

Grade 7

Curriculum Links:

Understanding Life Systems: Interactions in the Environment

General Information: By grade 7 students can really start to understand the impact that they can have on the environment. Teaching about species at risk is an important conservation strategy for these animals. You protect what you know about. We have included many curriculum links to Ontario's reptile species at risk as well as an activity sheet you can use.

Section 1: Relating Science and Technology to Society and the Environment

1.1: Assess the impact of selected technologies on the environment.

Example Activity: One of the main threats to turtles is road mortality. There are several solutions to the problem of turtle and other animal road mortality being studied. Students can research different methods and report on the impact that those technologies are having on the environment.

1.2: Analyse the costs and benefits of selected strategies for protecting the environment.

Example Activity: Many conservation strategies come at an expense to taxpayers or property owners. Students can study the different points of view from a current conservation strategy. For example students could look at the costs and benefits associated with protecting a certain wetland from farm expansion, mitigating forest harvest in black ratsnake habitat, changing rules about shoreline development around Georgian Bay to protect the many species at risk in that area or rebuilding the causeway at Long Point.

Section 2: Developing Investigation and Communication Skills

2.2: Design and construct a model ecosystem, and use it to investigate interactions between the biotic and abiotic components in an ecosystem.

Example Activity: Corn snakes make an excellent class pet. For more information about having a corn snake as a class pet contact Scisensational Ssnakes!! You can use this class pet as a way to investigate the habitat requirements and interactions of corn snakes.

2.3: Use scientific inquiry/research skills to investigate occurrences that affect the balance within a local ecosystem.

Example Activity: Reptiles are one of the most endangered groups of animals in Canada. There are a lot of changes both human-made and environmental which have altered the balance in their ecosystems. Students could choose a reptile species at risk to research and learn about what changes in its ecosystem have occurred to affect the balance and cause that species to become at risk of extinction.

Understanding Structures and Mechanisms: Form and Function

Section 1: Relating Science and Technology to Society and the Environment

1.1: Evaluate the importance for individuals, society, the economy, and the environment of factors that should be considered in designing and building structures and devices to meet specific needs.

Example Activity: Students can study the costs and benefits of different types of structures used for animal crossings around the world. These crossings are vitally important to certain reptiles at risk. We do not have many of these structures in Ontario yet, however plans are underway to create some. Students could assess the current proposals based on their research of crossings from other places.

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Section 3: Understanding basic Concepts

3.1: Demonstrate an understanding of an ecosystem as a system of interactions between living organisms and their environment.

Ecosystems – Answer Sheet

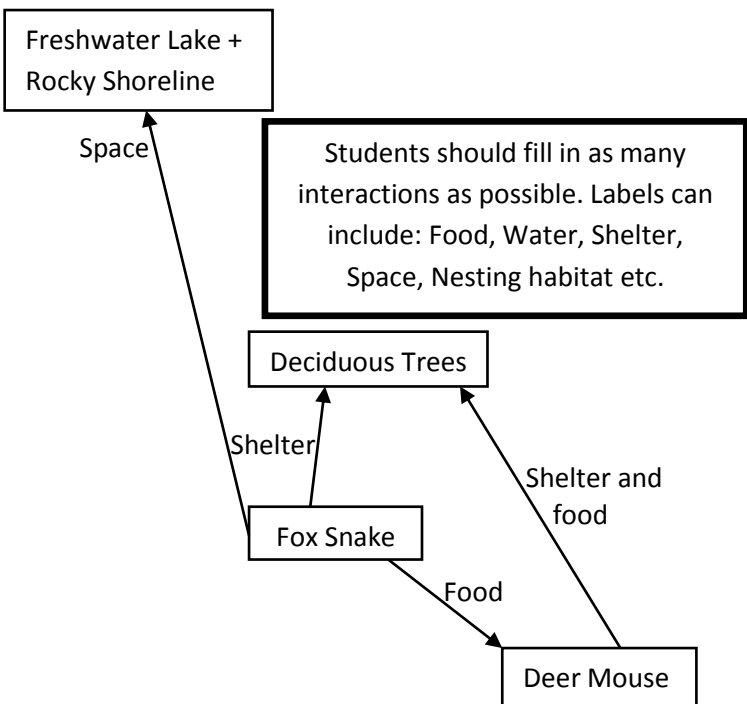
Complete the diagram by adding more arrows and boxes to include the rest of the components from the list on the left. A couple of interactions have already been done for you.

