

Winter Ecology Pre-Visit Activities – Day One

The following materials are aids to help prepare your students for their visit to the Central Wisconsin Environmental Station. The vocabulary list contains terms and concepts your students will encounter in their visit. Please modify the definitions as needed. The activities listed below are merely options – it is not necessary to do them all or to follow any particular order. Keep in mind that your student’s learning experiences at CWES will be enhanced if they are familiar with these concepts and terms prior to the on-site activities.

Vocabulary

- ☆ **Frostbite** – results from skin being exposed to the cold and freezing – a superficial injury
- ☆ **Hypothermia** – lowering of the body’s internal core temperature – extremely dangerous, often deadly
- ☆ **Microclimate** – a small precise area where climate conditions may vary from other areas around it depending on many factors (sun, cloud cover, wind direction, slope direction, etc.)
- ☆ **Wind Chill** – a combination of cold and wind that makes it seem colder outside
- ☆ **Insulation**- different materials (fat, fur, feathers, etc.) that an animal uses to conserve body heat
- ☆ **Adaptation** – a behavioral or physical characteristic that helps an animal to survive
- ☆ **Predator** – an animal that kills other animals for food
- ☆ **Prey** – the animal that is eaten by a predator
- ☆ **Subnivean** – under the snow, some animals stay under the snow all winter
- ☆ **Energy Consumption** – the energy that an animal uses in order to survive (get food/water, find shelter, etc.)
- ☆ **Migrator** – an animal that moves to another area, usually very far away, in order to survive the winter
- ☆ **Hibernator** – an animal that sleeps straight through the winter months, slowing down heart rate and other bodily functions
- ☆ **Tolerator** – an animal that uses a variety of adaptations to survive the winter, rather than migrating or hibernating
- ☆ **Torpor** – like hibernation, but the animal wakes up periodically to feed

Activity: Scavenger Hunt

Materials

(the clothing items may be brought in by the teacher, or assigned to students to bring in)

- ◆ Hat and Scarf
- ◆ Two pair s of mittens
- ◆ Long Underwear (top and bottom)
- ◆ Warm shirt and pants
- ◆ Heavy sweater
- ◆ Winter coat or snowmobile suit
- ◆ Baseball hat
- ◆ One pair thin gloves
- ◆ T-shirt, thin pants
- ◆ One pair thin socks
- ◆ Thin shirt and pants
- ◆ Thin long-sleeved shirt
- ◆ Thin spring coat/jacket
- ◆ Boots that are more fashionable than warm
- ◆ Scavenger Hunt clues worksheet

Preparation

Spread the items of clothing out in the classroom. Cut out Scavenger Hunt clue cards.

Activity

Student coming to CWES should be dressed so they can stay warm outside. Have students brainstorm a list of things they think they should wear to stay warm at CWES. Separate students into eight groups and give each a set of clues. The clues will lead them to appropriate and inappropriate items of clothing hidden around the room. Once students find the items that correspond with their clues, they should return to their seats and prepare to report their findings to the class. Have a volunteer put on all the appropriate items of clothing as they are reported. You can discuss the concept of layering and why it is important to layer your clothes (Layering traps dead air around the body that acts as an insulator. You can take off layers as you get warm and still stay protected from the elements). Point out essential articles of clothing (hat – keeps heat in, mittens – fingers help each other stay warm, warm boots – with plenty of wiggle room for toes, etc.)

* If you are not doing activity #2, you should let students do the Wordless Word Find “What do I wear to CWES.” Instructions for following this activity are at the end of activity #2. You should also send home the “Closet Scavenger Hunt” for students to complete as homework.

