



SSI Conservancy Stewards in Training Program

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APPENDICES

Appendix 1: How to make a field journal

An 11" X 17" piece of paper is folded in a rather detailed format (this the students do with tremendous social learning) to craft a wee booklet.

1. Cut along the centre line to the "X".
2. **With print side facing up**, fold paper up horizontally (hotdog fold) so that printed pages face each other.
3. Open and unfold, with **print side facing down**, fold paper up vertically (hamburger fold), print will be on outside now.
4. Take corners of top layer and fold paper back on itself to centre fold, and crease.
5. Turn paper over and do the same to this side (fold top layer on itself to centre fold, and crease).
6. Fold in half along the crease.
7. Review journal pages; it should open with aerial photo.
8. Glue the covers on.
9. Label front cover with: Your name & program title.
10. Optional to add masking tape on spine of journal
11. Optional to personalize journal with drawings, colours, etc.

The front and back are reinforced with coloured cardstock, labeled with the students name and often decorated. A strip of masking tape binds the spine. The inside pages include an aerial photo of the area with stations marked on. Specific pages are devoted to field station activities requiring input from the student. The final page of the journal is left for reflection at the end of the day.

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Appendix 2: Field Preparedness Equipment List

- ✧ First Aid kit (2), including anti-sting creams
- ✧ Air horn, whistle
- ✧ Walkie-talkies
- ✧ Tarps (4+) & rope & poles (8+)
- ✧ Flagging tape
- ✧ Flags
- ✧ Canister toilet and portable outhouse
- ✧ Toilet paper, trowel, hand wipes, bag for wastes
- ✧ Sit-upons
- ✧ Ponchos/garbage bags for rain
- ✧ Umbrellas
- ✧ Water & cups
- ✧ Bag for garbage & compost

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Appendix 3: Inclement Weather Policy

Occasionally, during the Stewards in training Program field days need to be postponed or cancelled due to inclement weather. To determine when to cancel or postpone a field day, the following protocol will be used.

1. The afternoon before the field day, Coordinators will check the weather on-line at www.theweathernetwork.com – and review the Weather Forecast specifically for Ganges.
2. If the forecast is for 60% probability of rain (1 cm or more) and/or temperature below 7°C – the field day will be postponed (if other dates are available) or cancelled. Teachers and the School Board Office will be called, **if possible, by 4 p.m.** the afternoon before field day.
3. If there is unexpected inclement weather the morning of the field day, the Coordinator will call the school office and the School Board Office (buses) **by 8:00 a.m.** to cancel.
4. Whether a cancelled field day can be rescheduled will be at the discretion of the Coordinator, and will be dependent on the specific program and its location.
5. In the event of unexpected inclement weather arising during the running of the field day, it will be up to the Coordinator's discretion to cancel the program. The field program will not be rescheduled should this occur.
6. The Coordinator will give volunteers as much notice as possible of any cancellation.

Contact Numbers

School Board Office	250-537-5548
Plant Services – Bus Inquiries	250-537-5723
Transportation – Bus Inquiries	250-537-4552
Salt Spring Island Middle School	250-537-1159
Salt Spring Elementary School	250-537-9928
Fernwood Elementary School	250-537-9332
Fulford Elementary School	250-653-9223
Phoenix Elementary School	250-537-1156
Salt Spring Centre School	250-537-9130

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Appendix 4: Letter to Teachers



Stewards in Training Program – Letter to Teachers

DATE

Dear Grades ____ Teachers,

Once again the time is soon approaching for the upcoming field trip with the SSI Conservancy, *Stewards in Training* program. This season's program focuses on stewardship of _____ . It takes place at _____ and includes four station activities: _____ .

We will be contacting you to schedule a 45 minute pre-trip visit to your classroom and your choice of date for the field trip. For the pre-trip visit, your students will need scissors, glue sticks, scotch/masking tape and pencil crayons/markers. Please divide your class into four groups and provide us with the list of names by group.

The field trip is free of charge for students, thanks to the generous funding provided by _____ .

Buses will pick up at ____ am and return to your school by ____ pm.

We look forward to meeting your students in the classroom and out in the field.

