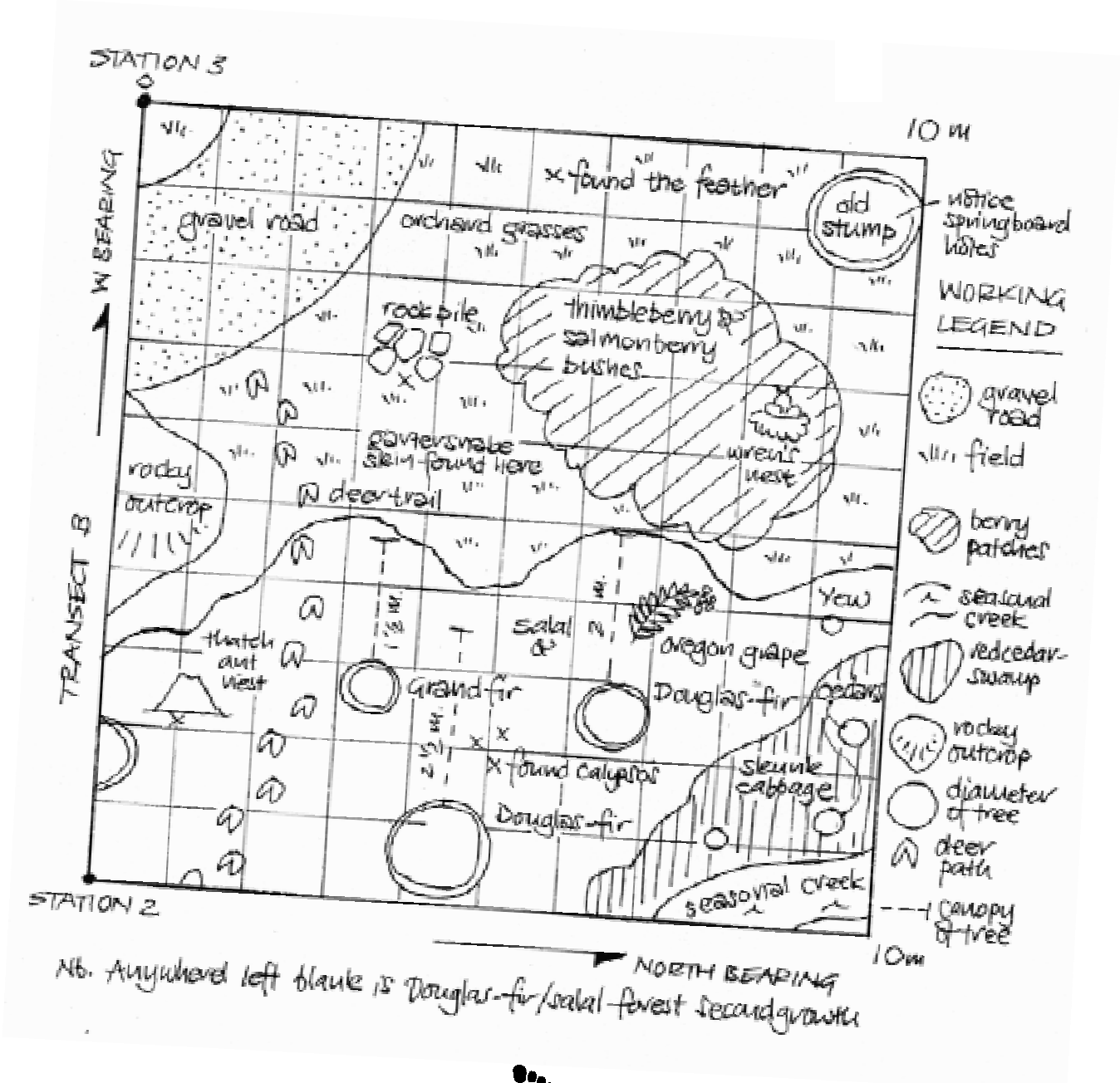




# Barefoot



# Mapping



**SIERRA CLUB**  
BRITISH COLUMBIA



## Barefoot Mapping

**Written by:** Jennifer Hoffman and Kari Jones

**Adapted from:**

*Canada's Rainforest: From Maps to Murrelets*  
by Briony Penn with Jennifer Hoffman



**Illustrations:** Caitlin Gallupe, Briony Penn,  
Donald Gunn

**Editing and Layout:** India Ink

The Sierra Club of British Columbia, 2001

The Sierra Club of British Columbia encourages reproduction of the student sections of this resource for educational purposes. Additional copies of Barefoot Mapping, as well as other Sierra Club of British Columbia educational materials, are available from:

The Sierra Club of British Columbia  
576 Johnson Street, Victoria, BC, V8W 2M3  
Tel: (250) 386-5255 Fax: (250) 386-4453  
E-mail: [info@sierraclubbc.org](mailto:info@sierraclubbc.org)  
Website: <http://www.sierraclub.ca/bc/>

### Acknowledgements

The Sierra Club of British Columbia gratefully acknowledges the contributions of the following:

*Funding Assistance*

J.W. McConnell Family Foundation

*Education Advisors, Reviewers and  
Additional Assistance*



Caitin Gallupe  
Maeve Lydon  
Deborah Miller  
Katie Molloy  
Sue Staniforth  
Heather Tufts  
Jacqueline Auberso  
Tessa Helweg-Larsen  
Dave Koch

### Sierra Club Educational Principles

The activities within *Barefoot Mapping* are based on the following educational principles:

#### Connecting With the Earth

Resources and programs focus on the interconnectedness of our ecosystems and help link local communities with global communities. They encourage environmental stewardship and sustainability and help reduce human impact.

#### Bringing People Together

Resources and programs recognize and respect individual knowledge and experience, and value individual emotions, beliefs, cultures and abilities.

#### Education by Doing

Resources and programs are centered around hands-on participation, and are linked with the out-of-doors in order to help participants derive a sense of place.