Activity: Hold in the Heat

Materials

- ◆ Examples of insulating materials (cotton, wool, polyester, thinsulate, down, polypropylene)
- ◆ Six Jars
- ◆ Six 2# squares of material (nylon, wool, cotton, polyester – may be purchased/donated from a fabric store)
- ◆ Materials Facts cards Worksheet
- ◆ What do I Wear to CWES? Word Find
- ◆ Closet Scavenger Hunt Worksheet
- ◆ Six long handled spoons
- ◆ Hang onto that Heat Worksheet
- ◆ Six blank transparency sheets & markers
or 6 large pieces of paper & markers

Preparation

Fill jars with water. Make a copy of the Materials Cards, Hang onto the Heat worksheet, and the wordless word find “What do I Wear to CWES?” for each group or student. Make a copy of the Closet Scavenger Hunt for each student.

Activity

Introduce students to different insulating materials. Ask students what the actual insulator is. Most will be surprised to learn that air is the actual insulator. (Still air provides the best insulation. Air is trapped in space between the fibers of clothing, and between layers. The air is heated up by the body and provides a layer of warmth.) Divide the class into 6 groups and give each group a materials card. Have the groups list the advantages and disadvantages of each material. They can write their findings on an overhead or large piece of paper to share with the group. Have the class rank the materials on their insulating properties.

- * An alternative to using the Materials Cards is to let students explore books and the Internet to look up the information themselves. Possible resources are “*The Complete Snow Camper’s Guide*, *The Cold Weather Catalog*, *Exploring Nature in Winter*, and <http://www.princeton.edu/~oa/>.

Have students stay in their groups for the next activity. This experiment will allow them to see how different materials differ in the amounts of air they can hold and trap. Give each group a 2” square of wool, cotton, nylon and polyester, a jar of water, a long handled spoon and a copy of the Hold in the Heat worksheet. Put each piece of material, one at a time, on the surface of the water and push it toward the bottom with the spoon. They should watch for air bubbles coming to the surface of the jar as the material is submerged and make note of the amount of bubbles on their worksheet. These bubbles are trapped air escaping. Have students release the square of material, allowing it to surface. When it floats, they should poke it under again. Bubbles rising to the surface this time show the ability of the material to trap air even when wet. Students should note the results on their worksheet. They should then repeat the process with all of the materials.

- * Wool should be the highest-ranking material on everyone’s list. Polyester may follow, but results may differ with different makes of material. Have each group share their results.

After this, hand out the Wordless Word Find “What Do I Wear to CWES? Go back to the pile of clothes that were put on by the volunteer. Alter your original list from the warm up and have students copy down what you are writing in the work back of their word find. Have students do the work find and take it home as a reminder of what to wear while at CWES. This may also be a good time to review what students have learned about the materials by going over student generated advantages/disadvantages lists and results from the experiment. Give students a copy of the Closet Scavenger Hunt for homework. It should be returned to school and handed in to give the teacher a better idea of the amount of appropriate clothing the students have.

Activity Three: Frostbite Pictionary

Materials

- ♦ Frostbite information sheet
- ♦ Board space and chalk

Preparation

Make a copy of the Frostbite Fact Sheet for each group or student.

Activity

Divide students into 5 groups and give each a Frostbite Fact sheet. Assign each group a topic to investigate in detail. Once they have finished their research, have them present to the class their findings. An option for this activity is to let students research in books and on the Internet to find their answers. Possible resources for this include: Standard *First Aid and Personal Safety*, *The Cold Weather Catalog*, *Keeping Warm – A guide for wintertime*, <http://www.cc.rochester.edu/student-srvcs/uhs/frostbite.html>, <http://www.learn2.com/07/0743/07431.html> and <http://www.yourhealth.com/ahl/1757.html>

After sharing their information, groups will compete in Frostbite Pictionary. Teams will take turns drawing words from the Pictionary list. Categories include **symptoms**, **prevention**, **treatment: what to do** and **treatment: what not to do**. If the group guesses the drawing correctly, they must then say which of the above categories the answer fits in. If the team fails to identify the correct category, another team can try to guess the answer and steal the point. If no one guesses it within one minute, the teacher can call the round and give someone else a turn. The team with the highest score wins.