Sincerely,

Coordinators
Salt Spring Island Conservancy *Stewards in Training* School Program

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Appendix 5: Student Permission



Stewards in Training - Student Permission Slip

DATE

Dear Parent,

The Salt Spring Island Conservancy is pleased to be hosting your child's class on a field trip to PLACE NAME, for a school day spent in nature. The Conservancy's school program - *Stewards in Training* – has been running since 2004 and operates free of charge for students. Funding has been provided by NAME OF SPONSORS.

Your child may need any or all of the following for the full-day outside: a sun hat, sunscreen, suitable footwear, a lunch with additional snacks, drinking water, warm clothing and rain gear in case of inclement weather, and any allergy medications.

POSSIBLE RISKS FOR THIS FIELD TRIP INCLUDE: LIST

Parents are welcome! Please contact your child's teacher for full details.

Sincerely,

COORDINATOR NAME(S)
School Program Coordinators

(tear off here)-----

I give permission for _____(print student's name) to participate in the field trip to PLACE NAME on _____, YEAR.

Parent or guardian name (please print)_____

Parent or guardian signature _____ Date _____

I would like to volunteer! tel: _____ email: _____

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Appendix 6: Student Evaluation



STEWARDS IN TRAINING - EVALUATION FORM FOR STUDENTS

Program: _____

Student name: _____ (optional) Grade: ____

Date: _____

1) What did you like best about the field day?

2) What would you change about the field day?

3) What was new for you on your field day? (i.e. what was it you didn't know before the field day that you learned there?)

4) How could you personally become a better steward of nature? What could you do that you are not already doing?

5) Other comments: (use backside if necessary)

Appendix 7: Master Equipment List

BASIC FIELD EQUIPMENT

2 bucket toilet with seat and lid
1 3 gallon blue water jug
5 yellow round plastic buckets
4 blue round plastic buckets
3 wool blankets
6 bamboo poles
1 portable outhouse (tarp with stakes, door)
10 stakes
4 signs for Conservancy attached to wood blocks
1 green tarp
6 white tarps
1 blue tarp
4 black tarps
8 additional tarps and rope (2009)
1 blue tarp in bag (lunch tarp)
11 red flag markers
15 small multi-coloured flag markers
5 hand trowels
Yellow bag with 36 sit upon pads
1 long foam pad
3 collapsible plastic crates with
89 clipboards
65 plastic sheets for covering papers
16 unused rain slickers
17 used rain slickers
14 umbrellas
Blue plastic box with name tags (42 nametag holders) (1 sharpee)
1 box of blank labels
2 box of Ziploc bags – sandwich size
1 ball of string
1 round yellow plastic bucket with:
 Spare flagging
 5 metal stakes for flagging (missing flags)
 Large orange, green, and white plastic garbage bags
1 bag of color pencils (approximately 20 pencils)
4 bags of extra pencils (each bag containing approximately 6 – 10 pencils)
Shoobox with cardboard covers (1 glue stick, sample journals)
Box of walkie talkies (3 double chargers, 8 walkie talkies)
Spare Clothing: 6 rubber boots, 2 towels.

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LARGE AND MISCELANEOUS EQUIPMENT

1 large aquarium
1 small aquarium
1 large fish net
3 pairs of hip waders (in blue rectangular bucket with lid)
1 small straw basket
1 box of coloring pens (approximately 100 pens)
Box of Specimens (antler, shells, coral)
Board with First Nations notes
Jeopardy Game
10 pr rubber boots

OUTHOUSE BUCKET

2 First Aid Kits
Hand Trowel
Toilet paper
Paper towels
Box of rubber gloves
Air horn
Hand sanitizer
Soap
Sunscreen
Wet wipes
Masking tape
Spare garbage bags

GANGES HARBOUR WATER SYSTEMS – GRADE 8

2 DO (dissolved Oxygen) water testing kits
2 boxes of rubber gloves
3 packages of plastic cups
4 clear goggles
5 clear protective eyewear
1 gallon of distilled water
1 large plastic bowl
4 Hydrion paper containers
4 Hydrion paper tubes

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BURGOYNE BAY – GRADES 2&3 Bucket (separate bucket for Invertebrate Station)

Clues to Burgoyne Bay's History Station (in a grocery bag)