#### Empowerment

Resources and programs provide skills which stimulate critical thought and empower participants to initiate and continue environmental activities.



Printed on Recycled Paper



# Table of Contents

<b>Introduction</b> .....	1
<b>About this Booklet - For the Teacher</b> .....	2
<b>Activities:</b>	
Part 1: Step One	Getting Started.....4
Step Two	Getting Your Boots Dirty.....5
Step Three	Compass 101.....8
Step Four	The Technical Stuff.....10
Step Five	Ahhh... More Technical Stuff.....11
Step Six	Marking it Out.....12
Part 2: Step Seven	Just Do It.....13
Step Eight	Talking Dirty... The Fun Stuff.....15
Part 3: Step Nine	Putting the Map Together.....16
Part 4:	Now What?.....18
<b>Resources</b> .....	19
<b>Definitions</b> .....	20





# Introduction



*“Mapping has become an activity primarily reserved for those in power; used to delineate the ‘property’ of nation states and multinational companies. The making of maps has become dominated by specialists who wield satellites and other complex machinery. The result is that although we have great access to maps, we have also lost the ability to conceptualize, make and use images of place—skills which our ancestors honed over thousands of years.”*

Doug Aberley, from *Boundaries of Home: Mapping Your Home Place*, 1993.

## Why Barefoot Map?

What do you see when you look out of your schoolroom window? Is there a stand of swaying trees? Do grasses whisper in the wind? Does the sweet scent of columbine or cedar waft through the air? Or do you have a basketball court outside your window? A running field? Can you hear the shouts of kids having fun? Is there something outside your window that you would like to keep forever? Or to change? These are reasons to make maps.

We tend to think of maps as tools we use to get around. But they can be much more powerful than that. They can be used to change people’s minds, to show the potential of a place, to record history, to celebrate special places, to plan for the future. They can be a voice for people who don’t usually have access to city hall or provincial boardrooms. They can increase our knowledge of our own cherished places.

Mapping is a way to get to know a place. It is a way for you and your schoolmates, friends, and family to protect the community that you live in (and we mean the whole community, including your trees, streams, butterflies, raccoons, mice, sedge grasses... everything), and to shape it in ways that work for you now and for future generations of students, trees, streams, butterflies, raccoons, mice, and grasses.

## Why do we call it Barefoot mapping?

Barefoot mapping is a name we have given to ecosystem mapping to show that it does not rely on fancy tools or specialized knowledge. Ecosystem mapping takes into account all of the natural and human-made features of our home area. Doing this allows us to understand our area in more detail, and to make choices that respect all aspects of our home.

## Isn’t it too complicated?

Barefoot mapping is not complicated. In fact, it is easy. All you really need are your feet, a compass, some paper and pencils, tape, a few other things from your classroom, and lots of enthusiasm.

## What can we do with a finished map?

It depends on why you have made the map. But think of the possibilities. Say, for example, that you mapped a field across the street from your school ground because you heard a rumor that a developer was planning to build a garage there. Say when you were mapping you discovered that not only did all the grade eight and nine kids hang out there during recess, but that there was a particular type of bird that nested in the tree at the far end, and that the grasses growing in the swampy section in the centre were native grasses that hardly exist anywhere else anymore. Well, then you could take your map to city hall and ask that they consider your information when making a decision about whether or not to give the developer a permit.

Or, if your school wants to build new classrooms in a section of the playground, you could hang an ecosystem map of the area in the new classroom so that students will know what the area looked like before the classrooms were built. You could use your map as a base when you go to restore an area to its natural state. You could use it to help keep an area pristine. You could make a map that charts seasonal changes in a favorite area and track them yearly. When you saw the first robin, when the first snow drop bloomed, the last maple leaves fell...

You could work with a local environmental group to open a stream that is covered.

Or... well, you get the picture.



# About this Booklet; For the Teacher

If you have this guidebook in front of you then probably your students are interested in doing some mapping in your area. This guidebook is about figuring out the steps to creating a map that includes all the environmental, social, historical, political and community features of your home area. Barefoot mapping is a tool that allows you to re-inhabit a place. It involves getting outside with a compass and a pencil, and getting acquainted with your area. Bare feet are optional!

The activities in this guide are adapted from the Sierra Club of British Columbia's *Canada's Rainforest: From Maps to Murrelets* and are linked to Life Sciences 8, Social Studies 10, Geography 12, Biology 11, Forests 11, and First Nations 12. For more detailed activities linking to these curriculums, order a copy of *Canada's Rainforest: From Maps to Murrelets*.

To make this activity really fun contact the Sierra Club of British Columbia's Education Program, and book a session with a "barefoot mapping" guide – a live body who will come to your school and take you and your kids through the steps in the guide.

## Why Do It?

Mapping is a powerful tool for exploring and making real the many connections between ourselves and a place.

By participating in the process of mapping students gain valuable insight into the ecology and issues surrounding both our classification of and interaction with the natural environment.

In addition, through active participation in barefoot mapping, students develop a number of skills. These include:

- Orienting themselves in a location using a compass and the sun
- Determining distance with pacing and tape measures
- Preparing a base map from scratch or from existing maps

- Interpreting existing thematic maps
- Understanding scale
- Determining heights and diameters
- Determining how information is classified and mapped

## Through Barefoot Mapping students will

- Connect students with their local places through a series of integrated mapping activities
- Promote skills development, career prep and active environmental citizenship



### Required materials

- Compass
- Field guides
- Graphic supplies (pens, coloured paper, paints)
- Journal
- Local maps, aerial photos and local natural and social history books\*
- Notebook
- Pencil and eraser
- Planning map of area selected (such as a legal plan of your school lot)
- String, flagging tape and masking tape
- Tape measure
- Tracing paper

\* see *Resources* for suggested mapping books, natural history books, maps and aerial photographs.

