

# GRADE 10 INDIVIDUALS AND SOCIETIES: AN ENGAGING SUSTAINABLE INQUIRY ON MEGACITIES



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## LEARNING PLAN OVERVIEW

<b>Subject(s)</b>	<ul style="list-style-type: none"> <li>• Humanities</li> <li>• Sustainable Development Project</li> </ul>
<b>Grade Level (s)</b>	High School (ages 14-18)
<b>Systems Tool(s)</b>	<ul style="list-style-type: none"> <li>• Sustainability Compass</li> <li>• Systems Iceberg</li> </ul>
<b>Purpose of Using Tool</b>	<ul style="list-style-type: none"> <li>• Inquiry</li> <li>• Critical Thinking</li> </ul>
<b>Summary</b>	This tenth grade/MYP 5 Individuals & Societies lesson plan aims to provide students the critical thinking skills they will need to analyze the problems megacities face and to come up with innovative solutions by using the Sustainability Compass and Systems Iceberg tools.

## Learning Objectives

At the end of the lesson, students will be able to;

1. Define sustainable development.
2. State the impact of the rise of megacities on communities using the Sustainability Compass.
3. Use the Systems Iceberg model in analyzing the challenges posed by megacities in local communities.
4. Act as responsible citizens of local and global communities.

## Material and Settings

- Printed Sustainability Compass tool
- Translators
- Dictionary

- Coloured pencils
- Sticky notes
- Flipchart
- Cut out words (cheat sheet)
- Slides
- Smartboard

## Learning Context

This lesson is intended for tenth graders in a high school in a diverse international school. The class is a mixed-ability class with some ESL students who are not quite confident to express themselves openly in class hence the lesson uses technology to ensure all students have the opportunity to express themselves.

## Purpose of Using the Systems Thinking Tools

The lesson uses the Sustainability Compass and Systems Iceberg model because it is best suited to the unit of sustainability and megacities in aiding students to problem solve and analyze the impact of megacities.

## Learning Plan Step-by-step Description

### **Session 1**

Teacher explains the next activity- scrambled terms. Students will be put into groups to complete the Sustainability Compass task 2 where they are given scrambled terms to sort them correctly/appropriately under the correct point of the Sustainability Compass (Nature, Economy, Society and Wellbeing).

After the task, each group of students will discuss their answer (how they classified the scrambled words under the columns Nature, Economy, Society and Wellbeing) and their reason for the categorization. Teacher shows a possible solution for the Sustainability Compass.

### **Session 2**

Students will undertake a gallery walk (while having sticky notes) to review the challenges of megacities listed by other groups. They will write on their sticky note any new challenge that they might not have considered in their list (or on their researched megacity in the previous unit)

Based on the identified challenges, students go into group activity to brainstorm innovative solutions they can deploy to address the challenges identified. They will also show a link their

solutions to the Sustainability Compass by explaining how the solution will improve any of the cardinal points on the Sustainability Compass. Students will share their answers via a jamboard.

The class will review the solutions on the jamboard for efficiency, sustainability and cost effectiveness.

Teacher projects a video for students to watch on other innovative solutions to make megacities sustainable ([video 1](#) and [video 2](#)).

### **Session 3**

Using the movie of Titanic as a pitch, teacher invites students to describe an iceberg and state the different components. Teacher projects the Systems Iceberg model as a system thinking tool on the board and reiterates its role in problem solving. Teacher outlines the different components of the Systems Iceberg and guides students through the explanation.

Students play an online activity matching the components of the Systems Iceberg model to the correct meaning.

Teacher leads a discussion to apply the Systems Iceberg model in finding solutions to a local challenge of street children (Talibe ) and the Ganges river in India.

Working in groups, students will identify a challenge within our school community and use the Systems Iceberg model in analyzing the problem with recommended solutions.

## **REFLECTION**

### **Plusses**

It was thrilling experience observing students take agency for the learning and collaborate with their teammates in brainstorming innovation sustainable solutions to the challenges they had researched as affecting megacities.

