CHAPTER 2
SEVEN STEPS TO SURVIVAL
CLASSROOM SESSION

GOAL
To introduce students to the Seven Steps to Survival as they relate to shore and woods.

OBJECTIVES
The students will be able to:

1. List in order the Seven Steps to Survival.
2. Explain why recognition is the first and most important step.
3. List three elements of a good shelter and why shelter is important.
4. List the two “musts” of a signal.
5. Determine if water is safe before consuming it.
6. List three local edible plants and animals that are safe to eat.
7. Tell why play is so important to surviving an emergency.

EQUIPMENT AND MATERIALS

1. Video that previews the Outdoor Survival Practical and Survival Suit Practical, videocassette recorder, and television. All videos can be purchased or borrowed from the University of Alaska Marine Advisory Program in Anchorage or the Alaska Sea Grant College Program in Fairbanks (see References).

2. The Sea Survival and Shore Survival videos (Note: the Shore Survival video has profanities in it).

3. Survival kit items: At least two heavy weight garbage bags, surveyor tape, warm clothes (wool, polypropylene, cotton, silk), wool hat, fire starting equipment, etc. (See lists in Chapter 3).

4. Photocopies of Seven Steps to Survival Quiz, and articles at the end of this chapter.
PRESENTATION PLAN

This lengthy lesson plan can be divided into two or three teaching sessions. Videos can be included in the lecture-demonstration, or they can be shown on other days.

1. Make sure students use their copies of the Student Note Taking Guide, printed in the Student Manual.

2. Present lecture-discussion

3. Assign the Survival Crossword Puzzle and the Shore Survival for Alaska’s youth article when appropriate. The Crossword puzzle is printed in the Student Manual.

4. Show videos as a followup at a later time.

5. For older students: The Giardia reference is more technical and should be read by the older students when appropriate.

6. The quiz can be given at the end of the day.

INTRODUCTION

Part of developing proper survival skills and a positive mental attitude is knowing the Seven Steps to Survival. These steps were developed by survival instructors who spent years asking survivors what they did that allowed them to survive an emergency. Knowing these steps will increase chances of surviving an emergency situation.

Ask students to guess the seven steps and their correct order before going into each step.

1. RECOGNITION “Oh no I’m in trouble!”

The first and most important step is recognizing that you are in an emergency and that if you do not do something about it you could die.

Discuss different types of emergencies the students could face.

- If you are out berry picking with your brother and you separate from each other, are you in an emergency? What if it is getting dark and you are not sure where you are or how to get back home?

- If you are out boating and your outboard starts sputtering, are you in an emergency? What if your engine dies and you start drifting toward a big rock?

Discuss at what point in each situation they should take action in order to survive an emergency. (After the boat hits the rock? After it gets dark? Or earlier when they still have time to take action?).
It is important to be ready and prepared to take action before it is too late.

Set up an imaginary emergency situation to use for this chapter. Two hikers who get lost on shore, with only their survival kits and a few items in their pockets, is a good setup for discussion purposes.

2. INVENTORY “What do I have, what should I do?”

S - sit

T - think

O - observe

P - plan

Tell students they must determine what they have going for and against them.

An inventory has three parts:

- Critical health needs
- Environment
- Equipment and survival skills

First, address critical health needs (for example, hypothermia must be dealt with immediately).

Second, minimize the negative effects of the environment—seek an area sheltered from wind and rain. People who are along the shore should get back in the woods to protect themselves from the wind.

Third, determine what you have on you and what you can use in the environment to improve your situation. Discuss what you could use—driftwood, branches, etc. in an emergency.

Most people end up in an emergency with nothing more than what they have on their body. This is why it is so important to have a survival kit on your person, rather than stowed on a boat or elsewhere. (Survival kits are covered in Chapter 3.)
3. SHELTER "I need to stay warm."

A shelter is anything that protects you from the environment.

People who die in survival situations generally die from one of two causes—drowning or hypothermia. What is hypothermia? It is the lowering of the body core temperature. Hypothermia symptoms include shivering (one of the first signs), depression (very serious because it can destroy the will to survive), incoherent speech, and loss of coordination (see Chapter 4).

Primary Shelter

Primary shelter is clothing. The best way to dress for an outing is in layers, in fabrics like wool or polypropylene. Wool and polypropylene are warmer than cotton and, most important, they insulate when wet.

A hat is essential. How much heat can be lost from the head? 50% of the body's heat at 40°F and up to 75% at 5°F.

When going boating or on a plane trip, people often do not dress for the outdoors. They may end up in serious trouble if they find themselves in a survival situation. It's best to be prepared by always dressing for an emergency or by taking warm gear along.
Secondary Shelter

An emergency shelter is something you can build to further protect you from the environment. There are three "musts" to a good shelter.

A good shelter must be: (write on board in a corner for future reference)

* Small
* Insulative
* Weatherproof from wind and rain

The purpose of the shelter is to trap your body heat next to your body, which keeps you as warm as possible. The shelter must be small, since the body will be the only heater. The insulation will trap body heat, and the weatherproofing will help prevent further heat loss. A well built shelter will look large from the outside, but its interior space must be only big enough to fit you.