Activity: Heat Loss Game Show

Materials

- ◆ Board space and chalk for a Heat Loss Game Board
- ◆ Board space and chalk for written descriptions of heat loss terms

Preparation

Write out heat loss terms and their corresponding definitions on the board. Make a Heat Loss Game board on the chalkboard containing two columns with the headings **Heat Loss** and **Warmth Decrease** and point values should be underneath each heading in ascending order. Become familiar with the heat loss terms that follow:

- ◆ **Radiation** – the leading cause of heat loss. It occurs when heat is released directly from the body's surface. It can be prevented by adequately covering the body.
- ◆ **Convection** – This means that heat is removed, or lost, by the wind. It can be prevented by limiting time spent in the wind.
- ◆ **Conduction** – this is the loss of heat by the body's direct contact with cold solids and liquids. It can be prevented by avoiding contact with cold objects and liquids.
- ◆ **Evaporation** – this is the loss of heat caused by perspiration evaporating. This can be prevented by dressing in layers to allow for easy regulation of body temperature.
- ◆ **Respiration** – this is the heat lost by humans exhaling warm air and breathing in cool air. There is no way to prevent this only to reduce it by breathing through your mouth.

Activity

Divide students into 5 groups and assign each a word: *radiation, convection, conduction, evaporation, and respiration*. The group must brainstorm how their word applies to heat loss and report to the class the results of their brainstorming. Make sure you go over the correct relationship between the student's work and heat loss. It will be more effective for the lesson if this is written for all students to see. All of the terms are ways that humans and animals can lose heat. See if the students can give examples as you explain the way we lose heat.

To play the Heat Loss Game, divide the class in half. There are two categories – Heat Loss and Warmth Decrease which are listed on the board with point values. The teams must choose a category and point value and listen as the answer is read. They must answer with a question that corresponds with the answer. If one team gets it wrong, the other team may answer. The team with the highest score wins.

To wrap up these two activities, discuss with the class what they have learned. Questions that might be asked include: *What is frostbite? What are 3 symptoms? What are 3 ways we can prevent frostbite? What is one thing we should do to treat it and one thing we shouldn't do? What is one way that the body loses heat? Can you give an example? What's another way the body loses heat?*

Activity: Should We Stay or Should We Go?

Materials

- ◆ Paper/pencils
- ◆ Library or Internet resources
- ◆ Winter Adaptation Rummy card decks (enough for every 3 students)

Preparation

Make sure you are familiar with the behavioral and physiological adaptations animals must undergo to survive winter and know the differences between the 3 major groups. Understand the vocabulary and

examples of animals from each of the groups. Make sure all Winter Adaptation Rummy cards are made and together.

Activity

When winter arrives, animals still need to find a habitat that meets their four basic needs – food, water, shelter and space. It can be more difficult to meet these needs in winter because it's colder and food may not be readily available. What do humans do to survive and stay warm in the winter? (Bundle up, stay inside, maybe even move to warmer areas of the country) Animals have certain strategies to help them cope with the cold winter months, as well. They must either adapt or leave. Brainstorm with your students the different strategies that animals might have in order to survive the winter. They can generally be divided into three main groups according to the strategy they use. Hibernators stay in the area, but sleep through winter underground or in caves. Migrators travel south to warmer areas. Tolerators stay in the area, but stay relatively active throughout winter. Once you have introduced the categories to the students, brainstorm with them animals that might fit into each category. Make sure you discuss what animals in each category do to make it through the winter (hibernators build up fat reserves, grow extra layers of fur; migrators eat a lot to prepare for the long trip south, most of them fly; tolerators can change their diet, huddle to keep warm, shiver, fluff fur, etc.).

Take students to an outdoor area that has an abundance of habitats. Put the students in groups of two and give each group a card with an animal on it. Groups will walk around to determine where their animal will love during winter (the habitat and specific structure such as tree cavity, underground burrow, etc. If they have a migrator, they must determine where it will go for winter.) Ask each group which strategy its animal uses to survive, where it lives, what dangers it might face in winter, and what behaviors and adaptations it will assume to overcome those dangers. Give each group a clipboard with paper and pencil to record their answers. Have students share their answers with other students back in the classroom.

