BRAIN TEASERS SEASON 3 LEARNING MATERIAL (GRADE 4 and 5)

No	Term	Meaning (Simplified)	Pronunciation	Use in a Sentence
1	Hydrosphere	All the water on Earth—in oceans, lakes, rivers, and even the air.	/hī-drō-sfeer/	Scientists study the hydrosphere to understand water cycles.
2	Biosphere	The part of Earth where all living things exist, including the air, land, and water.	/bī-ō-sfeer/	Protecting the biosphere means saving all life on Earth.
3	Lithosphere	The solid, outer part of the Earth, including the crust and upper mantle (rock and soil).	/lith-ō-sfeer/	The pollution seeped down into the lithosphere below the factory.
4	Aquifer	An underground layer of rock or sand that holds fresh water.	/ak-wih-fur/	The town gets its drinking water from the large aquifer.
5	Water Vapor	Water in the form of a gas in the air (a powerful greenhouse gas).	/wah-tur vā-pur/	Humidity is caused by a lot of water vapor in the atmosphere.
6	Tsunami	A very large ocean wave, usually caused by an underwater earthquake.	/tsū-nah-mee/	The warning system helped people move to high ground before the tsunami.
7	Wetlands	Land areas that are covered with water, like swamps or marshes (they clean water).	/wet-landz/	The wetlands are an important habitat for many birds and frogs.
8	Reservoir	A large, natural or artificial lake used to store water for people.	/rez-ur-vwahr/	The city's reservoir is getting low after the dry summer.
9	Salinity	The amount of salt dissolved in water, especially in the ocean.	/suh-lin-i-tee/	Too much rain can lower the salinity of the coastal ocean water.
10	Desalination	A process that removes salt from ocean water to make it drinkable.	/dee-sal-in-ā-shun/	Some dry countries use desalination plants to get fresh water.
11	Carbon Sequestration	The process of capturing and storing carbon dioxide from the air, often by planting trees.	/kahr-buhn see-kwess-trā-shun/	Forests are key to natural carbon sequestration.
12	Carbon Sink	Anything (like a forest or the ocean) that absorbs more carbon than it releases.	/kahr-buhn singk/	The world's rainforests act as a huge carbon sink.
13	Net Zero	Reaching a point where the amount of greenhouse gases going into the atmosphere equals the amount taken out.	/net zē-rō/	The company set a goal to reach net zero emissions by 2050.
14	Eco-friendly	Products or actions that are not harmful to the environment; also called "green."	/ek-ō-frend-lee/	We only use eco-friendly cleaning supplies at home.

15	Composting	The process of turning organic waste into rich, healthy soil.	/kom-pōst-ing/	Composting our food scraps reduces the trash we send to the landfill.
16	Rechargeable	Something (like a battery) that can be used again after being plugged in and given more energy.	/ree-chahrj-uh-buhl/	Using rechargeable batteries saves money and resources.
17	Insulation	Material put into walls or attics to trap heat inside and save energy.	/in-suh-lā-shun/	Good insulation helps keep the house cool in summer and warm in winter.
18	Conservationist	A person who works to protect and preserve wildlife and the natural world.	/kon-sur-vā-shun-ist/	The local conservationist gave a talk about saving the local river.
19	Green Transition	The worldwide shift from using fossil fuels to using clean, renewable energy.	/green tranz-ish-un/	The green transition will create new kinds of jobs.
20	Community Garden	A piece of land gardened by a group of people, often in a city.	/kuh-myū-nuh-tee gahr-dun/	My family grows vegetables in the community garden.
21	Landfill	A large area of land where garbage and trash are buried.	/land-fil/	Many cities are running out of space for new landfills.
22	Microplastics	Tiny pieces of plastic pollution, smaller than a grain of rice, that harm wildlife.	/mī-krō-plas-tiks/	Scientists are finding microplastics in the ocean and even in our food.
23	Smog	A thick, dirty cloud of pollution near the ground, often from cars and factories.	/smog/	The city had a terrible day of smog because of the still air.
24	Toxic	Poisonous or very harmful to living things.	/tok-sik/	You must never pour toxic chemicals down the drain.
25	E-waste	Old, broken, or unwanted electronic devices like phones and computers.	/ee-wāst/	Recycling e-waste is important because it has harmful metals inside.
26	Biodegradable	A material that can naturally break down or rot back into the earth quickly.	/bī-ō-dih-grād-uh-buhl/	Paper is biodegradable, but plastic is not.
27	Overconsumption	Using too many resources or buying too many things that we don't really need.	/ō-vur-kun-sump-shun/	Overconsumption is one reason we have so much waste.
28	Food Miles	The distance food travels from where it's grown to where it's eaten.	/fūūd mīlz/	Buying local vegetables reduces the food miles of your dinner.
29	Contaminate	To make something impure or unsafe by adding dirt or pollution.	/kun-tam-i-nāyt/	The oil spill will contaminate the beach for months.
30	Runoff	Water from rain or melting snow that flows over the land and into rivers and lakes.	/run-off/	Farm runoff can carry dirt and fertilizer into the stream.
31	Atmospheric River	A large, narrow band of water vapor in the sky that can cause heavy rain and flooding.	/at-muh-sfer-ik riv-ur/	The recent floods were caused by an unusually strong atmospheric river.

