

# Real World Ecosystems Curriculum Connections

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## Activity: Monitoring Ecosystems

### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 1 Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
    - analyze personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions
  - STS 2 Trace and interpret the flow of energy and materials within an ecosystem
    - analyze ecosystems to identify producers, consumers and decomposers; and describe how energy is supplied to and flows through a food web, by:
      - interpreting food webs, and predicting the effects of changes to any part of a web
  - STS 3 Monitor a local environment, and assess the impacts of environmental factors on the growth, health and reproduction of organisms in that environment
    - investigate a variety of habitats, and describe and interpret distribution patterns of living things found in those habitats
    - investigate and interpret evidence of interaction and change
  - STS 4 Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
    - describe and interpret examples of scientific investigations that serve to inform environmental decision making
    - illustrate, through examples, the limits of scientific and technological knowledge in making decisions about life-supporting environments

### Activity: Ecosystem in a Bottle

#### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 1 Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
    - illustrate how life-supporting environments meet the needs of living things for nutrients, energy sources, moisture, suitable habitat, and exchange of gases

### Activity: Ecosystem Benefits

#### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 1 Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
    - illustrate how life-supporting environments meet the needs of living things for nutrients, energy sources, moisture, suitable habitat, and exchange of gases

### Activity: Energy Flows

#### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 2 Trace and interpret the flow of energy and materials within an ecosystem
    - analyze ecosystems to identify producers, consumers and decomposers; and describe how energy is supplied to and flows through a food web, by:

- describing and giving examples of energy and nutrient storage in plants and animals
- describing how matter is recycled in an ecosystem through interactions among plants, animals, fungi, bacteria and other microorganisms
- interpreting food webs, and predicting the effects of changes to any part of a web

## Activity: Matter Cycles

### The Carbon Cycle

#### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 2 Trace and interpret the flow of energy and materials within an ecosystem
    - analyze ecosystems to identify producers, consumers and decomposers; and describe how energy is supplied to and flows through a food web, by:
      - describing how matter is recycled in and ecosystem through interactions among plants, animals, fungi, bacteria and other microorganisms
    - describe the process of cycling carbon and water through an ecosystem

### The Nitrogen Cycle

#### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 2 Trace and interpret the flow of energy and materials within an ecosystem
    - analyze ecosystems to identify producers, consumers and decomposers; and describe how energy is supplied to and flows through a food web, by:
      - describing how matter is recycled in an ecosystem through interactions among plants, animals, fungi, bacteria and other microorganisms

- describe the process of cycling carbon and water through an ecosystem

## The Water Cycle

### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 2 Trace and interpret the flow of energy and materials within an ecosystem
    - analyze ecosystems to identify producers, consumers and decomposers; and describe how energy is supplied to and flows through a food web, by:
      - describing how matter is recycled in an ecosystem through interactions among plants, animals, fungi, bacteria and other microorganisms
    - describe the process of cycling carbon and water through an ecosystem

## Activity: Relationships & Interactions

### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 2 Trace and interpret the flow of energy and materials within an ecosystem
    - analyze ecosystems to identify producers, consumers and decomposers; and describe how energy is supplied to and flows through a food web, by:
      - describing and giving examples of energy and nutrient storage in plants and animals
      - describing how matter is recycled in and ecosystem through interactions among plants, animals, fungi, bacteria and other microorganisms

## Activity: Natural Disturbances

### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 2 Trace and interpret the flow of energy and materials within an ecosystem
    - analyze ecosystems to identify producers, consumers and decomposers; and describe how energy is supplied to and flows through a food web, by:
      - describing and giving examples of energy and nutrient storage in plants and animals
      - describing how matter is recycled in an ecosystem through interactions among plants, animals, fungi, bacteria and other microorganisms
      - interpreting food webs, and predicting the effects of changes to any part of the food web
  - STS 4 Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
    - identify intended and unintended consequences of human activities within local and global environments

## Activity: Enough is Enough

### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 3 Monitor a local environment, and assess the impacts of environmental factors on the growth, health and reproduction of organisms in that environment
    - investigate a variety of habitats, and describe and interpret distribution patterns of living things found in those habitats
    - investigate and interpret evidence of interaction and change

- STS 4 Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
  - identify intended and unintended consequences of human activities within local and global environments

### Activity: Succession

#### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 3 Monitor a local environment, and assess the impacts of environmental factors on the growth, health and reproduction of organisms in that environment
    - investigate a variety of habitats, and describe and interpret distribution patterns of living things found in those habitats
    - identify signs of ecological succession in local ecosystems (e.g., emergence of fireweed in recently cut forest areas, replacement of poplar by spruce in maturing forests, reestablishment of native plants on unused farmland)
  - STS 4 Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
    - analyze a local environmental issue or problem based on evidence

### Activity: Sensible Science

#### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems

- STS 4 Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
  - describe and interpret examples of scientific investigations that serve to inform environmental decision-making
  - illustrate, through examples, the limits of scientific and technological knowledge in making decisions about life-supporting environments.

### **Activity: Making Good Decisions**

#### **Alberta**

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 4 Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
    - describe and interpret examples of scientific investigations that serve to inform environmental decision-making

### **Activity: Our Ecological Footprint**

#### **Alberta**

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 1 Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
    - identify examples of human impacts on ecosystems, and investigate and analyze the link between these impacts and the human wants and needs that give rise to them



## Activity: Creating Change

### Alberta

- ❖ Grade 7 Science: Interactions and Ecosystems
  - STS 1 Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
    - analyze personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions.
  - STS 4 Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
    - analyze a local environmental issue or problem based on evidence from a variety of sources, and identify possible actions and consequences