Emergency shelters covered here are:

* Garbage sleeping bag (grades K-1)
* Debris bed (grades 2-4/5)
* Debris hut (grades 4/5-12)

The garbage sleeping bag and the debris bed shelter are temporary and quick. They can be made in a hurry in an emergency. The debris hut shelter is more sturdy and will protect for a longer time.
Garbage Sleeping Bag (grades K-1)

Open up a garbage bag and ask students how they would use it for shelter. The simple garbage sleeping bag is just the right size for young people (5 years old) and they can build it themselves. (Illustrate with garbage bags and draw diagram on board.)

Start with one garbage bag and fill it with debris (twigs, moss, leaves, small branches, grass).

Then hollow out the center and put in another garbage bag. This is the garbage sleeping bag. Does it fit the three criteria: windproof and waterproof, insulative, and small? Yes, although it is not very insulative.

When inside a garbage sleeping bag, a child should wear a wool hat and keep the head out of the bag. Ask them why the head should be out of the bag. Answer: If they breathe in the bag, water will accumulate from respiration.

Position the bag next to a log or tree to shelter from wind and rain.

Will the garbage sleeping bag fit a big person? No. But a small adult could use it to cover the legs and use other shelter material for the rest of the body.
Debris Bed (grades 2-4/5)

The debris bed is a good shelter to build in a hurry, for kids who are too big for the garbage sleeping bed.

How to make the bed: Start with a thick layer of branches (1-2 ft) and cover with moss (1-2 ft).

Discuss with students how thick the layers should be and why. Ask them what will happen when someone lies on the bed. One reason the bed has to be thick is that it will compress.

Cover the moss with plastic sheeting or a garbage bag cut open.

How to make the blanket: Top the bed with another layer of plastic (plastic to plastic) and then cover the second layer of plastic with moss, twigs, boughs, etc.

Does this shelter fit the three criteria: rainproof and windproof, insulative, and small? No—it is not windproof.

Discuss with students how they would put the top layer on after sitting down on the bed.

After the students have learned about the debris bed shelter, discuss when they might build one:

- If someone is hypothermic and in need of immediate help.
• If it is getting dark and you need to build something quickly.
• If you do not have the equipment or energy to build something better.

The best emergency shelter is one that meets all three criteria: small, insulative, and weatherproof.

**Debris Hut Shelter (grades 4/5-12)**

Construct a debris A-frame or a modified lean-to against a log. It will have walls and a front door.

To build a good shelter you must start with the bed. As with the emergency bed, start with a layer of branches (berry bushes, deadfall, etc.). This should be at least 2-3 feet thick.

On top of this put at least one foot of moss, and on top of that put plastic sheeting or a garbage bag cut open. On top of the plastic place 1-2 feet of dry spruce boughs, grass, or other materials. If you do not have any dry materials, do not put anything on top of the plastic.

The bottom branches provide dead air space to insulate against the cold ground. The moss provides a dense insulative layer which prevents further heat loss. The plastic keeps moisture from seeping up from the moss. The boughs or grass provide a top dead air space to trap warm body heat.

Note: This 3 foot bed will compress to about 6 inches when you lie on it, so compress it down before beginning work on the frame.

Next, work on the top. Start with a frame of deadfall, saplings, or driftwood. The frame must be sturdy enough to hold the weight of branches and moss.

To weatherproof the top, cover the frame with a cut open garbage bag or other plastic. If plastic is not available for waterproofing, use skunk cabbage leaves, bark, big pieces of seaweed, etc.

On top of the plastic stack a dense layer of branches, boughs, berry bushes,
etc. A thick layer of moss, grass or other small material goes on top of the branches.

If you see daylight when you look inside the shelter, the shelter is not weatherproof and the holes should be chinked with more moss or grass. Even small holes can rob the shelter of valuable body heat.

How big should the shelter be? Just big enough to get into. When you are inside, there should be no more than six inches to the top and to each of the sides. Six inches is about equal to the distance between your thumb and little finger when they are outstretched. If the shelter is too big you will expend energy and body heat trying to keep your shelter warm.

If the shelter is too big, put more boughs, branches, or moss on the bed or be prepared to put them on top of you like a blanket after you get in the shelter.

Ask the students what they can use for a door. (The usual answer is plastic or driftwood.) Doors are difficult but very important. Plastic alone or driftwood generally don't work best, because they don't provide much insulation and often don't fit well enough to be rainproof or windproof.

Rig boughs hanging down from the shelter for a flap door. Or stuff plastic with debris and tie it into a ball. After you are in the shelter, thrust the ball into the opening to plug it.

A shelter door cannot have holes in it. Even small holes will allow valuable body heat to escape the shelter. So after spending hours building a good shelter, be sure to spend the time needed to make a good door.
4. SIGNALS “Hey, I need help over here!”

We can help search parties find us by putting up signals. To be effective, signals must do two things: (write on board)

• attract attention
• convey a message of distress

Ask students what they would use for signals if they were lost (write answers on board). Examples: Build an SOS above the high tide mark using grass, driftwood, seaweed, etc. Hang things like plastic bottles or seaweed from trees in sets of three. Hang shiny reflectors. Build as many signals as possible so rescuers can see you from the air, land, or water. Signals must stand out from the background.

Some signals can be carried along, and some signals can be constructed using locally found materials.