- 1 square silver tin
- 1 round red tin
- 1 square green tin –
 - laminated clue: bell,
 - laminated photos – 1. Mr. Maxwell, 2. family in front of home (Ruckle), 3. Mt Maxwell with horse/carriage.
- 1 round silver/red tin – Look South, next: East
 - Laminated clue: cable, spike clues.
 - 5 laminated photos – 1. cutting log into rounds, 2. spar tree, 3. steam powered clearing machine, 4. horse pulling rounds, 5. logs dumped in water.
- 1 round green tin –
 - Laminated clue: sheltered site
- Large wooden compass
- Compass box – 38 compasses (plus one broken compass)

Nature Identification Station (in a grocery bag)

- Box of shells: moon snail, kelp bulbs (2), starfish (2), abalone (3), foam buoy, sand dollar (3), Japanese oyster (4), sea urchin, clam (3), coral, crab shells.
- Measuring tape (2)
- Straw mat (11 x 14)
- Laminated clue cards:
 - Horsetail (2), Skunk Cabbage (2), Western Red Cedar (2), Big Leaf Maple (2), Salmonberry, Dandelion, Japanese Oyster, Dungeness Crab, Moon snail, Butter Clam.

Nature Journals station: (in grocery bag)

- Bags of small color chips (1 reds, 1 blues, 1 greens, 1 yellows, 1 browns)
- 2 bags of spare color chips
- 6 glue sticks
- 6 red pipe cleaner loops
- 9 metal loops
- Box of Loupes:
 - 20 loupes
 - 6 lids
 - 6 square bug boxes
 - 5 bug jars

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Grade 2/3 Nature Journal Sleeve:

Laminated art: Wickaninnish mosses, mushrooms, herons, widgeon drake, ravens, fontinolis
color samples
instructions for screens
pattern, texture details
sleeve with notes on station

FORD LAKE – GRADES 2&3 BUCKET

(separate buckets for Invertebrate Station and Silent Walk Station)

Nature Journals Supply Bucket: (blue rectangular bucket with lid)

5 flexible wooden frames (2 more that are too large to fit in bucket)
4 clamps
2 thermometers
Bag of watercolour paper squares
7 small Tupperware containers with lids (for water)
6 tupperware containers with lids to include
 20 watercolour pencils and 1 sharpener in each container
Bag with spare: erasers (2), paintbrushes (8), sharpeners (3), sharpies (5), chopsticks (4), pencils, markers, pens.

Plant ID stations: (in grocery bag in bucket)

11 laminated Dichotomous keys – Shrubs and small trees
1 large laminated poster of Dichotomous key - shrubs and small trees
6 laminated plant ID clue cards (3 x 5) :
 Himalayan Blackberry
 Beaked Hazelnut
 Scotch Broom
 Nootka Rose
 Indian Plum
 Black Hawthorn
6 laminated number cards

Silent Walk Box

Laminated timeline for garbage to biodegrade
Rope
String
Skull (baby deer with antlers?)
Skull

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Plastic green lid
Vertebrate
Jaw bone
Paper airplane
Golf ball
Easter egg
Walnut?
Pencil
Green plastic frog
Driftwood
Feather (crow?)
Cork
Pine cone (2)
Fir cone, peach pits (2)

FORD LAKE - GRADES 6&7

Invertebrate Box (blue rectangular box with lid)

Pond Biome Station

21 fish nets (assorted sizes)
4 microscopes
9 turkey basters (4 small, 5 large)
Plastic spoons
1 ice cube tray
2 clear sample boxes
3 measuring tapes
2 floating thermometers
1 mini aquarium
Vertebrate (partial skeleton)
4 dental floss boxes
Laminated Guides:
 Good/Bad Garden Bugs
 Aquatic Macro-invertebrates (4)
 Wetland Ecosystems (4)
 Identification Key – Pond Animals (animals w legs/animals w/o legs) (4)
 Aquatic Invertebrates – Quick Reference Guide (3)
 Dichotomous Key – Aquatic Invertebrates Group (10)
 Mac's Field Guide to NW Coastal Invertebrates (8)
 Dichotomous Key to Clams at Burgoyne Bay (5)

