

Name: _____ Course: _____ Date: _____

VALUE CONSCIOUS CONSUMPTION

ACIDIC OCEANS



Inquiry: How do human actions on land affect the oceans?

ACTION PLAN	<ol style="list-style-type: none"> 1. MY WORLD VIEW 2. MY ACTIONS 3. GLOBAL RESEARCH 4. LOCAL ACTIVITY 5. CRITICAL THINKING 6. ACTION SURVEY 7. PRESENTATION 8. SELF EVALUATION
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Group Members and Contact Info

Goals

Please read over the following goals and keep them in mind as you complete your Action Pack. When you finish this, you will do a SELF EVALUATION to measure how much you have gained in each area below.

- I
Inquiry:
 I can work with others to take a hands-on, minds-on, research-based approach to developing my knowledge and considering solutions to sustainability problems.

- T
Creative/Critical Thinking:
 I can learn a lot about something, consider different points of view, and generate new ideas that will influence how I think and act in the future.

- C
Communication:
 I can talk with others about my area of interest, consider their points of view, use digital media to gain knowledge, and deliver an interesting presentation on my topic.

- PS
Personal & Social Responsibility:
 I know what my own values are and they help me make wise choices for the health and well being of myself, my community and my world.

Glossary

Below are some key terms you will need to understand as you explore the inquiry of this Action Pack. They will appear in ***bold italic*** in your Action Pack. The simple definitions below are provided for ease of reference.

Carbon Emissions	The amount of carbon released by an activity or process.
Economic Impacts	Any change to the wealth and resources of a country or region, community or person. Often referred to in terms of the production and consumption of goods and services.
Ecosystem	A community of plants, animals and other organisms and all the interacting parts of their environment (air, water, soil, etc) that live, feed, reproduce and work together as a system.
Environmental Impacts	Any change to the living and non-living natural surroundings or conditions in which a person, animal or plant lives and interacts together. These impacts can be negative or beneficial, and can be created by an industry, project or Individual.
Family	For the purposes of this Action Pack, family will be considered the group of people that you are living with.
Fossil Fuels	A natural fuel such as oil or gas, formed in the geological past from the remains of living organisms.
Government	A system or organization that exercises authority and performs functions for the people of a designated country, province or local community.
Natural Resources	Materials provided by the Earth, such as minerals, forests, water, and fertile land that can be used for life to continue and by humans for economic gain.
Ocean Acidification	The decrease in pH of the ocean caused by the absorption of increased carbon dioxide from the atmosphere.
Social Impacts	The effect of an activity on the social well being of the people in a community (such as wealth, health, education level, employment rate, and community values)
Sustainability	Meeting the environmental, social, and economic needs of the present without affecting the ability of future generations to meet their needs.

1. MY WORLD VIEW

A 'world view' is how you see the world. We all have different world views, depending upon our cultural background, our life experiences and personal values. Our world view changes as we gain more knowledge and experience and consider other points of view.

Please complete the **WORLD VIEW & VALUES SURVEYS** BEFORE and AFTER completing this Action Pack.



Aboriginal wisdom presents another world view and values to consider:



"Look deep into nature, and then you will understand everything better."

~ Albert Einstein

2. MY ACTIONS

Our actions are directly related to our world view. We often see shifts in our actions as our knowledge about topics grows. You will be asked to take action through-out this project to try out what it is like to change habits.



Complete 6.1 in your ACTION SURVEY on [page B8.13](#) of this Action Pack BEFORE completing anything else in your Action Pack. Indicate which actions you already do by giving yourself points in Column A. **Only complete Column A at this time.**

DURING your Action Pack inquiry you will be asked to choose different Actions to try out and tick off your choices in Column B. Make sure that you have completed at least one Personal action and one action from any of the other categories before completing your Action Pack. But don't do that now – that's for later.

AFTER you have completed the entire Action Pack you will complete Column C, but don't do that now either! Just focus on filling out Column A at this time.

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3. GLOBAL RESEARCH

Important information on this topic has been pre-researched for you. Register online by inserting the 6-digit 'class code' number that your teacher will provide to complete the url below:

www.bethechangeearthalliance.org/user/register?classcode=_____

Then check out the websites and videos on this issue here:

www.bethechangeearthalliance.org/SLS



User Name: _____ Password: _____

Make notes on interesting and important information for the Critical Thinking questions in Section 5 and the Presentation you will be making in Section 7. Discuss and compare different perspectives with other members of your group.

Research Questions

Based on what you have learned in your research, answer the following questions. Group discussions are encouraged but answers to the research questions are to be written independently. To avoid plagiarism, your answers must be in your own words. Please list the links you used to answer your questions.