Discuss these signals:

• signal mirrors
• whistles
• SOS of driftwood
• flares
• reflectors (aluminum foil)
• lights
• hanging debris (trash)
• fires and smoke
• EPIRBs (Emergency Position Indicating Radio Beacon)
• VHF radio

There are several rules to remember when setting up signals:

• The more signals the better.
• Signals must be visible FROM THE AIR, LAND, AND SEA (e.g. can you see an SOS from a boat?).
• Signals must be large! How large is large? The U.S. Coast Guard recommendation for an SOS is 18 feet x 3 feet for each letter. Discuss how this would fit on a rocky or sandy beach and what will happen at high tide. An optional activity is to demonstrate 18 feet x 3 feet by making a large SOS in class from materials in the room.
• The rule of threes: Signals in sets of three convey a mes-
SAGE OF DISTRESS. An SOS has three letters. Hang three piles of debris from trees or drift logs. Use three fires in a line—one fire will look like a campout, two will look like a beach party.

- Try to use contrasting colors: hang a life preserver or bright bandana.
- Signals with movement are effective in catching a searcher's eye.
- If you are using a fire as a signal, you must have someone on watch at all times, to keep it burning and to make sure it doesn't get out of control.
- Signals must stand out from the natural environment.

Discuss which signals are the best in these environments:
- Forest: whistles, bright colors, something reflective.
- Coastline: SOS, hanging debris, something reflective.
- From a boat: mirrors, bright colors, water dyes.

5. WATER “I need to avoid dehydration.”

We can live only a few days without water.

Discuss how much water our bodies require each day for normal bodily functions. We need on the average 6-8 pints (3-4 quarts) depending on body size and health condition.

How much is 6 pints? Lots: 6 pints = 96 oz = 8 pop cans = 12 cups. How do we get fluids in our daily diet?—Milk, juice, etc.

What happens if we do not get enough water?
Dehydration (loss of body fluids) What are the symptoms?

- craving for cold or wet foods
- dark urine
- headache
- chapped lips
- feeling tired or dizzy
- depression—-a potential killer in a survival situation

When we are dehydrated the body and mind do not function at maximum performance. Severe dehydration can lead to death. To combat dehydration we should:

- Avoid excessive activity such as hiking.
- Minimize food intake (food requires water for digestion).

Ask where we can find water in a survival situation. Answers may include ice, rainwater, rivers, creeks, ponds, muskeg, saltwater, and snow. (Write all answers on board.)

Ask if all these water types are safe. (NO! They are not.) Name some that are safe.

- Rainwater collected in a clean container.
- Prepackaged water (if you have it).
- Water that has been boiled for 20 minutes.
All other sources of water are not safe to drink. River or lake water should be boiled for 20 minutes to be guaranteed that all giardia and dysentery-causing microorganisms are killed. If you get dysentery while awaiting rescue, you will have diarrhea which will further dehydrate your body.

If you cannot start a fire to boil water, collect rainwater. If that is not possible, you must minimize activities to reduce body fluid loss and reduce or stop eating. In a survival situation, some people would rather drink river water and risk getting dysentery over being dehydrated.

Eating food when you are out of safe drinking water, and drinking water that could be contaminated are both risky choices that each individual may have to make. If you are thirsty you may chose to drink water from a fast moving stream. If you are out of water but hungry you may chose to eat juicy foods such as water-laden berries.

Seawater, urine, and blood are not considered safe sources of drinking water. They contain large amounts of salt and may contain other harmful microorganisms.

What can we use as a water collector? (Containers can be hard to find on a beach.) Plastic containers, ziploc bag, bark, clamshells, etc.

6. FOOD  “Eat safe foods.”

(If possible bring in a local wild foods expert)

There are three rules for foods in a survival situation:

- If you don’t know it—don’t eat it.
- If you don’t have water—don’t eat or eat very little.
- If possible eat several kinds of food (e.g. animals and plants).

It is good to get to know several foods that can be eaten in a survival situation during any season.

If you are lost along the coastal shores it will be easy to find an abundance of food. Almost all seaweeds are edible, as are one-shelled animals (limpets, etc.).

Edible small crabs and fish can be found by turning over rocks.

Discuss what might be found along nearby beaches and how the foods could be prepared for eating. This requires that the instructor have a familiarity with intertidal life.

Discuss Paralytic Shellfish Poisoning (PSP), also commonly called red tide, and the consequences of getting it in a survival situation (death). Ask the students the symptoms of PSP.

Some students may discuss the fact that their families eat clams, cockles, etc. Tell them that, even if they eat these foods at home, they should not eat them
in a survival situation! At home they can go to the hospital if they get PSP. But if a lost person eats PSP-contaminated clams, he or she will probably die.

PSP is caused by a neurotoxin that blocks nerve impulses resulting in respiratory failure. It is found in filter feeders or bivalves including clams, cockles, mussels, oysters, and scallops. Barnacles and the moon snail also carry PSP. Past information has stated that it is safe to eat barnacles. Emphasize to students that it is not.

Other shellfish to avoid include starfish, jellyfish, sponges, sea anemones, sand dollars, and the hairy triton.

For a person lost in the woods, different types of foods are available. Animals may be difficult to capture and kill. Snares could be used to trap small animals such as squirrels, rabbits, shrews, etc., but valuable energy can be wasted for a person who does not know what he or she is doing.

A multitude of edible plants can be found and eaten in a survival situation. In the spring leaves can be eaten, in the summer the berries, and in the fall and winter the roots. It is very important to learn which plants are safe to eat. There are poisonous berries, leaves, and roots in Alaska. Discuss edible leaves and berries. It is very important for the instructor to know which plants are safe to eat, but more important which plants are poisonous or can cause a sudden and severe illness. Remember: If you don't know it—don't eat it! You can live for weeks without food.

