# 3.3 Mapping

*"Whether you turn to the right or to the left, your ears will hear a voice behind you, saying, 'This is the way; walk in it.'"*

*Isaiah 30:21*

## Objectives:

**Recruit**

1. Define the following terms:
   a. Map
   b. Symbol

2. Draw the map symbols for each of the following:
   a. Marsh
   b. Road
   c. Railroad
   d. Stream
   e. Lake
   f. Buildings
   g. Woods
   h. Spring
   i. Telephone Line
   j. Trail

3. Align a map to North.

**Camper**

1. Define the following terms:
   a. Latitude
   b. Longitude

2. Draw a map of your neighborhood.

3. Locate given places using the grid lines on a map.

4. Follow a route on a map drawn by another Lutheran Pioneer.

# UNIT 3
# CAMPING

## *CHAPTER 3*
## *Mapping*



*Lutheran Pioneers, Inc.*
*115 S. Teut Road*
*Burlington, WI*

**Frontiersman**

1. Define the following term:
   a. Contour lines.

2. Explain what a topographic map is and demonstrate its use.

3. Explain what a map scale is and demonstrate its use.

4. Use triangulation on a map to identify a location.

5. Draw a map of a hiking path of at least three miles and have another Lutheran Pioneer follow it.

# Applying God's Word to the Lesson

DEVOTION #1

Psalm 25:4 ***Show me your ways, O LORD, teach me your paths.***

Theme: A Christian's Compass and Map

On a backpacking hike on the Appalachian Trail in Northern Georgia the importance of knowing your directions and using a map becomes evident. Four hikers left camp to find water. One of the group was very knowledgeable in finding his way around the woods. Since they were going only a short distance from camp, they did not take a compass with them. On that overcast day they soon became confused in the thick woods and unsure of the way. Only by shouting out were they able to be found and directed back to their camp. Their maps indicated water was located a certain number of yards from the trail. A compass, to determine the azimuth, would have enabled them to avoid those anxious lost moments. If water was not found in the direction indicated, they could have easily back tracked their steps to their original location.

As sinners living in a sinful environment we can become confused and lost in the woods of the world. We think we know where we are going, but we overestimate our abilities. Psalm 25:4 says, "Show me your ways; O Lord, teach me your paths." The Lord's way, as correctly drawn out in his Word, will never leave us lost or confused. It does not need to be adjusted for the difference between magnetic north and true north. It always points us in the way we should go. The Bible is like a map showing the contours of evil and sin. It is amazing how precise and up to date the Bible is in knowing us and directing us and leading us.

No good backpacker would leave home without studying very carefully the uncertain path his trail will take him. The map must go along for quick reference when an uncertain point or strange topography appear. Let God and his Word be your constant guide in life, so that the way is always certain and according to his map. Don't leave home without him.

QUESTIONS:

1. Describe a time in your life or someone else's life when you or they were lost and confused.
2. Offer suggestions of help from God's Word that show God's way.

PRAYER: Dear Lord and Savior, as we learn more things to help us enjoy your wonderful world, do not let us become so confident of our abilities that we think we do not need you or your Word. As a compass and maps help us find our way through unknown places, we also need your direction in life to avoid being lost for eternity. You suffered and died for our sins to make us your dear children by faith. May your Word be the compass and map of our lives. Amen.

HYMN: 283 (TLH) 293 (CW)

# Applying God's Word to the Lesson

DEVOTION #2
TEXT: Isaiah 55:8
THEME: My Way Versus God's Way

Frank Sinatra popularized a song called "My Way." In it he boldly makes no apologies for mistakes nor does he wish to have done things differently in life, but he simply says, "I did it my way!"

In hiking I have thought I should be at my destination only to find out my feet were not walking as fast as I thought they were. That familiar landmark turned up in a different place on the trail from what I remembered. Without the sun everything looked different. Hiking a trail my way would have gotten me lost. My sense of direction and remembering of details is unreliable in the woods.

Isaiah 55:8 says that a Christian can expect God's ways to be different from the ways of the world. The world is sinful and evil, and the ways of the world reflect those values.

Frank Sinatra is wrong. "My way" is wrong. God's way is right.

PRAYER: Defeat my sinful will when I think I know better than God. Help me to accept his way no matter what. Amen.

