



The UN SDGs

Youth Tutor

Teaching Activities

Case Book



Edited by
Hong Kong Institute of Education for Sustainable Development

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Introduction



Climate change, global inequalities, war and conflict, food and water insecurity, our world is facing challenges from hundreds of different dimensions. To align global visions, the Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The 17 SDGs are integrated—they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.

Today, there are 1.8 billion people between the ages of 10–24 — this has been the largest generation of youth in history. The youth will be among the most affected, as the same time, youth are also agents of change. Youth have the power to change the current status quo, to mobilize peers, local and international communities to advance the SDGs to improve the lives of people and the health of the planet.

The “UNSDGs ” Youth Tutor Training Programme was launched by the Hong Kong Institute of Education for Sustainable Development in April 2022, the programme aims to equip young SDG advocates with the skills and knowledge needed to become youth tutors. The youth tutors were taught about the concepts of the UNSDGs and Education for Sustainable Development for each of the social, environmental and economic pillars of the SDGs. The first batch of youth tutors ranges from secondary school students to undergraduate students, from Shanghai, Hong Kong, the US and the UK, all coming together to learn about how education could drive changes in mindset and action.

This case book is a collection of outstanding teaching activities designed by the “UNSDGs” Youth Tutors, they focus on different SDGs, including SDG 3 – Good Health and Wellbeing, SDG 5 – Gender Inequality, SDG 13 – Climate Action and more. It is envisioned that the case book could be a valuable resource and reference for educators and young SDG advocates to join hands in advancing inclusive, equitable and quality education for all.



SDG 3

Good Health & Wellbeing



Designed By

Audrey To
Kevin Liew
Nicole Wong

Topic : Affordable Healthcare

Targeted Students : Grade 7-8

Summary and Rationale:

- The activity focuses on target 3.8 – achieving universal health coverage, especially equal access to quality health-care services.
- SDG 3 is crucial to every single one of us in the international community as it calls for innovation and research in regards to the aspect of healthcare to eradicate diseases, strengthen treatment and health, as well as address new and emerging health issues
- Several racial, ethnic, socioeconomic and other minority groups lack adequate health insurance compared with the major population, particularly those in countries where their National Health Services (NHS) charge a higher rate for quality healthcare and essential treatments, fuelling the prevalence of healthcare inequalities.

Learning Objectives:

- Understand the concepts of healthcare, National Healthcare Services (NHS), healthcare inequalities and the factors that affect equal access to the NHS
- Understand SDG 3 in relation to real world contexts as well as the current state of international progress to achieving SDG 3
- Become familiar with the importance of affordable healthcare
- Explore the measures taken by the global community to reduce healthcare inequalities
- Encourage students to actively voice out themselves by stimulating critical reflections and discussions on their experience with local healthcare system, health inequities in our world, the factors affecting affordable healthcare, and SDG3 in general
- Developing students' empathy skills by allowing them to step into the perspectives of different stakeholders through case studies and debate sessions

Skill Areas:

- Application
- Critical Thinking
- Reflective Thinking

Activity Prep:

- Presentation Slides
- Students should do some research or think about the debate topic "should healthcare be free?" before the second part of the lesson
- Access to Slido for Q&A sessions
- Relevant videos clips



SDG 3


Good Health & Wellbeing



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Nicole Wong

Activity Outline (two 45 min sessions)



Section	Time	Activity
Lesson 1		
Introduction to SDG3	15 minutes	<ul style="list-style-type: none"> • Introduction to the United Nations • Introduction to Sustainable Development Goals • Introduction to SDG 3 (targets, importance, current relevance) <ul style="list-style-type: none"> ◦ SDG 3 Introduction Video
Exploring Affordable Healthcare	30 minutes	<ul style="list-style-type: none"> • Health Equities <ul style="list-style-type: none"> ◦ What are health equities? (Video) • What is the NHS system? <ul style="list-style-type: none"> ◦ Introduce Two types of NHS systems • Health Inequities <ul style="list-style-type: none"> ◦ Discussion: Why are there health inequities? , What factors affect equal access to health care? ◦ Case Studies: Examples of health inequities in real life
Lesson 2		
Mini Debate	25 minutes	<ul style="list-style-type: none"> • should healthcare be free?
Call for Actions	20 minutes	<ul style="list-style-type: none"> • Explore actions taken to reduce health inequities • Video: How does the Affordable Care Act Work? • Discussion: What can students do to help?