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Clam anatomy (2)
Field Guide to the Identification of Pebbles
Book: Pacific Reef & Shore (3)

Creek Biome Station

Waterproof case with: 3 calculators
Waterproof case with: 4 measuring tapes
Waterproof case with: 3 stopwatches and 4 corks

ANDREAS VOGT NATURE RESERVE – GRADES 6&7

Andreas Vogt Nature Reserve Bucket (blue rectangular bucket with lid)

Wildlife Tree Poster (not in bucket – too large)
3 hammers
3 handsaws
60 stakes (for plant identification signs)
6 “Invasive Species” signs on stakes with plastic covers
Bag with 9 pairs of gloves
57 plastic sheet protectors with cardboard inside (for plant identification signs)
41 small black clips (for plant identification signs)
2 laminated maps
laminated plant ID charts:
 Gary Oak Meadows – plants (2)
 Gary Oak Meadows – flowers (1)
 Douglas Fir Forests – plants (1)
 Garden Butterflies of the Georgia Basin (1)
 Gary Oak Ecosystem Recovery Team (1)
 Mac’s Field Guide To Pacific Northwest Wildflowers (1)

Invasive Species Station (in grocery bag)

Invasive Species Station sign
Invasive species brochures
Book: Field guide to noxious weeds and other selected invasive plants of BC
Saw + spare blade
Clippers
Broom Pullers (light weight) - 2

Restoration (Past, Present, and Future) Station (in grocery bag)

10 laminated work sheets (2 sided)
1 laminated key for work sheet
4 laminated aerial photos of AVNR
4 straws with protractors taped to them

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(compasses put in general compass box)

Wildlife Tree Station (in grocery bag)

Wildlife Tree Station sign

Map of site indicating wildlife tree locations

10 laminated wildlife tree assessor forms

6 laminated wildlife tree signs (yellow)

Laminated numbers (red) – only 1, 2, 3, 5, 8, and 9

8 measuring tapes

7 wipe off markers

3 rags for wipe off boards

Plant Identification Station (in grocery bag)

Plant Identification Station sign

Plant markers: flags (# 2,3,4,5,7,8,9,11), badges (# 1,10), clip (# 6)

10 laminated dichotomous key – trees

10 laminated dichotomous key – wildflowers

1 laminated dichotomous key – answers

CUSHEON COVE – GRADES 4&5

Nettle Twine Station

Laminated notes:

Photos of braiding, ropes

First Nations fishing information

Study of Trees

Stinging Nettle Information

Wood Station

Wood Samples (marked)

Yew

Big Leaf Maple (2)

Douglas Fir

Douglas Fir - Old Growth

Western Red Cedar – 2nd growth

Western Red Cedar – Old Growth

Arbutus (2)

Gary Oak

Red Alder

Juniper

Band-Aids

Waterproof box with 9 knives

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CHANNEL RIDGE - GRADES 4&5

Laminated Cards (Station Questions)

1. Age of Young Trees
2. Pond Station
3. First Nations Midden
4. Moss
5. Wildlife Tree Station
6. Tree Circumference
7. Stump
8. Nurse Log
9. Burnt Trees
10. Tree Aging
11. Ant Hill
12. Plant Identification
13. Camas
14. Soil
15. Silent Walk

Laminated Sheets:

- Dichotomous Key – Shrubs/Trees (6)
- Circumference of Trees & Carbon Stored in them
- Moss Study
- Letters (A, B, D, E, F)

Overhead Overlays:

- Leaf Classifications
- Animal Classifications
- How to use a compass
- Dichotomous key – shrubs/trees

Handouts:

- Basic Soil Profile
- Journal sample
- Letter to Teachers
- Note to Leaders
- Gary Oak Ecosystem brochure
- Guidelines for planting Garry Oak Seedlings.

Orange wire hoops.

