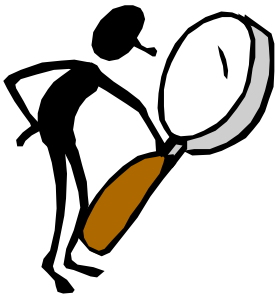
UNIT 5
THE EASTERN MASSASAUGA RATTLESNAKE

Follow-Up Activities
And Resources

GROUP WORK AND RESEARCH MOTIVATORS



What can we do to preserve the Eastern Massasauga Rattlesnake and its natural habitat?

Why is it important to save the Eastern Massasauga Rattlesnake? What would be the consequences of its extinction?

Explore other vipers and compare them with the Eastern Massasauga Rattlesnake.

Are rattlesnakes efficient predators? Explore the different methods snakes use to capture and kill their prey.

What organizations can help you find information on rattlesnakes and explain how you can share their habitat?

What is anti-venom? How is it made? Discuss the risks and benefits of using anti-venom.

Explore the strategies different snakes use to ward off predators and protect themselves.

How has the Eastern Massasauga Rattlesnake range changed in Ontario in the last decade?

Name:_____
Date:_____

AT THE ZOO…
RATTLESNAKE OBSERVATION ACTIVITY

Features and Distinguishing Traits

1. Describe the colour and markings of the Eastern Massasauga Rattlesnake. Compare the colour and markings to at least one other snake species found at the zoo.

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2. What are two distinguishing features of the Eastern Massasauga Rattlesnake?

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3. What makes the Eastern Massasauga Rattlesnake different from other Ontario snakes?

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4. What is the rattle of the Eastern Massasauga Rattlesnake used for? How does the snake use its rattle?

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5. What are the heat-sensitive pits (found on either side of the face between the eye and the nostril) used for?

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Habitat

1. Observe the Eastern Massasauga Rattlesnake in its natural environment (in the zoo display). Draw a pencil-sketch of the snake and its positioning within this environment.

Name:_____
Date:_____

2. Explain why the snake is resting where it is. (Is it near shelter? Will its body be warm or cold in this spot?)

3. What was the original Ontario range in which the Eastern Massasauga Rattlesnake lived? What is its current Ontario range?

4. List a few reasons for the decrease in population of the Eastern Massasauga Rattlesnake.

5. What other snakes can be found in Ontario?

Snake Encounters

1. What should you do if you hear a snake rattle while you are walking in the forest? (Push the button on the display.)

2. Give one suggestion on how you can help the Eastern Massasauga Rattlesnake.

AT THE ZOO…
RATTLESNAKE OBSERVATION ACTIVITY- ANSWER SHEET

Features and Distinguishing Traits

1. Describe the colour and markings of the Eastern Massasauga Rattlesnake. Compare the colour and markings to at least one other snake species found at the zoo.
   Answers will vary
   Should include: skin is grey with a row of rounded brown-black blotches down the centre of the back and three smaller rows of alternating blotches down each side.

2. What are two distinguishing features of the Eastern Massasauga Rattlesnake?
   a. The warning rattle on the tip of the tail.
   b. The heat-sensitive pits on each side of the head between the nostrils and the eyes.

3. What makes the Eastern Massasauga Rattlesnake different from other Ontario snakes?
   Has a vertical eye pupil. Is venomous.

4. What is the rattle of the Eastern Massasauga Rattlesnake used for? How does the snake use its rattle?
   The rattle is used as a warning device. The snake lifts its tail slightly and vibrates the hollow segments of the rattle.

5. What are the heat-sensitive pits (found on either side of the face between the eye and the nostril) used for?
   They are used to find warm-blooded prey. A rattlesnake can find the exact location of a warm-blooded prey within 60 cm, even in complete darkness!

Habitat

1. Observe the Eastern Massasauga Rattlesnake in the zoo display. Draw a pencil-sketch of the snake and its positioning within this environment.

Drawings by students will vary, as will the position of the snake on particular day of trip. The zoo places under-floor warm areas for the snakes to use (thermoregulate).

2. Explain why the snake is resting where it is. (Is it near shelter? Will its body be warm or cold in this spot?)
   Answers will vary.
   For example, on a warm day snakes can be found basking in the sun in order to regulate its body temperature. (Cold-blooded organisms require environmental contributions to regulate their body temperature.)

