



ELP and ESP Station Handout
THE WAGON
THEY CAME BY WAGON TO SUTTER'S FORT

INTRODUCTION

This handout will teach you how to run the Wagon station on an ELP or ESP day. You will also learn the history of wagons, the overland trail, the journey, and why pioneers were traveling Sutter's Fort in the 1840s. Through the Wagon station, your students will also learn about the history of the overland trail and have the opportunity for a hands-on activity. The students will learn some of the math, science, mechanics, and language required of the pioneers to traverse the California trail.

Through the Wagon station:

1. Students will see the type of wagon in which the pioneers actually traveled.
2. Students will learn what tools and provisions pioneers had to bring, and how those were packed into the wagon.
3. Students will learn what the country they traveled through was like.
4. Students will learn about the animals that helped them successfully travel across the continent.

THE PEOPLE:

Before the Gold Rush, most of the pioneers traveling to California and Oregon had already traveled to the western edge of the United States – into the Great Plains just west of the Mississippi River. They were generally farming families, though some were mechanics (craftsmen such as blacksmiths and carpenters) and businessmen.

THE PLACE:

Any place between the Mississippi River and the Pacific Ocean; through prairies and deserts, over rivers and mountains. For the station at the Fort, the wagon is usually set up east of the Central Building, under the tree on hot days, or underneath the covered area on rainy days.

THE TRIP:

If you come to California today, you would travel by car, plane, bus or train. Even if you live on the East Coast, you can make the trip in a few hours or a few days. Wouldn't the pioneers be surprised to learn about highways, airports and railroad tracks?

There was barely a trail to California in the 1840s, and the only way to travel was by foot, horseback, or wagon. In the mid-1840s, the overland trip took 5 – 6 months. The first wagons to come into California arrived at Sutter's Fort in 1844 with the Murphy-Stephens-Townsend Party. After abandoning several wagons in the Sierra, the Murphy-





Stephens-Townsend Party crossed the mountains and traveled to the Fort with only five or six wagons. This was the first wagon party to successfully complete their trip to California. This was just the beginning.

By 1845, about 50 more emigrant wagons came into California, and the next year 500 wagons crossed the Sierras. The number of pioneers making the overland trip grew each year; by the end of the Gold Rush, thousands of people traveled west in covered wagons.

What did the wagons look like?

Just like buying a car today, a pioneer family had lots of decisions to make when choosing a wagon. There were many kinds and sizes. Some were strong, new wagons. Others were small farm wagons built by the men and boys in a family. Some people even rode to California in buggies!

Most families came to Sutter's Fort in simple farm wagons that were light in weight and easy to take apart for river crossings. They were mostly made of wood so pioneers could replace broken parts from trees found along the way.

The wagon was designed to carry everything the family would need for six months on the trail. There were only a few forts along the way where they could trade or buy supplies. So a family's first decision was the size of its wagon. How much room would be needed to carry food, clothing, tools, weapons, equipment and household goods? The wagon you will see at Sutter's Fort is about the size of the average farm wagon. The wagon box measures 4 feet wide by 10 feet long. It was not designed for people to ride in, unless someone was too ill or too young to walk. In fact, the wagon box was so crowded with barrels and supplies that there was no room inside for people. Even at night, the pioneers slept outside the wagon.

The wagon was covered with a white top made of a heavy cloth, called canvas. Wooden hoops (called bows) were bent from one side of the wagon to the other to hold the cover in place. This made a rounded roof over the wagon box. Once the wagon was packed, there was probably no room to stand up!

The cover kept out the rain and dust. Before leaving for California, the family had to be sure it was waterproof. Children often helped their fathers rub oil over the canvas so that rain would not ruin everything inside. If the weather was bad, the pioneers could also close up the front and back ends of the canvas. They pulled on ropes, called **pucker strings** to close up the cover.

Inside the wagon, pioneers invented many ways to save space. Some sewed pockets onto the cover. Other placed hooks on the wooden hoops for guns, clothing, and other supplies. A tailgate could be lowered on the back of the wagon.