Ask students what they would eat in January, April, August, or December if lost in the woods or along a shore.
7. PLAY "Keep a positive mental attitude."

The last step in the Seven Steps to Survival is play. Play is important to maintain a Positive Mental Attitude and avoid depression.

Avoid depression, which destroys the will to survive. Keep yourself busy by improving your signals and shelter and collecting foods. Talking with each other will help minimize depression. Invent games and contests.

Ask what kinds of things can be done for play:

- Make the shelter better.
- Build more signals.
- Get water (build water collectors).
- Get food (try fishing, snaring).
- Tell stories.
- Make games.

Tell students: If you are alone, think about what you will do when you get home. If you are sitting around feeling sorry for yourself, get up and do something.

If you are with other people be sure to watch them to make sure they are not depressed or scared. Keep everyone busy and talking. TRY TO THINK LIKE A SURVIVOR, NOT LIKE A VICTIM.
HOW TO BUILD A FIRE

For the survival practical, the fire should burn for 10 minutes. This tells how to build a fire that will burn for longer than 10 minutes.

AIR, FUEL, and HEAT are needed to start a fire and to keep it going.

FUEL is anything that burns well such as logs, twigs, pitch from trees, plastic, or paper. Fuel includes tinder (small dry twigs, pitch, or grass), kindling (small branches or wood, no bigger around than your finger), and large fuel (driftwood or logs).

AIR or oxygen is necessary to ignite a fire and to keep it burning.

HEAT is supplied from the spark of a flint or by a match.

First locate a site sheltered from wind and rain. Collect enough tinder and kindling to supply a fire for at least 20 minutes and enough large fuel for the day.

Arrange tinder to allow room for oxygen. Kindling can be crosshatched on top of tinder or stacked in a teepee shape. If a magnesium fire starter or other flint material are being used, add kindling sparingly after starting a flame.

Kindling should burn for several minutes before adding larger fuel. Do not smother the fire by adding too much fuel at one time. Larger fuel should also be added sparingly. A small fire is adequate to boil water or cook food.

Grass, twigs, birch bark, and fire sticks can be used for tinder. Fire sticks are wood sticks with paraffin.
Using a knife, shave pieces of magnesium starter onto tinder.

Strike the sparking edge of the magnesium starter to make sparks and get flames going.
TO SUMMARIZE

Review the seven steps and their importance:

1. Recognition: Accept the fact that you are in trouble.

2. Inventory: Find out what you have going for you and against you. Think about personal health needs, environment, and supplies.

3. Shelter: Anything that will protect you from the environment. First is your clothing. Second is a shelter that you construct, which must be small, insulative, and weatherproof.

4. Signals: You must be spotted to be rescued. A signal must attract attention and convey a message of distress.

5. Water: Avoid dehydration. Drink safe water—rainwater or boiled water.

6. Food: Eat only foods you know.

7. Play: Avoid depression, maintain a positive mental attitude.

Review steps in fire building.

Show the video that previews the Outdoor Survival Practical and Survival Suit Practical.

Give the Seven Steps to Survival Quiz if time is available. If the schedule is tight, give the quiz later.
STUDENT NOTE TAKING GUIDE

Name_____________________________

Taking notes on this page during class discussion will help you learn what you need to know about survival.

Shelter

1. A ________________ is anything that protects you from the environment.

2. Your primary shelter is your ________________.

3. The way to dress for an outing is in ________________. (long underwear, under wool clothes, covered by rain gear).

4. A wool ________ is essential, because you can lose up to ________ percent of your body heat without one.

5. An emergency shelter is something you can build to protect yourself from hypothermia. The three "musts" to a good shelter are:
   a. 
   b. 
   c. 

6. How do you build a good shelter?
   a. Start with the ________________. Use a layer of ________________ 2-3 feet thick.
   b. On top of this, put at least one foot of ________
   c. Next add a garbage bag or plastic sheeting.
   d. Then work on the top. Start with the frame, put three small poles over the ________________. Tie the logs together with rope found along the beach, tree roots, bull kelp, plastic strips, or other material.
   e. Cover the frame with a cut open garbage ________________ or other plastic.
   f. ________________ goes on top of the frame.
   g. ________________ goes on top of the branches.

7. How big should you make your shelter?

8. If you look inside the shelter and see ________________ your shelter is not weatherproof and you need more ________________.

9. What can you use for a door?
STUDENT NOTE TAKING GUIDE

Shelter (continued)

10. Draw a picture of what your shelter might look like and label the parts.
STUDENT NOTE TAKING GUIDE

Signals

1. To help search parties find you, you can put up a ________________, which is the fourth step to survival.

2. What two things must signals do to be effective?
   a. __________________________ (let someone know where you are)
   b. __________________________ (let them know you want to be rescued)

3. What are some possible items you can use to make signals?

4. What are some rules to remember when setting up your signals?

5. What signals are best for use in each of the situations listed below?
   Forest:
   Coastline:
   In the water:

6. To signal distress, __________ is the magic number.

7. Each letter in an SOS must be _____ feet high and _____ feet wide.

Water and Food

1. List two edible plants that are found in your region that you can find in:

   Spring  _________________
           _________________

   Summer  _________________
            _________________

   Fall    _________________
            _________________

   Winter  _________________
            _________________
STUDENT NOTE TAKING GUIDE

Water and Food (continued)

