



Outdoor Survival

Program Purpose

The purpose of this program is to introduce students to basic outdoor survival concepts and participate in a small group shelter building exercise.

Length of Program

2 ½ hours

Age

Grades 4th – 12th

Maximum Number of Participants

20

Objectives

After completion of all activities, students will be able to:

- Identify the seven basic needs for survival.
- Describe the symptoms and treatment for frostbite and hypothermia.
- Compare and contrast the value of different materials in a survival situation.
- Demonstrate creative and critical thinking skills in a group shelter building exercise.

Preparation

Before the class arrives:

- Obtain the “Outdoor Survival” kit from the storage room.
- On a dry erase or chalkboard, draw a winter scene of the road from a bus driver’s viewpoint with a deer ahead.
- Set up chairs in the side-by-side formation of bus seats with an aisle down the middle.

Basic Outline

- I. Introduction (10 minutes)
- II. The Seven Basic Survival Needs (20 minutes)
- III. Dangers of Cold (10 minutes)
- IV. Gilligan’s Island (30 minutes)
- V. Shelter Building (50 minutes)
- VI. “Parade of Homes” (15 minutes)
- VII. Conclusion (10 minutes)

Materials

5 plastic tarps
5 foam pads
5 – 4” lengths of twine
5 clipboards with paper and pen attached
Dry erase board & markers (or chalkboard & chalk)

Introduction

Usher the students into class in a drill sergeant manner, and only allow them to enter the chairs from the front using the aisle (as you would load a bus). You are the bus driver of a bus that has already been delayed numerous times and are impatient to leave school for Upham Woods. Warn the students that since there is construction on the main highway, you will have to take an indirect route to get to Upham, involving several unlit county roads. In addition, your weather radio informs you of a severe snowstorm watch that may be passing through south-central Wisconsin. Assure the students that you are extremely experienced and should have no trouble. Assign two students to play the “motor” as you fire up the engine of the bus. Encourage the students to play along as you go through curves in the road, bumps, and sudden stops. Comment on how early it’s getting dark now, and about the snow that is falling with increasing force. Finally, scream and shout,

“Oh no! It’s a deer in the road!” and simulate a bus crash where students (and adults!) fall onto the floor in heaps. When laughter has subsided, gather everyone back to the chairs. Explain that the bus is in a ditch, the motor has been irreparably damaged and the bus battery doesn’t work. The snowstorm is expected to continue throughout the night, and the nearest house is 8 miles away. The chance of someone driving by late at night is slim, but snowplows will probably be out tomorrow. Thank goodness no one was hurt in the crash. However, it is extremely cold outside with a wind chill factor of -20° F, and we need to seek shelter for the night. What kinds of things should we be thinking about to ensure our survival in this situation?

The Seven Basic Survival Needs

In any survival situation, the following seven basic needs must be met. Write numbers 1-7 on the chalkboard. Ask the students for suggestions of what they might need to survive in the given scenario. As the students give suggestions, list them on the board in order. Then ask the students how long they think they could survive without each.

- 1) **PMA** (Positive Mental Attitude, or “don’t lose your head”): The most important thing in any survival situation is not to panic. Your brain is your best tool for inventorying what resources you have and for coming up with a plan to provide for your needs. Panic can lead to making irrational, counterproductive decisions that make the situation worse, not better.
How long? 3 seconds. If your car breaks through the ice on a frozen lake and you panic, you may waste time pounding against the windows when you should be rolling them

down. People have saved themselves by popping the trunk, pulling down the back seats and swimming out.

- 2) **AIR** (oxygen): Although we take air for granted, in a drowning, choking, or toxic fume situation it becomes critical to maintain an adequate supply of oxygen to the brain.
How Long? 3 minutes. After that, brain cells begin to die.
- 3) **SHELTER**: A shelter is used to conserve the heat your body already has. Clothing is considered shelter because it traps a layer of warm air and holds it next to your body. Shelters do NOT add heat. Fires or electric blankets may add heat. Would you be warmer standing outside in winter in a swimsuit next to a fire, or in a parka and snowpants with no fire? The best way to stay warm is to keep from losing heat. 70% of your heat loss can occur through the top of your head, so wear a hat to conserve body heat!
How long? 3 hours. If you are wet and exposed to wind and/or cold temperatures, failure to seek shelter can lead to fatal hypothermia. Keeping you DRY and out of the WIND are the two most important assets of any shelter.
- 4) **WARMTH**: If you are in an extended survival situation that may last for days, shelter alone may not be enough to prevent frostbite and/or hypothermia. Warmth can be added through building a fire or drinking hot liquids. Physical activity of any kind will increase blood flow and raise body temperature. The body heat from a warm person can be used to add heat to a cold person.
How long? 3 hours-3 days: Variable depending upon conditions.

- 5) **REST** (sleep): Any physical activity will burn calories – energy that cannot be used later. Resting will conserve calories so that they may be burned slowly for warmth over time. Before any activity, make sure to weigh the benefits and costs, especially if you have no food to replace energy consumed.

How long? 1-3 days: Variable, depending upon conditions. 24 hours without sleep or rest will lead to fuzzy thinking and bad decision making for most people.

- 6) **WATER:** It is possible to survive a full three days without water, but as the body dehydrates it begins to function less efficiently. Water loss can occur through breathing, sweating and evaporation.