Optional Activity

Introduce Winter Adaptation Rummy cards to students. This is an excellent activity to bring all concepts together. A pre-made deck of cards will include the following:

- ◆ 9 title cards: 3 “Hibernator”, 3 “Migrator”, 3 “Tolerator”
- ◆ 9 animal cards: pictures or names of 3 animals from each winter group
- ◆ 9 habitat cards: each one with the name of the wintering habitat that matches an animal from one of the groups
- ◆ 9 winter food cards: each one with the name of a winter food that matches an animal from one of the groups
- ◆ 9 winter adaptation cards: each one will have the name of a winter adaptation that matches an animal from one of the groups.

Example: hibernator, garter snake, underground burrow, no food, huddling with other snakes

**Some of these may overlap, such as more than one animal living in underground burrows.

Group the students in 2's or 3's and have them play “rummy”. Each person will get 5 cards and the rest of the cards will go into the deck in the middle. When each one has a turn, he/she will choose a card from the deck, and put down an unwanted card. The object of the game is to see how many “sets” one person can lay down. The one with the most sets wins.

Pull the activity together by reviewing with students the behaviors and physiological functions each group utilizes to adapt to winter. What special costs does each group face in their adaptations to winter? What happens to hibernators that don't lower their body temperature or reduce their heart rate? (some don't – they wake up periodically and feed) Do all animals of similar species get through winter the same way? (no, not all birds migrate - some stay and have food available to them.)

Scavenger Hunt Clue Cards

- ☆ Find something that you can wear on your head to keep it warm
 - ☆ Find something that you can wear on your head that looks cool but it doesn't keep it very warm.
 - ☆ You might need something to keep your neck warm as well, can you find something that would do that?
-

- ☆ Find something you can wear on your hands that would keep them very warm
 - ☆ Find something that you can wear on your hands but doesn't keep them very warm
 - ☆ If your "hand warmers" get wet, you need a second pair – find them!
-

- ☆ Find something that you can wear underneath all of your clothes that will keep your whole body warm
 - ☆ Find something that you could wear underneath your clothes. They don't offer much warmth and they can be worn by themselves in the spring/summer
-

- ☆ Find something that could cover your bare feet and keep them super warm. You wear these right next to your skin
 - ☆ Find something that could also cover your feet but wouldn't keep them very warm
 - ☆ To keep your feet even warmer, you could use a second pair of foot warmers. Find them.
-

- ☆ Find something that you could wear to keep your torso very warm, but that isn't a jacket and it's warmer than just a plain shirt
 - ☆ Find something that you could wear on your torso but it wouldn't keep it very warm
-

- ☆ Find something you could put over all of your clothes that would serve to keep you warm and also be a windbreaker
 - ☆ Find something that you could put over all of your clothes but wouldn't be very effective in keeping you warm or breaking the wind
-

- ☆ Find something that could go over your socks that would keep your feet both warm and dry
 - ☆ Find something that you could wear on your feet that looks fashionable but lacks that ability to keep your feet warm and dry
-

- ☆ Find something that would keep both your upper and lower body warm but that isn't long underwear. (There will be 2 items, but they will be found together)
 - ☆ Find something that you wear on your upper and lower body but they don't provide much warmth (There will be 2 items, but they will be found together)
-

Materials Cards

Polyester

- ◆ Synthetic fiber
 - ◆ Wicks moisture away from skin
 - ◆ Relatively lightweight but weighs more than down
 - ◆ Absorbs virtually no water
 - ◆ Dries easily
 - ◆ Isn't very compressible or packable
 - ◆ Relatively inexpensive
 - ◆ Somewhat wind and water resistant
-

Polypropylene

- ◆ Synthetic fiber
 - ◆ Is hydrophobic (doesn't absorb water)
 - ◆ Isn't very comfortable
 - ◆ Moves water vapor away from the skin
 - ◆ As water moves it evaporates causing heat loss
-