SDG 3

Good Health & Wellbeing

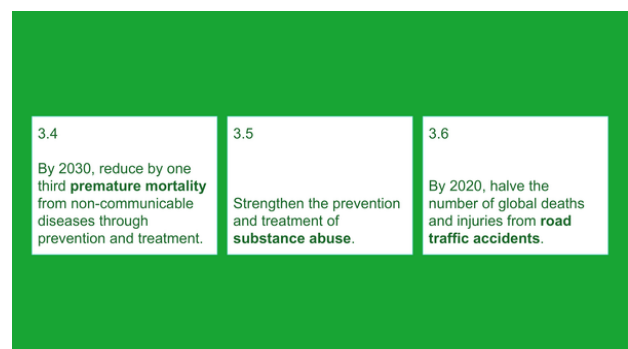
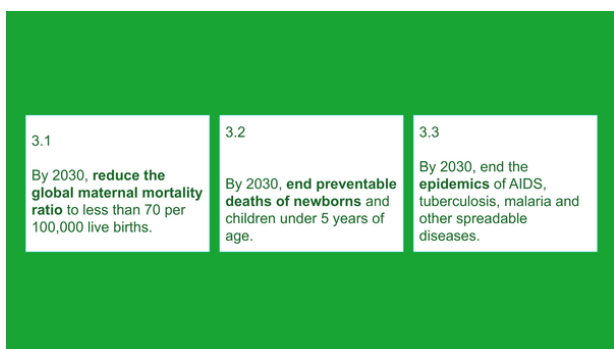
3 GOOD HEALTH AND WELL-BEING



Designed By

Audrey To
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Nicole Wong

Activity Slides



SDG 3

Good Health & Wellbeing

3 GOOD HEALTH AND WELL-BEING



Designed By

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Activity Slides

3.7

By 2030, ensure universal access to sexual and reproductive health-care services and integration of into national strategies.

3.8

Achieve universal health coverage, including financial risk protection, access to quality and safe essential health-care services, medicines, and vaccines.

3.9

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and pollution.

3.A

Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate.

3.B

Support the research, development of, and access vaccines and medicines for diseases that primarily affect developing countries.

3.C

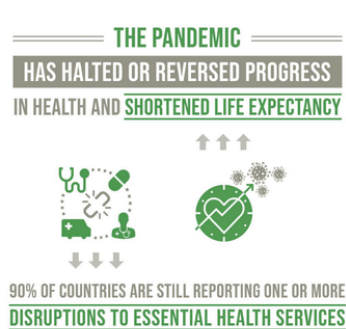
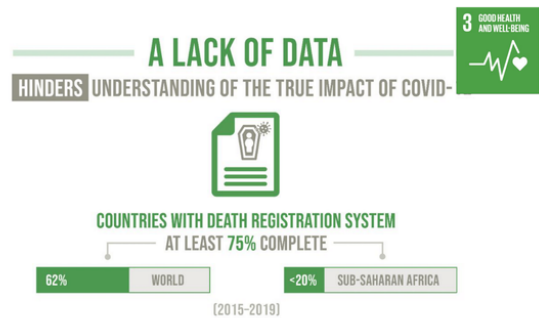
Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries.

3.D

Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

Why is SDG 3 important now?

SDG 3 has *always* been important, but is even more important now that we are living in a **global pandemic**.



In short...

The current pandemic is threatening to **undo all the work we've done** to healthcare over the years.

Before the pandemic, we were making major strides in improvements like **increasing life expectancy** and **reducing many diseases** that threatened lives.

The pandemic should serve as a **wake up call** for how much more we need to do to fix this system.

SDG 3

Good Health & Wellbeing

3 GOOD HEALTH
AND WELL-BEING



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Activity Slides



Affordable Healthcare

by Audrey To, Nicole Wong,
Kevin Liew

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- What is the NHS system?

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- Why are there health inequities?
- What factors affecting equal access to healthcare?

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Real Life Use

- What are examples of health inequities in real life?

04
Action Taken:

- What are we doing to reduce healthcare inequities?




Health Equities

To make sure that everybody can be as healthy as possible **no matter what!**

Everybody gets the **same** access to help for their health.


What is Health Equity?



What is Affordable Healthcare?

