Summary

Strand 2 - Environment Draft

Subject	Year	Start date	Duration
Information Technology in a Global Society	IB1	Week 4, May	6 weeks 8 hours

Course Part

CORE

Description

The environmental theme covers a wide range of topics. The increasing processing capability of mobile devices has enabled almost universal access to information, but the increased number of devices has impacted on health and the environment.

Inquiry & Purpose

Inquiry / Higher Order Questions

Type	Inquiry Questions
Concept-based	Explain how computer climate models work, with clear text and diagrams. 2. Describe how new technological developments are driving better climate models. 3. What are the problems associated with climate models? 4. Explore and experiment various live onli

Curriculum

Aims

Develop in the student the capacity to identify, to analyse critically and to evaluate theories, concepts and arguments about the nature and activities of the individual and society

Enable the student to collect, describe and analyse data used in studies of society, to test hypotheses, and to interpret complex data and source material

Enable the student to evaluate social and ethical considerations arising from the widespread use of IT by individuals, families, communities, organizations and societies at the local and global level

Develop the student's understanding of the capabilities of current and emerging IT systems and to evaluate their impact on a range of stakeholders

Objectives

Knowledge and understanding of specified content

- demonstrate an awareness of IT applications and developments in specified scenarios
- demonstrate an awareness of the social and ethical significance of specified IT applications and developments
- demonstrate technical knowledge of ITGS terminology, concepts and tools

Application and analysis

- explain the impacts of IT applications and developments in specified scenarios
- analyse the social and ethical significance of specified IT applications and developments
- transfer IT knowledge and make connections between specific scenarios

Synthesis and evaluation

- evaluate local and global impacts of specified IT developments through individually researched studies
- evaluate a solution involving IT to a specified problem using knowledge of IT systems
- discuss the social and ethical implications of specified IT policies and developments

Syllabus Content

Strand 2: Application to specified scenarios

Core

- 2.3 Environment

Concepts

1. Explain how computer climate models work, with clear text and diagrams.
2. Describe how new technological developments are driving better climate models.
3. What are the problems associated with climate models?
4. Explore and experiment various live online weather/simulated real life models.
5. List 5 different data loggers and what they do that humans can’t?
6. How do Mapping Systems work? And create your own GIS Map
7. Investigate the types of GIS available and what the different layers support decision making?
8. What is the typical lifecycle of your mobile phone?
9. Can sensitive data left on discarded computers being recovered and used for criminal purposes such as identity theft?
10. What Really Happened In IBM's Clean Room? (CNN) Discusses possible cases in 'clean room' workers
11. Report on the electrical consumption of IT devices as more and more computing services are moved to the cloud, concern is increasing over the hidden environmental costs of the energy-hungry data centers that power these services.

12. What is basel action network and how they do support e-waste

ATL Skills

Approaches to Learning

Thinking

- In this unit, we will

  ask students to formulate a reasoned argument to support their opinion or conclusion

  give students time to think through their answers before asking them for a response

  reward a new personal understanding, solution or approach to an issue

  ask open questions

  help students to make their thinking more visible (for example, by using a strategy such as a thinking routine)

  require students to take an unfamiliar viewpoint into account when formulating arguments

  ask questions that required the use of knowledge from a different subject from the one you are teaching

  include a reflection activity

  make a link to TOK

Social

- In this unit, we will

  have students work in small groups

  allocate, or ask students to allocate among themselves, different roles in a classroom discussion or activity

  have students peer assess their group performance or process

  provide opportunities for students to make decisions

Research

- In this unit, we will

  require students to formulate/construct a focused research question (either in class or in a homework assignment)

  reward or encourage correct citing and referencing

  assign a task that required students to use the library

  require students to practise effective online search skills (for example, use of Booleans and search limiters)

  provide opportunities for students to reflect on how they determine the quality of a source, or analyse contradictory sources

  require students to record their search for sources in steps (types of search engines, search terms, and so on)

  give students advice on (or provide an opportunity for students to practise) narrowing the scope of a task to make it more manageable

  discuss or model the importance of academic honesty and clear acknowledgment of sources

Developing IB Learners

Learner Profile

Inquirers

Knowledgeable

Thinkers

Communicators

Risk-takers (Courageous)

Assessment

Formative assessment

Students' progress will be monitored through dialogue of 1-1, group and class discussions. Assessment strategies for this unit will include a variety of methods to cater for all learning styles (kinesthetic, auditory and visual learners) and to engage in the syllabus outline thoroughly. All formal summative evaluations will be marked according to IB criteria that ranges from grade 1 (very poor) to grade 7 (excellent performance).

Students assessments include:

- Mini quizzes and formative activities to reinforce certain concepts.
- Projects will be given but not limited to, oral presentations and blog entries.
- Short question and answer based on paper 1 and paper 2 components
- Topic starter/activities template to produce resources prepared to teach and deliver to the class.
- Homework is assigned as a vital extension of the classroom work. Students can be expected to regularly receive homework designed to reinforce concepts and skills covered in class.
- Homework includes, but not limited to, readings, worksheets, writing assignments, research, and revision for summative assessment

Summative assessment

A written theory paper type 2 exam at the end of this specific themed topic.

Assessment criteria

SL Criteria
External Assessment

Paper 1: Structured questions that assess in an integrated way the three strands of the syllabus

Social and ethical significance

Application to specific scenarios

IT systems

HL Criteria
External Assessment

Paper 1: Structured questions that assess in an integrated way the three strands of the syllabus, including HL topics

Social and ethical significance

Application to specific scenarios

IT systems

Description