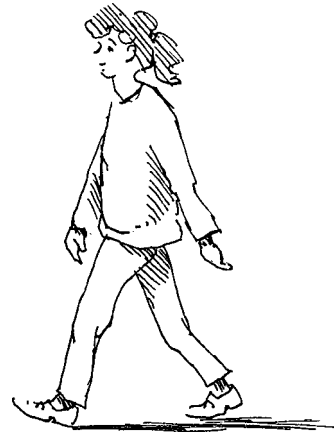




# Part 1



**M**apping is fun! It's cool, it's funky. But it is also work. And to create a good map, one that can be useful to other people, you need to do some preparation and skill building before you start. Don't worry, though, that part is fun too. You get to be out of doors, walking around, learning new things, listening to the birds, checking out the slugs, finding animal droppings, looking for Calypso Orchids or Sedge Grass... and everything you do in Part One will be used when you go to make your final map.



Some things to know before you even get started:

**Base Map:** is the map which is used as a base on which to plot data, i.e. draw what you see outside. An example of this is a map that shows only the outline of Canada's borders. This map provides visual reference points onto which features such as cities, mountains, streams etc. can be plotted.

**Grid:** a pattern of lines forming squares used as a reference for locating points on a map, chart, aerial photo, etc.

**Transect:** a term applied to a reference line in any field survey procedure. Think of a transect as a train track.

**Working Legend:** is what you put on paper to represent what you see in real life—i.e. a large tree could be a dark green circle on your paper map. (see example page 10.)

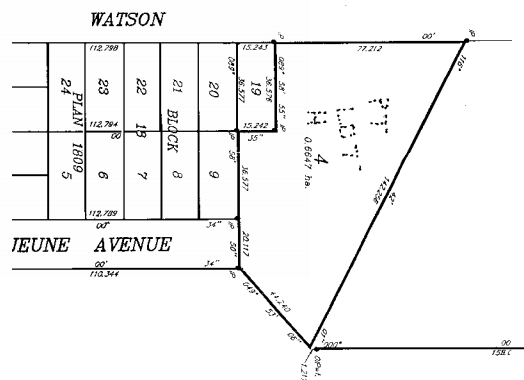


## Getting Started

Okay, so now you've read all that introductory stuff, let's get started—this is where you get to decide what place you are going to map and why! If this was a text book I would say, "Your objective is to select a place to map and to understand how mapping can convey ideas and information", but it's not a text book so instead, why don't you decide why you want to map the place you chose. The questions listed below will help you!

## Tasks

1. Have you decided which area you wish to map? Think about why you want to create the map, and who will use it—what is the purpose of your map? Depending on your objectives you might want to make a series of maps with different themes, such as ecosystems or history, rather than just one map.
2. Examine the street map. Consider what information is missing from it. Are trails marked? Lunch grounds? Where you play certain games? What about habitat for animals and plants? Have their homes, range, or trails been recorded? Think about historic things. Are old place names from early settlers mapped? Historic and prehistoric use of the land? What plants used to grow here? Was this area originally forested? Is this mapped? What about the story of the rocks? The glaciers? And the location of watersheds and streams? Do you have any other ideas of things you want to look for in your area?



### Think About it...

There is a lot of work involved in creating a good map. You may want to get a buddy or even a team to work with you. That way you can choose someone who is good at math, someone who is artistic, someone who knows a lot about plants, someone who can make jokes while you're working... Anyway, think about it.



## Step One

### Oh Yeah, You'll Need

- Street map of your area. Check your local city or municipal hall – they usually have several cool maps of your neighbourhood they can give you. If not, what about your local parks and survey departments, or the city archives?



## Step Two

### Getting Your Boots Dirty

**B**efore you start to map your area, it's a good idea to explore it a bit—to get your toes in there and get a little dirty!

*This step is about checking out some of the features of your area that might be important in your map so that you can get a feel for your chosen area, and can know what is coming. It takes some time, but it's outside and it's fun.*

#### Oh Yeah, You'll Need

- A journal
- Aerial and other maps of your area (Check the list of resources at the end of this guide)
- An example of an ecosystem map (See if your teacher has a copy of *From Maps to Murrelets* — it could be useful). Or check out the website: <http://www.for.gov.bc.ca/pab/publictns/treebook/biogeo/biogeo.htm> for an example of an ecosystem map of BC
- Field guides to your region (there's a list at the back of this guide)
- Pen or pencil

### Tasks

#### Part 1- Getting Out There!

1. Start to walk around your area. Take your field guides with you and look for native trees and plants. Also look for introduced species such as Scotch broom, Himalayan blackberry, or English ivy that grow in disturbed areas.
2. Write all this down in your journal. (Or, if you are an artist, consider drawing them. Are you a musician? Can you make up a song?)
3. Start to think about what is natural in your area and what has been disturbed, or is a human-made landscape. All your senses will help with this. (Human-made describes entirely constructed landscapes such as gravel, lawns or concrete.) Take notes in your journal as you go.
4. Try to classify what you see into ecosystems. Check your field guides to see what classification systems they use, or make up your own.
5. Explore the animals that live in these ecosystems. Start by focusing on species that are quite visible or leave signs. Research animal groups: woodpeckers, squirrels, deer, birds of prey, crows and ravens, and insects, amphibians, reptiles, migratory birds and other invertebrates like slugs and snails. Don't forget other orders of animal kingdom, like fungi, lichens, slime molds and bacteria. Again, think about native and introduced species. The main introduced species that are indicators of disturbed areas are starlings, house sparrows, rats, house mice, cats, rabbits and bullfrogs.