2. List two poisonous plants found in your region.
   
   ____________________________
   ____________________________

3. Your body needs at least _______ pints of water every day.

4. To make creek water safe to drink, it must be _______ for ______ minutes.

5. If we do not get enough water to drink, our body will start to
   ____________________________.

6. If you eat clams, cockles, or barnacles picked from Alaska's beaches you could
die from ________________________.

Play

1. The last step in the seven steps to survival is ________________________.

2. Name two reasons why play is important.

3. What kind of things can you do for play?

4. Describe a game you could play if you were in a survival situation all by your-
   self, or one you could play if there were other people.
Shelter

1. A shelter is anything that protects you from the environment.

2. Your primary shelter is your clothing.

3. The way to dress for an outing is in layers, (long underwear, under wool clothes, covered by rain gear).

4. A wool hat is essential, because you can lose up to 75 percent of your body heat without one.

5. An emergency shelter is something you can build to protect yourself from hypothermia. The three "musts" to a good shelter are:
   a. small
   b. insulative
   c. weatherproof

6. How do you build a good shelter?
   a. Start with the bed. Use a layer of branches 2-3 feet thick.
   b. On top of this, put at least one foot of moss or grass.
   c. Next add a garbage bag or plastic sheeting.
   d. Then work on the top. Start with the frame, put three small poles over the bed. Tie the logs together with rope found along the beach, tree roots, bull kelp, plastic strips, or other material.
   e. Cover the frame with a cut open garbage bag or other plastic.
   f. Branches go on top of the frame.
   g. Moss goes on top of the branches.

7. How big should you make your shelter? Just big enough for you, or you and your companion.

8. If you look inside the shelter and see light, your shelter is not weatherproof and you need more moss or grass.

9. What can you use for a door? Branches, or plastic stuffed with moss.

10. Draw a picture of the shelter with labeled parts.
Signals

1. To help search parties find you, you can put up a signal, which is the fourth step to survival.

2. What two things must signals do to be effective?
   a. Attract attention (let someone know where you are)
   b. Give a message of distress (let them know you want to be rescued)

3. What are some possible items you can use to make signals?
   Driftwood, shells, rocks, grass, surveyor tape

4. What are some rules to remember when setting up your signals?
   Rule of three
   One by sea
   One by air
   The bigger the better

5. What signals are best for use in each of the situations listed below?
   Forest: Mirror, surveyor tape, whistle
   Coastline: SOS, surveyor tape, mirror, hanging debris
   In the water: Mirror, whistle, something bright

6. To signal distress, 3 is the magic number.

7. Each letter in an SOS must be 18 feet high and 3 feet wide.
Water and Food

1. List two edible plants that are found in your region that you can find in:
   (This varies with region)
   
   Spring    Fern fiddleheads
              Seaweeds

   Summer    Goosetongue
              Berries

   Fall      Berries
              Seaweed

   Winter    Wild potato
              Indian rice

2. List two poisonous plants found in your region.
   (This varies with region)

   Baneberry
   Poisonous water hemlock
   False hellebore

3. Your body needs at least 6-8 pints of water every day.

4. To make creek water safe to drink, it must be boiled for 20 minutes.

5. If we do not get enough water to drink, our body will start to dehydrate.

6. If you eat clams, cockles, or barnacles picked from Alaska's beaches you could die from PSP.

Play

1. The last step in the seven steps to survival is play.

2. Name two reasons why play is important.

   Maintain a positive mental attitude (prevent depression)
   Combat hypothermia

3. What kind of things can you do for play?
   (This varies)

4. Describe a game you could play if you were in a survival situation all by yourself, or one you could play if there were other people.
SURVIVAL CROSSWORD PUZZLE

1. A first sign of hypothermia
2. Best survival tool
3. _______ _______ (number) of anything will signal for help
4. A shelter must be small, _________________, and weatherproof
5. A fabric that keeps you warm even when it is wet _______________
6. A signal must attract attention and send a ______________
7. You can go without ________________ for 3-4 days
8. An edible sea animal with one shell
9. Depression can be avoided by ________________
1. A first sign of hypothermia
2. Best survival tool
3. (number) of anything that will signal help
4. A shelter must be small, _________ and weatherproof
5. A fabric that keeps you warm even when it is wet _________
6. A signal must attract attention and send a _________
7. You can go without _________ for 3-4 days
8. An edible sea animal with one shell.
9. Depression can be avoided by _________

1. shivering
2. brain
3. three
4. insulative
5. wool
6. message
7. water
8. limpet
9. play
Alaska’s youth spend a lot of time on the water and along the shoreline. While most outdoor adventures—hiking, boating, fishing, picking berries, or traveling by boat or plane—are filled with excitement and discovery, tragedy can strike at any time.

**Be Prepared**
In preparing for an emergency you must think “It can happen to me.” Be prepared: otherwise, you won’t have the necessary equipment or skills to face an unexpected emergency. Preparation includes:

1. developing a positive mental attitude,
2. being mentally tough, and
3. being physically prepared by having good health, the proper survival equipment and the proper survival skills.

**Mental Preparation**
In developing the proper mental attitude you must:

1. accept the fact that it can happen to you,
2. realize that what you are carrying with you may be all you have in an emergency,
3. develop a will to survive and conquer fear.

Someone who is lost or tossed into an emergency situation may panic. Fear, cold, and being tired, hungry, or thirsty are all normal feelings in an emergency situation. You must learn to conquer these feelings and develop an attitude that you will survive.

**Physical Preparation**
Physical preparation includes:

1. your health.
2. your survival skills, and
3. your equipment.

