The *NatureMapping* Program Teacher's Activities Summary

#1 – Everything is Connected
Build food web and read the Glenrose Watershed Gazette developed by 8th graders that was distributed to the local community annually for three years.

#2 – Speaking Species I
Students begin journaling (e.g. studying animals and writing about them in their journals) and learn how to find an animal's <u>species code</u> to add to the *NatureMapping* Data Collection form. Students team up to interview animals selected from a list. They present their "interviews" to their classmates. Common spelling mistakes for wildlife names are listed.

 Speaking Species II
Lists of species for each Washington State county are printed. Species selected from the same list used in Part I are used. Students will find species online whose ranges fall within their local area.

#3 – Field Guide Frenzy
Students guess a species based on a series of clues. The online Student Guide has photos covered with shapes that disappear one at a time after each clue is read.

#4 – Using Binoculars/Monoculars
Most people use binoculars, but don't know how to use them properly. Students find will learn the correct usage and then practice finding species on posters. An example of the difference between eye placement and magnification between predators and prey is given.

#5 - Name that Animal I
Students will break out into teams of "note takers" and "biologists". Using wildlife posters, they will use binoculars to find the highlighted species, write descriptions of the species in their journals, use field guides to identify the species, and enter their species, <u>how many they see</u>, and <u>if they are sure</u>, on the *NatureMapping* Data Collection Form. Animal sizes in relationship to a finger, hand, arm, etc. are in the Student's Guide.

 Name that Animal II
Students look at pictures birds from 5 to 20 seconds and estimate the size of the flock. <u>Estimation</u> is a column on the *NatureMapping* Data Collection Form, allowing entry without exact numbers.

#6 – Introduction to Mapping I
Students follow a treasure map on their school grounds. Compass usage and pacing is part of this activity. Students draw the map to scale. A 1:24,000 topographic map is printed in "pieces" and students must put them back together.

 Introduction to Mapping II
Using the same treasure map in Part I, students will follow the treasure map's instructions using a 1:100,000 topographic map to find geographic locations on the topo map. Practice questions on map features are presented.

#7 – Animal Signs
Search image…how to look for animals and their signs is the focus. "Signs" can be placed along the same treasure map course. Sign cards, tracking tips and patterns, pet measurements, and online clues are tools students can use as reference. <u>How observed</u> the species is added to the *NatureMapping* Data Collection Form.

#8 – Using Maps: Where are You?
Students will learn how to read a topographic map and learn the terminology used by geographers, such as datum. The DeLorme Atlas, 1:24,000 and 1:100,000 topographic

maps are used to find <u>Township/Range/Section, Latitude and Longitude,</u> and UTM to add to their species sightings on their *NatureMapping* Data Collection Form. Students will practice mathematics using degrees, minutes, seconds and how to convert to decimal degrees needed for GIS maps.

#9 – Meeting Needs

Teacher lead discussions of what is a habitat is one activity. Drawing habitats using the area covered within the treasure map is another. Students will look at the Lake Tahoe Map and discuss different habitats seen from the "air". Using the Chase Middle School habitat map as an example, students will draw their school grounds from a bird's eye view. Students will also learn how habitats are used by different species.

#10 – Name that Habitat

Using the habitat maps drawn in Activity 9 and the Lake Tahoe picture, students will learn the codes the 9 <u>general habitats</u>. Students will learn how to assign the 2nd and 3rd numbers in a habitat code for the *NatureMapping* Data Collection Form.

#11 – Habitat Association

Students discuss what habitats of the species they select would be seen in and how they would   use the habitat. Species used throughout these activities are listed and linked to multiple habitats, range maps, and descriptions of how scientists modeled the range maps.

#12 – Data Collection Protocols

NatureMapping at a glance explains each column in the *NatureMapping* Data Collection Form that should now be completed by the students if they have gone through all of the activities. (The words underlined in each activity are columns on the form.) The *NatureMapping* data collection and spreadsheet protocols are listed.

#13 – Using Emerging Technologies to collect and analyze data

This activity touches on the pros and cons of technology in the field:

Steps to collect geographic data - online

How to use a GPS unit

Comparison of aerial and topographic maps

How to use PowerPoint as an entry into GIS

NatureTracker data collection software on handhelds and PDA's

An online GIS exercise in Community Explorer's Willapa Bay exercise

#14 – Learning from Nature: Biomimicry

Examples of how nature provides "research and development" of how to co-exist on this planet and how people are learning to mimic nature for building designs, air conditioning, drugs, computer memory chips, kidney dialysis and more. Powerpoint presentations are available for elementary, middle, and high school teachers.

#15 – *NatureMapping* Water Module

The Water Module was originally created for teachers and individuals that already had instructions on how to collect water quality data. It provides multiple levels of information through the Guidelines.