Cotton

- ◆ Not an exceptionally good insulator
 - ◆ When knitted, it provides loosely twisted loops of yarn that allow for more air to be trapped
 - ◆ When it becomes wet, it is heavy, clammy and provides no insulation
 - ◆ As velveteen and corduroy, fibers from extra stitching help provide pockets to trap air
 - ◆ Natural fiber
-

Thinsulate

- ◆ Synthetic fiber
 - ◆ Doesn't absorb water
 - ◆ Dries easily
 - ◆ Is thinner but yet heavier than other materials such as down
 - ◆ Good insulating power
-

Wool

- ◆ Natural fiber
 - ◆ Fibers trap air even when wet
 - ◆ Relatively inexpensive
 - ◆ Itchy against the skin
 - ◆ Dries poorly
 - ◆ Doesn't move water away from skin
 - ◆ Is heavy when wet naturally water repellent
 - ◆ Still retains some warmth even when wet
-

Down

- ◆ Good insulator
 - ◆ Lightweight when dry
 - ◆ Has special washing instructions
 - ◆ Must be enclosed by other materials
 - ◆ Heavy when wet
 - ◆ Dries slowly and with difficulty
 - ◆ Very light to carry and can be compressed when packed
 - ◆ Absorbs water
-

What should I wear to CWES????

List of what I need:

- _____
- _____
- _____
- _____
- _____
- _____

- _____
- _____
- _____
- _____
- _____
- _____

The words in this list are hidden in the word find below. Find the words and circle them. The words can be backwards, vertical, horizontal or diagonal.

X Y L T Z R S T L N E X B P A A S D F J
K S L Q W E R E T A E W S Y V A E H T Y
U I T O P L K J H G F D S A Q A Z W S X
E D R O C R F V T G B Y H N U J M I K R
O L I P O Z X C V B N S N E T T I M M A
P O H I U B Y T R S E W Q L P O M K O E
X T S J C Y F S G V C U K H B F I J N W
D R M Z S E A O W Q A A S D F S G H J R
K H R L P T M C O N I O R B U T V Y C E
T X A Z E A A K L R S K D F J N F H G D
W P W T R O I S O E P T U Y H A W W E N
D R F G T C Y H U J I R K O L P M N B U
V C X Z Q R A Z W S X E E K U M R F V G
T G B Y H E N U J M I K O T L R P W R N
E T R M I T T E N S Y T U Y A A O U P O
W F U I O N C I F O M O U K T W Q R A L
S T H J L I D G N V E L W J P S M C B X
M G B K P W E H W X E R T U I Y O R P K
E T A D S F D G F H G J S O C K S H A L
W L I J N Y G V T F C V B N M F D S A W

