

# Winter Survival Skills



**Overall Unit Plan:** This is designed to function with classes on an 85 minute block schedule.

Class 1:

- Lecture notes on ecology (temperature deciduous forest ecosystem), cold weather animal adaptation.
- Review hypothalamus response, integumentary system, and circulatory system for connection of animal physiology to human anatomy and physiology.

Class 2:

- (1/2 block) Guest Speaker: School Nurse to present information on cold-weather survival issues. Discuss hypothermia, frost-bite, and other first aid measures that would be beneficial when spending large amounts of time outdoors.
- (1/2 block) Library/Computer lab research. Students will research their shelter designs and first aid practices assigned for peer teaching at the school forest.

Class 3:

- Students will participate in a field trip to the school forest. This will actually be from 9:20-2:30 of the same day.

Class 4:

- Students will analyze the field trip to the school forest and summarize the information learned throughout this unit. They will journal how they integrated the classroom concepts to their practical experience for winter survival at the school forest.

## **Learner Objectives**

Students will...

- discover animals that live in the environment surrounding Black River Falls during the winter months
- demonstrate living skills that will be useful to them when they are out of doors during the winter.
- list three wildlife adaptations to survival in the winter
- provide examples of animals surrounding Black River Falls that use the following techniques to survive winter conditions - migration, hibernation, resistance
- construct a winter shelter and demonstrate how to build the shelter to their peers
- demonstrate first-aid techniques to winter recreational injuries
- understand the anatomy and physiology concepts within the human body that allow for our bodies to survive cold conditions



## Team A - Winter Survival Research and Planning



Team A Members:

### Shelter Style: Debris Hut

1. Describe 2 outdoor situations where you would need to seek and build an emergency shelter.
2. Research debris hut construction on the Internet. Cite the sources you use below:
3. Sketch what your shelter should look like below.
4. List below the steps needed to construct a debris hut.
5. What materials will you need to construct your shelter?
6. What are the important things to remember about your shelter construction so that the bodies inside are sheltered from the cold conditions outside? Think hard about your shelter design and placement!
7. Meet with the members of your team right now. Choose a leader and member roles to efficiently construct your shelter. Record each person's name and task below.



### First Aid Response: Hypothermia

1. Research hypothermia on the Internet. Cite the sources you used in this search below:
2. What environmental conditions cause hypothermia?
3. List the correct anatomy of the human body that is affected when a person experiences hypothermia? (Use correct names of anatomical features!)
4. What is the physiological response of the body to hypothermia?
5. How can you tell if a person is hypothermic? (What are the signs?)
6. What are the first aid responses to a hypothermic body?
7. What should you never do for someone who is hypothermic?





## Winter Survival Research and Planning

Team B Members:

### Shelter Style: Snow Cave

1. Describe 2 outdoor situations where you would need to seek and build an emergency shelter.
2. Research snow cave construction on the Internet. Cite the sources you use below:
3. Sketch what your shelter should look like below.
4. List below the steps needed to construct a snow cave.
5. What materials will you need to construct your shelter?
6. What are the important things to remember about your shelter construction so that the bodies inside are sheltered from the cold conditions outside? Think hard about your shelter design and placement!
7. Meet with the members of your team right now. Choose a leader and member roles to efficiently construct your shelter. Record each person's name and task below.



### First Aid Response: Ankle Sprain

1. Research sprains on the Internet. Cite the sources you used in this search below:
2. What environmental conditions cause sprains?
3. List the correct anatomy of the human body that is affected when a sprained ankle becomes the problem? (use correct names of bones, muscles, and tissues!)
4. What is the physiological response of the body to an ankle sprain?
5. How can you tell if a person has a sprained ankle? (What are the signs?)
6. What are the first aid responses to an ankle sprain?
7. What should you never do for someone who has a sprained ankle?





## School Forest Field Trip Rubric

At the school forest you will work as a team to build your shelter and teach others about the first aid responses for your assigned dilemma for winter survival. Be sure to read the criteria in the rubric below so that you can expertly survive your winter experience.