Outside the wagon, every inch of space was important. Wooden boxes and barrels were nailed to the sides to add storage. Ropes, lanterns, farm tools, and even furniture might be





tied to the outside of the wagon box. A bucket was often seen swinging from the front of the wagon where cream was churned into butter from the bouncy ride.

Most important was the grease or tar bucket, usually made from a hollowed out log and fitted with a cover and a dipping stick. It hung from the rear axle or the side of the wagon. No one would travel without it. Just like a modern truck, a wagon needed grease to keep its wheels and other moving parts rolling smoothly. Wagon grease was a mixture of lard and pine tar. If they ran short of grease, the pioneers used cooking grease, or fat from buffalo or other game.

The wheels looked a lot different from an ordinary wagon because the front wheels were smaller than those in the back. This made it easier for the wagon to make sharp turns. In fact the back wheels were probably taller than most children. This allowed the axle to clear over rocks and tree stumps. The axle is a bar of wood under the wagon box that is attached to each set of wheels. It turns as the wheels revolve. If the axle is damaged, the wagon cannot roll.

The wheels were made of wooden pieces that were bolted together. A strip of iron, called a tire, slipped over the wheel to protect the wood. The wheels had to be removed and the hubs greased regularly to make them roll smoothly.

No wagon was complete without a tongue, which was a long wooden timber that was attached to the yokes of the oxen. Now that the family has a wagon, what do you think they will pack inside?

Leaving Home – Food and Supplies

Imagine the arguments that were heard over what to take, and what to leave behind. Men insisted on good equipment, weapons and tools, while women needed supplies to keep families well and halfway comfortable on the trail. Everyone wanted to bring family treasures that would remind them of home in faraway California.

In figuring out what to bring, most pioneers wanted to keep their wagon as light as possible. If wagons were too heavy, the oxen could become exhausted and unable to continue pulling the wagon. A complete outfit for a family of four could cost from \$800 to \$1,000 and weigh nearly 2,000 pounds.

Food on the Trail

Among other things, the Pioneer Provision list recommends the following foods based on one adult. It tells you to multiply this number by the number of persons in the party. Remember children would have eaten less than adults.

- Flour - 200 pounds
- Bacon (dried) - 75 pounds
- Pilot Bread (hardtack or dried cracker-like bread) - 30 pounds
- Rice - 10 pounds





- Coffee - 5 pounds
- Salt - 10 pounds
- Dried Beans – ½ a bushel (big basket)
- Dried Fruit - 1 bushel
- Baking soda - 2 pounds
- Vinegar - small keg
- Sugar - 25 pounds

Pioneers also took yeast for baking, eggs (that were packed in cornmeal so they wouldn't break), lard, dried meat, and even chocolate for a treat. They took cattle and other livestock so they could get milk and some meat. They depended on hunters to provide game, and children gathered roots and berries along the way.

Horses, Mules, or Oxen - Which Will You Select to Pull Your Wagon?

Horses were very expensive so most pioneers used oxen or mules to pull their wagons. Both were strong, steady and able to cross rough terrain.

Most families coming to Sutter's Fort chose oxen because they were cheaper than horses or mules, and they could be eaten if food ran out! They were able to stand both heat and cold weather, could eat very poor grass and stay healthy, and were less likely to get diseases, probably because they have four stomachs to help digest grasses.

What is an ox, anyway? A male calf can grow up to be a bull. Or it can be neutered to become a steer. When a steer is over 4 years old, it can become an ox if trained to work. A steer under 4 that has been trained to work is called a working steer. A steer of any breed may become an ox. (Oxen is the plural of ox.)

Oxen learn to work in a yoke. This is a piece of wood with bows at both ends which fit over the necks of two oxen. Oxen always work side by side in this yoke. A **yoke of oxen** means two oxen. The yoke was easy to make, so it was another reason that oxen were popular on the trail.