3.1 ***Ocean acidification*** is a major sustainability issue. How is it happening?

Did you know...?

One third of all carbon dioxide emitted by humanity has been absorbed by the world's oceans. This is making them more acidic than they have been for tens of millions of years.

~NOAA

Link(s):

- 3.2 The carbon cycle is a natural process where the Earth creates a balance between carbon released into the atmosphere and carbon absorbed by the different natural sinks. Before the industrial era human activity produced some **carbon emissions**, but not enough to affect this natural cycle. Human activities are now creating such excessive amounts of carbon that the planetary life-support systems are struggling to keep balanced. List three major sources of human produced CO₂ and some activities associated with each source:

Source

Activities

Link(s):

- 3.3 How does **ocean acidification** affect shellfish, corals, and other calcifying organisms?

Link(s):

3.4 What are some changes in peoples' lifestyles over the past 50-60 years that have lead to the increase of the production of **carbon emissions**? Give at least three examples below.

Link(s):

Taking Action

Choose ONE or MORE actions from your **ACTION SURVEY** in the back of your Action Pack and do the action(s) now. Choose something that you are not already doing or increase an action that you have done occasionally to become a regular practice.



Make a check mark in **Column B** beside the action you will be taking and record it below.

My chosen action is: _____

I will complete it by: _____

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4. LOCAL ACTIVITY



How does this global topic relate to you personally? How much **carbon emission** do you produce every year? Complete the following activity and research chart to see how you are part of the equation.

1. Have each member of your Action Circle calculate their carbon footprint: [Link 12](#) and record your carbon emissions per year. Record your group findings in the RESEARCH

CHART.

2. The ocean absorbs approximately 30% of the CO₂ produced through human activities. Calculate how much of the CO₂ you produce will be absorbed by the oceans. Use the following formula: (Total kg carbon per year) x 0.30 = (Carbon Absorbed by the oceans) e.g. 720 x 0.30 = 216 kg
3. Decide how you can reduce your annual carbon output. Record your responses in the 'Changes' chart below. Take a look at the following video for some ideas, or consider the option recommended in the carbon calculator: [Link 14](#)

Research Chart

4.1 Complete Research Chart (use note paper if more space is needed)

	Group Member Name	Total Carbon produced each year (kg)	Amount of Carbon absorbed by the oceans (kg) Total CO ₂ x .30
1			
2			
3			
4			
	GROUP TOTALS		

4.2 Changes that I will make:

	Area to change (Transport, food, home, use, waste):	Change that I will make:
1		
2		
3		
4		
5		

So What?

4.3 What are some conclusions or observations you gained from this Activity?

Taking Action

Choose ONE or MORE actions from your **ACTION SURVEY** in the back of your Action Pack and do the action(s) now. Choose something that you are not already doing or increase an action that you have done occasionally to become a regular practice.



Make a check mark in **Column B** beside the action you will be taking and record it below.

My chosen action is: _____

I will complete it by: _____

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5. CRITICAL THINKING

Global *sustainability* issues are complex, and considering different points of view can give us a stronger understanding in order to change for the better.



Critical Reflections

To avoid plagiarism, write your answers IN YOUR OWN WORDS.

5.1 What are the long-term environmental and social justice implications of *ocean acidification*?

5.2 Is it possible to reduce our *carbon emissions*? What would that look like?

5.3 **STAKEHOLDERS** are individuals or groups (companies, communities, etc) who have concerns or could be impacted by an issue. Below is a list of stakeholders and environments that could experience *environmental, social* or *economic impacts* by reducing our impact on the oceans. Write down two or three benefits or concerns for each stakeholder(s).

Stakeholder(s) / Environments	Impacts: Benefits & Concerns
1. Myself, my <i>family</i> & my Community	
2. The Natural World (Animals, Plants, <i>Ecosystems</i> and planetary life-support systems)	
3. Companies that use, sell and buy <i>fossil fuels</i>	
4. People and Companies that harvest, sell, and rely on seafood	
5. <i>Government</i>	
6. Other	

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Costs & Benefits

What if I was to choose differently, and reduce my carbon footprint impact on the ocean?

5.4 What would I need to do to take this action (e.g. commitment, time, something I'd need to stop doing, asking people to support me, taking responsibility, shifting comfort zones, etc.)? List at least 3 specific examples.

1.

2.

3.

5.5 What would the benefits be?

1. To me, personally (health, knowledge, values, etc.)

2. Environmentally (locally to globally) put in examples?

3. Socially (who may be impacted by this?)

4. Economically (money or resources saved or spent)

5.6 If I chose NOT to reduce my carbon footprint impact on the ocean, what would the ***environmental, social*** and ***economic impacts*** be?

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6. ACTION SURVEY

Our actions are directly related to our world view.