3. What was the original Ontario range in which the Eastern Massasauga Rattlesnake lived? What is its current Ontario range?
   Original Range: much wider range included parts of Southern Ontario
   Present Range: Ojibway Prarie Complex, Wainfleet Bog, part of the Bruce Peninsula, areas along the Eastern shores and adjacent islands of Georgian Bay.

4. List a few reasons for the decrease in population of the Eastern Massasauga Rattlesnake.
   Answers will vary.
   Destruction of natural habitat (occurs largely due to development activities; the Eastern Massasauga has highly specific habitat needs and cannot be easily relocated), habitat fragmentation (due to construction activities), human persecution (due to fear and hunting of species), collection of snakes for illegal pet trade.

5. What other snakes can be found in Ontario?
   Answers will vary
   Examples include: Eastern Milk Snake, Northern Water Snake, Lake Erie Water Snake, Eastern Fox Snake, Northern Brown Snake, Northern Ribbon Snake, Eastern Garter Snake, Red-sided Garter Snake, Butler's Garter Snake, Northern Redbelly Snake, Smooth Green Snake, Northern Ringneck Snake, Queen's Snake, Blue Racer, Black Rat Snake.

Snake Encounters

1. What should you do if you hear a snake rattle while you are walking in the forest? (Push the button on the display.)
   Leave the snake alone and it will depart on its own. Walk quickly away and allow the snake to escape.

2. Give one suggestion on how you can help the Eastern Massasauga Rattlesnake.
   Answers will vary.
   Create and/or maintain natural habitats, report your snake sightings (Phone # 705-755-2159; Website: www.mnr.gov.on.ca/MNR/nhic/nhic.html), be a concerned camper, cottager or property owner.

ACTIVITIES FOR THE TORONTO ZOO, OJIBWAY NATURE CENTRE, AND SCIENCE NORTH !

BEFORE YOU COME...

EXHIBIT DESIGN

Exhibits in zoos are designed to represent part of the natural world. Zoos are placing an increasing emphasis on ecological issues and conservation programs. Ideally, exhibits are interpretative, natural, stimulating, and strategically placed to illustrate the interrelationship of animals and plants in the wild.

Exhibit Design Choices:

Geographical:	Organized by continent or land forms (zoogeographic)
Ecological:	Reflecting an animal's habitat (i.e. cloud forest, desert, pond, etc.)
Systematic:	A traditional exhibition style where animals are separated (i.e. bear house, monkey house, reptile house, etc.)
Theme:	An exhibit with an obvious message, such as a nocturnal house or a children's zoo.
Behavioural:	Demonstrating an adaptation such as social behaviour in a group of animals.
Mixed species:	An exhibit that shows the relationships between animals occupying different niches within one habitat.
Museum:	Preserved specimens. This could include whole animals, or interpretative displays of objects such as eggs, antlers, or skins.

Exhibits at the Toronto Zoo are organized using **Zoogeographical** separation. Our land form groups include: the Americas, Australasia, Africa (savannah and rain forest),Eurasia, Indomalaya, and the Canadian Domain.

AN EXHIBIT ALL YOUR OWN . . .

Design an educational exhibit for the massasauga rattlesnake. Use a cardboard box as your exhibit space- you can design a “bird’s-eye-view” exhibit or cut out the front of the box to form a front view to the exhibit. Refer to information from this education package and from the library before beginning construction. Use natural materials or colored modeling clay. The following are questions you should answer and apply to your exhibit design:

- Do snakes climb?
- Do they need water?
- What type of habitat(s) is/are required?
- How will the keepers clean the exhibit safely?
- How will the snake get heat?
- What tools need to be provided for safe cleaning or holding?
- Will my design be interesting and allow visitors to observe the snake while causing the least, if no, disturbance to the animal?
- Is my exhibit design comprehensible to most age groups?

Ensure that interpretative elements, such as graphics, and relevant information is included as part of the exhibit. Design a poster to go with your exhibit. (Relate this exercise to Activity #5 in the Conservation Section)

ONCE YOU ARRIVE...

Come to the Toronto Zoo and compare your exhibit to the massasauga rattlesnake exhibit in the America's pavilion. Get up close to a rescued rattlesnake at Ojibway Nature Centre, Science North, and several of Ontario's national and provincial parks interpretative programmes.