Oxen did not have reins like horses. In fact, they were led by a teamster or drover, who walked beside the oxen. He used a light stick to prod them along. Commands of **Gee** meant turn right, and **Haw** meant go left. It was important not to pull too far to the left or the right or the wagon tongue might break. Remember how difficult it would have been to replace or repair the tongue on the prairie!

When crossing rivers or streams, lead oxen were tied to a rope and the teamster led the oxen across the river. If the river was big and strong, wagons were taken apart and floated across the river. After the wagons went across, the oxen swam across in a herd, following the leader.

Like horses and mules, oxen have shoes that are made by blacksmiths. But oxen are hard animals to shoe since an ox cannot stand on three legs. When an ox had to be shod, the





pioneers would dig a trench, lay the ox on its back and with its legs pointed up, the blacksmith could shoe the ox. Because an ox has a cloven foot (two separate pieces), it required two curved pieces of iron for its shoe, rather than the U-shaped horseshoe!

After months of travel, the oxen deserved much credit for getting the pioneers to California. The term, strong as an ox, seems very true! One pioneer, named Joel Palmer wrote about oxen in his diary of 1847, Journal of Travels over the Rocky Mountain to the Mouth of the Columbia River: He wrote:

Oxen stand the trip much better, and are not so liable to be stolen by the Indians. Cattle [meaning oxen] are generally allowed to go at large [roam freely] when not hitched to the wagons; whilst horses and mules must always be staked up at night.

Oxen can procure food in many places where horses cannot, and in much less time. Cattle [oxen] that have been raised in Illinois or Missouri better stand the trip. They are accustomed to eating the prairie grass which they must rely on while on the road. Great care should be taken in selecting cattle [oxen]. They should be from four to six years old and heavy made [large and powerful]. For those who fit out but one wagon, it is not safe with less than four yoke of oxen, as they are liable to get lame, have sore necks or to stray away.

MORE ABOUT OXEN (AND BUEYS, TOO)

(By John Grafton)

We know that oxen were the most popular power source for getting the immigrants in their covered wagons to California and Oregon. We also know that the Mexicans, who were already here in California, used oxen (bueys in Spanish) to pull their two wheeled carts and wooden ploughs.

However, the ox seems to have mostly disappeared from the American West shortly after the westward migration, and was replaced by horses and mules. Consequently, it seems like the average westerner of today knows mostly nothing about these noble animals which played such a large part in early settlement of the West.

I have attempted to recapture some of this knowledge about oxen by contacting some very gracious and helpful people in the New England area of the United States, and in the state of Jalisco Mexico, where the ox still lives.

WHAT AN OX IS

Contrary to popular belief, oxen are not a particular breed of cattle. Any breed can be, and probably has been, used as oxen. The Durham, or what we would call the Shorthorn breed of cattle today, was apparently the most common type of animal pulling the wagon trains west. Some Herefords, or whitefaces, may have been used as well.





Just about any kind of cow, including the family milk cow, was at times pressed into service to pull. To earn the title of ox or buey however, an animal needed to be a castrated male, fully grown and trained, usually by about four years of age. Before attaining oxhood an animal was known just as a steer to the Americans and as a novillo to the Mexicans.

The preferred age for castrating was about a year. This age was late enough to allow good muscle development in the neck and shoulders, but early enough to allow the legs to grow longer than those of a bull.

HOW OXEN WERE HANDLED

The American way of handling oxen, and the Mexican way, was two distinct styles of working. The Americans used ox yokes with wooden bows that fit around the animal's necks. An iron ring was attached to the yoke, and the wagon tongue, or a chain, was hooked onto this ring. The person driving the oxen would walk along beside, or slightly in front of the team. He would be carrying a whip, but would be guiding the team mostly by voice commands: **gee** to turn to the right, **haw** to turn to the left, and **whoa** to stop.

The Mexicans used yokes (yugos in Spanish) which were tied to the animal's horns with a soft leather strap (coyunda). The yoke was then attached to the cart or plow with a rope or rawhide loop (barzon). The team (yunta) was guided by being prodded with an iron-tipped pole (otate), and usually the only voice command was an **ooah** to stop. The Mexican buey along with the Mexican two-wheeled cart and wooden Mexican plow were probably much used at Sutter's Fort.