- Healthcare is **not too expensive!**
- People can get healthcare without having to cut off other needs
- People have **access** to healthcare

How is Health Equity related to Affordable Healthcare?



The Relationship between Affordable Healthcare and Health Equity

The **Affordable Care Act (ACA)** is a law adopted by the United States to reduce health inequities and make healthcare **more available** to **more people**.

By making healthcare affordable and accessible to everyone, we can make sure that:

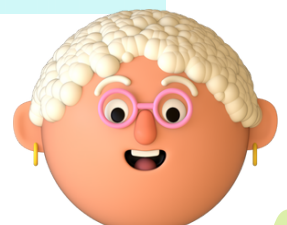
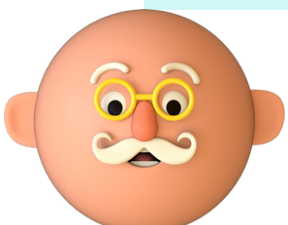
1. Everyone can **keep a healthy wellbeing**
2. Better healthcare systems can be established
3. Better quality of care
4. Society is more healthy!

The NHS

The **National Health Service (NHS)** is a healthcare system.

The NHS is the **health service** that everybody in the UK can use when they become poorly or injured, to help them to get better. For example:

1. Getting **doctor visits**
2. Getting **surgery**
3. Getting **urgent help** from doctors



SDG 3

Good Health & Wellbeing

3 GOOD HEALTH AND WELL-BEING



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Activity Slides



Before the NHS...

People had to pay a lot of money in order to receive treatment.

Now, with the NHS...

People can pay less or even nothing for treatment if they had too little money.

Fairness and Equality

At its core, the NHS embraces the idea that **everyone** should have **equal access to quality healthcare services** regardless of their financial status.

→ This can help to alleviate mental stress on people who:

1. have to deal with expensive healthcare issues
2. are unable to access essential healthcare services

→ As a result, these groups of people can receive high-quality healthcare for their own medical needs

	AUS	CAN	FRA	GER	NETH	NZ	NOR	SWI	UNK	UK	US
OVERALL RANKING	2	9	10	8	3	4	6	6	1	11	11
Care Process	2	6	9	8	4	3	10	11	7	1	5
Access	4	10	9	2	1	7	5	6	8	3	11
Administrative Efficiency	1	6	11	6	9	2	4	5	8	3	10
Equity	7	9	10	6	2	8	5	3	4	1	11
Health Care Outcomes	1	9	5	8	6	7	3	2	4	10	11

2 types of NHS systems (UK & USA)

	UK	USA
Who is it funded by?	Taxes	Private financing
Costs are...	Lower	Higher
Is healthcare accessible?	All citizens (free)	Citizens who buy health insurance plans (only specific group of people)

Health Inequities

The differences in the amount of help people are getting.

Health inequities are differences in the health statuses between various people in our society.

People may be helped differently because of who they are.

Why are health inequities significant?

There a lot of people in our world with **poor health conditions**, because they are unable to access and afford to pay for quality healthcare

These health inequities are **unfair** and have resulted in countless innocent people being forced to live under **harmful, dangerous living conditions**.

Why do health inequities exist?

- People come from various different societal and financial backgrounds.
 - While some people may grow up in a wealthy high-income family who can easily access and afford excellent healthcare services,
 - others may be less fortunate and born into poverty - without little to any money.
- High-quality, effective healthcare often requires a lot of money to pay for, however money is not available in certain regions

Not done with it btw

What factors affect unequal access to healthcare?

People may be **treated differently** because of their...

Education	Employment Status	Income
Gender & Sexuality	Ethnicity	Race

There are many instances of **discrimination** in healthcare. Statistically, minority groups receive lower quality care.

But why?

What is **causing** these health inequities?

Medicine is Expensive

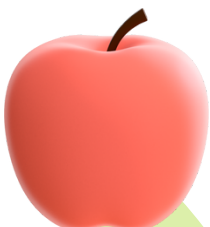
Especially in the US, drugs are extremely expensive. Equipment and staff are also very expensive.

No Set Prices

The system does not define set prices. Hospitals are pushed to the brink and need to set higher prices as a result.

Not Enough Money

This makes healthcare really expensive, and not everyone has enough money to pay for it.