## Part 11- Back Inside

1. Find other maps and aerial photographs with information on them that would relate to the ecosystems of your school ground or area.
2. You might also find stories about a place. Keep in mind that descriptive stories can be attached to a place on the map. These stories might be from your own experiences, from an early settler or explorer, or from an early native inhabitant of the area. You can either write these stories down or illustrate them.
3. Features of the landscape are also mappable as points and lines. Brainstorm what features you might want to map. See the *Features List* (pg. 10) for clues.
4. You will also map your own habitat, places like picnic spots, places you play games, places of sanctuary, favourite walking and biking trails and learning places. Think about both public and private space.
5. Think about how to represent each of your ecosystems on your final map. What colours will you use, ie, wetlands = blue, concrete = grey, old growth forest = dark green. If you need some help, check out some of the ecosystem maps that you have. Remember to think about the power of your design to convey your message and reach your objectives.
6. Create your working legend. See page 10 for an example.



**T**hink of ecosystems as clumps of things that live together in a specific place, and name each ecosystem after a dominant-or largest- plant such as a Douglas fir, Garry oak, or Spruce. If you don't know the name of a plant call it something like bushy shrub ecosystem.

**O**rganize your team into theme groups, i.e. native use, climate, geology. Each group can extract information from the different base maps or sources and relate it to the school grounds. For example,

**Historians:** Ask old timers what the school grounds looked like before the school was built. Look for old journals of early explorers or surveyors which might tell you what this place looked like then.

**Geologists / Rock Hounds:** Look at a geology map and figure out what the age of the rocks are that you are sitting on as well as which terrain (island that crashed into the continent) you are on.

**First Nations:** Look at maps that record First Nations history and figure out what your school site was called by native people or what they did on the land (visited summer camps, gathered camas bulbs, etc.).

**Weather Watchers:** Determine what climatic zone you are in.

**Party Animals:** Check for bottle caps which might indicate that this is a favourite place for people to hold parties; a midden (lots of clam shells in black earth) will be a clue to an old village/party site of thousands of years.



## Features List



These are examples of features on an ecosystem map that are marked with a symbol.

Berry patches: look for thimbleberry, salmonberry, or other patches of wild berries.

Eagle, heron, and raven nests: search for nests in tree branches and among grasses.

Grandfather trees: anything over 100 years is a grandfather tree; a favorite place of red squirrels dining on the fallen cones.

Nurse logs: fallen trees which provide good wildlife habitat and out of which new trees, plants and moss grow.

Places special to you: these could be trails, forts, buildings and roads, hideouts, favorite climbing trees, middens, grave sites, or ancient villages.

Rare and unusual plants: if you have keen naturalists on your team have them identify and record locations of these plants.

Red-flowering currant bushes: native shrubs good for hummingbirds searching for food.

Rock piles: reptiles love rock piles.

Signs of wildlife: including gnawed cones, footprints, deer tracks, nests, roosts, dens, cocoons, or droppings.

Stumps: a good indicator of the logging history of an area as well as also being good for wildlife.

Sword fern patches: where you will find western red-backed salamanders, the biggest predator of the forest, based on collective weight!

Thatching ant nests: look for a mound of needles.

Wildlife trees: (snags) standing dead or dying trees that provide valuable habitat for many species such as owls, woodpeckers and amphibians.





# Compass 101

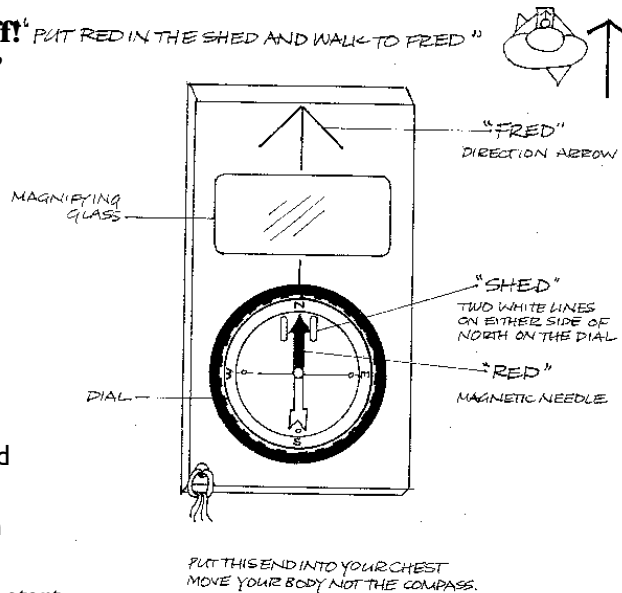
**B**arefoot mapping is easy and doesn't take much technology, but it is useful to know how to use a compass. Besides, compasses are cool—you can use them for so many things.

In this step you will learn how to use a compass, then you will use your compass-using skills in later steps. Note: this activity makes a whole lot more sense when you do it with a compass in your hands!

## Tasks

### Part 1—The Easy Stuff! "PUT RED IN THE SHED AND WALK TO FRED"

1. Repeat the following mantra "put red in the shed and walk to Fred". Red = the magnetic needle, shed = two white lines on either side of North on the dial, and Fred = the directional arrow. (See diagram).
2. Set the dial so that the red N on the dial is matched to the direction arrow on the base plate.
3. Place a small rock at your start point.
4. Hold the compass tucked firmly in front of your chest with the direction arrow pointing away from your body.
5. Still holding the compass firmly to you, rotate your body until the red magnetic needles point to the red N on the compass dials. You are now facing North.
6. Look along the needles and the direction arrows and select a landmark in the distance.
7. Now walk 15 paces in the direction of the chosen feature.
8. To check your accuracy, turn 180 degrees so that you follow the white south-seeking needle back to your starting point.