WHY OXEN?

Contrary to popular belief, oxen are not stronger than horses, and they do not last longer. They are much slower, are more difficult to shoe, and they cannot stand as much heat as a horse. And, their lifespan is about ten years less than that of a horse.

They do seem to have their advantages though. They can work on much less feed than a horse, are easier to handle (especially for an inexperienced person), and the ox yoke is a much simpler piece of equipment than the horse harness. The ox is also much less prone to injury due to its thicker skin and more placid nature.

People who have worked oxen seem to have a special affection for them, frequently describing them as noble and gentle beasts. And, they have not only enjoyed working them, but have enjoyed eating them as well. And that is probably the final advantage of oxen over horses since horses have never been very popular in American or Mexican cuisine.



RUNNING THE WAGON STATION

The wagon is usually set up east of the Central Building or underneath the tree. If it is raining, the wagon will be underneath the covered area next to the woodpile. Unlike many of the other stations, the wagon station is predominantly a presentation where the students should learn about the journey west, what they would carry in their wagon, and the different wagon parties that came to Sutter's Fort. Your presentation may vary depending on how much background information the students have already received in the classroom. Further reading material on western migration and wagon parties are in supplemental documents provided by the ELP Coordinator to your teacher.

Possible activities:

- History lesson of the wagon parties and the California trail. The major wagon parties include the Bidwell-Bartleson Party, Murphy-Stephens-Townsend Party, Grigsby-Ide Party, and the Donner Party. This is a time to ask the pioneers, the students with the school group, about their character. Many of them are portraying individuals that came west by wagon. Included in the wagon is a map of the different overland trails. Discuss with the students what activities the pioneers would be doing each day along the trail.
- Loading and unloading the wagon (make sure the students do not lift anything heavy!). This gives the students the opportunity to feel the items at the station.
- Pioneer games such as graces and bean bag toss

GAME OF GRACES



Originated in France in the early 1800s the game of Graces became a very popular game in the West. Pioneer children played the game as it was simple to construct and easy to master. Graces is played with two people. Each person gets two rods, four in total. Then, one of the players takes a wooden hoop and, pushing apart the two rods, makes the hoop fly in the air for the other player to try and catch it. The winner is the player who catches the hoop ten times first.

Mastering aiming and catching can be very time-consuming. To throw the hoop, one takes the hoop and, with one rod in each hand, places the hoop over both of the rods so as they are inside of the hoop. The player would then let the hoop slide slightly down the rod and cross the rods in an X shape. Ideally, the hoop should be on the lower triangle of the X shape. Then, pulling the rods apart, the hoop will quickly slide up and shoot away from the player, towards the direction aimed for.

BEAN BAG TOSS



The journey west to California in the 1840s and 1850s was harsh and took a great deal of sacrifice for all members of the family. Wagons were loaded with only necessary items for survival. This meant that there were obviously no toys for children. It is often noted the only toy a pioneer child could carry is if it was small enough to fit in their pocket. Bean bags, however, could be easily made on their journey. Every wagon had dried foods like beans. Also, many had old fabrics that could be parted with. Mothers could easily sew bean bags for their children. All family members though enjoyed bean bags. They can be used for juggling or a simple game of bean bag toss. Position the wooden bucket 5 to 10 feet from the children and they can aim for the bucket. Whoever scores the most points wins.

Safety and Precautions

Today, it is hard to imagine the dangers on the overland trail. Pioneers faced many hardships at different points. You and your students, hopefully, won't be dealing with these. There are, however, a few points to consider.