SDG 3

Good Health & Wellbeing

3 GOOD HEALTH AND WELL-BEING



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Activity Slides

Impact of Health Inequities

Health inequities have a **negative** impact on everyone.

For example, it could:

- Make it **harder** to treat infectious diseases
- Lead to **higher levels of stress and anxiety** which is damaging for mental health
- **Prevent** half of the world's population from **accessing** and **receiving** proper healthcare
- Drive 100 million people into **poverty** every year due to large amount of money spent on treating health issues
- **Raise average cost** of healthcare **globally** for everyone

Health Inequities can also **physically**, **mentally**, and **psychologically** impact future generations of children whose parents and ancestors faced similar health inequities in a negative way



Examples of Health Inequities in Real Life

Daily Number of children who died from under 5 years (in 2020):

16,000 Deaths

- The leading causes of death were **medical-related**, such as pneumonia, diarrhea, and malaria.
- These deaths could have been **prevented** and **treated** given **proper access** to quality healthcare and sanitation



Examples of Health Inequities in Real Life

16,000 Deaths

Daily Number of Children Deaths (under 5 years)

The leading causes of death were **medical-related illnesses**, which could have been **prevented** and **treated** given **proper access** to quality healthcare and sanitation

99%

Percentage of global annual maternal deaths (from pregnancy issues) that come from developing countries

Maternal death rates are a key indicator of health inequity as it shows the gaps in healthcare quality between the financially rich developed countries, and the poor developing countries.

16,000 Deaths

Daily Number of Children Deaths (under 5 years)

The leading causes of death were **medical-related illnesses**, which could have been **prevented** and **treated** given **proper access** to quality healthcare and sanitation

These examples are only a few of countless health inequities that affect millions of people around the world.



Hope is not lost!

The current COVID-19 pandemic taught us that our healthcare systems were **really fragile**.

- Our healthcare systems immediately **collapsed** and was unable to sustain the amount of cases.
- They were already really fragile and pushed to the brink, and the pandemic toppled the illusion of stability.



Hope is not lost!

But now, governments recognize the **importance of good healthcare** systems and have united together to protect basic health needs of all the people, and put an end to health inequities.

- After this, governments will hopefully continue building the **strength** and **durability** of our healthcare systems in case we are faced with another health crisis.



How does the Affordable Care Act Work?



What can YOU do?

Learn about it!

It is important to be **educated** and be **aware** of these problems.

Recognizing these problems are the **first step** to helping.

Tell your friends

Thus, it is important for others to know about it as well!

People need to know that this is an **important issue** that affects **all** of us.

Stand Against Discrimination

Social discrimination is one of the major problems contributing to health inequity.

Defy social discrimination, and do not treat others differently because of who they are!



Debate!

Students will be split into groups of 4, and split into pairs to debate...



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Activity Slides



Financial Costs:

- Is healthcare *actually free*?
- UK citizens contribute towards healthcare through **taxes**
- Stretched NHS budget in the UK
 - ◆ strictly-controlled distribution of medical resources

Personal Costs:

- Health service staff work for **long hours** and **do difficult tasks**
- they might **suffer from personal stress** and **strain**

eg. since healthcare is *free*, some people might not show up to their doctor's appointment in time
some people who receive free organ transplants might not live in a way that honours the gift they have received
→ causing **more stress** on healthcare workers

Private Healthcare:

- Money will be **used in a better way** if a hospital is run as a **business**
- Private healthcare might be of **better quality**, compared to public healthcare

The Future of Healthcare:

- What do **WE** actually value in a healthcare system?
- societal issues to consider:
 - a. **ageing population** -> large **elderly** population
 - b. current healthcare system only emphasises on **PHYSICAL health** (whereas **mental health** is important as well)
 - c. can local communities do more to take care of their most **vulnerable** members?

What could health equity look like?

Health equity can look like...



Financial Protection
So payments do not force people into financial hardship

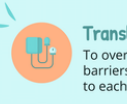


Affordable Prices
So people have enough money for treatment

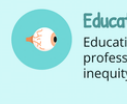


Long-Distance
Mobile health services for people who cannot travel far

Health equity can look like...