Partial Ecosystem List:

(You can add more parts to the ecosystem as you think of them)

- ✓ Eastern Fox Snake
- Massasauga Rattlesnake
- Five lined skink
- ✓ Deer Mouse
- Meadow Vole
- Eastern Chipmunk
- Red Squirrel
- ✓ Deciduous Trees
- Coniferous Trees
- Shrubs and small plants
- American Robin
- Purple Finch
- Red Fox
- Raccoon
- Red-Tailed Hawk
- ✓ Rocky shoreline
- ✓ Freshwater lake (Georgian Bay)
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Draw your diagram here (label as many of the interaction lines as you can):



Draw an X through an important piece of the ecosystem. Describe below what you think would happen when that piece is removed from the ecosystem.

There are a few possibilities when a piece of an ecosystem is removed. The lower down the food chain the piece the more of an effect its removal will have. For example if trees are removed lots of other creatures will die. An animal which is higher up on the food chain will have less of an effect. For example if Foxes are removed then most likely there would be an explosion of mice for a few years, then hawks would be more abundant and eventually a new balance would result.

Losing any species in an ecosystem is sad and there may be long term effects we do not see, or things which we may have discovered about that species which may have helped humanity that we would never know about.

Ecosystems

Many Species at Risk around the world are having problems because a part of their ecosystem is being disturbed by human activity. For example, oil development in the Canadian Arctic is taking land away from Caribou populations, hazardous chemicals from cities further south rain down into the arctic environment polluting food sources for birds, polar bears and other animals.

An ecosystem consists of many important interactions between living organisms and their environment. When one part or piece of an ecosystem is altered or removed the whole system may break down.

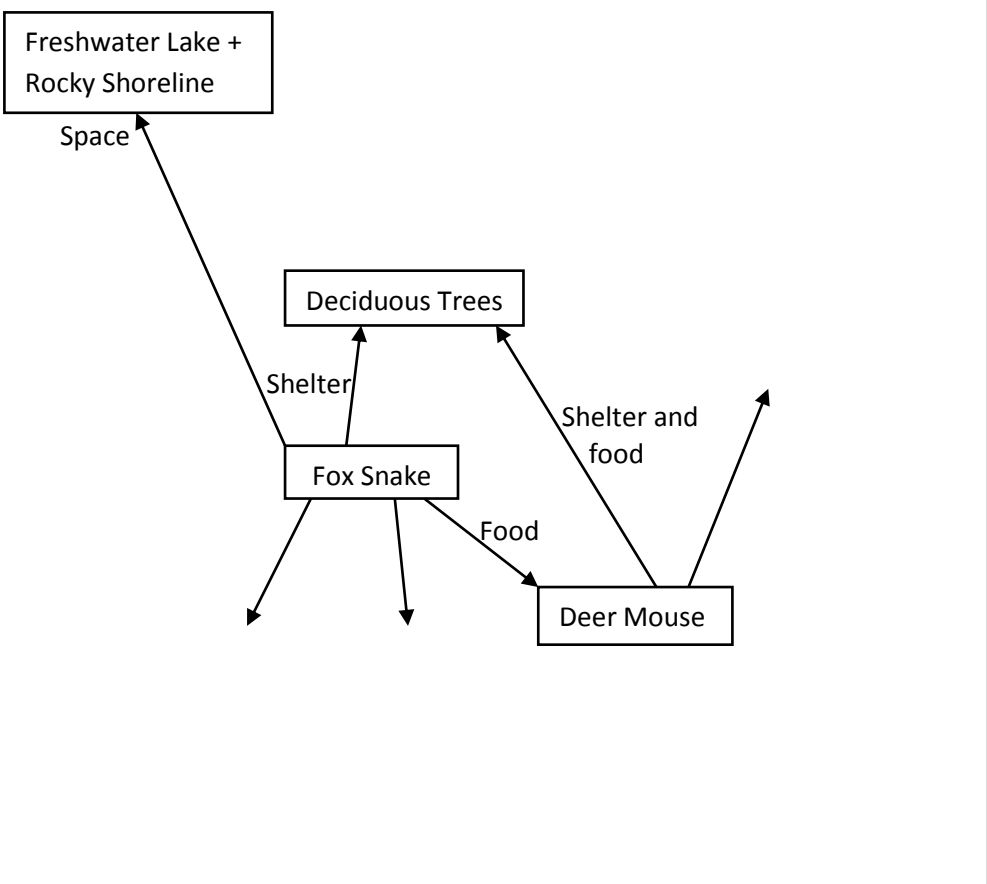
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