Don’t go out adventuring in the woods or on the water if you are not in good health. Develop survival skills so that you feel prepared in the woods. Be sure to have necessary survival equipment with you.

**Make a Plan**
Before you go anywhere along the beach, in the woods or on a boat you must make a plan:

1. Check the weather forecast. Will it be sunny or stormy?
2. Know where you are going, the route you will be taking and how long it will take to get there and come back—and be sure to tell someone your plans.
3. Never travel alone, especially if you don’t know the area well. It’s best to travel in threes.
4. Take proper clothing with extra mittens, socks, rain gear, a survival kit and first aid supplies. Dress in layers using wool or polypropylene. Your survival kit should be small enough to carry on you.

**Seven Steps to Survival**
Part of the mental and physical preparation for anyone planning to spend time outdoors is learning the Seven Steps of Survival. Once you learn the Seven Steps you will know how to face a survival situation and will have learned skills necessary to prepare yourself to survive.

**First Step: Recognition**
If you’re not sure that you are lost or in trouble, assume you are and take action. Many people fail to recognize...
that they are in trouble and many have died because they were too “tough” to accept this fact.

**Second Step: Inventory**

Once you admit to yourself that you are lost or in trouble, then the next step is to inventory the situation. To inventory, first respond to any major first aid needs.

Second, get yourself and others out of the rain and wind.

The third part of inventory is to see what you can use that can help you stay alive. Inventory what you have in your pockets, and what you can find along the beach or in the woods that can be used for signals, to build a shelter or a fire, and to gather water and food. Use your skills and your brain.

**Third Step: Shelter**

People who die in survival situations generally die from one of two causes—drowning or hypothermia. Your primary shelter is your clothing. When you get ready to go on an outing, dress for the worst weather.

You can make several kinds of shelters depending on the situation and the environment you are in. A shelter must do two things:

1. It must insulate you on all sides from the cold.
2. It must be small and snug to keep the wind and wet out.

In selecting a place to build your shelter, try to find some place out of the wind and rain. Be sure your site has good drainage.

The materials you use will depend on what is available: grasses, branches, moss, logs, and garbage found along the beach are commonly used.

**Fourth Step: Signals**

You can help search parties find you by putting up signals. Signals must do two things:

1. They must attract attention.
2. They must send a message.

There are two kinds of signals—active and passive. Passive signals are signals that work without you. Examples of passive signals are lights, reflectors (mirrors, aluminum foil), wreckage, or an SOS from driftwood.

Active signals are signals that you have to operate: fires or smoke, hand-held signal mirrors, or whistles.

You should have several signals—the more the better—because your signal must send messages in two directions. You need signals that can be seen from the air (fires, a driftwood SOS, wreckage or reflectors). You also need signals visible from the ground or from a boat (hanging reflectors, hanging bright surveyor tape or debris).

When building signals remember the rule of threes. Sets of threes are a universal distress signal. If you have only one fire, Search and Rescue might think that you are merely camping.

- If rescuers see three fires they know it is a rescue signal.
- If you arrange driftwood as a signal, create three straight lines of wood (and make sure they are above the high tide line).
- If you blow your whistle, blow three short whistles, then wait, and then blow three again.
- If you hang wreckage in trees, hang three piles about 15 to 20 feet apart.

**Fifth Step: Water**

On the average, people need six pints of water every day to keep their bodies running.

If you don’t get enough water you will dehydrate. Signs of dehydration include a headache, chapped lips, feeling run down or tired, depression, a craving for things that are cold (like ice cream), and dark urine.

In a survival situation, water can be obtained from several sources including rainwater, rivers or creeks, lakes, ponds, and snow or ice. Rainwater is the only water safe to drink without being boiled. Water obtained from any other source must be boiled for 20 minutes. There are a host of microscopic organisms in water from ponds, creeks, snow, etc., that can make you sick. Giardia, or “beaver fever,” and dysentery can make you very sick.

If you use snow or ice, melt it before you use it. Liquids to avoid include seawater, blood, and urine.
Sixth Step: Food

Food is used for producing body energy, for heat production (to keep you warm), for tissue repair, for mental functions (so you can think straight) and for comfort and a sense of well being.

Remember—don’t eat anything unless you have water to drink. You need water in order to digest food. If you don’t drink water when you eat, your body will dehydrate. Your body can, however, survive for days without water and weeks without food.

Try to balance your diet by eating both plants and animals. But, with both plants and animals, if you’re not sure—don’t eat it!

The seashore provides a wealth of sea plants or seaweeds and animals at low tide. But you must be careful to stay clear of all bivalve shellfish as they may have paralytic shellfish poisoning (PSP). Microscopic dinoflagellates, which are eaten by bivalves, carry this poison. The poison can kill people, even though it doesn’t kill the shellfish.

Bivalve (two-shell) shellfish include clams, cockles, mussels, scallops, oysters, and geoduck. Even if you eat these at home, do not eat them in a survival situation. Barnacles and the moon snail may also have PSP and should be avoided.

The following is a list of good nutritional foods found along the seashore:

- limpets
- small snails
- sea urchin eggs
- hermit crabs
- gumboots/chitons
- sea cucumber
- abalone

Some of the fishes you can eat:

- flat fish
- herring
- blennies
- salmon
- rockfish
- smelt
- bullheads (not the eggs)

Most seaweeds, including the brown, the red and the green are all excellent sources of vitamins and minerals.