1. It is important to check the inventory of the wagon the first thing in the morning on your ELP/ESP day. Do not pack up the wagon at the end of the day until ELP/ESP staff has checked the inventory.
2. Make sure to handle all supplies with care. If you break or misplace items, you will have to replace them. Always be aware of your surroundings. The Fort can be very busy with visiting school groups. If the wagon is out in the courtyard, small items can “walk away” if left unattended.
3. Make sure the students and public are respectful of the items. For example, the sticks for graces are not to be used like drum sticks.
4. The musket should be treated like a loaded firearm. Do not let the students point it at anybody.
5. The wagon should remain stationary throughout the day.
6. If the pioneers are climbing in the wagon, please stand at the back to assist them getting in and out. Nobody wants to fall off the wagon.
7. If you have any injuries occur, report them to Fort staff.

Bibliography and Further Reading

What I Saw in California by Edwin Bryant

Across the Plains by Prairie Schooner by Benjamin F. Bonney

Patty Reed's Doll: The Story of the Donner Party by Rachel K. Laurgaard

The Emigrant's Guide to Oregon and California by Lansford Hastings



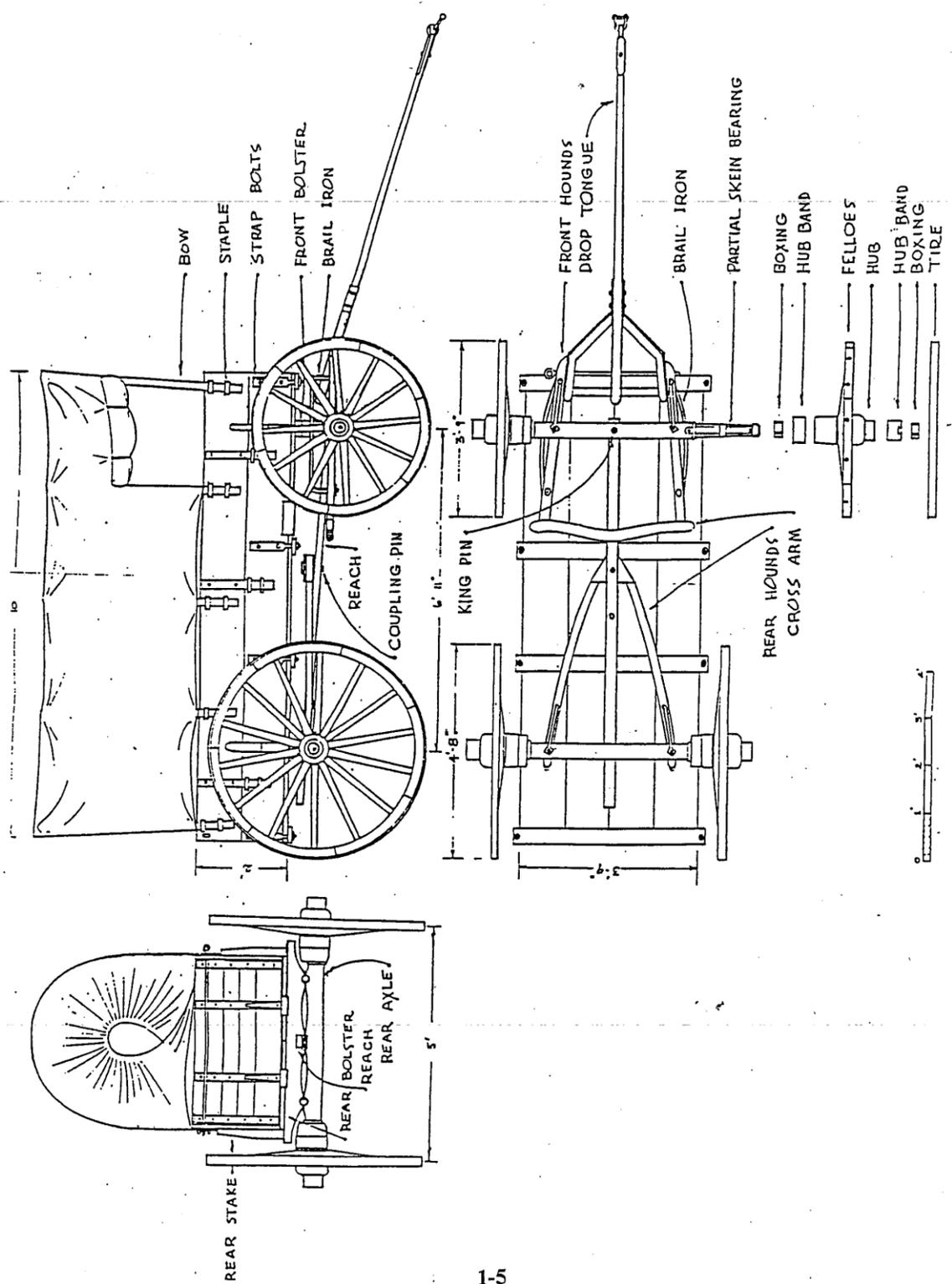
PIONEER PROVISIONS

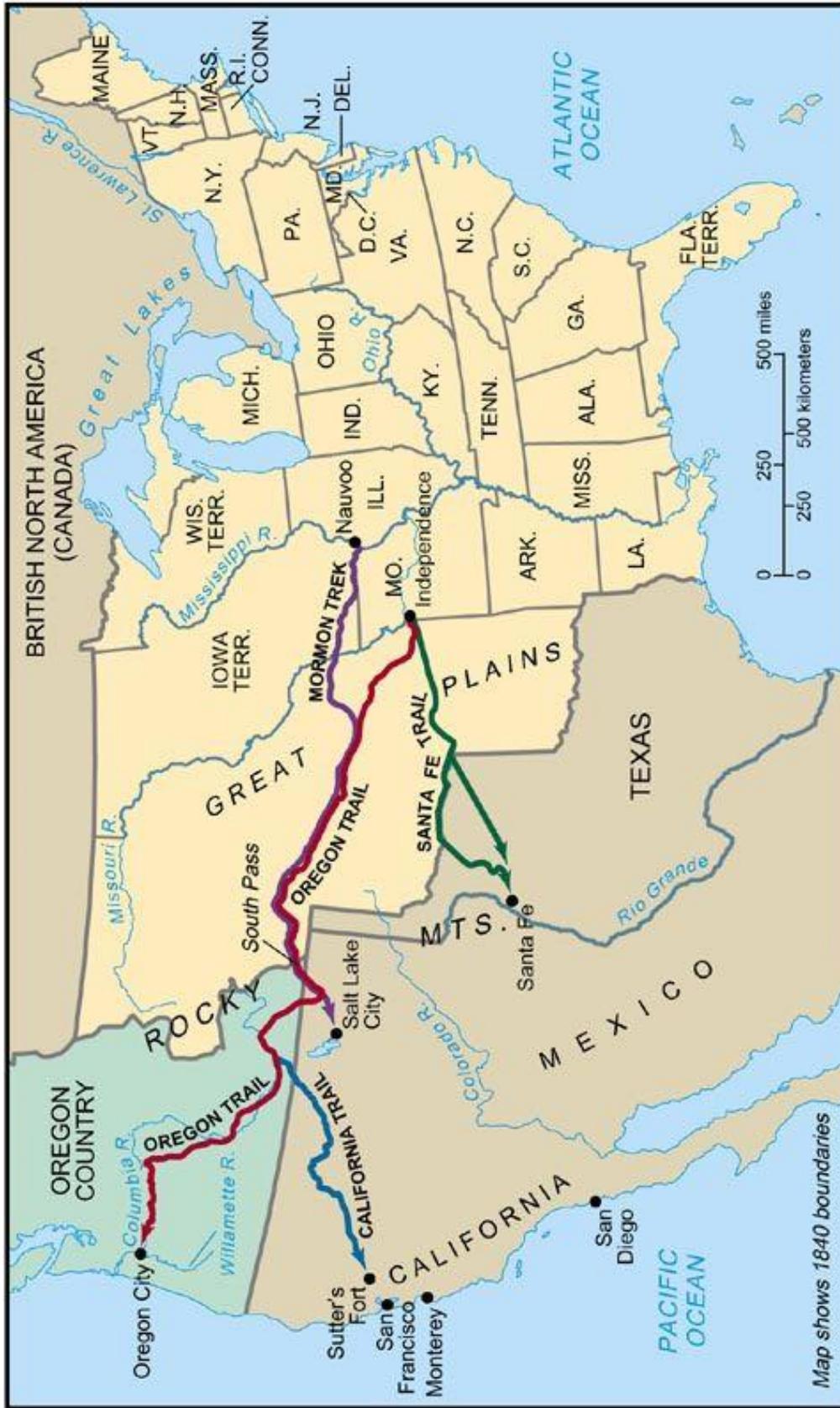
Based on a document provided by the Pacific Northwest Region, Forest Service, United States Department of Agriculture. Not everyone took all these items. Prices were of the 1840's and varied from year to year and town to outpost, much like today.