<u>Team-work Skills</u>	<u>Shelter Design</u>	<u>First-Aid Response</u>	<u>Teaching Experience</u>
<p>WOW! What a team player. You were actively involved in helping your team succeed and accomplish the task.</p> <p style="text-align: center;">10</p>	<p>PICTURE PERFECT! Your shelter is structurally sound to limit the cold elements that would threaten life.</p> <p style="text-align: center;">10</p>	<p>DOCTOR MATERIAL! You followed proper procedure to keep an injured person alive in the cold environment.</p> <p style="text-align: center;">10</p>	<p>PROFESSOR! You did a super job explaining the correct information to your peers in a way that they could understand.</p> <p style="text-align: center;">10</p>
<p>Great! You worked well as a team. There were a few “rough” spots throughout the day, but you persevered.</p> <p style="text-align: center;">8</p>	<p>The shelter looks good, but a person would not survive well overnight in the cold elements.</p> <p style="text-align: center;">8</p>	<p>You had the right idea, but forgot some concepts that would have helped keep the injured person more comfortable.</p> <p style="text-align: center;">8</p>	<p>You did a good job explaining the information, but forgot about some of the important info.</p> <p style="text-align: center;">8</p>
<p>You helped your team complete the task, but many times had to be asked by the team to help.</p> <p style="text-align: center;">5</p>	<p>The shelter was attempted, but was very poorly constructed and a person would not be able to survive in the cold environment.</p> <p style="text-align: center;">5</p>	<p>You played the guessing game and forgot very important concepts about your first aid problem and how to help the injured person.</p> <p style="text-align: center;">5</p>	<p>You were shared some information, but forgot a lot of the important concepts we needed to learn about.</p> <p style="text-align: center;">5</p>
<p>You refused to work with your team and they had to shoulder all of your work.</p> <p style="text-align: center;">0</p>	<p>You did not complete a shelter.</p> <p style="text-align: center;">0</p>	<p>You did not provide any information to help the injured person.</p> <p style="text-align: center;">0</p>	<p>You were unprepared to share your assigned information with the group. We were unable to learn from your group.</p> <p style="text-align: center;">0</p>

Student's Name: \_\_\_\_\_ Team A or B      Total Points: \_\_\_\_\_ /40

## **WI Model Academic Standards**

### **Science:**

A.12.5 Show how the ideas and themes of science can be used to make real-life decisions about careers, work places, life-styles, and use of resources

B.12.5 Explain how science is based on assumptions about the natural world and themes that describe the natural world

C.12.1 When studying science content, ask questions suggested by current social issues, scientific literature, and observations\* of phenomena, build hypotheses that might answer some of these questions, design possible investigations\*, and describe results that might emerge from such investigations

F.12.2 Understand how cells differentiate and how cells are regulated

F.12.7 Investigate how organisms both cooperate and compete in ecosystems

F.12.8 Using the science themes, infer changes in ecosystems prompted by the introduction of new species, environmental conditions, chemicals, and air, water, or earth pollution

F.12.9 Using the science themes, investigate energy systems (related to food chains) to show how energy is stored in food (plants and animals) and how energy is released by digestion and metabolism

F.12.12 Trace how the sensory and nervous systems of various organisms react to the internal and external environment and transmit survival or learning stimuli to cause changes in behavior or responses

### **English:**

A.12.1 Use effective reading strategies to achieve their purposes in reading.

A.12.4 Students will read to acquire information.

C.12.1 Prepare and deliver formal oral presentations appropriate to specific purposes and audiences.

C.12.2 Listen to, discuss, and comprehend oral communications.

F.12.1 Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings.

### **Math**

A.12.3 Analyze non-routine\* problems and arrive at solutions by various means, including models\* and simulations, often starting with provisional conjectures and progressing, directly or indirectly, to a solution, justification, or counter-example

### **Social Studies**

E.12.1 Summarize research that helps explain how the brain's structure and function influence learning and behavior

E.12.15 Identify the skills needed to work effectively alone, in groups, and in institutions

### **Environmental Education**

B.12.2 Describe the value of ecosystems\* from a natural and human perspective; e.g., food, shelter, flood control, water purification

B.12.3 Evaluate the stability and sustainability\* of ecosystems\* in response to changes\* in environmental conditions

B.12.6 Predict population response to changes\* in environmental conditions

### **Physical Education**

D.12.3 Recognize the strengths and weaknesses of teammates and provide opportunities for everyone to enjoy success within skill limitations

F.12.5 Take appropriate leadership or supportive roles in activities