HYMN: 383 v. 1,4,5 (TLH) 367 (CW)

DEVOTION #3
TEXT: John 14:6
THEME: Jesus is the Way

OUTLINE

1. When Jesus is the way, everything in our life must bend and conform to Jesus' way. (Maps and compasses lead correctly no matter what we may think).
2. Explore areas where this is a problem and work together at Christ-like solutions or conformity to Jesus' way. (Discard directions - become lost; discard God's directions - become lost forever).
3. Hold up positive life experiences that are fun and enjoyable and also God pleasing and according to Jesus' way.

Additional References:

- Deut. 1:33
- Joshua 18:8
- Job 23:10
- Psalm 25:4
- Psalm 37:5
- Psalm 86:11
- Psalm 103:12
- Psalm 119:35
- Psalm 105
- Psalm 133
- Proverbs 3:6
- Proverbs 4:26
- Proverbs 19:2
- Proverbs 20:24
- Proverbs 22:6
- Isaiah 48:17
- Isaiah 53:6
- Isaiah 55:8
- Jeremiah 10:23
- Hosea 4:9
- Matthew 2:1,2
- Matthew 28:18,19
- John 3:16
- John 14:6
- Acts 9:2
- Acts 27:7
- Romans 15:24
- 1 Cor. 10:13
- 1 Cor. 12:31
- 1 Cor. 14:1, 2
- Thess. 3:5
- Heb. 10:20-22

## 1 Introducing the Lesson

Very often, boys will at least have a familiarity with maps from school and/or family travel. This will often give them at least a curiosity about maps that you will be able to build on as you present the lesson.

To begin the lesson, you may want to show the boys a number of different kinds of maps. The chapter in *A Boy's Handbook* focuses on the topographical map. However, other map skills are also useful for boys to learn and use. You might show them a topo map, a road map, a lake map, and a gazetteer. Other possibilities are demographic, climatologic, meteorological, trail, and tourism maps.

You may also discuss the different scenarios in which someone might use a map (general traveling, hiking, fishing, deer hunting, etc.) and the importance of having a good map and knowing how to read it.

The most important thing to focus on in teaching the lesson is the ability to read the symbols and information on a map, including its orientation and scale.

1

# MAPPING

*Your word is a lamp unto my feet and a light for my path. I have taken an oath and confirmed it that I will follow your righteous laws.* Psalm 119:105,106



Paul traveled to cities on two continents. God always drew the map. God mapped out Paul's journeys and Paul followed it even when he did not know where it would take him. God has a map for our life on which he has marked our starting point and the finish line. The map begins with our birth and ends in heaven. In His Word, He lists the standard map symbols for us to follow. Use them often.

Whether you are walking across town to meet with your best friend or traveling with your dad on a super highway to go fishing at a new lake, some kind of map is needed. If you have been to your friend's house often enough, the "map" will be in your head. You know that Jimmy lives at 5th and Elm and you know how to get there. But when looking for a new lake, all you know is that the lake is outside of Midville on Highway C. Unless you have been there before, you will have to rely upon a map to show you the way.

**DEFINITION**

A map is a two dimensional representation of the world we live in. Maps can show towns, highways, boundaries and many other details. One of the most useful maps for the outdoorsman is a topographic or topo map.

**MAP SCALES**

The world, like a compass, is divided into 360 degree of longitude (imaginary meridian lines from the South to

## Possible Materials for Teaching and Demonstrating this Lesson

- Variety of Maps (including different types and areas)
- Compass
- Videos from the Lutheran Pioneer National Office
- Computer and/or Internet Mapping Programs
- Aerial Photograph(s) of a given area

2

North pole) and 180 degrees of latitude (imaginary lines around the earth, with 0 degree at the equator and 90 degrees at each pole.) Each degree is divided into 60 minutes and each minute is divided into 60 seconds. A 7-1/2 minute topo map is 1:24,000. This means that 1" on the map is equal to 24,000 inches or 2,000 feet. Some other popular scales are:

Figure 1



15 minute topo is 1:62,000.
This is approximately. 1 mile per inch.

2 degrees topo is 1:250,000.
This is 4 miles per inch.

The topo map used most often by backpackers, hunters, and canoeists is the 1:24,000 scale map (see figure 1).