32	Cyclone	A large, swirling system of winds and storms that forms over warm water.	/sī-klōn/	The powerful cyclone caused major damage to the coast.
33	Wildfire	A large, destructive fire that spreads quickly through a wilderness area.	/wīld-fīr/	Hotter, drier summers have led to more severe wildfires.
34	Temperature Anomaly	A difference in temperature compared to the long-term average for that time of year.	/tem-pur-uh-chur uh-nom-uh-lee/	Scientists noticed a large temperature anomaly in the Arctic last month.
35	Feedback Loop	A chain of events where the effect of a warming climate causes even more warming.	/feed-bak lūp/	Melting ice is part of a warming feedback loop.
36	Ice Sheet	A huge layer of ice that covers a large area of land, like in Greenland or Antarctica.	/īs sheet/	The melting of the Greenland ice sheet contributes to sea level rise.
37	Albedo	How much light (and heat) a surface reflects; white ice has a high albedo.	/al-bē-dō/	Melting ice lowers the Earth's albedo, causing the planet to absorb more heat.
38	Tipping Point	The point when a small change causes a sudden, large, and irreversible change in the climate system.	/tip-ing poynt/	We hope to prevent the Earth's climate from reaching a dangerous tipping point.
39	Mitigation	Actions taken to reduce or prevent the causes of climate change, like lowering CO2 emissions.	/mit-i-gā-shun/	Switching to solar power is a key part of climate mitigation.
40	Farming Practices	The methods farmers use to grow crops and raise animals.	/fahr-ming prakt-i-siz/	New farming practices can help keep carbon in the soil.
41	Invasive Species	A plant or animal brought to a new place that spreads quickly and harms the local ecosystem.	/in-vā-siv spē-sheez/	The new weed is an invasive species that is taking over the fields.
42	Overfishing	Catching too many fish so that there are not enough left to reproduce.	/ō-vur-fish-ing/	Overfishing has caused the number of tuna in the ocean to drop.
43	Irrigation	Supplying dry land with water through ditches, pipes, or sprinklers to help crops grow.	/ih-ri-gā-shun/	The farmer used an irrigation system to water the fields.
44	Geothermal	Energy that comes from the natural heat inside the Earth.	/jē-ō-thur-muhl/	Iceland uses geothermal energy to heat most of its homes.
45	Biomass	Natural materials, such as plants, wood, and garbage, used to create heat or electricity.	/bī-ō-mass/	Burning certain kinds of biomass for energy is a type of renewable energy.
46	Ecology	The science that studies how living things interact with each other and their environment.	/ih-kol-uh-jee/	She wants to study ecology in college to help protect nature.