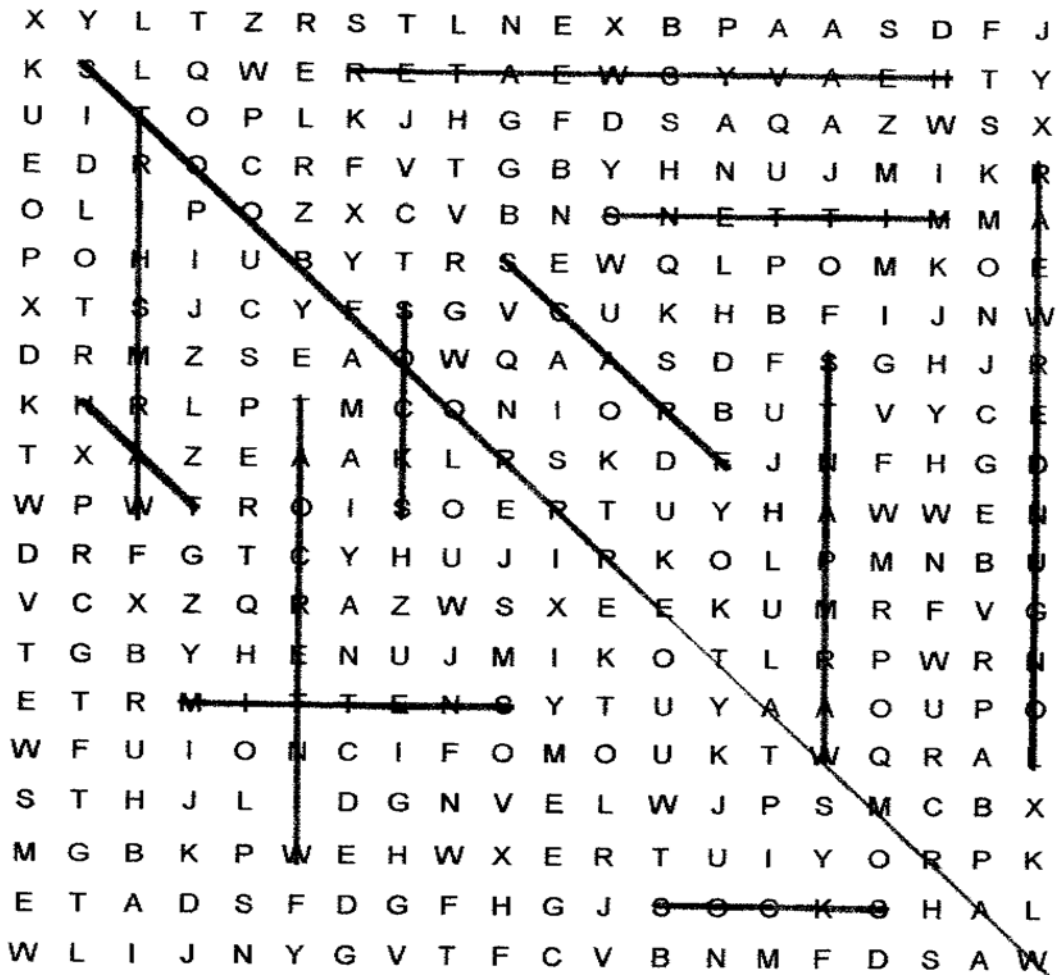
What should I wear to CWES???? Answer key

List of what I need:

- hat
- scarf
- socks
- socks
- warm shirt
- warm pants

- heavy sweater
- winter coat
- warm, waterproof boots
- mittens
- mittens
- long underwear

The words in this list are hidden in the word find below. Find the words and circle them. The words can be backwards, vertical, horizontal or diagonal.



Closet Scavenger Hunt

- ☆ You've just learned about what you need to wear to CWES but you're not sure that you have all of those articles of clothing. Here's your chance to find out. Take this sheet home and search your closet and anywhere else in the house you think you might find these things (but get permission first!).
- ☆ After you find an article of clothing, mark it down by putting a check in the appropriate box. If you don't have something, ask around to see if you can borrow it from anyone else and mark the appropriate box. If you still can't get your hands on what you need, check that box and bring this sheet back to school so that your teacher or fellow students can help you out! Don't be left out in the cold!

Hat

- Have it
- Can borrow it
- Don't have it

Scarf

- Have it
- Can borrow it
- Don't have it

Warm shirt

- Have it
- Can borrow it
- Don't have it

Winter coat

- Have it
- Can borrow it
- Don't have it

Warm pants

- Have it
- Can borrow it
- Don't have it

Heavy sweater

- Have it
- Can borrow it
- Don't have it

Warm,
Waterproof boots

- Have it
- Can borrow it
- Don't have it

Long underwear
(top and bottom)

- Have it
- Can borrow it
- Don't have it

Two pairs of
warm socks

- Have it
- Can borrow it
- Don't have it

Two pairs of
mittens

- Have it
- Can borrow it
- Don't have it

Hang onto that Heat!

You have been given four different squares of material. You should record your data below. For each material you should list the type of material. Results of the material's response to being underwater both times should also be noted. Each response should note the amount of air bubbles that rose to the surface. Star the material you think is the best.