# Step Three

## Oh Yeah, You'll Need

- Compass

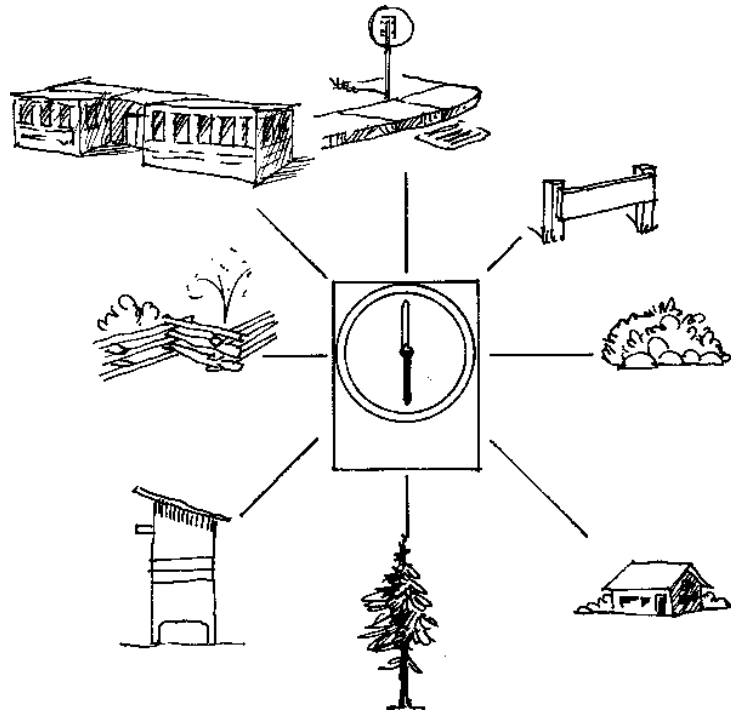
**N**orth and south walks are accomplished by following the magnetic needle. To walk to the east and west cardinal points, as well as other points on the compass, you use the technique of dialing a direction.



## Part 11— The Harder Stuff

### Dialing a Direction

1. Hold the compass with the direction arrow (Fred) pointing away from your body.
2. If you wish to travel west, rotate the compass housing until W is aligned with the direction arrow (Fred) on the base plate.
3. Turn your body until the red-north-seeking needle matches the red N on the dial (is in the shed).
4. Look along the direction arrow to figure out which direction to travel.
5. Follow the same procedures for east or any other bearing, by aligning the direction arrow to your desired direction on the base plate.



**L**et's get back to the base map idea. Remember—from the things you need to know before you even get started? To create a map you first need a base map to plot your information onto. Any map will do, but remember that if your map has too much detail you may not be able to mark anything new on it clearly—so a city map may not be best. You can prepare your base map in a variety of ways. You can: draw your own map freehand, putting in the boundaries of the area you want to map; go to a land survey office and get a survey map of the area; copy from other maps, such as your city map, leaving in only the details that you need.



## Step Four

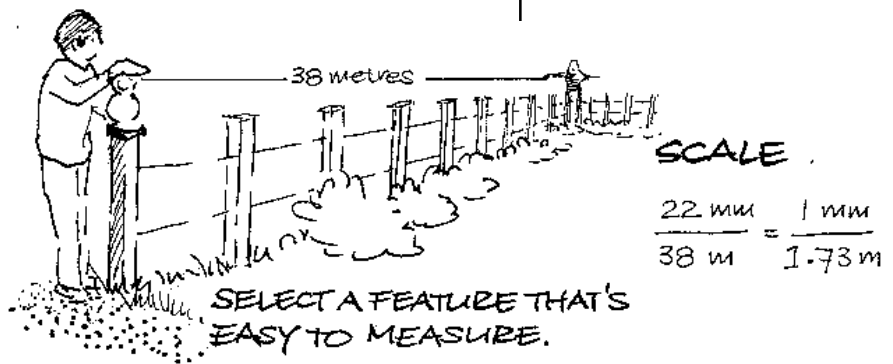
### The Technical Stuff

Let's get to the mapping already. That's what you're thinking, right? Well, we're getting there. But there are just a few more things that you really need to do in order to create a truly useful map.

In this step you will make a base map and determine scale so that you can create a grid for your maps – both on the ground and on paper. It is important to set scale so that you don't draw the picnic table the same size as the school, or the blackberry bush bigger than the Cedar tree, or the mountain goat trails wider than the road... This basemap will be the one you really use when you start creating your own map.

### Tasks

1. Measure the distance on your base map from one known point on the base map (X) to another known point on the base map (Y). If it is a legal map, this may be just from one side of the property to the other.
2. Document the measurement as one map unit.
3. Measure the distance between the same X & Y points in real life on the ground.
4. Document this distance as one ground unit.
5. The ratio of the two units is the scale. For example, one centimetre on the base map may be equal to one metre in real life; i.e. 1:100.
6. Draw on the base map a length of a line that represents one metre. Represent this as similar to the diagram shown below.
7. If you want to enlarge or shrink your base map, the "one metre line" enlarges and shrinks proportionally.



At the start you simply want your base map as a means of planning out your grid and setting your grid into context. It will probably be more than adequate to keep the base map at 1:500. You also might want to enlarge your base map up to the 1:100 scale and put it on the wall of your classroom for the purposes of this next exercise. A 1:100 base map of a school generally fills about a metre square space.

### Oh Yeah, You'll Need

- Base map
- Measuring tape (or string)
- Ruler



## Step Five

### Ahhh... More Technical Stuff

#### Oh Yeah, You'll Need

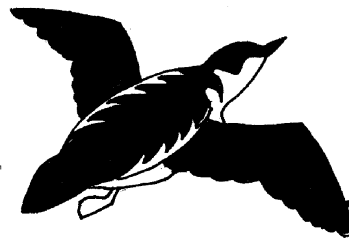
- Base map
- Compass
- Pencil
- Ruler

**W**e're almost there. There are only a couple more steps before you can get out in the field creating maps!

*This step aligns your map with north—yes you get to use the compass again—which is a necessary step before creating your grid.*

### Tasks

1. Check your base map to see if it has a north arrow marked on it. Whether or not your base map has north marked on it, it is worth doing this exercise, as True North (geographic north written on maps) varies from Magnetic North (which varies, and is what your compass reads).
2. Refer back to the two points on the map that you used to determine the scale. Go outside to determine the bearing between them.
3. Lay the map down and place your compass over it. Adjust the map underneath until the direction arrow (Fred) lines up with the line between your two points. Remember to keep 'Red in the Shed'.
4. Record the compass bearing between your two points and mark North before you move the map or the compass. You now have Magnetic North marked on your map.