How long? 3 days: In winter especially people forget to drink because they are not hot. Drink even BEFORE you are thirsty! Thirst is a warning signal telling you that you are already dehydrated. If snow is the only source of water, melt it first so you do not cool your body temperature by eating snow.

- 7) **FOOD:** In most survival situations, food is not a top priority. However, food helps your body stay warm by adding calories to burn and raising body temperature by activating your metabolism.

How long? 3 weeks: Without food, your body will burn fat reserves as fuel. After fat reserves are used up, the body will begin to metabolize protein, burning muscle as a food source.

Dangers of Cold

There are two main winter dangers: hypothermia and frostbite. Hypothermia can be fatal; frostbite can lead to the amputation

of body parts. It is critical to understand and be able to recognize and treat both these conditions.

Hypothermia is a drop in the body's core temperature (in the area surrounding the heart and lungs). As the body loses heat, it begins to function less and less efficiently. Blood vessels constrict, drawing blood away from the hands and feet toward the body's core.

98.6 ° F: average normal body temperature

96.0 ° F: Body shivers to generate heat. Chemical reactions slow.

94.0 ° F: Body may shiver uncontrollably. Mental and physical processes are very inefficient; good chance of making dangerous, irrational mistakes.

92.0 ° F: Beyond this body requires added heat to warm itself. Person is mentally and physically incompetent.

90.0 ° F - 85 ° F: All shivering stops. Muscles become rigid. Unconsciousness sets in.

78.0 ° F: Death occurs.

Signs of Hypothermia

Mild Hypothermia (above 90.0 ° F): Look for consistent shivering and blue lips, progressing to slurred speech, dazed expression, and stiff muscles.

Severe Hypothermia (below 90.0 ° F): Shivering has stopped. Person appears confused and unaware; muscles are rigid and unconsciousness sets in.

Treatment of Hypothermia

Get victim out of the weather and remove wet clothing. Replace it with dry clothing or a sleeping bag. You must get the victim warm. If possible, get to a warm place (inside heated shelter or car). Get several people to huddle around the victim to slowly add heat. If conscious, give victim warm

liquids to drink. They should see a doctor as soon as possible.

Frostbite occurs when cells in the body freeze and burst. This most commonly happens to exposed body parts like the cheeks, nose, and ears, and to the extremities, like the hands and feet. What happens to a pop can that you stick in the freezer? It explodes, because as the water inside turns to ice, it expands. The same thing can happen to your skin. If the water inside your cells freezes, it will expand and burst your cells. Frostbite is not usually fatal, but it can kill body parts, turning them black.

Signs of Frostbite

- Pain or burning sensation in exposed area
- White spot forms surrounded by red skin
- Numbness in affected area

Treatment of Frostbite

Slowly and gently warm the affected parts by placing a hand on the exposed part, or putting in lukewarm (not hot) water. If the body parts are numb, the victim should see a doctor.

Gilligan's Island

Split the students into groups of four and give each group a clipboard, paper and pencil. Give them the following scenario: They have crash landed on an island that has a climate similar to Wisconsin's in winter. The distance to the mainland is too great to walk and there is no boat. What five items would the group choose to have with them to increase their chances of survival? Tell the students to be specific. Give them about 15 minutes to work within their group. Call the groups back together and one by one have each group write their items on the board, explaining why each was chosen.

Encourage the students to question each other's choices. The purpose of this activity is to get them to think critically and creatively and be able to justify their reasons for choosing certain items over others. Answers may vary greatly; here are a few things to consider:

- Is a tent better than a sleeping bag?
- Is a tent without a waterproof groundcloth effective?
- If matches are chosen, how will they get dry wood?
- Would a knife or axe be more useful?
- Would a signal mirror, CD, or flare gun be useful?
- If blankets or extra clothing is chosen, what material are they made from?

Shelter Building

Keep the students in the same groups. Give each group a tarp, foam pad, and four foot length of twine. Tell the group that they will have about 40 minutes to build a shelter using just those items and what they find at the site. Emphasize that knocking down trees or logs is strictly forbidden. Everyone must be able to fit inside the shelter, and everyone must participate in making it. At the end, we will have a "Parade of Homes" where each group can show off their shelter and explain how and why it was constructed to the other groups.

Take the students down the Riverbend trail up near cabin hill, or across the street to the Westridge trail. Try to assign one adult to stay with each group. You may want to pull the adults aside to emphasize that they are there for supervision only, not to participate. Once they begin, circulate among the groups and ask them about their choice of location for their shelter and the shelter's entrance. Encourage them to consider the slope of their location, relationship to the wind or sun rays, etc. Give suggestions when necessary

but let them try ideas on their own and evaluate their success. Watch to make sure the adults don't take over the activities of the group.

Conclusion

After the parade of homes, students must disassemble their shelters and bring materials back to the classroom. Ask the students to list the Seven Basic Survival Needs, and the signs and treatment of hypothermia and frostbite. Emphasize that the most important factors in keeping warm are staying dry, out of the wind, keeping exposed areas and extremities covered, and seeking shelter.

REFERENCES

- A Guide to Nature in Winter*, Donald & Lillian Stokes. Little, Brown & Company: Boston, MA. 1976.
- Winter: An Ecological Handbook*, James C. Halfpenny & Roy D. Ozanne. Johnson Books: Boulder, CO. 1989.
- Outdoor Survival*, Charles Platt. F Watts: New York. 1976.
- Wolf Ridge "Basic Survival" lesson plan.