

Chris Darimont



stock Market

Students play a card game to learn the habitat needs of north-woods animals

StUDEnt oBJectIVES:

At the end of this lesson, students will be able to:

1. Define the habitat needs of common north-woods mammals.
2. Compare the habitat components among common north-woods mammals.
3. Predict how habitat change affects different species.

Voc ABULARY:

habitat • carrion

tEAc HER BackGRoUnd:

All animals need a habitat that provides them with food, water, shelter and space. While all animals have these needs, they satisfy them in different ways.

For example, deer eat twigs, wolves eat deer, beavers build a lodge they create for shelter, and adult wolves sleep out in the open. In this game, each player will try to collect all of their animals' needs by trading habitat cards. This game is similar to a stock market setting. By playing several times, students will gain a sense for the needs of several north-woods animals.

The "north woods" is divided into several distinct habitats. The "evergreen forest" is a forest made up of white and red pines, balsam firs and white spruce, all trees that retain their leaves (needles) during the winter. The "mixed woods" forest contains a mixture of evergreens and northern broadleaf trees (quaking aspen, paper birch and northern red oak). The "shrub woods" is an area dominated by short, brushy tree growth. Shrub woods plant species are generally shorter than 20 feet tall at maturity and may grow so densely that it is difficult to walk through them. Speckled alder and mountain maple are common shrub woods trees. Regrowth forest is one that has been clear-cut but new trees have begun to grow.

ActIVItIES:

1. Divide the class into groups of six.
2. Give each group six animal needs charts and a deck of animal needs cards.
3. Direct one student in each group to deal out the animal needs cards to the members of his or her group.

Subjects:

biology



Approximate lesson time:

1 hour



Materials:

animal needs cards,
animal needs charts
(See pages 10-11)



**National
Science
Education
Standards**

*Unifying Concepts
and Processes*

*Systems, order, and
organization*

*Change, constancy,
and measurement*

*Evolution and
equilibrium*

Science as Inquiry

*Abilities
necessary to do
scientific inquiry*

*Understanding about
scientific inquiry*

Life Science (5-8)

*Structure and
function in
living systems*

*Regulation and
behavior*

Life Science (9-12)

*Interdependence of
organisms*

**Science in
Personal and
Social Perspectives
(5-8)**

*Populations,
resources,
and environments*

- Students look at their cards and determine if they have any cards that are needed to fill their animal needs charts. If they have a card listed on their chart, they place the card on top of that square in the chart.
- When you say go, students begin trading habitat cards the same way stockbrokers trade commodities on the stock market. If a student has three cards they can't use, they hold them up and yell, "three, three, three" (without revealing the item on the cards). If another player wants to trade three cards, they exchange three cards face down. This fast-moving exchange continues until one player has collected all the necessary cards and calls out, "Habitat!"
- Direct players to rotate animal charts and play again.

Discussion Questions:

- How is this game like reality in the north-woods ecosystem? Answers may include: animals have habitat needs, animals compete to fill their needs, and resources are limited.
- How is this game not like reality in the north-woods ecosystem? Answers may include: animals don't trade resources, animals may be able to share resources, and animals may be able to adapt to new resources.
- Which were the most precious commodities? What does that tell you about the importance of that element of the ecosystem? Answers will vary.
- Which animals had the easiest time making a living? Probably the herbivores and omnivores because there are a lot of plants in north-woods ecosystems compared to the number of animals available to carnivores.
- Do some animals eat the same things as others? Explain. Yes. Deer, moose, snowshoe hare and beavers all eat aspen. Bear and wolves eat carrion and deer.
- Who would be affected first if the habitat changed (example: if the area was logged, turned into a suburb or flooded)? Herbivores would be affected first because their food source, space and shelter would be immediately impacted. Predators would be second.
- What will animals do if they can't find their habitat needs in a particular area? Migrate to a new area; find a new food, water, or shelter source; adapt; or die out.
- How are wolf needs similar or different from the other animals' needs in this game? All animals need food, water, shelter and space. A bear and wolf may share the same shelter, and both eat deer and carrion, for example.

ASSESSMENT:

Students will take a short quiz.

Quiz

- Define habitat. An area that supplies enough food, water, shelter and space for one or more organisms, such as plants, animals, fungi and algae.
- Give an example of how one animal finds food, water, shelter and space. See animal needs cards/chart.

3. Which animals have the easiest time finding enough food, based on this game? Answers will vary based on your observations.
4. Which of these animals is most common near your town? Why? Hint: What kind of habitat is around your town? Which species could live there and be tolerant of the presence of humans?

NOTE: Most species access multiple sources of food, water, shelter and space. For simplicity, only the specified source fulfills the requirement.

ExtEnSIonS:

Play the game again, but add some additional food or space cards. For instance, add meadow cards as the result of forest fires, or add suburb cards. How do these changes affect the animals that survive the game?



Lynn and Donna Rogers

Animal needS chArt

(give one to each player)

Animal	Food	Water	Shelter	Space
bear	berries	stream	cave	evergreen forest

Animal	Food	Water	Shelter	Space
deer	aspen	pond	deciduous woods	regrowth forest

Animal	Food	Water	Shelter	Space
wolf	deer	stream	log	deciduous forest




























Animal	Food	Water	Shelter	Space
moose	water plants	pond	balsam fir tree	marsh

Animal	Food	Water	Shelter	Space
beaver	birch	pond	lodge	deciduous forest

Animal	Food	Water	Shelter	Space
hare	dogwood	stream	thicket	mixed woods

Nature's Stock Market

Animal Needs Cards (cut apart)

mixed woods 	water plants 	berries 	deer 
deciduous forest 	aspen 	birch 	thicket 
dogwood 	pond 	pond 	pond 
balsam fir 	log 	stream 	stream 
deciduous forest 	stream 	cave 	evergreen forest 
lodge 	regrowth forest 	deciduous forest 	marsh 
flowers 	ferns 	rock 	meadow 