47	Pesticide	A chemical substance used to kill pests, like unwanted insects or weeds.	/pes-ti-sīd/	The farmer stopped using pesticides to keep his crops organic.
48	Ecotourism	Traveling to natural areas in a way that helps conserve the environment and local people.	/ek-ō-tū-riz-uh m/	We went on an ecotourism trip to see the monkeys in the forest.
49	Anthropogenic	Meaning "caused by humans" (used to describe most current climate change).	/an-thruh-puh-j en-ik/	The increase in CO2 is mainly an anthropogenic problem.
50	Wastewater	Water that has been used and needs to be cleaned before it returns to a river or ocean.	/wāst-wah-tur/	The plant cleans the wastewater from all the houses in town.
51	Climate Change	Long-term changes in Earth's usual weather patterns.	/klī-mit chānj/	Climate change is causing more storms and droughts.
52	Global Warming	The rise in Earth's average temperature, mainly from human activity.	/glō-buhl wawrm-ing/	Global warming melts the ice caps and glaciers.
53	Greenhouse Effect	A natural process where gases in the atmosphere trap the Sun's heat to warm the Earth.	/green-hows uh-fekt/	Too many gases make the greenhouse effect too strong.
54	Carbon Dioxide (CO2)	The most common greenhouse gas, released when we burn fossil fuels.	/kahr-buhn dī-oks-īd/	Planting trees helps absorb extra carbon dioxide.
55	Fossil Fuels	Natural materials (like coal, oil, and gas) that formed from ancient plants and animals, and release CO2 when burned.	/foss-il fyūlz/	We need less fossil fuels to power our homes and cars.
56	Emissions	Gases and pollution released into the air by factories and vehicles.	/ih-mish-uns/	New cars have lower emissions than old ones.
57	Renewable Energy	Power that comes from natural sources that will never run out, like the Sun and wind.	/ri-nōō-uh-buhl en-ur-jee/	We should use more renewable energy sources.
58	Non-renewable	An energy source (like fossil fuels) that we will eventually use up.	/non-ri-nōō-uh-buhl/	Non-renewable resources must be used carefully.
59	Sustainability	Using resources wisely so that they will last a long time for future generations.	/suh-stayn-uh-b il-i-tee/	Sustainability means making smart choices every day.
60	Adaptation	Making changes to deal with the effects of climate change that are already happening.	/ad-ap-tā-shun/	Building a higher wall near the ocean is an example of adaptation.
61	Atmosphere	The layer of gases that surrounds the Earth.	/at-muh-sfeer/	Greenhouse gases are trapped in the atmosphere.
62	Methane	A strong greenhouse gas, released from landfills and livestock (cows).	/meth-ayn/	Methane is a very powerful heat-trapping gas.
63	Ozone Layer	A protective layer high in the atmosphere that blocks harmful Sun rays.	/ō-zōn lā-ur/	Chemicals used to make a hole in the ozone layer.

64	Precipitation	Water falling to the Earth as rain, snow, or hail.	/pri-sip-i-tā-shun/	The amount of precipitation has changed in many areas.
65	Drought	A long period of time with very little rain, causing water shortages.	/drowt/	The farmer lost his crops because of the long drought.
66	Heatwave	A period of time when the weather is much hotter than usual.	/heet-wāv/	The summer heatwave was dangerous for older people.
67	Glacier	A huge, slow-moving river of ice on land.	/glā-shur/	Mountain glaciers are shrinking because of warming.
68	Permafrost	Ground that has been frozen solid for two or more years, mainly in the Arctic.	/pur-muh-frost/	When the permafrost thaws, it releases more gases.
69	Sea Level Rise	The increasing height of the ocean's surface due to melting ice and warming water.	/see lev-ul rīz/	Sea level rise threatens cities near the coast.
70	Erosion	When wind or water wears away the land or soil.	/ih-rō-zhun/	Heavy rain caused the riverbank to suffer erosion.
71	Ecosystem	A community of living things (plants and animals) and their environment.	/ek-ō-sis-tuhm/	A healthy forest is a balanced ecosystem.
72	Biodiversity	The great variety of all life on Earth—all the plants, animals, and microorganisms.	/bī-ō-dih-vur-si-tee/	Protecting biodiversity is important for a strong planet.
73	Habitat	The natural home or environment of an animal, plant, or other organism.	/hab-i-tat/	The warming climate can destroy an animal's habitat.
74	Endangered Species	A type of animal or plant that is in danger of becoming extinct.	/en-dānj-urd spē-sheez/	The panda is an endangered species that we try to protect.
75	Extinction	When a type of animal or plant completely dies out and is gone forever.	/ik-stingk-shun/	We must stop the loss of wildlife to avoid extinction.
76	Deforestation	The clearing of forests by cutting down the trees.	/dee-for-uh-stā-shun/	Deforestation in the Amazon is a serious problem.
77	Reforestation	The act of planting new trees to replace the ones that were cut down.	/ree-for-uh-stā-shun/	Our class helped with reforestation by planting seedlings.
78	Marine Life	All the plants and animals that live in the ocean.	/muh-rēēn līf/	Plastic in the ocean harms marine life, like turtles.
79	Coral Bleaching	When warming ocean water makes colorful coral turn white and die.	/kor-ul blēch-ing/	The Great Barrier Reef is suffering from coral bleaching.
80	Migrate	When animals move from one region to another to find food or a better climate.	/mī-grāt/	Birds migrate south for the winter.