In response to being global citizens/agents of change using the knowledge gained from the unit, student pursued an interdisciplinary project with other subjects including visual arts and mathematics. They took the learning out of the class to educate the high school about sustainability, undertook climate mitigation actions and using system thinking analysis highlighted how the school can reduce the amount of waste generated. There were also service learning opportunities with the local community.

### **Areas for Improvement**

Some students initially had challenges grasping the meaning of mental models on the Systems Iceberg. It was not easy connecting the term (mental models) to the meaning. If I am

to teach this lesson again, it might be a good idea to initially introduce the term belief systems/patterns as synonymous to mental models.

Additionally, I subsequently will not lead the discussion in explaining key terms of the Systems Iceberg model. I would first and foremost provide opportunity for students to discuss in groups their own understanding, research further meaning and engage in a KWL (Know, Want-to-know, and Learned) activity. Thereafter, I will come in to address what they want to know and any misconceptions.

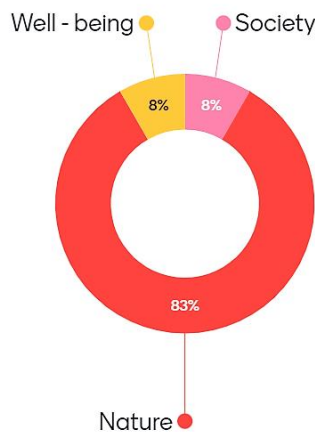
## EVIDENCE

### Compass Level 1 Certification Lesson Plan Template by Mark Adjei Tetteh



Which of the compass points represents the basic foundation of sustainable development?

Mentimeter



Press ENTER to show correct answer

12



Systems Iceberg L1 Jamboard

1 / 3



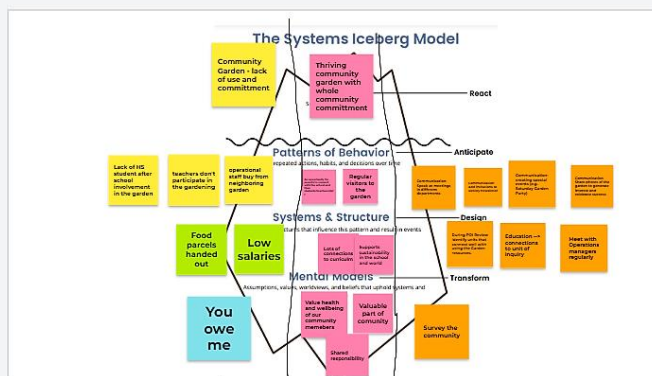
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Share



Set background

Clear frame



MYP 5\_1 & S\_10.2\_Megacities

1/2

Share

Set background Clear frame

Open on a Jam!

Advantages and challenges of megacities

- More places to eat and shop
- Lack of space
- Higher auto insurance premiums
- Higher cost of living
- Higher crime rates
- Better airports
- More noise (sound pollution)
- you can find everything you want in megacities
- More pollution
- You may not need a car: driving a vehicle is expensive on average \$1000 monthly - according to AAA
- More job opportunities
- Megacities lead to people expanding knowledge
- Vast entertainment system
- Better medical services
- Often has higher crime rates
- Megacities require a good infrastructure which means that most megacities do have that.
- Advantages: Lots of job opportunities and many new inventions are made. Disadvantages: Traffic, encourages poor working conditions and child labor.
- Adv- Better job, Mass transportation system, Entertainment, Best medical service. Dis- Adv- Overcrowding, Traffic, Air pollution, Unfair income, high crime rate.
- High cost of living
- Adv- Better job, Mass transportation system, Entertainment, Best medical service. Dis- Adv- Overcrowding, Traffic, Air pollution, Unfair income, high crime rate.
- Advantages: More production of goods. Disadvantages: Loss of pollution.
- production of more products
- Advantages: They reduce poverty, and improve living conditions for many citizens. Disadvantages: Inequality, high crime rates, pollution.