

Outdoor Education Study Guide

Objective

The students will learn and demonstrate a variety of outdoor education skills, such as camping, cooking, hiking, and orienteering. The students will be able to challenge themselves as well as others. The students will be able to use proper verbal communication skills as well as have fun. Students will also use teamwork/teambuilding skill in order to demonstrate the skills learned.

Camping

Leave No Trace skills (LNT) the seven principal

1. Plan Ahead and Prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of Waste Properly
4. Leave What You Find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors

Tents- selecting a tent, parts of a tent= main body, 1 wall/2 wall, fly, ground cloth, stakes, guy lines, and poles.

- a. 2-man backpack tent goes between 3-10 pounds
- b. 3-man backpack tent or more goes 10-15 pounds
- c. Base camp tents can weigh as much as 40 pounds

- Freestanding versus staked design
- The tarp/ground cloth- cut ground cloth-don't overlap-cut smaller than floor
- Seam-seal before use
- Storage-air it out and make sure its dry before putting tent away-store it in a loose bag after the season.

Backpack or travel typed kitchens

1. Your operation has to be lightweight and compact. Weight and bulk are critical.
2. Dehydrated and freeze-dried food?
3. Take all food out of packages and re-pack using baggies
4. Camp foods bought pre-packaged?
 - a. How many meals of each type? Breakfast, lunch and dinner.
 - b. Where will they be prepared?
 - c. How will your supplies be transported?
 - d. How many in you're group and what kind of appetites?
5. Stoves-backpack
6. Fuels- White gas, Propane, Butane, Kerosene, Combination, and Multi-use

Lighting (lanterns and headlamps)

- Like stoves, there are choices-white gases; propane, butane, kerosene, battery and candle lanterns are available for your evening pleasures.
- It makes sense to use the same fuel for lanterns and stoves. Watch the mantles on lanterns. They are fragile and care must be taken to keep from destroying.
- Headlamps- is small and hands free and batter operated.

The wood fire- only make a fire if there is a fire ring already there don't make your own ring (LNT principals)

1. Collect only dead wood: wood that is preferably already on the ground
2. Collect all your fire material first before you try to get the fire going.
3. The process of starting a fire starts with small dry tufts and twigs. This is known as TINDER.
4. Once you get a small flame going, add small twigs a little at a time i.e. KINDLING (pencil-size branches and larger)
5. Once you have the fire going, let it grow until you have a bed of coals that are orange or white in color. A blue flame isn't hot enough to cook things thoroughly. You can now add smaller kindling to regulate your heat so you can cook.
6. Use a Teepee for atmosphere or to cook simple things like hotdogs and marshmallows, a log cabin-type fire for making a cooking fire.
7. Never leave a fire unattended. Make sure it is out-out-out before you clear the site.
8. It's a common courtesy to leave a small amount of tinder, kindling, and a few sticks of wood next to your cook area for the next campers who come through.
9. DO NOT throw can, bottles, tabs or plastic in your fire. It doesn't burn through and it POLLUTES.
10. Bring matches in Baggies. Keep extras in a separate spot. Lighters work, too.
11. Make a SWEEP of your area and pack out any garbage. Don't be afraid to get it out of the dead fire.
12. Consider cooking on a stove and only using a small campfire after your meal for atmosphere.

Packs and Bags- Making a choice

Daypacks

- Carrying your lunch, water bottle, extra jacket, books and all the small stuff you need quick access to
- Look for padded straps and even some extras like waist belt and loops to hang things from.

External- for carrying large loads on fairly even surfaces

1. Frame should be sturdy with frame joints and welds clean and strong with a pack able to withstand tension.
2. Should contour to fit the natural contour of your back
3. Packs come in several forms: S-shape (good for skiing and climbing), Straight (good for short portages and carries), Hip-wrap (good for distributing weight to hips during long trips)
4. The weight is located high and close to the shoulder: at the same time, the hip belt transmits its share of weight directly to the legs.
5. Good circulation of air between the frame and your back makes it comfortable
6. Generally cost less than other types.

Internal frame packs- keeps load close to back and is easy to bend and twist

1. Designed to hold weight next to the body so that it doesn't effect balance
2. Weights are low so actions where movement is bending and up and over are possible.
3. The inside pack wall that lays against your back has some type of semi-rigid bendable material in sheet-form or aluminum "stays" set into sleeves to give the pack support.
4. Many packs have adjustments for individual fit and comfort
5. When purchasing, one needs to be aware of height and weight and torso size. Packs should be custom fit to your body size.

Pack loading

1. There are top-loading and front-loading (packs and opens just like a suitcase) in both internal and external designs
2. For good footing, load pack so heavier items are high and close to the back. Try to get as much load forward as possible. Watch the side-to-side balance.
3. For off-trail, pack lighter items higher and further from your back with heavier items lower and closer to your back.

