## Unit 3

### Lesson 3.1

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| **Term** | **Definition** | **Example Sentence** |
| **adaptation** | Responding to the current and future impacts of climate change to minimize harm. | Wetland restoration can also be a form of adaptation, as wetlands reduce the intensity and impact of storms and hurricanes that pass over them. |
| **geoengineering** | The intentional alteration of the Earth’s oceans, soils, or atmosphere, usually in order to reduce the effects of climate change. | Taking CO2 out of the atmosphere is one form of geoengineering. |
| **mitigation** | Actions taken to reduce or prevent the emissions of greenhouse gases. | Mitigation solutions include everything from renewable energy to electric cars and public transportation. |
| **resilience** | The ability to withstand, adapt to, and recover from challenges or disruptions. | A community facing sea-level rise could relocate critical infrastructure—like energy generation plants or transportation networks—to higher ground to increase resilience. |

### Lesson 3.2

| **Term** | **Definition** | **Example Sentence** |
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| **adaptation** | Responding to the current and future impacts of climate change to minimize harm. | Wetland restoration can also be a form of adaptation, as wetlands reduce the intensity and impact of storms and hurricanes that pass over them. |
| **weatherization** | The process of sealing and insulating building envelopes to regulate building temperature during extreme weather and reduce a building’s energy needs. | Through the process of weatherization, old buildings can often be renovated to be more insulated and let less heat in and out. |
| **geothermal** | An energy source or heating and cooling system that uses the Earth’s natural heat. | Geothermal heating systems can reduce reliance on fossil-fuel-powered systems. |
| **resilience** | the ability to withstand, adapt to, and recover from challenges or disruptions. | A community facing sea-level rise could relocate critical infrastructure—like energy generation plants or transportation networks—to higher ground to increase resilience. |
| **aquaculture** | The breeding and harvesting of fish, shellfish, and other aquatic organisms for food and other purposes. | The Earth’s changing climate is creating a lot of problems for aquaculture, especially for less wealthy farmers in regions most severely impacted by the climate crisis. |
| **Climate Information Services (CIS)** | Tools that collect and share regional climate information so people can manage local risks and problems and adapt practices. | Using Climate Information Systems, researchers work together with farmers to establish climate-smart procedures to make farming more resilient and sustainable. |

### Lesson 3.3

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| **Term** | **Definition** | **Example Sentence** |
| **climate innovation** | The research, development, and scaling of new climate solutions. | Climate innovation means both new technologies and new ways of doing and thinking about things. |
| **decarbonize** | To reduce or eliminate greenhouse gas emissions from processes, products, and systems. | Government and industries are working to decarbonize the economy by reducing fossil fuel dependence. |
| **renewable energy** | Energy derived from natural sources that are continuously replenished. | The costs of renewable energy technologies like wind and solar have dropped a lot in recent years. |
| **research and development (R&D)** | The process of investigating, designing, and creating new products, technologies, or improvements to existing systems. | For many companies, zero-carbon cement is still in the research and development phase, with the processes and designs still being developed. |

### Lesson 3.4

| **Term** | **Definition** | **Example Sentence** |
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| **innovation** | A new technology or way of doing and thinking about things; the process of research, development, and scaling something new. | We need to develop a wide range of health and agricultural innovations so that those living in areas impacted by extreme drought, flooding, and severe weather have access to nutritious food and fresh water. |
| **regulation** | A rule, law, or policy made by a government to control the activities of businesses or individuals, often by setting standards or requirements. | Regulations exist to ensure companies and communities follow basic guidelines—such as building codes and public transportation policies—that can collectively help reduce emissions. |
| **greenwashing** | When a company exaggerates or falsely claims to be more sustainable than it actually is. | Greenwashing is sometimes hard to identify because companies work hard to disguise it. |
| **lever of power** | Types of actions people and organizations can take to promote climate solutions. | By working in strategic ways at each lever of power, we can amplify the impact of our actions. |
| **policy** | A law, rule, process, practice, or action of a government or other organization, often used as a basis for decision-making. | The government implemented a policy requiring all new buildings to use energy-efficient heating and cooling systems. |
| **nongovernmental organization (NGO)** | A private organization that serves public interests at local, national, or international levels and includes groups like nonprofits, community-based organizations, and advocacy groups. | NGOs like the Sierra Club, Earthjustice, and the Environmental Defense Fund play a crucial role in amplifying the power of other groups to have an impact. |

### Lesson 3.5

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| **Term** | **Definition** | **Example Sentence** |
| **carbon tax** | A tax on emissions associated with burning fossil fuels that makes visible the “hidden” cost of carbon emissions. | Carbon taxes also help create incentives to come up with carbon-free alternatives to save money. |
| **green premium** | The additional cost for a clean technology over one that emits greenhouse gases. | The green premium is a helpful tool for evaluating climate solutions and helping us decide where to focus our efforts. |
| **net zero** | Achieving a balance between the amount of greenhouse gases emitted into the atmosphere and the amount removed. | The cost difference between a net-zero alternative and a traditional carbon-emitting option is called the green premium. |
| **subsidy** | Money provided by the government to help make a product or service more affordable. | The government introduced a subsidy for electric vehicles to make them more affordable and to encourage the transition to clean transportation. |
| **carbon capture and sequestration (CCS)** | The technology and processes that collect CO2 at the point of emissions to then store underground or elsewhere. | Many power plants are investing in carbon capture and sequestration (CCS) technology to trap CO₂ emissions and store them underground, reducing their environmental impact. |