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2 ice cube trays

15 sets of Laminated Leaves - each set includes:

Red Alder, Dogwood, Garry Oak, Arbutus, Broad Leaf Maple, Pacific Willow,
Grand Fir, Red Cedar)

Bag of craft "popsicle" sticks

28 small wooden stakes

Bag of cones

4 wood cuts

5 spray bottles

Ruler

Twine, & Numbers in plastic badges (1, 2, 3, 4, 5)

Appendix 8: Ducks Unlimited Ford Lake Access Guidelines



Ducks Unlimited Canada
Conserving Canada's Wetlands

Ford Lake Access Guidelines

Ford Lake lies in the heart of the largest watershed on Salt Spring Island and is one of the few freshwater wetlands providing habitat for many waterfowl species in the area. This Ducks Unlimited Canada (DUC) project is 158 acres of Agricultural Land Reserve and is actively farmed by a local farmer. DUC values soil-based farming as an important part of the landscape because of the benefits provided to waterfowl. Environmental education is also encouraged by DUC; however, access to this land will be limited to reduce impacts on farming activities. Those groups that are permitted to enter the property are asked to follow the guidelines below.

Close all gates immediately upon passing through and ensure gates are **securely fastened** upon leaving the property. Do not climb over fences.

Keep to well-established trails and roads. Please stay away from equipment, off of hay bales, and out of barns.

Do not disturb livestock. Be aware that the ram could be dangerous and the farmer will try to pen him up before you arrive.

Keep out of the lake; access to shoreline is permitted

Do not artificially alter water courses or interfere with livestock watering stations.

No dogs are allowed on the property at any time due to livestock concerns.

All access requests should be routed through the DUC Land Manager (Jeanine Bond).

Please remind the farmer (Mark Hughes 250-653-9296) the day before your arrival that you will be on the property.

Any questions regarding farming practices should be directed to the DUC Land Manager (Jeanine Bond 604-592-0987). Enjoy your time in this unique and beautiful location!

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Appendix 9: Government of British Columbia, Ministry of Education's, Environmental Learning and Experience Policy (2006)

Excerpt from *Environmental Learning And Experience: An Interdisciplinary Guide for Teachers*

Complexity

Life on Earth depends on, and is part of, complex systems.

Environmental education addresses the study of complex systems in two ways. First, it examines the complexity and interrelatedness of natural systems, and how humans interact with and affect those systems. It also looks at human-created systems, both those that are built and those that are part of our social fabric. For example, when students investigate the water cycle, a food web, or photosynthesis, they are studying a natural system. When they investigate government and politics, economics and the evolution of societies, or highway and sewage systems, they are studying human-created systems.

These investigations help students understand the complexity of systems and the links between them. Knowledge from a broad range of scientific disciplines contributes to a well-rounded understanding of environmental issues. However, there must be an awareness that knowledge is not static and that theories can change. Knowledge from the sciences, economics, politics, law, and sociology are vital to the study of complex systems and human interactions.

Through studying cultural systems and global issues, students may begin to see the relationships between the environment and human rights, justice, race and gender equity. Other cultures in the world present diverse perspectives on ways of valuing and relating to natural and human-created environments. In developing a thorough understanding of systems, students can examine the origins and impact of their present worldview and analyze the implications of new information and changing societal values.

Concepts for student consideration and discussion include:

- an ecosystem, or a social system, is caused by the collective interactions of individual
- parts that require holistic investigation;
- individual components serve unique functions in all complex systems. The loss or degradation of any single component may cause a decline in the viability of the system;
- the planet's resources are finite. Humans are dependent on materials and energy supplied by the global ecosystem;
- different cultures observe natural systems through various philosophical, technological, and social points of view. Throughout time, cultures have interacted with the environment in different ways;
- the pace of technological change and the distribution of scarce resources can have a profound impact on society and the environment; and

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- the organization of societies in the past and present, and the laws that govern them, have implications for environmentally and socially sustainable development.

Aesthetics

Environmental awareness enables students to develop an aesthetic appreciation.

Aesthetics deals with beauty, artistic expression, and our physiological responses to these. Environmental education helps students to develop an aesthetic sense of respect and appreciation for the natural world through study, physical challenges, and other experiences in nature.

An aesthetic appreciation, along with other understandings of nature, encourages students to learn and act to protect and sustain the environment, and can also contribute to self-awareness and personal fulfilment. Further, outdoor studies and activities in physical or outdoor education can help develop student aesthetic appreciation. Aesthetics also has an internalized component strongly related to what we personally value in nature.

