

IB Environmental Systems and Society (ESS) SL Year 1: Foundations of ESS

Teacher(s)	IB ESS PLC	Subject group and course	Environmental Systems and Society (ESS)		
Course part and topic	Foundations of ESS	SL or HL/Year 1 or 2	SL; Year 1	Dates	Aug-September
Unit description and texts		DP assessment(s) for unit			
<p>In this unit students will develop fundamental understandings of:</p> <ul style="list-style-type: none"> ● Cultural perceptions of the environment ● System models ● Energy and equilibrium <p>Statement of Inquiry: A systems approach, including modeling, supports the study of complex environmental issues. This holistic view promotes understanding through varying societal environmental value systems (EVs).</p>		<ul style="list-style-type: none"> ● Formative quizzes ● Who Am I? environmental values activity ● Cultural Attitudes Jigsaw ● Environmentalism Timeline ● It Takes a Disaster Jigsaw ● Pancake System Models ● Energy/Matter Flow System Diagrams ● Case Study: Apo Island– Tipping Points ● Summative Unit Assessment 			

INQUIRY: establishing the purpose of the unit

Transfer goals

List here one to three big, overarching, long-term goals for this unit. Transfer goals are the major goals that ask students to “transfer” or apply their knowledge, skills, and concepts at the end of the unit under new/different circumstances, and on their own without scaffolding from the teacher.

SWBAT:

Formulate an individual Environmental Value System and justify their decisions on environmental issues using evidence-based claims using the following science and engineering practices:

- Asking Questions and Defining Problems
- Developing & Using Models

ACTION: teaching and learning through inquiry

Content/skills/concepts—essential understandings

Learning process

Check the boxes for any pedagogical approaches used during the unit. Aim for a variety of approaches to help facilitate learning.

Students will know the following content:

- 1.1 *There is a wide spectrum of EVSs, each with its own premises and implications*
- 1.2 *The use of systems and models simplifies interactions but may provide a more holistic view without reducing issues to single processes.*
- 1.3 *The laws of thermodynamics govern the flow of energy in a system and the ability to do work.*
- 1.4 *All systems can be viewed through the lens of sustainability and environmental indicators and ecological footprints can be used to assess sustainability.*
- 1.5 *Pollution is a highly diverse phenomenon of human disturbance in ecosystems.*

Students will develop the following skills:

- Identify environmental value systems and evaluate the implications of environmental values in specific contexts
- Identify and explain their own environmental value system.
- Justify, using examples and evidence, how historical influences have shaped the development of the modern environmental movement.
- Construct a system diagram or a model from a given set of information.
- Evaluate the use of models as a tool in a specific context.
- Explain the implications of the 1st and 2nd laws of thermodynamics to ecological systems
- Discuss resilience in systems
- Evaluate the consequences of tipping points in earth systems

Students will grasp the following concepts:

- Cause and Effect
- Systems and System models
- Stability and Change

Learning experiences and strategies/planning for self-supporting learning:

Study Skills

Teach study reading &

Cornell notes

independent reading

outside of class

Small group/pair

work

Jigsaw summaries

Writing/Diagram-ing

In-Class Practice

Interdisciplinary learning

The course is interdisciplinary by nature.

Other/s:

Accommodations:

- *SWD/504 – Accommodations Provided*
- *ELL – Reading & Vocabulary Support*
- *Intervention Support*
- *Extensions – Enrichment Tasks and Project*

Formative assessment: Each subtopic will be assessed using topic quizzes. Students will also complete individual and group assignments to demonstrate understanding of and practice with concepts, content, and skills.

Summative assessment: Summative Case-study assessments will mirror criteria described by the IB program. Unit test will mirror the IB exam students will take at the end of the year.

Differentiation:

- ***Just-in-time reteaching from formative quizzes at the start of most class sessions***
- ***Scaffold learning - teaching study skills and writing strategies as well as content***
- ***Extend learning - authentic science writing & documentaries for advanced reading***

Details: Growth will be monitored using formative assessments by instructor. Remediation/ extension will be conducted through homework activities and investigations conducted in class. One on one tutoring offered to assist students needing additional assistance with material.

Approaches to learning (ATL)

Check the boxes for any explicit approaches to learning connections made during the unit. For more information on ATL, please see [the guide](#).

Thinking

Social

Communication

Self-management

Research

Details:

The ATL for this unit will be social. This will be centered on the development of individual EVSs. This will include extensive perspective-taking activities for better understanding of other EVSs.

Language and learning <i>Check the boxes for any explicit language and learning connections made during the unit. For more information on the IB's approach to language and learning, please see the guide.</i>	TOK connections <i>Check the boxes for any explicit TOK connections made during the unit</i>	CAS connections <i>Check the boxes for any explicit CAS connections. If you check any of the boxes, provide a brief note in the "details" section explaining how students engaged in CAS for this unit.</i>
<p>Activating background knowledge</p> <p>Scaffolding for new learning</p> <p>Acquisition of new learning through practice</p> <p>Demonstrating proficiency</p> <p>Details: This unit applies vocabulary acquired through previous courses. Proficiency will be assessed through formative and summative assessments.</p>	<p>Personal and shared knowledge</p> <p>Ways of knowing</p> <p>Areas of knowledge</p> <p>The knowledge Framework</p> <p>Details: Students will focus on the methodology (Systems and models) for the course.</p>	<p>Creativity</p> <p>Activity</p> <p>Service</p> <p>Details: As students develop their own EVS, they may be motivated to organize projects within the community that promotes sustainability and pollution reduction.</p>
<p>Resources</p> <p><i>List and attach (if applicable) any resources used in this unit</i></p>		
<ul style="list-style-type: none"> ● Oxford Environmental Systems and Societies ISBN 978-0-19-833256-5 ● Biozone Environmental Science Student Workbook ISBN 978-1-927173-55-8 ● Hodder Education Environmental Systems and Societies Study and Revision Guide ISBN 978-1-471-89973-7 ● IB ESS Schoology Group 		

Reflection—considering the planning, process and impact of the inquiry

<p>What worked well</p> <p><i>List the portions of the unit (content, assessment, planning) that were successful</i></p>	<p>What didn't work well</p> <p><i>List the portions of the unit (content, assessment, planning) that were not as successful as hoped</i></p>	<p>Notes/changes/suggestions:</p> <p><i>List any notes, suggestions, or considerations for the future teaching of this unit</i></p>
<p>Study skill & writing practice activities</p> <p>System Model activities.</p> <p>Case Studies</p> <p>Jigsaw reading & presentations</p>	<p>Students trying to study independently without support from study skills lesson</p> <p>case studies with less than 70 minute work session</p>	<p>Incoming juniors need support in purposeful reading, note-taking, and writing strategies to feel confident in approaching IB ESS content.</p>