RATTLESNAKE RESOURCES

This section includes references and information sources for educators and students, as well as listing organizations that have particular interests in rattlesnakes, and/or conservation in general.

Web Page and Links

Eastern Massasauga Rattlesnake Recovery Team
www.massasauga.ca

Organizations You May Wish To Contact

Toronto Zoo
Curator of Amphibians and Reptiles
(416) 392-5968
361-A Old Finch Ave.
Scarborough, ON, M1B 5K7
www.torontozoo.com

Ojibway Nature Centre
5200 Matchette Road
Windsor, ON, N9C 4E8
(519) 966-5852
www.ojibway.ca

Science North
100 Ramsey Lake Road
Sudbury, ON, P3E 5S9
(705) 522-3701
www.sciencenorth.on.ca

Georgian Bay Islands National Park
P.O. Box 28
Honey Harbour, ON, P0E 1E0
(705) 526-9804
http://www.pc.gc.ca/pn-np/on/georg/edu/index_e.asp

Bruce Peninsula National Park
P.O. Box 189
Tobermory, ON, N0H 2R0
(519) 596-2444
www.pc.gc.ca/pn-np/bruce/index_3.asp

Grundy Lake Provincial Park
R.R. 1,
Britt, ON, P0G 1A0
(705) 383-2286
www.ontarioparks.com/english/grun.html

Killbear Provincial Park
P.O. Box 71
Nobel, ON
P0G 1G0
(705) 342-5492
www.ontarioparks.com/english/killb.html

Massasauga Provincial Park
RR#2 Parry Sound
ON, P2A 2W8
(705) 378-2401

Ministry of Natural Resources (Parry Sound)
7 Bay Street
Parry Sound, ON, P2A 1S4
(705) 746-4201

Ministry of Natural Resources (Owen Sound)
1450 7Th Avenue East
Owen Sound, ON, N4K 3E4
(519) 376-3860

Ministry of Natural Resources (Niagara)
P.O. Box 5000
4890 Victoria Avenue North
Vineland Station, ON, L0R 2E0
(905)562-4147

Niagara Peninsula Conservation Authority
250 Thorold Rd. W. 3rd Floor
Welland, ON, L3C 3W2
(905) 788-3135
www.conservation_niagara.on.ca

Committee on the Status of Endangered Wildlife in Canada
(COSEWIC)
c/o Canadian Wildlife Service
Environment Canada
Ottawa, ON, K1A 0H3
www.cosewic.gc.ca

Federation of Ontario Naturalists
355 Lesmill Rd.
Don Mills, ON, M3B 2W8
(416) 444-8419 or 1-800-440-2366
www.ontarionature.org

OTHER REFERENCES

Behler, J.L. and F.W. King. 1979. The Audubon's Society Field Guide to North American Reptiles. Alfred A. Knopf Publishers: New York, 1979. 717 pp.

Conant, R. and J.T. Collins. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Peterson Field Guide Services, Houghton-Mifflin: Boston, 1991. 429 pp.

Cooke, F.R. Introduction to Canadian Amphibians and Reptiles. Canadian Museum of Nature: Ottawa, 1984. 200 pp.

Johnson, B. Familiar Amphibians and Reptiles of Ontario. Natural History Press: Toronto, 1989. 189 pp.

Rubio, Manny. Rattlesnake: Portrait of a Predator. Smithsonian Institution Press: Washington, 1998. 240 pp.

Tennant, A. and R.D. Bartlett. Snakes of North America, Eastern and Central Regions. Gulf Publishing Company: Houston, 2000. 588 pp.

Thomas F. Tyning. A Guide to Amphibians and Reptiles, first edition. Stokes Nature Guide Series: USA, 1990. 400 pp.

Snakes of Ontario Identifier (Available from Zoo Gift Shop or Curator of Amphibians and Reptiles, Toronto Zoo 361-A Old Finch Ave. Scarborough, Ontario M1B 5K7 Cost: $3.00)

Snakes of Ontario Poster (Available from Recovery Team Members or Curator of Amphibians and Reptiles, Toronto Zoo 361-A Old Finch Ave. Scarborough, Ontario M1B 5K7)