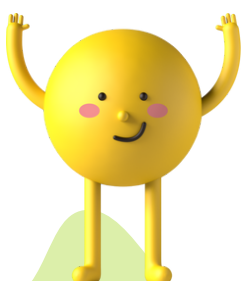
Translators
To overcome language barriers so people can talk to each other



Education
Educating healthcare professionals about health inequality



Flexible Appointments
Appointment times that can be changed for people who work for a long time



SDG 5

Gender Equality



Designed By

Audrey Yuen
Jenny Kim
Tiffany Cheung

Subject : Social Science

Targeted Students : Grade 5–6

Summary and Rationale:



- By the end of the activity, students will be able to understand how gender inequality manifests itself in developed and developing countries and be motivated to build a more inclusive society
- The activity will include a discussion about students' future careers and their reason for choosing them, an exploration and introduction to gender stereotypes by using a card game, as well as case studies showing the severity of gender inequality in developing countries
- Students should think independently about 'how we can move forward', how they can contribute and alter their own behaviour to construct a more equitable society

Learning Objectives:

- Understand how gender inequality in terms of the ability to make choices manifests in both the developing and developed world
- Know about how gender inequality manifests in specific developing nations
- Know the ways choice is limited through gender stereotypes in society
- Understand how they can contribute to breaking the cycle of gender stereotypes
- Be inspired by female role models who has acted against gender stereotypes

Skill Areas:

- Teamwork
- Critical Thinking
- Creativity
- Public Speaking
- Empathy

Activity Prep:

- Case study of how gender inequality manifests in developing countries and developed countries to facilitate discussions of stereotypes
- Arts and crafts materials
 - Blank A4/A5 pieces of paper for drawing
 - Writing utensils and colour pencils/markers
- Cue cards written with jobs that are traditionally female / male dominated (eg. firemen, police, nurses, etc.)
- A series of questions to be asked for discussion
- Powerpoint or Worksheet for Role Models Showcase



SDG 5

Gender Equality

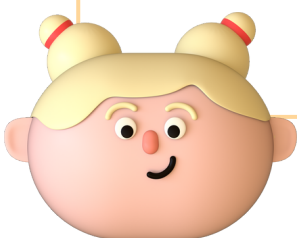


Designed By

Audrey Yuen
Jenny Kim
Tiffany Cheung

Activity Outline (70 mins)

Section	Time	Activity
Opening Discussion & Activity	10 minutes	<p>What do you want to be when you grow up and why?</p> <p>Students can choose the pre-written career card that most aligns with their ideal career or pick one of the blank career cards and fill in an unlisted one.</p> <ul style="list-style-type: none"> to show students that they have a lot of choice in what they want to pursue in the future, contrasting to limited choices that children in the developing world have.
Case Study	15 minutes	<ul style="list-style-type: none"> Teacher will take all the career cards from the students except the "Housewife" card and ask the students how they would feel if this was their only career choice Teacher will explain this is the reality for girls who are the same age as the students in many countries and introduce the case studies selected from the following: <ul style="list-style-type: none"> Afghanistan: Afghan girls are not allowed to attend school beyond primary school, cannot work in the workforce, are prevented from leaving the house without a blood relative/husband/in-law, and are married off at an average age of 15 or 16. Pakistan: domestic violence and honour killing is still ubiquitous, and almost twice as many men as women receive secondary education in Pakistan. Malala is an activist who spoke out against the stripping of the right to education of girls in Pakistan as a teenager. (Video) South Sudan: worst record for educating girls – 73% of girls do not go to primary school, and the government spends just 2.6% of its total budget on education



SDG 5

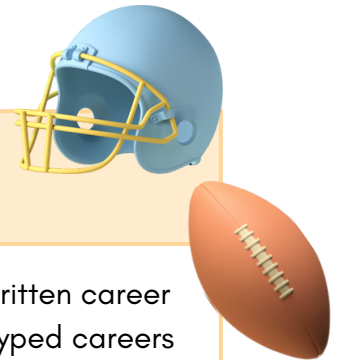
Gender Equality



Designed By

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Jenny Kim
Tiffany Cheung

Activity Outline (70mins)