**MAP COLORS**

There is much information that can be obtained from a topo map. Starting at the bottom is the scale, the survey date, the magnetic declination (see Chapter 10) and the map's location with respect to the entire state. The map itself is drawn in five colors:

| | |
|---|---|
| BLACK | Man made objects (highways, buildings, railroads, power lines, etc.) |
| BLUE | Streams, rivers, lakes, etc. |
| BROWN | Contour lines showing elevation |
| RED | Some major highways and boundary lines |
| GREEN | Woods and forests |

## 2 Teaching the Lesson

There are several different exercises that can teach the Pioneers the importance and usefulness of maps in various situations. You can let the boys see and explore maps on a regular basis when you plan different trips, camps and hikes. Before long, it will become second nature to many of them. They will be delighted the first time they see a topographic feature and can say, "I knew that would be there!" However don't assume that this skill comes easily for young boys. To understand it completely requires taking an imaginary "bird's eye" view of the land and comparing that to the symbols and markings on the map. This is not an easy skill for all of the younger Pioneers to master.

**"Expert" Presenters**

There are not many experts with regard to mapping that could add very much valuable information to the lesson. However, if you would like to get a different face in front of the Pioneers, you might consider another leader or an "Old Decrepit Pioneer" (ODP). If you still seek an expert for providing applications to your older boys, most of the suggestions from Chapter 3.2 (Compass) apply also to map-work. See page 3.2.6.

One other expert you might consider, although they rather rare today, is a cartographer (map-maker), who can explain how maps are drawn and used.

**Field Trips**

Your most useful map teaching may take place on site, where the boys can see actual features and their representations on a map. You might consider a visit to a map store to show the boys the variety of maps that are available for use. Beyond this, there are very few places to visit to learn about mapping, unless you decide to visit the office of an "expert." Other trips might be tied in with activities or testing of this lesson.

**Other Resources**

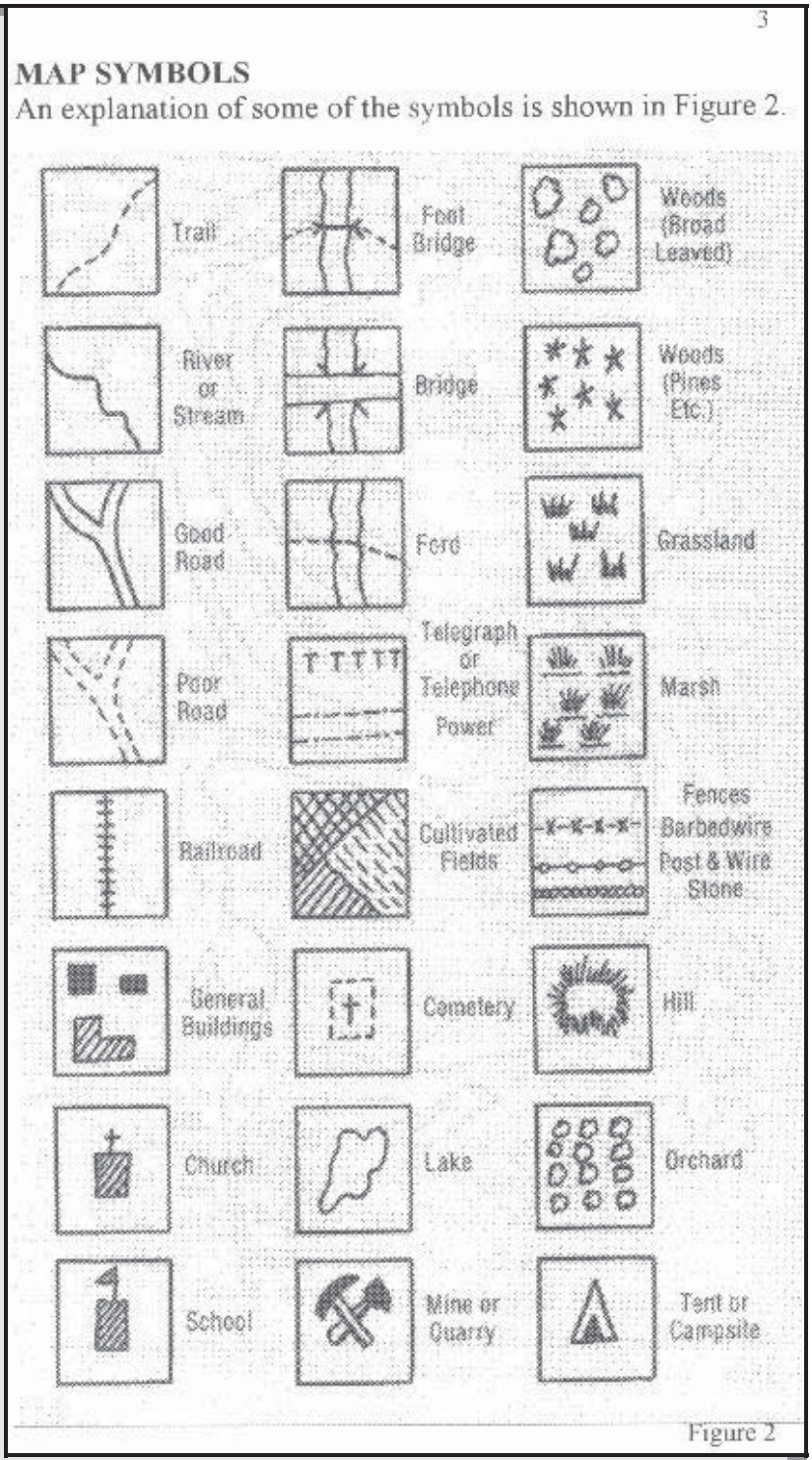
There are other resources available to help you learn about mapping before you present the lesson. These might give you new ideas or tools to use for your presentation.