Complete the following ACTION SURVEY step by step.

6.1 **BEFORE** starting your Action Pack, indicate which actions you already do by giving yourself points in COLUMN A. Add these up in the Total for COLUMN A.

# of points	If this statement is true for you or not
0 points	= Not true
1 point	= Sometimes true
2 points	= I have done this (not something one does regularly)
3 points	= True most of the time

6.2 **DURING** your Action Pack inquiry, set your goals and tick off the Actions you intend to take in COLUMN B... and then do them! IF you have already done all of the suggested actions, think of a new action, get it approved by your teacher and write it into the last open space.

Action Survey

	What Actions have I taken before? What Actions will I start taking?	A <i>Done before Action Pack</i>	B <i>I intend to do this Action ✓</i>	C <i>I have done these Actions</i>
Personal Actions	1. I have learned more about the ocean acidification issue and found out what I can do to help.			
	2. I ride my bike instead of taking a ride in a car whenever and wherever possible.			
	3. I have changed this part of my lifestyle to reduce my carbon footprint and maintained this change for 1 WEEK: _____ _____			
	4. I have made another change in my daily life to reduce my carbon emissions : (describe here) _____ _____			

Household Actions	5. I have informed my family about the effects that carbon emissions have on the oceans.			
	6. I have calculated the current carbon footprint of my household and identified areas that contribute the most carbon emissions.			
	7. I have researched and recommended energy efficient appliances to replace any old appliances.			
	8. I have offered to help make some changes in my household to reduce carbon emissions.			
School Actions	9. I have started a school campaign to raise awareness of how our carbon producing activities are affecting the oceans.			
	10. I have researched my school's dependence on <i>fossil fuels</i> .			
	11. I have worked with school administration to reduce my school's dependence on fossil fuels.			
Community Actions	12. I encouraged a friend to join me in reducing our CO ₂ impact on the ocean for one month.			
	13. I signed the online pledge to help protect the oceans: http://cisanctuary.org/ocean-acidification/pledge.php or create your own.			
	14. I found out what government department regulates this issue and which elected politician is responsible for this department.			
	15. I wrote a letter to the department staff and/or to the politician stating the change that I think is appropriate.			
	16. My customized and related action (teacher approved): _____			
	What Actions have I taken?	A Before		C After
	Totals:			
		Starting Points Sustainability		Total Points Sustainability



Points for Sustainability

6.3 **AFTER** completing your Action Pack, fill in COLUMN C by giving yourself points for all the actions you are now taking. Add up the total of COLUMN C to see your **TOTAL POINTS FOR SUSTAINABILITY**.

5-15	This is a good place to start! And you have lots of choices for actions to increase your score
16-31	You are well on your way to creating healthy, sustainable habits!
32 or more	WOW, Superstar! You are here to inspire others. Lead on!

Points for Change

6.4 **CHANGING** our habits is a big accomplishment! As we increase our awareness we will see the impact of each choice we make and even more ways to 'be the change'. To give yourself points for trying new actions and being willing to change old habits, subtract the total of COLUMN A from the total of COLUMN C to get your total **POINTS FOR CHANGE**.

Total Column C: _____ - **Total Column A:** _____ = _____ **TOTAL POINTS FOR CHANGE**

3-6	Way to go – you've overcome the hardest part to change – STARTING! Keep it up!
7-15	Well done – keep consistent with your changes to create new habits.
16 or more	Way to be a CHANGE AGENT! Check out other Action Packs for more ideas

Reflection on Taking Action

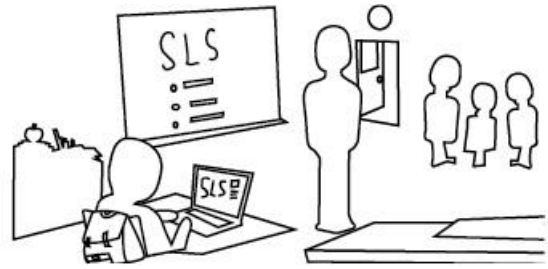
Answer these questions after completing your Action Pack (use more paper as needed)

6.5 What was rewarding about making a commitment to action and changing my behaviour?

6.6 What was challenging?

7. PRESENTING YOUR EXPERIENCE AND KNOWLEDGE

Your final Action Pack assignment is to give a presentation to your class summarizing your thoughts on the Inquiry you did in this Action Pack. This is your chance to share what you have learned and invite your peers to take action!



Presentation length: 5 - 15 min.

See ideas for your presentation below. Ask your teacher for further details.