Section	Time	Activity
Arts & Crafts Activity	15 minutes	<ul style="list-style-type: none"> Students pick a job from one of the prewritten career cards which are explicitly gender stereotyped careers e.g. nurse, fashion designer, football player, astronaut Students try to draw a sketch of what the person looks like. If most students end up drawing female nurses, male footballers and male astronauts, the teacher can raise the question of why a female footballer / a male nurse wasn't drawn instead. The teacher can ask the students why we often associate certain careers with certain genders.
Teacher-led discussion	15 minutes	<ul style="list-style-type: none"> Why do gender stereotypes and gender expectations exist? How are these stereotypes harmful? How can we become more inclusive and supportive of everyone? (eg. through our language and actions)
Be Empowered: Role Models Showcase	15 minutes	<p>Women in STEM and female entrepreneurs who don't fit the traditional gender roles</p> <ul style="list-style-type: none"> Marie Curie Rosalina Franklin Vera Rubin Maryam Mirzakhani
Homework	/	Find a female role model who inspires you and make a poster to showcase her journey, impact and successes



SDG 5

Gender Equality

5 GENDER EQUALITY



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Example of Career Cue Cards



Case Studies



Discussion Questions



Women in STEM

 <p>Marie Curie -Scientist -Awarded Nobel Prize for Physics for her study into spontaneous radiation -Received Nobel Prize in Chemistry, in recognition of her work in radioactivity.</p>	 <p>Rosalind Franklin -Scientist -Contributed to the discovery of the molecular structure of deoxyribonucleic acid (DNA)</p>	 <p>Vera Rubin -Astronomer -Pioneered work on galaxy rotation rates -Confirmed the existence of dark matter</p>	 <p>Maryam Mirzakhani -Mathematician -First woman to be awarded a Fields Medal -Contributed to the dynamics and geometry of Riemann surfaces and their moduli spaces</p>
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Women in STEM

- Marie Curie
- Rosalind Franklin
- Vera Rubin
- Maryam Mirzakhani

SDG 10

Reduce Inequalities



Designed By

Anny Chen
Nicole Deng
Yoyo Choy

Topic: Different Dimensions of Inequalities

Targeted Students : Grade 7-8



Learning Objectives:

- Understand the relationship between **animals** and human
- Realise the importance of reducing **animal** inequalities and protecting animals for the respect of lives.
- Become aware of the situation of **education** inequalities, specifically caused by the uneven distribution of **education** resources
- Being able to respect, empathize with and help students in need
- Understand the relationship between **climate** change and inequalities
- Interpret how **climate** change exacerbates inequalities
- How to practise climate action and live a green lifestyle so as to reduce **climate** inequalities

Three Dimensions & skills:

Animal Inequalities

Build trust with animals, fostering empathy, learning to reflect on ourselves and aspiring to achieve equality in lives

Education Inequalities

Developing empathy, social consciousness, and the ability to cooperate with each other

Climate Change Inequalities

Build up the knowledge about the relationship between climate change and inequalities and cultivate a sense of living green.

Activity Prep:

- Ipads for students to access comics, videos, Nearpod, drawing, and Kahoot game
- If available: VR glasses to enhance experience
- A4 paper and crayons for drawing activities
- Presentation slides



SDG 10

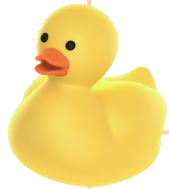
Reduce Inequalities



Designed By

Anny Chen
Nicole Deng
Yoyo Choy

Activity Outline (60 min session for each theme)



Section	Time	Activity
Animal inequalities		
Comics and Videos	15 minutes	<ul style="list-style-type: none"> Students could pick from a list of comics and videos to learn about marine life & marine pollution <ul style="list-style-type: none"> "<u>Human, Why don't you eat plastic bags?</u>" <u>The Ocean Cleanup Project</u>
Group Discussion (Life Under Water)	15 minutes	<ul style="list-style-type: none"> Where does marine pollution come from? Where will these pollution go? What hazards do marine litters propose?
VR Experience / Video Showcase	15 minutes	<ul style="list-style-type: none"> Use VR glasses (if available) to experience the life of wild animals while in the natural habitats where they truly belong. Understand that animals holds the right to live freely and human need to respect their lives.
Group Discussion (Life on Land)	15 minutes	<ul style="list-style-type: none"> Should animals be locked up? Are animals born to please human? What should be the relationship between animals and human?