81	Carbon Footprint	The total amount of CO2 released by a person or group's activities.	/kahr-buhn fut-print/	I want to reduce my carbon footprint by cycling.
82	Conservation	Protecting and wisely managing nature and natural resources.	/kon-sur-vā-shun/	Conservation groups work to save the rainforest.
83	Recycle	To change old materials (like plastic and paper) into new products.	/ree-sī-kuhl/	We must remember to recycle all of our bottles and cans.
84	Compost	To mix food scraps and yard waste together to make natural, rich soil.	/kom-pōst/	We put our fruit peels in the compost bin.
85	Pollutant	A harmful or poisonous substance that dirties the air, water, or land.	/puh-lōōt-unt/	Factories sometimes release dangerous pollutants.
86	Air Quality	How clean or polluted the air is where you live.	/air kwol-i-tee/	On a smoggy day, the air quality is very poor.
87	Hybrid Car	A car that uses both gasoline and an electric motor to save fuel.	/hī-brid kahr/	A hybrid car uses less gas than a regular car.
88	Electric Vehicle (EV)	A car that runs only on an electric battery, with zero tailpipe emissions.	/ih-lek-trik vē-hik-ul/	My neighbor charges her EV in her garage at night.
89	Natural Resource	Something found in nature that people use, like water, wood, or sunlight.	/nach-ur-ul ree-sors/	We must protect every natural resource we have.
90	Urbanization	The process of building more cities and moving people into town areas.	/ur-buhn-i-zā-shun/	Rapid urbanization often replaces farmland.
91	Solar Energy	Power captured from the sunlight, usually using flat panels.	/sō-lur en-ur-jee/	The new school roof has solar energy panels.
92	Wind Power	Electricity made by using large turbines (windmills) that turn in the wind.	/wind pow-er/	Giant wind power farms are built offshore.
93	Hydropower	Electricity created by the force of moving water.	/hī-drō-pow-er/	The dam uses hydropower to light up the city.
94	Turbine	A machine with blades that spins to generate electricity from wind, water, or steam.	/tur-bīn/	A huge fan-like turbine turns with the wind.
95	Grid	The network of wires, lines, and power stations that bring electricity to homes.	/grid/	The storm knocked out power to the entire grid.
96	Storm Surge	A rush of ocean water pushed onto land by a powerful storm.	/storm surj/	The hurricane caused a dangerous storm surge near the shore.
97	Desertification	The process where fertile land turns into dry desert, often due to warming or bad farming.	/duh-zert-if-i-kā-shun/	Desertification makes it harder to grow food.

98	Acid Rain	Rain mixed with air pollution that can harm forests and lakes.	/as-id rān/	Acid rain damaged the leaves on the trees.
99	Invasive Species	A plant or animal that is new to an area and harms the native ecosystem.	/in-vā-siv spē-sheez/	The new fish became an invasive species in the lake.
100	Forecasting	Predicting what the weather or climate will be like in the future.	/for-kast-ing/	Climate scientists are forecasting a hotter decade.