- *The Boy Scout Handbook* and *Fieldbook* both provide additional illustrations and information.
- The Lutheran Pioneer Library has videos about map, compass, and orienteering.
- Map stores (such as Milwaukee Map) have a wide variety of maps of all types and other map information.
- Many department stores also have gazetteers and other maps available, especially for nearby lakes and regions.
- The internet is an excellent source for maps. Topographical maps can be downloaded and printed for free. There are also topo programs available that kids can go through.

**Projects & Activities**

Getting the boys involved in projects and activities often will keep them interested in the subject matter and make it more memorable. Here are a few ideas for activities for teaching *Mapping*.

- Have the boys draw maps of different areas. For the younger boys, this could be as simple as the schoolyard or a classroom. For the older boys, it should be something like a camp area or a few city blocks. If it is a familiar area, they might even do it from memory.
- Compare an aerial photograph to a topographical map, or make a topographical map from an aerial photograph.



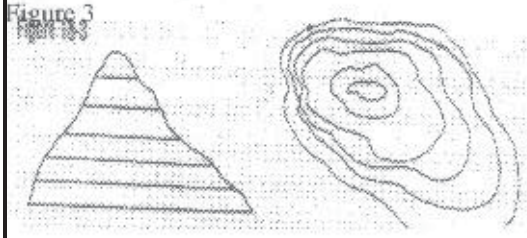

- Once they know the basics, it is a good idea to distribute maps, especially to the younger Pioneers, on the way to a Pioneer camp or outing. It should be a detailed map (possibly from a gazetteer or printed from a computer program), so that the boys can pinpoint exactly where they are as you pass a given street, hill, or landmark. This is an easy way to reinforce map skills with very little effort for you.
- Give a group of boys a gazetteer, and let them see all of the features it offers. This often fascinates young travelers. You can let them select a site (e.g., lake, park, historic site) that they would like to visit from the information in the gazetteer. Then have them find it in on the correct page and map a route to it.

4

## USING A TOPO MAP

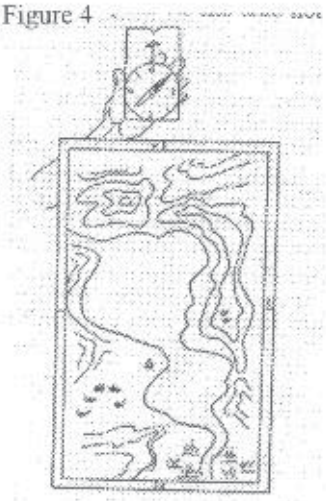
Laying a topo map out on a table, you can use a ruler to find the distance between any two points. Studying the contour lines, you can find steep cliffs, valleys and gently sloping hills (see Figure 3.) If you have a topo map of your area, take it outside and line it up with your surroundings. Looking around you, find a highway or a railroad or a tall hill and then locate it on the map. Do this several times to familiarize yourself with how the map represents your area. Looking only at the map, can you "see" your surroundings?