SDG 10

Reduce Inequalities



Designed By

Anny Chen
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Yoyo Choy

Activity Outline (60 min session for each theme)

Section	Time	Activity
Education inequalities		
Reading Materials	15 minutes	<ul style="list-style-type: none"> Students are split into groups of 3 Reading materials are related to the questions in the Kahoot game, some groups receive clearer description of statistics with geographical locations and good printing quality, while some receive blurry information or unclear description As a result, some students will find the following quiz easier, while some find it frustrating. This allows students to understand the situation of the uneven distribution of education resources in the world.
Kahoot Game	15 minutes	<ol style="list-style-type: none"> 1. Is the right to education a basic human right? 2. How many out of every 100 children in Africa are expected to enter a graduate and post-graduate institution? 3. How many out of every 100 children in South and West Asia are expected to enter a graduate and post-graduate institution? 4. How many out of every 100 children in Latin America are expected to enter a graduate and post-graduate institution? 5. How many percent of the world population is still not online?
Teacher led Group Drawing Activity	30 minutes	<ul style="list-style-type: none"> Students put into the same group as in previous activity and work together to draw a picture of the ideal world from their perspective Teacher guide students to collaborate and draw a world where partnership and cooperation is demonstrated



SDG 10

Reduce Inequalities



Designed By

Anny Chen
Nicole Deng
Yoyo Choy

Activity Outline (60 min session for each theme)

Section	Time	Activity
Climate Change inequalities		
Nearpod Activity	30 minutes	<ul style="list-style-type: none"> Teacher introduce the causes and consequences of climate change, including some key statistics <u>Watch Introductory Video on Climate Change</u> Using <u>Nearpod</u> - based on <u>BBC's informative video</u> on climate change, answer the following questions: <ol style="list-style-type: none"> How many percentages is the richest half of the world responsible for greenhouse gas emissions? How many percentages is the poorest half of the world responsible for greenhouse gas emissions? How many people will be estimated to be forced into poverty within the next ten years? How many percent higher chances of dying do people who live in areas with less vegetation? How many times do children in high-income countries see extreme weather compared to their grandparents, and how many times do children in low-income countries see it?
Teacher led mindmap discussion	20 minutes	<ul style="list-style-type: none"> Teacher stimulate discussion on how to "live green" students put into groups of 3 to develop their own ideas by drawing on given lpad Teacher collect ideas from students to make a large mindmap on blackboard
Conclusion	10 minutes	<ul style="list-style-type: none"> Teacher review lesson contents and consolidate students' knowledge about the relationship between the situation of climate change and inequalities Teacher highlight how adopting a green lifestyle helps to reduce climate change inequalities



SDG 13

Climate Action

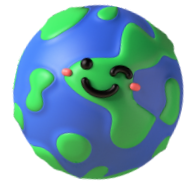


Designed By

Kayla Yeung
Michelle Ho
Rachel Ha

Subject : Environmental Science

Targeted Students : Grade 6



Learning Objectives:

- Introduce the definition of climate change and its relevance to the planet's future
- Learn about the effects of climate change on local and international levels
- Discuss the relationship between human activities and the climate
- Promote small yet achievable habits to adopt sustainable lifestyles and reduce carbon footprint
- Empower students to take action for the environment

Skill Areas:

- Discussion
- Collaboration
- Observation and Graph analysis
- Critical Thinking
- Application

Activity Prep:

- Students' Individual computers/mobile devices
- Teaching Slides



Activity Outline (45min)

Section	Time	Activity
Introduction	15 mins	<ul style="list-style-type: none">• Calculate carbon footprint resulting from daily activities using <u>Carbon footprint calculator</u>• Group discussion:<ul style="list-style-type: none">a. What is home to you? What do you like the most about our planet?b. Do you know what is climate change?c. What is a carbon footprint?



SDG 13

Climate Action



Designed By

Kayla Yeung
Michelle Ho
Rachel Ha

Activity Outline (45min)



Section	Time	Activity
Climate Change Concepts	20 minutes	<ul style="list-style-type: none"> Define and Explain the concepts of: <ol style="list-style-type: none"> Climate Change <u>Global warming video clip</u> Greenhouse Effect and common Greenhouse Gases Global temperature comparison and climate change observations (using NASA Images of Change) Common Greenhouse gas emissions sources Global and Local (HK) climate change statistics
Carbon Footprint	15 minutes	<p>Carbon footprint</p> <ul style="list-style-type: none"> Group discussion : What is carbon footprint ? Recap of climate change concepts Group discussion : How to reduce our carbon footprint in our daily life <u>Video clip: Reduce Your Carbon Footprint</u> Introduce Ways to reduce Primary Carbon Footprint Introduce Ways to reduce Secondary Carbon Footprint
Conclusion	5 minutes	<ul style="list-style-type: none"> Student Q&A Provide additional resources: <ul style="list-style-type: none"> <u>What You Can Do to Fight Climate Change - WWF Article</u> <u>101 WAYS TO FIGHT CLIMATE CHANGE - Curbed Article</u> <u>Our Planet One Planet FULL EPISODE Netflix</u>