Test Material #1

- ◆ Type of material: _____
- ◆ Underwater first time: _____
- ◆ Underwater second time: _____

Test material #2

- ◆ Type of material: _____
- ◆ Underwater first time: _____
- ◆ Underwater second time: _____

Test material #3

- ◆ Type of material: _____
- ◆ Underwater first time: _____
- ◆ Underwater second time: _____

Test Material #4

- ◆ Type of material: _____
- ◆ Underwater first time: _____
- ◆ Underwater second time: _____

Frostbite Fact Sheet

General information:

- ◆ Frostbite results when crystals form, either superficially or deeply in the fluids and underlying soft tissues of the skin
- ◆ The effects become more severe if the injured area is thawed and then refrozen
- ◆ Frostbite is the most common injury resulting from exposure to the cold
- ◆ The nose, cheeks, ears, fingers and toes are most often affected
- ◆ Frostbite is when insufficiently protected skin areas – especially the toes, fingers, ears and nose – come into contact with high winds and winter cold. The tissues of the skin can develop ice crystals and become frozen

How would you know you were getting it or had it?

- ◆ Just before frostbite occurs, the affected skin may be slightly flushed
- ◆ As frostbite occurs and develops
 - Ⓡ The skin changes to white or grayish yellow
 - Ⓡ Pain is sometimes felt early
 - Ⓡ Blisters may appear
 - Ⓡ The affected skin feels intensely cold and numb
 - Ⓡ The skin becomes pale and glossy
 - Ⓡ Prickly sensations
 - Ⓡ Itching
 - Ⓡ Firm, whitened skin

How could I treat it if I or someone I knew had it?

- ◆ Cover the frozen part
- ◆ Provide extra clothing and blankets
- ◆ Bring the person indoors
- ◆ Give the person something warm to drink
- ◆ Do not rub the part
- ◆ Do not apply heat lamps or hot water bottles
- ◆ Do not break the blisters
- ◆ Elevate the frostbitten parts
- ◆ Immerse the affected area in water that is body temperature
- ◆ Do not massage the area

How can I prevent frostbite?

- ◆ Limit exposure to extreme cold
- ◆ Wear proper protective clothing
 - Ⓡ Cover ears and face with scarf and hat
 - Ⓡ Wear an extra pair of socks
 - Ⓡ Wear mittens
- ◆ Keep clothes dry
- ◆ Avoid touching cold objects or liquids
- ◆ Keep moving in the cold
 - Ⓡ From time to time move hands and feet
 - Ⓡ If face is threatened, make faces

Frostbite Pictionary

Symptoms:

- φ Pain
- φ Skin becomes pale and glossy
- φ Skin turns white
- φ Skin turns grayish-yellow
- φ Cold

Prevention:

- φ Wear mittens
- φ Wear an extra pair of socks
- φ Make faces
- φ Don't touch cold objects
- φ Wear a hat and a scarf
- φ Don't get wet

Treatment: what to do

- φ Cover the frozen part
- φ Give person a warm drink
- φ Immerse the part in lukewarm water

Treatment: what NOT to do

- φ Do not rub
- φ Don't apply heat lamps or hot water bottles
- φ Don't let person go near a hot stove
- φ Don't break the blisters

Heat Loss Game

Under the category of "Heat Loss"

100 points

A: Heat loss resulting from not wearing a hat

Q: What is radiation?

200 points

A: Heat loss by becoming too active and sweating

Q: What is evaporation?

300 points

A: Heat loss from sitting on the cold ground

Q: What is conduction?

400 points

A: heat loss from a high speed wind

Q: What is convection?

500 points

A: Heat loss that results from not wearing mittens

Q: What is radiation?

600 points

A: Heat loss that results from breathing

Q: What is respiration?

Under the category of "Warmth Decrease"

100 points

A: Heat loss that occurs from sitting on a cold rock

Q: What is conduction?

200 points

A: Heat loss that occurs due to wearing too many layers and sweating

Q: What is evaporation?

300 points

A: Heat loss that results from a high wind chill

Q: What is convection?

400 points

A: Heat loss due to not wearing socks

Q: What is radiation?

500 points

A: Heat loss resulting from touching cold water with your hand

Q: What is conduction?