While most land animals are edible they take more time and energy to get, so it is usually best to stick to easily available sea life. Mink, marten, squirrels, rabbits, birds, and mice are all safe small game animals. Try to balance your diet by eating plants also.

There are lots of land plants to eat—but remember, if you’re not sure don’t eat them. Learn which berries and plants are poisonous. It is important to spend time learning about local plants and animals in your area so that if you find yourself in a survival situation you will know what you can eat and what to avoid.

Seventh Step: Play

Play keeps you busy so you don’t become bored or scared, and play helps you keep a positive mental attitude. Make it a point to spend some time at storytelling, baseball or other games. Non-play activities—such as working on your shelter or looking for food and water—can help keep moods positive, too. Remember that inactivity can be a sign of depression or fear; so, if you are with others, do your best to help keep them active.

Summary

In summary, knowing the Seven Steps to Survival will provide you with the knowledge and some helpful skills necessary in a survival situation. Prepare yourself before you leave home. Build yourself a survival kit that you will use, and take it with you whenever you head into the wilderness.

Survival Stew

If you are boiling water for 20 minutes you can make a nutritious stew by adding seaweeds, limpets and snails into the water during the last five minutes of boiling. The meat from the small shellfish should separate from the shell. The vitamin and mineral rich broth and the shellfish meats and seaweeds are safe and nutritious.
Giardia

It’s called “backpackers disease,” “beaver fever,” or giardiasis, and each year an increasing number of wilderness travelers suffer from its unpleasant symptoms. Before you quench your thirst from a clear Alaska stream, consider the following information about Giardia lamblia parasite—and how to avoid it.

WHAT IS GIARDIASIS?
Giardia lamblia is found worldwide and is the most commonly reported human intestinal parasite in the United States. Although the cyst can be transmitted on food and from person to person, its most frequent transmission is through surface water that is either untreated or inadequately treated. In treated water, either inadequate chlorination or defective filters or both have been responsible for large outbreaks of the disease nationwide.

WHAT ARE THE SYMPTOMS?
Abdominal bloating, cramps, excessive gas, diarrhea and a vague feeling of physical discomfort are typical. The incubation period after ingesting the cysts is one to four weeks with an average of 10 to 14 days.

If you have any combination of the above symptoms, especially if they continue longer than seven days, you should consult your physician and mention the possibility of giardiasis so that appropriate tests can be done. Diagnosis is confirmed by stool examination.

HOW DO YOU CONTRACT THE DISEASE?
Follow-up on many cases in Southcentral Alaska revealed that the victims had consumed untreated surface water, usually on camping or fishing trips.

The parasite is carried by all mammals, including humans and wild and domestic animals. Beavers seem particularly susceptible to giardia infections and carry large numbers of cysts in their intestines. The feces of carrier animals contain cysts which live outside the host. The cysts reach water drainage systems either by direct deposits into the water, as in the case with beavers, or indirectly by rain and runoff.

Giardiasis is usually passed between humans as a result of poor sanitary practices. Young children who become infected may reinfect themselves or others. Typically, children may neglect to wash their hands after a bowel movement. Later their fingers reach their mouths while they are eating or playing, and the cysts are reintroduced into their intestines.

Those who handle babies and change diapers, such as day care workers, must also be cautious about washing their hands to avoid passing cysts to others.

TREATMENT
Treatment for humans involves use of properly prescribed drugs for seven to ten days. The drugs may produce side effects, and care must be observed in their use by pregnant women and possibly others. Treatment should be prescribed by a doctor.

There is a catch to the treatment of this unpleasant disease. From 85% to 90% of patients are cured with one course of medication. The 10% to 15% who are not must take a second course of treatment.

PREVENTION
Whenever possible, people in the out-of-doors should carry drinking water of known purity with them. When this is not practical, and water from streams, lakes, ponds, and other outdoor sources must be used, time should be taken to disinfect the water before drinking it.

BOILING WATER
Except for water treatment methods that include adequate filtration, boiling is the only technique that can be recommended with complete confidence for eliminating giardia in water. Boiling for one minute is adequate to kill giardia. If other upstream contamination is suspected (from places of human habitation, sewage outfalls, etc.), the water should be boiled for 20 minutes.

CHLORINE OR IODINE DISINFECTION
Although boiling is the most reliable method of water disinfection, it is recognized that boiling drinking water is not practical under many circumstances. Therefore when one cannot boil water, chemical disinfectants such as iodine or chlorine should be used. This will provide a large degree of protection against giardia and will destroy
Mix thoroughly by stirring or shaking water in container and let stand for 30 minutes. For chlorine tablets, contact time begins after tablets have dissolved. Be sure screw tap threads of your water container receive disinfected water for the appropriate contact time. The water should have a slight chlorine odor after standing. If it does not, repeat the dosage and let stand for an additional 30 minutes before using.

<table>
<thead>
<tr>
<th>% Chlorine (undiluted)</th>
<th>Amount per quart (1 drop = 0.05 ml)</th>
<th>Contact time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>20 drops</td>
<td>30 minutes</td>
</tr>
<tr>
<td>4-6% (household bleach)</td>
<td>4 drops</td>
<td>30 minutes</td>
</tr>
<tr>
<td>7-10%</td>
<td>2 drops</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Unknown %</td>
<td>20 drops</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Halazone</td>
<td>2 tablets</td>
<td>30 minutes</td>
</tr>
</tbody>
</table>

Note: Very cold or turbid water will require prolonged contact time. Let it stand up to several hours or even overnight.