## Step Six

### Marking it Out

**T**his is the last practice step—I promise! This time the point is to set out a grid. Having a grid, like setting a scale, helps you record information accurately so that you don't put the playground on top of the parking lot, or the clump of trees at the bottom of the ditch, or the bird's nest in the compost bin. This is another step that makes a whole lot more sense when you actually do it!

### Tasks

1. Think of a grid like different train tracks with intersecting points like stations. A group of you will go down each train track or transect and mark each station you come to.
2. Set up the grid so that the transects run north/south. It makes it much easier to set out and describe later.
3. Determine the size of your study area (for example, 100 meters square) using your scale of 1 cm = 1 metre.
4. Create a base line running west/east along one side of the study area—somewhere recognizable such as a roadway or close to an edge of a field. Figure out the approximate bearing of the line from your North arrow.
5. Determine the distance between transects along the base line. (For example, every 10 meters at 90 degrees.)
6. Select stations along each transect, (for example, every 10 metres). This will create squares 10 m<sup>2</sup>.
7. Mark the grid on the base map using the correct scale. Depending on the size of your area you can vary the width of the squares, but 10 metre squares are best because they are easiest to do the math from!

### Oh Yeah, You'll Need

- Base map
- Compass
- Measuring tape (or string)
- Pencil
- Ruler

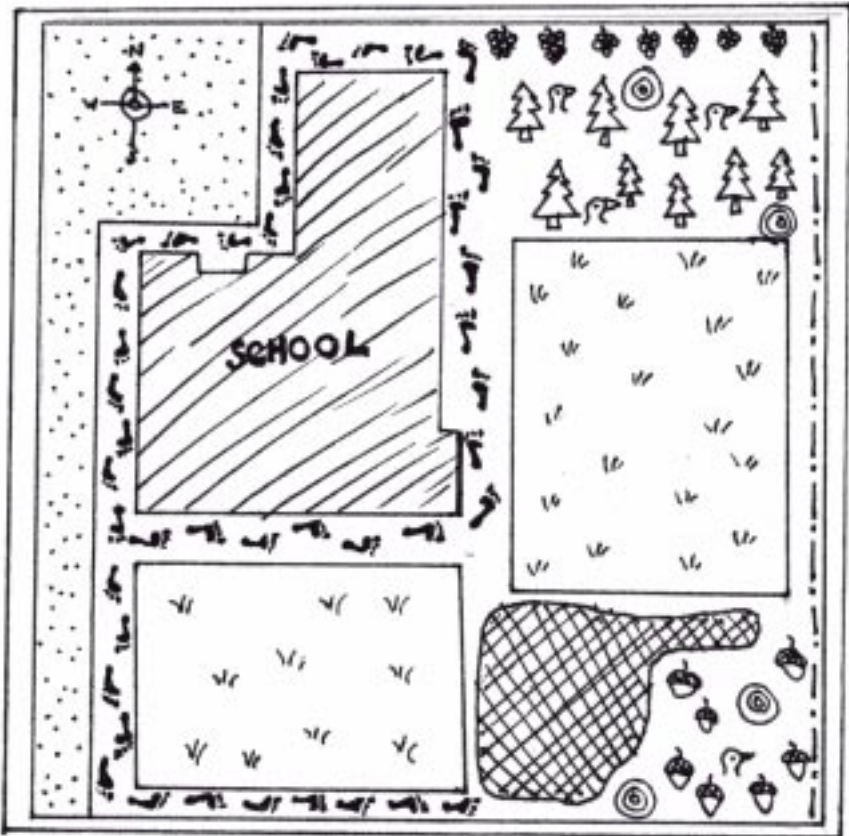
**T**hink about what is easiest in terms of setting your “train tracks”. Is there something recognizable like a building or road at the edge of your mapping area? Does it make sense to use this as a baseline for your train tracks?





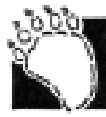
# Part 2

Yahoo...Here you go! Now you are starting to create your own map. Here is where all the technical stuff that you did in Part One comes in handy, and helps make a map that really works. Before you start on this section, take time to think again about why you are making the map and what you plan to do with it.



ecosystem map

**Think about it...**  
Now that everyone in your group has learned all the skills, think about how many maps you are actually going to make. Is the whole group going to make one map together, or are you going to break into groups to make several maps? If your whole group makes one map, then you each only have to record one or two grids. If you each make your own map, you will each have to record all of the grids.







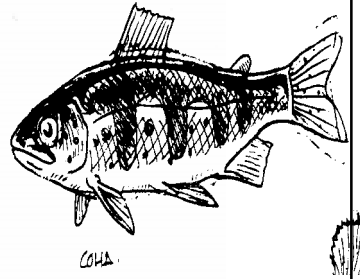
## Just Do It

**E**very biologist knows that fieldwork is hard and takes lots of time. Some of it is even tedious. But even the most laborious of field tasks are done in the great outdoors, where you can listen to the birds sing, take deep breaths of fresh air, kick your shoes off, and enjoy yourselves!

*Proper planning is essential for successful fieldwork and the first task of mapping fieldwork is to set up the grid. It is probably useful to do a practice session of this step before you go ahead and do the real thing. In this step you will transfer the grid from your base map into your real life field setting.*

## Tasks

1. Select a 'Main Mapper' (ie. a team captain) for your team. (Make sure your team has at least three people in it.)
2. Check your base map for your baseline, and then find that line in real life.
3. Set out the transects by positioning each team along the baseline at 10 metre intervals.
4. Have your Main Mapper dial the north bearing. The Main Mapper then walks a pre-determined distance (for example, 10 metres) along the bearing with the compass. He or she will be carrying the tape measure or string end as they walk.
5. Mapper #2 stays at the starting point and holds the end of the tape measure or string.
6. At each 10 metre interval, Mapper #3 marks the station with flagging tape and stakes, and records in a notebook the details about that station.
7. At each station, Mapper #3 takes one end of the string and measures 10 metres to the west and east of Mapper #2 (ie. adjacent train tracks) to see if the Master Mapper is walking a correct bearing. There is usually an error of 1 metre for every 10 metres walked. Just adjust between teams as you go.
8. Try to figure out how you will map an area when the terrain is more difficult. This could be anything from being mountainous to being forested with thick brush. One helpful hint is to taking sightings on each other in more challenging terrain.



