**Vocabulary: PROPERTIES OF MATERIALS**

Read the following descriptions of properties; fill in with suitable adjectives and their opposites.

1. materials which break easily are... ___________________  x  ______________
2. materials which are difficult to scratch or cut are... ___________________  x  ______________
3. materials which bend easily are... ___________________  x  ______________
4. materials which have a flat, even surface are... ___________________  x  ______________
5. materials which dissolve in water (or other solvents) are... ___________________  x  ______________
6. materials which burn easily are... ___________________  x  ______________
7. materials which can be seen through are... ___________________  x  ______________
8. materials which are able to conduct an electric current are... ___________________  x  ______________
9. materials which do not corrode or rust are... ___________________  x  ______________
10. materials which are difficult to lift or carry are... ___________________  x  ______________

Describe the properties of the following materials and examples.

- glass
- copper
- rubber
- concrete
- steel
- wood

The body (coachwork) of a car should be / A bridge pillar (column) should be

Skills / Talking: A MODERN LANDFILL (POSITION & FUNCTION IN A SYSTEM)

Match the terms with the boxes in the scheme. Think about individual components of a landfill.

<table>
<thead>
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<th>MODERN LANDFILL</th>
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<tr>
<td>cap</td>
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<tr>
<td>leachate drainage system</td>
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<tr>
<td>plastic liner</td>
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<tr>
<td>groundwater well</td>
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<tr>
<td>reservoir / tank</td>
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<tr>
<td>decomposing waste (garbage)</td>
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<tr>
<td>leachate treatment system</td>
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<tr>
<td>landfill gas system</td>
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<td>gas explosion monitoring</td>
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<td>collection pipes</td>
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ACQUIFER
Plastic waste (plastic objects and particles such as plastic bottles, bags and microbeads) often becomes plastic pollution which affects living organisms, wildlife habitats and humans. Plastics are light, flexible, formable, colourable, durable and also inexpensive, and today’s levels of plastic production are extremely high. But the chemical structure of most plastics makes them resistant to natural processes of degradation and it might take hundreds or thousands of years before they degrade.

About 400 million tonnes of plastic is produced worldwide each year. Plastic pollution can affect land, waterways and oceans. It is estimated that 8 million tonnes of plastic waste enters the ocean from coastal communities each year. Living organisms, particularly marine animals, can be harmed when they get entangled in plastic objects or when they ingest plastic waste, or through exposure to chemicals included in plastics.

Some studies suggest that the bodies of 90% of seabirds contain plastic debris. Some researchers suggest that by 2050 there could be more plastic than fish in the oceans (by weight). The trade in plastic waste (mainly imported to “developing” countries) is one of the main causes of marine plastic pollution, therefore the United Nations has imposed a ban on waste plastic trade unless it meets certain criteria.

Larger plastic objects (e.g. plastic bags and food containers) very often become microscopic plastic particles - microplastics - after they break down (by degradation, friction, abrasion or collisions) into smaller pieces, between 2 nanometres and 5 millimetres in size. While these microplastics accumulate in water, soil and air and they can have serious health effects.

A study from 2017 found that 83% of tap water samples taken around the world contained plastic pollutants. It is currently unclear if this contamination is affecting human health, but plastic nanoparticles in drinking water could have serious impacts on human well-being and health. Some hazardous compounds that are used in plastics, such as phthalates or bisphenols have been used in the manufacturing of food packaging, medical devices, flooring materials, bottles, perfumes and cosmetics. A high dosage of these compounds is hazardous to humans, destroying the endocrine system.

There have been many efforts to reduce the use of plastics and to promote plastic recycling. Some supermarkets charge their customers for plastic bags, and in some places more efficient reusable or biodegradable materials are being used in place of plastics. Some communities and businesses have put a ban on commonly used plastic items, such as plastic water bottles and plastic bags.

based on various Wikipedia sources
Summary and feedback
Describe properties of chosen materials (glass, concrete, wood, rubber, steel...).
Describe the position and function of a modern landfill’s components.
What are major environmental issues connected to plastic waste?

Vocabulary to remember
Adjectives: insoluble, (non)conductive, (non)corrosive, (non)flammable, brittle / fragile, colourable, durable, flexible, formable, hard, heavy, (in)expensive
Verbs: protect X from Y, accumulate, affect, break down / degrade, collect, cover, estimate, get entangled, ingest, isolate X from Y, monitor, prevent
Nouns: leachate drainage system, leachate treatment system, plastic bags, plastic bottles, plastic debris, plastic liner, plastic objects, plastic particles, plastic pollutants, reservoir / tank, tap water, groundwater well

Use / throw away
collect at the curbside
transport to a recycling facility
sort / separate different types
inspect / pick undesirable items
wash / shred (grind)
dry / get rid of excess water
filter / remove contaminants
melt by heat and pressure
extrude molten plastic
make pellets

Plastic recycling process

1. Why do people use plastics in such enormous quantities?
2. How can plastic objects harm living organism?
3. How do large plastic objects change to microplastics?