**Iodine**

Tincture of iodine from the medicine chest or first aid kit can be used to treat water. Iodine disinfecting tablets are also available. Mix thoroughly by stirring or shaking water in container and let stand for 30 minutes. For iodine tablets, contact time begins after tablets have dissolved. Be sure screw cap threads of your water container receive disinfected water for the appropriate contact time.

<table>
<thead>
<tr>
<th>Tincture of iodine (2%)</th>
<th>Amount per quart (1 drop = 0.05 ml)</th>
<th>Contact time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 drops</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Iodine tablets</td>
<td>2 tablets</td>
<td>30 minutes</td>
</tr>
<tr>
<td>(Potable Aqua, Globaline, Coughlan's, etc.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Very cold or turbid water will require prolonged contact time. Let it stand up to several hours or overnight.

**WATER FILTERS**

Portable filtration devices that are effective against Giardia are those with pore sizes less than five micrometers (one micrometer is one millionth of a meter). Water pressure will be required to use filters with pore openings of this size. Water filters containing resins or activated carbon granules without microfilters with pore sizes less than five micrometers will probably not filter out giardia cysts.
SEVEN STEPS TO SURVIVAL QUIZ

Name ____________________________________________

There are seven steps for survival at sea or on the shore. Fill in the blanks with the following steps, in order from most important to least important.

STEPS: Signal, Shelter, Play, Recognition, Water, Inventory, Food

1. ________________  Understand and accept that you are in a life-threatening situation and must act to save yourself.

2. ________________  Take stock of what you have, so you are better prepared to act in your situation.

3. ________________  You must protect yourself from loss of body heat which might lead to hypothermia.

4. ________________  Ask for help.

5. ________________  This is necessary to protect your body from dehydrating.

6. ________________  This is important if rescue is not available for a long time.

7. ________________  Constructive activity keeps up the will to live and improves your chances of survival.

Read the following questions carefully and provide answers.

8. Your primary "shelter" is your clothing. Check 4 items that are best in a survival situation.

   _____ cotton jeans and cotton T-shirt
   _____ hat
   _____ extra socks
   _____ wool pants and wool sweater
   _____ rubber boots
   _____ tennis shoes

9. Hypothermia is the lowering of the ________________ of the body's core.

10. A good shelter must be small, ________________, and weatherproof.

11. One way of signaling for help that is visible from the sea is (circle the correct answer):

   a. SOS
   b. Hanging debris
SEVEN STEPS TO SURVIVAL QUIZ

12. Describe one way of signaling for help that is visible from the air.

13. To signal distress, _____________ is the magic number.

14. To keep healthy, your body needs at least __ pints, or three quarts of water every day.

15. To make sure creek water is safe to drink you must ___________ it for ___ minutes.

16. List two plants in your region that are edible.
   ___________
   ___________

17. List two poisonous plants found in your region.
   ______________
   ______________

18. Give two examples of “play” activities you could do if you were stranded with at least one other person.

19. Give two examples of how you would keep a positive mental attitude if you were stranded by yourself.

20. A survival kit should be located on/in your (circle the correct answer):
   a. boat
   b. body
   c. backpack

21. Draw a diagram of a one-person survival shelter you might build on the beach using available materials. Label the layers of material in the floor, walls, and roof.
SEVEN STEPS TO SURVIVAL QUIZ: WITH ANSWERS

Name ____________________________

There are seven steps for survival at sea or on the shore. Fill in the blanks with the following steps, in order from most important to least important.

STEPS: Signal, Shelter, Play, Recognition, Water, Inventory, Food

1. Recognition. Understand and accept that you are in a life-threatening situation and must act to save yourself.
2. Inventory. Take stock of what you have, so you are better prepared to act in your situation.
3. Shelter. You must protect yourself from loss of body heat which might lead to hypothermia.
5. Water. This is necessary to protect your body from dehydrating.
6. Food. This is important if rescue is not available for a long time.
7. Play. Constructive activity keeps up the will to live and improves your chances of survival.

Read the following questions carefully and provide answers.

8. Your primary “shelter” is your clothing. Check 4 items that are best in a survival situation.
   ______ cotton jeans and cotton T-shirt
   ___X____ hat
   ___X____ extra socks
   ___X____ wool pants and wool sweater
   ___X____ rubber boots
   ______ tennis shoes

9. Hypothermia is the lowering of the temperature of the body’s core.

10. A good shelter must be small, insulative, and weatherproof.

11. One way of signaling for help that is visible from the sea is (circle the correct answer):
   a. SOS
   b. Hanging debris
12. Describe one way of signaling for help that is visible from the air.
   **SOS on the ground, mirror, surveyor tape**

13. To signal distress, **three** is the magic number.

14. To keep healthy, your body needs at least 6 pints, or 3 quarts of water every day.

15. To make sure creek water is safe to drink you must **boil** it for **20** minutes.

16. List two plants in your region that are edible.
   (This answer varies with region)

17. List two poisonous plants found in your region.
   (This answer varies with region)

18. Give two examples of "play" activities you could do if you were stranded with at least one other person.
   (This answer varies)

19. Give two examples of how you would keep a positive mental attitude if you were stranded by yourself.
   (This answer varies)

20. A survival kit should be located on/in your (circle the correct answer):
   a. boat
   b. **body**
   c. backpack

21. Diagram a one-person survival shelter you might build on the beach using available materials. Label the layers of material in the floor, walls, and roof.