Sleeping Bags- purchase of a bag is one of your most important decisions in camping. Buy one that fits your needs and suits the type of camping you will be doing.

Rating of bags- In general, thickness determines the warmth of a bag. (Thickness on the top half is of prime concern.) The weight of your body compressed the bag under you, so you'll probably need a ground pad (such as a therma-rest self-inflatable pad) to say comfortable and warm. Bags are rated for use with a minimum temperature. A bags rated at 20 degrees should keep you comfortable down to 20 degrees (but it should also be noted that there are other factors involved)

Category	Rating	Weight ranges	
		Down	Polyester
Summer	30-40 degrees	1lb. 15oz-2 lb. 4oz	1lb. 15oz-4lb. 2oz
3-season	5-30 degrees	2lb. 4oz-3lb. 9oz.	2 lb. 2oz.-5lb. 9oz.
Year round	below 0 degrees	3lb 4oz-5lb 9 oz	4lbs-6lb 12oz

INSULATION

DOWN

1. Natural insulator from ducks and geese
2. Efficiency is measured if "fill power"
And is the weight of down, volume in Cubic inches that the down will occupy
550 down=1oz. Of down fills 550cubic inches
3. Lightest and most compressible (you can stuff it into a small sack)
4. Keeps it's LOFT (also know as thickness)
5. Down that gets wet loses its ability to insulate
6. Cost the most but last longer than synthetic

SYNTHETIC

1. Synthetic insulation fills
2. Hollofill, Qualofill, and Polarguard
3. Fibers dry fast and keep insulation when wet
4. Less expensive than down but weigh more, are bulkier and won't last as long

DESIGN-in general, it's good to pick the narrowest bag you finds comfortable the less room the warmer the bag.

1. Mummy-less material and bulk, usually comes with a hood, keeps you the warmest
2. Rectangular-gives you the most room a much looser fit
3. Barrel-an in-between compromise

MATTRESS PADS- these are a luxury that are almost a necessity. The pad provides insulation between you and the ground in cold weather. It also smoothes out the bumps you get from roots, rocks and other sharp objects below the tent bottom. There are many different brands and types.

THE MAP- a map is a symbolic picture of a place. In a convenient shorthand, it conveys a phenomenal amount of information in a form that is relatively simple to understand and easy to carry.

1. Background-The earth is divided up into 360 units called degrees. A measurement east or west is called longitude; a measurement north or south is called latitude (think "lateral"). Longitude is measured 180 degrees, both east and west, starting at the Greenwich meridian in England. Latitude is measured 90 degrees; both north and south, form the equator.
2. Scale-The scale of a map is the relationship between measurements on the map and measurements in the real world. Scale is often represented as a ratio.
3. Quadrangles-The area coved by each individual USGS map is called quadrangle (or "quads" for short). Each quad is given its name by a prominent topographic or human feature in its area. The name of the quad is found in the lower right hand corner of the map.
4. Declination-A compass needle is attracted to magnetic north. Most maps, on the other hand, are aligned with the geographic north pole ("true north"). The difference between the direction of true north and the direction of magnetic north, measured in degrees, is referred to as declination. The importance of declination with regards to map and compass orientation, navigation. There is a diagram of the area's declination can be found in the lower left hand corner of the map.

5. Contour lines-The real challenge of map reading is translating a two dimensional map into the three dimensional reality of peaks, ridges, valleys and water which make up the natural world At the heart of this translation is learning how to interpret a map's contour lines. Contour lines represent imaginary lines of constant elevation running along the earth's surface. The elevation difference (contour interval) between adjacent contour lines always remains constant. Contour intervals are marked below the mileage diagram at the bottom of the map. Every fifth contour line is a deeper shade of brown. These are called index lines. Their elevation is marked somewhere along their extent and can help speed up the tabulation of elevation gain or loss along a route.
6. Legend- a legend is a chart or key, which explains the significance of different symbols used on the map. Most USGS maps lack a formal legend.
7. Pacing- knowing the pace at which a group travels can go a long ways towards helping locate their position on a map. With experience, it becomes easier to estimate pace.

THE COMPASS- a compass, at its most basic is a device which, anywhere and anytime, can reveal direction of travel. This direction of travel is described (in degrees) by its relationship to the earth's magnetic pole. The location of this pole is indicated by a magnetized needle, which aligns itself with the earth's magnetic field (one end of this needle, painted red, points north, while the other end, painted white, points south)

• **Declination-** it's important in terms of using a map and compass together because, then traveling between the two, it is necessary to correct for declination.