Figure 3



To be able to use a map effectively, you will need a compass. To orient your map to true north, study Figure 4. Place your compass on the true North, indicating arrow at the bottom of the map. Turn the compass and map together until the compass needle aligns with the map's magnetic north line. (This works if the map is of your present location. If the map is of an area that has a different magnetic declination than your own, it is aligned to true north using your local declination, not of the map.) The map is now orientated to true North and the map details will coincide with the ground details. Now, if you know where you are on the map, you can find the direction to any other point and how far away it is by using your compass and the built-in scale.

Figure 4



- Let the boys prepare driving directions to the location of a Pioneer camp or outing.
- Let the boys select a good campsite or sites based only on a topographical map, and then check out the site(s).
- Let the boys plan a hike across an area, based on a topo map. They should include in their plan the estimated distance and time required for the hike.
- Let the boys select a city at least 50 miles from your church. They should give detailed directions to the location, including estimated distances.
- Let kids use maps to plan a three or four day family vacation, including places to stay, sights to see, and routes to take. Challenge them to convince their parents to use the plan.

**AV Materials for This Chapter**
***Available from Lutheran Pioneers***

AV 113 *BY MAP AND COMPASS* - 27 Minutes - Ages 9-Adult

AV 121 *FINDING YOUR WAY IN THE WILD* - 35 Minutes - Ages 10-Adult

## 3 Practicing and Testing the Material

The best way to practice and test this information is by using the activities and projects in the lesson.

To reinforce the value of the material and to reward the boys for learning, try to make use of the routes and plans that they make in the activities. Otherwise, it just becomes another exercise without much of an end result.

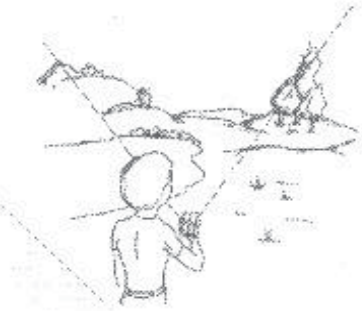
For the testing of the various map symbols, the younger boys might enjoy a drawing game like Pictionary®, in which teams get points for being able to determine the assigned symbol that their player is drawing before the other team does.

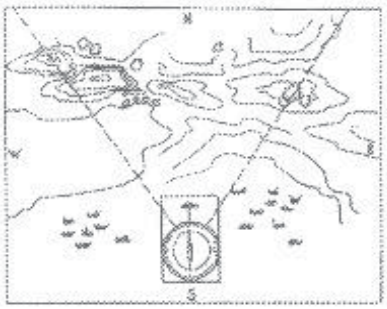
To test triangulation with the older boys, you might put three or four different colored handkerchiefs or pieces of cloth in a field in different locations. Then give them a topo map of the region with the compass readings defined and marked for one of the cloths, and ask them report back the correct color.

5

**TRIANGULATION**

If you are in the middle of a wilderness and have been following your topo map, but are not sure exactly where you are, you can use a method called triangulation. This was done in the compass chapter without a map. But your location on a map can be accurately located also. First, orientate your map as described above. Then find two major landmarks that are on your map and try to find them in your surroundings, as in Figure 5. They should be at least 90 degrees apart for this method to work accurately. Take a bearing on both landmarks and then draw these lines on your map. Where the two bearings intersect, this will be your point of location. If you are on an easily distinguishable landmark, such as a river or highway, only one bearing is necessary.





A good map is not really expensive, but when you are in the field it may be your only guide back to civilization. Take care of it properly. If it might get wet or dirty, it should be kept in a plastic case. It should not be left lying around. Always place it back in your pack as soon as you are finished with it.

After a while, reading and using a topo map will become second nature. You will be able to plan your wilderness trips from home. With your map on the table, you will be able to find good campsites, measure how far you will have to travel, find water for cooking and a lot of other information necessary for a successful trip.