

MATERIALS

7.1. Vocabulary

Ex. 1. Match the words to their definitions.

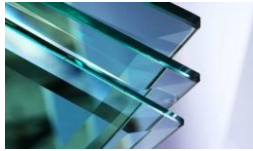
1. aluminum



2. plastic



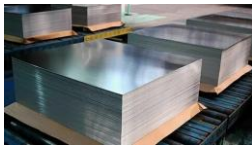
3. glass



4. leather



5. steel



6. cast iron



7. fiberglass



8. lightweight aluminum



a. a type of iron that is very hard and brittle, often used for cooking pots and pans.

b. a hard, transparent material that is used for making windows, bottles and other objects.

c. a lightweight, silvery-white metal that is resistant to corrosion, commonly used in construction, transportation, and packaging.

d. a material made from the skin of animals, typically cows, used to make clothing, shoes, and accessories.

e. a synthetic material that can be molded into different shapes when heated, commonly used in packaging and household items.

f. a strong metal made from iron and carbon, often used in construction or manufacturing.

g. a reinforced plastic material made of glass fibers embedded in resin, used in insulation, boats, and other applications.

h. a type of aluminum that has been specially treated to reduce its weight, often used in aircraft and sports equipment.

9. rubber



i. an elastic substance made from the sap of certain plants or produced synthetically, used in tires, hoses, and other products.

Ex. 2. Translate the sentences from Russian into English. Use the target vocabulary.

1. Резиновые шины на моем велосипеде позволяют легко ездить по любой местности.
2. Пластиковый корпус двигателя был разбит вдребезги после удара.
3. Кожаный чехол на рулевом колесе выглядит роскошно.
4. Стеклопластиковый кузов этого автомобиля делает его прочным и долговечным.
5. Легкая алюминиевая рама этого самоката позволяет легко переносить его с собой.
6. Лобовое стекло моей машины треснуло после того, как в него попал небольшой камень.
7. Стальные болты были использованы для крепления петель на металлической двери.
8. Чугунные шестерни внутри двигателя подвержены коррозии при неправильном уходе.
9. Рама этого велосипеда изготовлена из алюминия, что делает его легче и удобней в обращении.

7.2. Reading

Ex. 1. Read the text.

Mechanics as the Study of Matter and Motion

Mechanics is the study of matter and motion. It's a branch of physics that deals with the behavior of physical objects when they are subjected to forces or displacement. Mechanics has been studied for thousands of years, and during this time many different materials have been used to make mechanical devices, tools, and machines. Here are some examples.

Leather

One of the earliest materials used in mechanics was leather. It was used for belts, straps, and harnesses. Leather was strong, flexible, and easy to work with. It was also widely available because it could be made from the skin of animals, such as cows, horses, and sheep.

Cast iron

In the 18th century, cast iron became an important material in mechanics. Cast iron is a hard, brittle alloy of iron, carbon, and silicon. It's formed by pouring molten iron into a mold. Cast iron was used to make steam engines, bridges, and buildings. It was also used for cannonballs and cannon barrels.

Aluminum

Another important material in mechanics is aluminum. Aluminum is a lightweight, silvery-white metal. It's the most abundant metal in the Earth's crust, but it was difficult to extract until the late 19th century. Aluminum is now used for aircraft, cars, bicycles, and many other products. It's also used in electrical power lines because it's a good conductor of electricity.

Fiberglass

Fiberglass is a type of reinforced plastic. It's made by weaving glass fibers together and then coating them with a resin. Fiberglass is strong, lightweight, and resistant to heat, chemicals, and electricity. It's used to make boats, surfboards, car bodies, and sports equipment, such as hockey sticks and tennis rackets.

Rubber

Rubber is a soft, elastic material. It's made from the sap of rubber trees, which are native to South America. Rubber is used to make tires, belts, hoses, and many other products. It's also used as a coating for handles, grips, and other parts of mechanical devices.

Plastic

Plastic is a synthetic material made from polymers. Polymers are long chains of molecules. There are many different types of plastic, but they all have some common properties. They're lightweight, strong, durable, and resistant to moisture, chemicals, and electricity. Plastic is used to make a wide range of products, including toys, tools, packaging, and electronic devices.

These are just a few examples of the materials used in mechanics. Over the centuries, engineers and scientists have developed many new materials and improved existing ones. Today, there are thousands of different materials that can be used in mechanics. The choice of material depends on many factors, such as cost, availability, strength, weight, and resistance to heat, cold, moisture, wear, and corrosion.

Ex. 2. *Answer the questions.*

1. What is mechanics?
2. How long has mechanics been studied?
3. What are some examples of materials used in mechanics?
4. Why was leather a popular material in early mechanics?
5. What is cast iron and how was it used in mechanics?
6. What are some properties of aluminum that make it useful in mechanics?
7. How is fiberglass made and what are its characteristics?

7.3. Communication

Ex. 1. *Make sentences using the following words:*

1. Mechanics/use/aluminum
2. Cast iron/durability/engines
3. Fiberglass/repairing/car bodies
4. Glass/windows/mirrors
5. Leather/car interiors/common
6. Lightweight aluminum/high-performance/race cars
7. Plastic/components/bumpers
8. Rubber/tires/flexible parts
9. Steel/strong/sturdy/material
10. Mechanics/right materials/different repairs