600 points

A: Heat loss due to one of the body's normal functions involving air

Q: What is respiration?

Winter Ecology Pre-Visit Activities – Day Two

Vocabulary

- ☆ Hypothermia – lowering of the body’s internal core temperature – extremely dangerous, often deadly
- ☆ Frostbite – results from skin being exposed to the cold and freezing – a superficial injury
- ☆ Food Web – collection of plants and animals that depend upon one another for survival.
- ☆ Plankton – microscopic plants and animals living in our aquatic ecosystems
- ☆ Habitat – an area where an animal lives and can find all the things it needs to survive – food, water, shelter, space

Activity: Winter Survival

Materials

- ◆ Survival Scenarios
- ◆ Survival Supplies worksheet
- ◆ Pencils

Preparation

Teachers should be familiar with the survival scenarios and reasons why some items may be more appropriate than others for students to bring.

Activity

Winter can be dangerous for humans as well as animals. It’s cold, often snowy or icy, and generally not a good time to be out in the element. What are some things that humans need to consider in order to survive outside in winter? (shelter, warmth, food, etc.) What would students do if they got stranded outside in the cold? Read the survival scenario to your students. Put students into groups and give them a copy of the Survival Supplies sheet. Have students read through the list and decide what they would bring on their own. They must then take that list to the group and decide together what 10 items they would bring to survive until they found civilization. Would they stay put or try to walk out? What kinds of things must they consider? Are there strategies or adaptations that animals might use that they could mimic? Once the groups have decided on their items, have them share with the class. There are not necessarily right or wrong answers, although some items may have more value than others may. Discuss with the class why they brought certain items, but not others. Introduce the seven basic survival needs (positive mental attitude, air, shelter, heat, rest, water, food). Would their chosen items help them meet their survival needs?

Survival Scenario

You are returning home from your grandparents’ house after a family reunion one weekend in January with your family. Your parents decided to bring the family camper to stay in, as the house would be very crowded with other relatives. About 2 hours into the 7 hour drive home, it starts to snow. Your father decides to take a shortcut that he remembers from years ago to get out

of the storm sooner. After about an hour and a half of driving, you all realize that the shortcut has not taken you any closer to home. You try to find your way back, but only succeed in getting further lost down dirt roads out in the country. You haven't seen a house or car in hours and the camper has run out of gas. You, your parents, your ten year old sister, six year old brother and the family cat are lost in the woods.

After a family conference, you decide it is not wise to split up. You are going to try to walk back all together. The snowing has slowed, but the wind has started blowing hard. Because you didn't inform anyone as to where you were going, there are no helicopters or jeeps patrolling the area to look for you and you have seen no other cars or houses.

The family is dressed in moderately warm winter clothing (including winter coats) and is wearing sneakers. Temperatures at night go down in the teens, but the wind chill tonight is about 5 to 10 below. You start to pull the following items out of the camper that you can take with you. You can't take them all so you have a discussion with your family to decide what to bring.

Survival Supplies

- σ Ice fishing gear
- σ \$300 cash
- σ 44 magnum handgun and ammunition
- σ 4 polyester fiber-fill sleeping bags
- σ matches
- σ steak (3 lbs)
- σ marshmallows
- σ walkie-talkie
- σ road map for Wisconsin
- σ 5 gallon jug of water
- σ instant oatmeal (3 boxes)
- σ house and car keys
- σ cigarettes
- σ Coleman stove (2 burner)
- σ Family tent (10 lbs.)
- σ Alarm clock
- σ Five cans of kidney cat food
- σ 5 lb. tub of peanut butter
- σ snowmobile suits
- σ 10 lb. cheese wheel
- σ transistor radio
- σ 6 ft. tent pole
- σ sheath knife
- σ wool sweaters for everyone
- σ paperback books
- σ first aid kit
- σ extra socks
- σ 2 pair of snow boots

Try to avoid arguing about your rankings – LISTEN, and work towards a
compromise

Choose the 10 most acceptable items

Don't give up your choice just to prevent conflict