## Step Seven

### Oh Yeah, You'll Need

- Compass
- Flagging tape
- Measuring tape (or string)
- Note book and pencil



## Step Eight

### Oh Yeah, You'll Need

- Clipboard
- Features list
- Notebook and pencil
- String with one metre intervals marked on it
- Working legend
- 8.5 x 11 white paper

## Talking Dirty... The Fun Stuff

**T**his is the really fun part. This is where you get to be as creative, silly, mathematical, artistic, or funky as you want. Get out there, dig in the dirt a little, look under logs, check out the tops of the trees, listen to the birds singing, squelch around the edges of ponds, peer into the hollows of trunks. Make whistles out of blades of grass, and record it all. This is the map. This is it. Go for it!

*Work in pencil. Map what you see, hear, smell and feel. Don't be afraid to vary from the working legend, as things always change when you get out there. Look up, look down, peer into dark corners, wade through the muck. Take those shoes off and wiggle your toes. Have fun!*

## Tasks

1. Remember the base map with all the grids marked out on it that you made in the last step? Depending on the size of your class, get each student to choose one or more squares. How?— what about throwing darts at it? Giving each one a number and having people pull numbers out of a hat? The square you choose will be the grid you map.
2. Remember your working legend from long ago? Bring it out and attach it to a clipboard. You will also need a piece of white paper large enough that it can fit information at a scale of 1:100. For example, 10 metres square is 100 mm on paper at a scale of 1:100. This size fits nicely on a regular clipboard.
3. Pull out your features list to use as a guide. Look for special features in your grid. Is there a fallen log covered with moss and mushrooms? Are you at the edge of a winding stream? Is that a bird's nest hidden among the tall grass?



**H**ow else can you record information from your grid? How about with a tape recorder or a video camera. Collect samples of soil, create sketches and poems of the place. Create tape recordings that capture stories and legends from old timers who used to live on the land, or kids who live or play on it now.



**O** kay this is it. you've done all the dirty work, now it is time to be creative. Don't let the boundaries of paper limit you. Think of all the many ways you could create your map.

**A Note On Maps –**

In this guidebook we are laying out the skills and tools to create a map drawn on paper. But this is only one way—and it may not be your favourite. Maps can come in any form. One group of students learned all the mapping skills in this booklet and then made themselves a video. You could write a song or poem, create a sculpture, make a quilt, or paint a collage. Use your creativity, and go for it!

**Part  
3**





# Step Nine

## Putting the Map Together

**A**re there any artists in the room? Computer wizards? Who is good at math? All these skills can be used for this step of putting the grids together into one large map. Think of your map as a piece of art that you are a part of. Jazz it up, make it funky, colourful and fun. Unleash your creative powers!

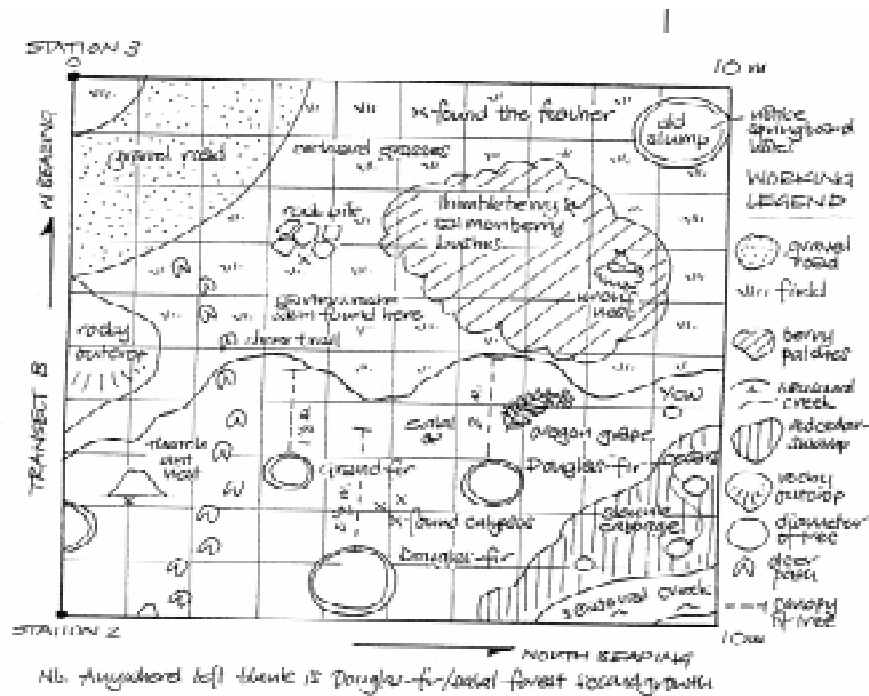
### Oh Yeah, You'll Need

- Art supplies
- Large squares of paper
- Recorded information from each grid
- Research information

### Tasks

1. Gather your squares and figure out which ones go next to each other.
2. Place a large sheet of tracing paper over the whole batch of them and, with a pencil, join the ecosystems up between squares so that every part of the mapped site is on the traced copy. Go outside and check if anything seems to be missing.
3. Finalize your working legend into the final legend and decide how you are going to colour the map. Start with pencil crayons so that you can see through to notes written on the map.
4. Add special features you observed such as trails, forts or wildlife trees.
5. Add special text boxes for themes. This could include things such as the age of rock, old place names or historic land use.
6. Devise fun graphic symbols. For example, for trails you could use deer or raccoon tracks. For features like wildlife trees, you can use a potato print of an owl. Have fun with some nonsense place names.
7. If you make a lot of mistakes, or want to do two maps, use more sheets of tracing paper.

