

Manitoba Climate Warriors Curriculum Connections

Science 7

Cluster 1: Interactions Within Ecosystems

7-1-01	Use appropriate vocabulary related to their investigations of interactions within ecosystems. Include: ecosystem, biosphere, abiotic, biotic, organisms, ecological succession, photosynthesis, cellular respiration, ecological pyramid, bioaccumulation, scavengers, decomposers, micro-organisms. GLO: C6, D2	7-1-08	Compare photosynthesis to cellular respiration, and explain how both are part of the cycling of matter and the transfer of energy in ecosystems. Include: photosynthesis: water + carbon dioxide + light energy = sugar + oxygen in the presence of chlorophyll; cellular respiration: sugar + oxygen = water + carbon dioxide + energy. GLO: A2, C6, D2, E4
7-1-02	Define ecosystem, and describe various examples that range from the microscopic to the entire biosphere. Include: a place on Earth where living things interact with other living things as well as non-living things. GLO: D2, E2	7-1-09	Analyze food webs, using ecological pyramids, to show energy gained or lost at various consumer levels. Include: producers; primary, secondary, and tertiary consumers. GLO: C2, C8, D2, E4
7-1-03	Identify abiotic and biotic components of ecosystems that allow particular organisms to survive. GLO: D1, D2, E2	7-1-10	Analyze, using ecological pyramids, the implications of the loss of producers and consumers to the transfer of energy within an ecosystem. GLO: C2, C8, D2, E4
7-1-04	Describe ecological succession and identify signs of succession in a variety of ecosystems. Include: the natural process whereby some species are replaced by other species in a predictable pattern. GLO: D2, E2, E3	7-1-11	Explain, using ecological pyramids, the potential for bioaccumulation within an ecosystem. GLO: D2, E2, E4
7-1-05	Identify and describe positive and negative examples of human interventions that have an impact on ecological succession or the makeup of ecosystems. <i>Examples: positive — protecting habitats, reintroducing species; negative — preventing natural fires, introducing non-indigenous species, draining wetlands for agriculture or housing...</i> GLO: B5, D2, E2, E3	7-1-12	Provide examples of scavengers and decomposers, and describe their role in cycling matter in an ecosystem. Include: micro-organisms. GLO: D2, E1, E2, E3
7-1-06	Identify environmental, social, and economic factors that should be considered in the management and preservation of ecosystems. <i>Examples: habitat preservation, recreation, employment, industrial growth, resource development...</i> GLO: B1, B5, D2, E2	7-1-13	Demonstrate proper use and care of the microscope to observe micro-organisms. Include: preparing wet mounts beginning with the least powerful lens; focussing; drawing specimens; indicating magnification. GLO: C1, C2, C7
7-1-07	Propose a course of action to protect the habitat of a particular organism within an ecosystem. <i>Examples: protect the nesting habitat of a given bird in a local wetland...</i> GLO: B5, C3, D2, E2	7-1-14	Identify beneficial and harmful roles played by micro-organisms. <i>Examples: beneficial — aid in digestion, composting, food and vaccine production; harmful — cause disease, food spoilage...</i> GLO: B3, C2, D2
		7-1-15	Research and describe human food production or preservation techniques that apply a knowledge of micro-organisms. <i>Examples: bread and yogurt making, food drying, sterilization, refrigeration...</i> GLO: A5, B2, B3, D1