Make sure your presentation includes:

1. **I Inquiry Process**
 - State the Inquiry question that you explored. Is this an important question we all need to be asking ourselves?
 - List the top 3 most interesting facts that you learned in your research.
 - Share the experience and results of your local activity
2. **T Creative/Critical Thinking**
 - Name some key *stakeholders* or *ecosystems* and their concerns or interests.
 - List some ways we can approach this issue more sustainably (both industry and personal).
 - Share new ideas or conclusions you gained from completing the Action Pack.
3. **PS Taking Action for Personal & Social Responsibility**
 - What actions did you take?
 - What was it like to take personal action?
 - Share your personal experience exploring this topic, inspire others to take action.
 - Suggest ways your classmates can take action.
4. **C Creative Communication**
 - Engage with your audience; make eye contact, don't read off a piece of paper the entire time, and project your voice.
 - Be creative; how can you make learning about this topic fun and interesting? Consider the different presentation formats below.
 - Share personal stories that deliver key points.
 - Be passionate, persuasive and creative.

Creative Format Options

1. **A VERBAL TESTIMONIAL** Acting as a stakeholder (person, community, animal, river, etc) you tell your personal story about how important this topic is to you and how it can affect your life, positively and negatively. You could do it like a talk show where one interviews the other about your experience.
2. **GRAPHIC DEPICTION** Drawings that are labeled and explain the information you learned in the research. This could be pictures, images, a storyboard, timeline, and includes how you will make changes in your life.
3. **MOCK DEBATE** You and your partner present two points of view, or two stakeholders, showing the facts that support both sides in the issue.
4. **PAINTING OR COLLAGE** An artistic representation of what you learned in the research and how you will make changes in your life.
5. **MOCK NEWSCAST** You are a TV journalist on the scene of an environmental situation and you are interviewing both sides of the issue. For example, trees being cut down, industry's waste going into a river, protesters with signs at a government office.
6. **NEWSPAPER** Create a newspaper page with various articles about both sides of the issue. You may include a cartoon that is relevant, a letter to the editor about the issue and columns with the scientific facts. Include what changes are needed to help with this issue in the world.
7. **POEM/PROSE/SONG/RAP** Present a piece of creative writing that expresses personal feelings and facts together around your issue/topic.
8. **SKIT** Act out a script to demonstrate your understanding of the issue/topic. Explain the stakeholders on both side of the issue and how you will change your life to help.
9. **WEBSITE** Create a well designed website that clearly leads the reader through the major issues, facts and opinions on this topic.
10. **POWERPOINT/PREZI** Create a visual presentation with strong images, graphs, even video, that complements and strengthens your verbal presentation. Remember images – not words!
11. **VIDEO** Create a video that describes the key points of the issue in a compelling way. This video can be animation.

8. SELF EVALUATION

While helping you learn about a sustainability topic, the goal of this Action Pack was to help you increase your ability in a number of life skills.

By completing the self evaluation below you can acknowledge the areas that you have developed and the areas that need more work. Please keep in mind that your abilities will continue to develop over the years.

Please rate yourself from 1 – 5 for each of the following statements.

- 1** = I did not develop this skill with this project and I do not feel confident in this life skill.
- 2** = I developed this skill a little, but I need to do more work in this area.
- 3** = I developed this skill a fair bit, and I see how I could use it in the future.
- 4** = I developed this skill a lot and I am quite confident about using this skill in the future.
- 5** = This goal was fully met... I actively use this life skill in many areas of my life.

	<i>Action Pack Goal</i>	<i>Your Self Evaluation</i>				
I	Inquiry Process:					
	• I can work well with others to explore a topic.	1	2	3	4	5
	• I can research a question using internet links.	1	2	3	4	5
	• I am willing to get personally engaged to use my own experience as part of my research.	1	2	3	4	5
	• I am willing to look for solutions even when a clear and easy answer is not obvious.	1	2	3	4	5
T	Creative/Critical Thinking:					
	• I learned a lot about this topic.	1	2	3	4	5
	• I considered different points of view.	1	2	3	4	5
	• I have generated some new ideas.	1	2	3	4	5
	• My understanding of this topic will now influence how I think and act in the future.	1	2	3	4	5



Communication:

- I am comfortable speaking with others about my area of interest. 1 2 3 4 5

- I can hear and respect different opinions during a discussion 1 2 3 4 5

- I can use digital media to research information. 1 2 3 4 5

- I can use digital media to share information. 1 2 3 4 5

- I can deliver an interesting presentation on my topic. 1 2 3 4 5



Personal & Social Responsibility:

- I know what my own values are. 1 2 3 4 5

- I use my values to decide on my actions. 1 2 3 4 5

- I take responsibility for how my actions impact on my life. 1 2 3 4 5

- I take responsibility for how my actions impact on the lives of others, my community & my planet. 1 2 3 4 5