FOOD for One Adult		TOOLS & EQUIPMENT	COOKING EQUIPMENT
(Multiply by # in Party)			
Flour - 200 lbs per adult	.02lbs	Oxbows - 3 or 4	Cooking Utensils 20.00
Bacon - 75 lbs	.04/lb	Screws - 3 dozen	Dutch Oven 1.25
Pilot Bread - 30 lbs	.03/lb	Tacks - 8 to 10 oz	Tin Plates & Cups .03/ea
Rice - 10 lbs	.07/lb	Shingle Nails - 2 lbs	Water Keg FH
Coffee - 5 lbs	.07/lb	Saw	Sheet Iron Stove FH
Tea- 2lbs	.05/lb	Hammer	Coffee Pot FH
Sugar - 25 lbs	.10/lb	Axe	Wooden Bowls & Spoons FH
Dried Beans - Y2 bushel	.08/lb	Spade	Water & Milk Buckets FH
Dried Fruit - 1 bushel	.24/lb	Augers	Bailer FH
Salt- 10 lbs	.04/lb	Wrench	Churn FH
Corn Meal- 10 lbs		Screwdriver (tum screw)	Wrought Iron Baking Pan FH
Ground Corn - 12 lbs		Pocket Knives - 2	Tin Cans FH
Vinegar - small keg		Blacksmith Tools	Coffee Grinder FH
Whiskey - 4 gal keg	5.00	Mining Tools	
Bran		Mallet	HOUSEHOLD GOODS
Dried Vegetables		Matches (in corked bottles)	Bible FH
Citrus Acid		Wide Belts (Bullet Pouches)	Clothing FH
Saleratus (baking soda) - 8 lbs	.04/lb	Bull Whip (Goad)	School Books FH
		Horse Gear	Bags FH
		Ox & Horse Shoes	Medicine & Medicine FH
CLOTHING		Tar Bucket	Cabinet
		Wagon Tongues	Paper / Journals FH
2 Changes		Spokes	Feather Mattress FH
Flannel Underclothing		Axles	Candles FH
Shoes		Wheels	Furniture FH
Sunbonnets		Anvil	Linen & Muslin FH
Cowhide Boots		Grinding Stone	Money - 200.00 FH
Hats		Plow Molds	Blankets - 2/ person 10.00
Heavy Wraps for Mountains		Rope	Quilt - 1/ person FH
Extra Walking Shoes		Seed Looms	Pillow - 1/ person FH
Cotton & Wool Socks		Metal	Ground Cloths - 1/ person FH
Cotton & Wool Underwear		Watch	Soap FH
		Wagon	Sewing Supplies FH
			Beeswax FH
ANIMALS		WEAPONS	
Mares- 3		Rifle	
Milk Cows-3		30.00	
Oxen-4 to 6	each	Pistol- 1 or more	
25.00		15.00	
Sheep			
Goats		Powder - 3 lbs	
		.25/lb	
Chickens		Lead - 12lbs	
		.04/lb	
Horses 150.00 –	each	Caps (flints) - 1,000	
200.00		5.00/1000	

Note: FH means from home







WESTERN TRAILS