Aesthetic values may explore explicit value shifts, such as those found when examining a natural setting for the development of a park or a residential development. The idea that nature has fundamental worth from an aesthetic point of view is one example of a value shift. Different types of value shifts are also possible in environmental aesthetics and environmental criticism in the arts; however, these often concentrate on cultural expressions of our interaction with nature.

Finally, aesthetic experiences provide insight and enrich human interactions with the environment by allowing students to:

- develop an understanding of the aesthetic qualities that exist in the environment;
- develop skills and sensitivity to the application of aesthetic criteria when considering environmental matters; and
- develop the ability to formulate, apply, and communicate personal aesthetic criteria for assessing environmental issues.

Concepts for student consideration and discussion include:

- direct experiences in natural surroundings provide opportunities to develop respect and appreciation for living and non-living things;
- aesthetic appreciation encourages a sense of the uniqueness and beauty of the planet;
- appreciation of nature is an impetus for many forms of creative expression;
- individuals and cultures vary in the degree to which they value nature for its own sake and for its ability to serve human needs;
- lifestyles, arts, and religions can be indicators of their perception of, and relationship with, their environment;
- and » respect for the land and all living things can encourage the maintenance of a healthy environment, providing benefits for everyone.

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Responsibility

Human decisions and actions have environmental consequences.

Studies about the environment provide opportunities for students to explore the environmental impact of decisions and actions made at personal, community, societal, and global levels.

Studies in geography, history, technology, and other arts and sciences can help students develop awareness of diverse cultural perceptions and interpretations of the environment.

Through the study of human impact on the environment, students can explore and develop positive approaches to long-range environmental concerns. Exploring and addressing global issues, such as militarism and war, the inequitable distribution of wealth and resources, food production, and transportation are essential to establishing a sustainable society. A focus on decisions and actions in other cultures and locations contributes to questions about how to live more sustainably here in British Columbia.

Concepts for student consideration and discussion include:

- the preservation of viable ecosystems is a basic value for every society;
- First Nations practise of Traditional Ecological Knowledge can illustrate alternative views on how humans have interacted with their environments;
- consideration of all species for future generations is essential to preserve the integrity of the ecosphere;
- the language used by a culture unconsciously reproduces its moral values;
- some human actions have significant and cumulative impacts on the environment; and
- growth in population and resource consumption is exponential. Most contemporary societies produce wastes, consume resources, and/or add to their population at rates that cannot be sustained.

In light of what we know about past decisions around environmental issues, it is vital for students to decide what currently constitutes responsible action towards the environment and then begin to practice it. Concepts for student consideration and discussion include: there are consequences and responsibilities for any action or inaction; actions are influenced by belief systems and personal limitations, both physical and cultural; responsible action requires an understanding of factors that influence the environment and those that regulate, influence, or govern human interaction with the environment. These include the law, government and politics, civic responsibility, the decision makers, and those who influence them.

Ethics

The study of the environment enables students to develop an environmental ethic.

Supporting students to take responsible action requires an examination of values.

Environmental education provides an opportunity for students to question cultural assumptions that lead to social conflict and environmental crises. The questioning process can create new visions and possibilities, but it is also important for students to realize that issues and crises are often the result of our value systems.

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Students should be encouraged to make decisions based on an understanding of the issues, as well as their own values and the values of community members. Knowledge of philosophical and critical thinking tools, such as perspective analysis, argument analysis, and message deconstruction, provides a means to assist with the decision-making process and other disciplines.

Some issues for an analysis of values could include: economic growth and sustainable development; land ownership; business ethics; consumption patterns and lifestyles; technological change; pollution; violence in society; the role of the media; and population control.

Concepts for student consideration and discussion include:

- actions are generated by belief systems or sets of values;
- value systems can change over time;
- the formation of values occurs in stages;
- how the environment is affected by specific actions is a scientific question, but the choice of what action to take is a question of ethics and of cultural, religious, and/or personal values;
- human quality of life is influenced by environmental quality;
- humans must recognize their responsibility to future generations;
- societal attitudes toward the environment are influenced by mass media coverage and perspectives; and
- print and electronic media have commercial implications and contain ideological and value messages that have social and political implications.