**Think about it...**  
 While you are making the composite map consider questions such as: Have you met your objectives? How can you meet them with design decisions? Do some areas need to be emphasized over others? What is really important to you in this place? Have you conveyed that to your audience?





## Now What?

**Y**ou've recorded all that you can from your grid. You've learned all there is to know about your area. You've drawn it into a beautiful map. (Or maybe you have made a video, or a picture collage). Is that the end? No way... there is tons more to do. Now is the time to reflect on what you can do with your map, and then to **GET OUT AND DO IT!**

*Remember why you wanted to make the map in the first place? Was it to convince the principal that there really is room to create a school garden? Was it to take to city council? Was it a present for a friend who is leaving the school?*

Here are some ideas for what to do with your map once it is finished.

- Approach your local art gallery and ask them to hang it for the people in your community to see. If they are not willing, try the local library, city hall, or the lobby at the mall.
- Challenge a class at a sister school to do a map of their area. What can you learn from each other's maps?
- Give the map to the school board and principal to use when making plans for future development in your area.
- Use your map as a base for restoring your area to its natural state. For information on Naturescaping (as it's called) check out <http://www.env.gov.bc.ca/hctf/nature.htm>.
- As well, check the Greening Schoolgrounds website: <http://www.greengrounds.org/> for great information on how to 'green' your schoolground!
- Keep your play areas intact.
- Improve habitat for certain species, either individually, or as a group. Build reptile rock piles, build birdhouses near food sources, or create a native plant garden.
- Use your imagination!
- Try to continue to observe your mapped sites over time. For example, try and record changes during different seasons or if changes to surroundings occurs.

## Part 4





# Resources

## Natural History and Field Guides

Campbell, S. and S. Pincott, *NatureScaping British Columbia*, Ministry of Environment, Lands and Parks, Victoria, 1995.

Cannings, S. and R. Canning, *British Columbia: A Natural History*, Greystone Books, Vancouver, 1996.

Green, D.M. and R.W. Campbell, *The Amphibians of British Columbia*, Royal British Columbia Museum, Victoria, 1984.

Gregory, P.T. and R.W. Campbell, *The Reptiles of British Columbia*, Royal British Columbia Museum, Victoria, 1984.

MacKinnon, A. and J. Pojar, *Plants of Coastal British Columbia*, Lone Pine Publishing, Edmonton, 1984.

MacKinnon, A. and J. Pojar, *Plants of Northern British Columbia*, Lone Pine Publishing, Edmonton, 1992.

MacKinnon, A. and J. Pojar, *Plants of the Aspen Boreal Forest*, Lone Pine Publishing, Edmonton, 1984.

Nagorsen, D., *The Mammals of British Columbia: A Taxonomic Catalogue*, Royal British Columbia Museum, Victoria, 1990.

Peterson, R. T., *A Field Guide to Western Birds*, Houghton Mifflin Co., Boston, 1990.

Stewart, H., *Cedar*, Douglas and MacIntyre, Vancouver, 1995.

Turner, N.J., *Plants in British Columbia Indian Technology*, Royal British Columbia Museum, Victoria, 1992.



**Did you like mapping?** Want to do it again? Some interesting resources on mapping are:

Giving the Land a Voice: Mapping our Home Places ed. by Sheila Harrington, 1995.

The Ways We Live: Exploring Community, "Maps with Teeth" written by Susan Berlin, New Society Publishers, 1997.

"Memory, Love, Distortion, Power: What is a Map?" by Dennis Wood, in Orion Magazine, Spring 1994.

Boundaries of Home: Mapping your Home Place by Doug Aberley, New Society Publishers, 1993.

Vancouver: A Visual History by Bruce Macdonald, Talonbooks, 1992.

The Rain Forests of Home Atlas: Profile of a North American Bioregion ed. P. K. Schoemaker, B. vonHagen and E.C. Wolf, Island Press 1997.

## Maps On-Line

*Base Mapping and Geomatic Services Branch*  
<http://home.gdbc.gov.bc.ca/>

*LandData BC*  
<http://ldbcweb.landdata.gov.bc.ca:8001/LdbcSystem/index>

Their "Links" are especially useful:  
<http://ldbcweb.landdata.gov.bc.ca:8001/LdbcSystem/index>

The MapPlace  
<http://www.em.gov.bc.ca/Mining/Geolsurv/MapPlace/default.htm>



# Definitions

**Base Map:** is the map which is used as a base on which to plot data, i.e. draw what you see outside. An example of this is a map that shows only the outline of Canada's borders. This map provides visual reference points onto which features such as cities, mountains, streams etc. can be plotted.

**Cadastral map:** a map showing lot lines of all properties.

**Ecosystem:** all the living organisms of a natural community together with their physical, chemical and biological environment.

**Ecosystem mapping:** the stratification of the landscape into map units based on ecological criteria such as climate, terrain, soil, vegetation, aspect; it provides an ecological framework for land management by bringing plants, animals and the terrain together in one map. It is the basis for indicating sensitive areas, an historic record of ecological site conditions and a tool for showing ecosystem and landscape diversity.

**Grid:** a pattern of lines forming squares used as a reference for locating points on a map, chart, aerial photo, etc.

**Introduced species:** a species that has been brought to an area where it is not native.

**Succession:** the orderly, gradual and continuous replacement over time of one plant, animal or community by another.

**Terrain:** a tract of land especially with respect to its physical features.

**Transect:** a term applied to a reference line in any field survey procedure. Think of a transect as a train track.

**Watershed:** the region or area drained by a river system or other body of water.

**Working Legend:** is what you put on paper to represent what you see in real life—i.e. a large tree could be a dark green circle on your paper map.

