many fish from the seas and the oceans as we want and there will always be more.	<input type="checkbox"/>	<input type="checkbox"/>
3 Solar energy is a renewable and inexhaustible source of energy.	<input type="checkbox"/>	<input type="checkbox"/>
4 People only need clean air, fresh water, delicious food and shelter.	<input type="checkbox"/>	<input type="checkbox"/>
5 We are depleting the natural sources of oil.	<input type="checkbox"/>	<input type="checkbox"/>
6 By using things more than once we save resources and energy because we don't have to replace them right away.	<input type="checkbox"/>	<input type="checkbox"/>
7 When I cut down a tree I should think about where I can plant another one.	<input type="checkbox"/>	<input type="checkbox"/>
8 If the hen lays a golden egg every day, then there must be a hidden treasure in her stomach.	<input type="checkbox"/>	<input type="checkbox"/>

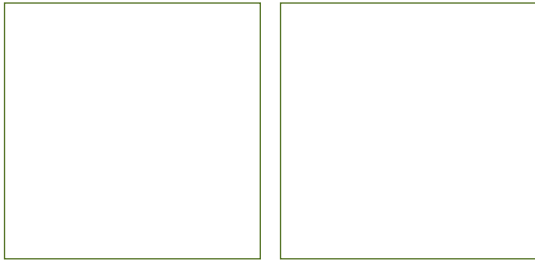
Answer key: 1. True 2. False 3. True 4. False 5. True 6. True 7. True 8. False



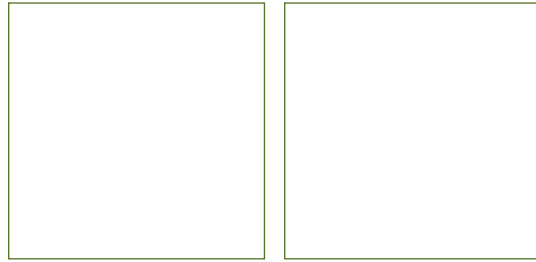
FACT SHEET

Sustainable – Non-sustainable

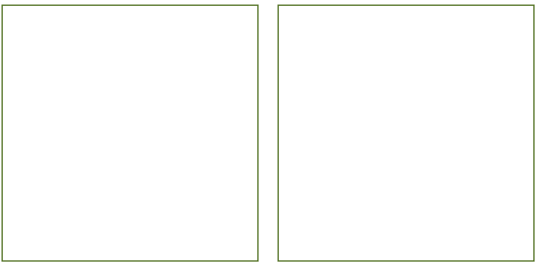
Read the sentences underneath each pair of boxes. Choose the two pictures that go with each sentence. Put the picture of the resource in the box on the left and the picture of how we use it on the right.



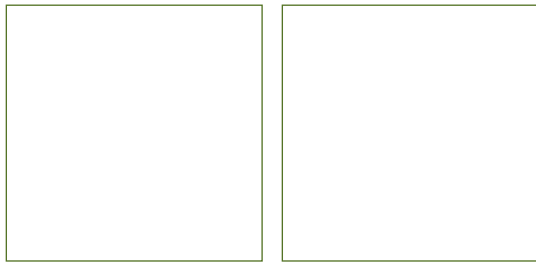
The number of fish caught should not be more than the number of fish that become adults.



Water should not be taken from the ground faster than it refills.



Trees should be planted as fast as they are cut down.



Hunting should be watched carefully to make sure the number of animals does not go down.





FACT SHEET Lovely Town



Once upon a time there was a small town by the sea. It was very beautiful, with clean blue sea, sand as soft as silk and wonderful forests along the coast. They called it Lovely. People lived in it peacefully and happily. They fished, took vacationers into their homes, and offered them walks in the forest nearby or boat trips in the sea. They offered them food made from local plants and animals.

One day the residents of Lovely got together and decided to change their town by turning it into a big and attractive tourist centre, which they imagined would give them a chance to make more money and have better lives. They cut down the forest and started building new hotels in its place. They also built wide roads along the beach, which destroyed the sand dunes and the plants growing on them. Many tourists drove their cars to Lovely, making the town a noisy place. Every day lorries brought food and goods from distant places to meet the demands of the tourists, and rubbish began piling up. Lovely was growing all the time. Almost nothing seemed to have remained from the small town – it had changed beyond recognition. People stopped thinking of Lovely as a nice place for a holiday, and many stopped coming. The people who lived in Lovely started to miss the town as it used to be.

One evening a stranger appeared in the central square, where most of the local people gathered in the evening. He stayed there for a long time, listening to the people talk, and in the end he told them the following story:

Once upon a time there was a special hen. Every single day it laid a golden egg, shining like a little sun in a corner of the coop. The owner of the hen checked the weight of the eggs daily. He kept complaining they were not bigger and said: "Maybe I should just kill that hen. There must be a treasure in its body. If I take it out, then I will be the richest man in the world."

After hesitating for some time he finally made up his mind: he killed the bird and can you imagine his shock to find out that the inside of the hen was just like any other! He started pulling his hair in despair and crying bitterly, but everything was in vain. The miser had lost both the eggs and the hen.

The stranger looked at the saddened townspeople and said, "Those who rush to riches will often end with nothing."