SDG 13

Climate Action

13 CLIMATE ACTION



Designed By

Kayla Yeung

Michelle Ho

Rachel Ha

Activity Slides

Climate Change

Our planet in crisis

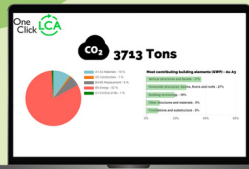


Discussion Time!

What is home to you?
What is your favourite place on this planet?
What is climate change?



First, understanding ourselves...
[Click here! It should only take 5 minutes](#)



A Quick Activity: Carbon Footprint Calculator

What does this do?
Calculate the total greenhouse emissions caused directly and indirectly by you through our actions

In these three areas:
Home energy + Transportation + Waste production

What is carbon footprint?

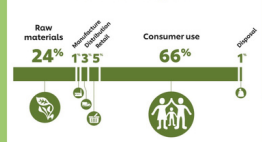
The total amount of greenhouse gases generated by our actions that devastate the environment in many ways

... which comes from the production, use, and end of life of daily products or services!



Human activities are responsible for almost all greenhouse gases in the atmosphere in the past 150 years

Greenhouse gases



e.g. Fossil fuel powered cars, Factory emissions, Farming of livestock, fast fashion production, among many others

What do you think about yours?

The average carbon footprint in Hong Kong is **13,440 kg** per person a year

Lesson roadmap



Climate Change? Global Warming?

Introduction to climate change, global warming and carbon footprint



Methods to reduce carbon footprint

How to take action in our daily lives!



Save the climate game

Ending off the lesson with a fun game about climate action :)

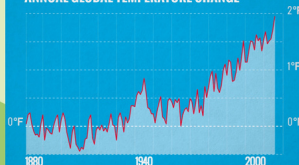
1

Climate Change? Global Warming?

Have you heard of the terms above? Discuss with your elbow partner

What was happening ?

ANNUAL GLOBAL TEMPERATURE CHANGE



Climate Change

- A **change** in the **average conditions** (e.g. temperature & rainfall) in a region **over a long period of time**.
- Earth's surface is **warming**
- Many of the warmest years on record have happened in the past 20 years.

Global Warming

- The **increase** in Earth's **average temperature** over a **long period of time**.
- Global warming is **one aspect** of climate change

Let's watch a video!



SDG 13

Climate Action

13 CLIMATE ACTION



Designed By

Kayla Yeung

Michelle Ho

Rachel Ha

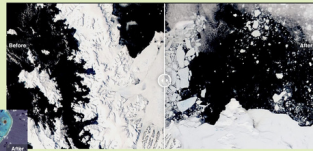
Activity Slides

Global Warming

What have you noticed?



What are on the images?
Any difference or change?



Greenhouse Effect

- A warming of Earth's surface and the air above it.
- It is caused by **gases in the air that trap energy from the Sun**
- These **heat-trapping gases** are called **greenhouse gases**
- The most common greenhouse gases are water vapor, carbon dioxide, and methane

Common Greenhouse Gases

- Water vapor
- Carbon dioxide
- Methane



The mechanism is similar to this!

Greenhouse gas emissions

Waste
Produces GHGs when decomposing in landfills



Deforestation
Land is cleared to build more houses

Livestock breeding
Livestock emits methane when they digest

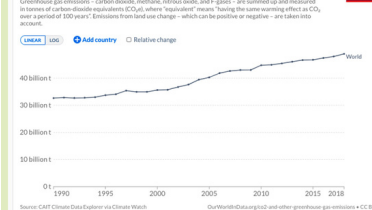


Industry
Factories create air pollution

On a global scale

Global greenhouse gas emissions

Total greenhouse gas emissions



- Today, we collectively emit around **50 billion tonnes** of CO₂ each year. This is more than **40% higher** than emissions in 1990, which were around 35 billion tonnes.

1 tonne = 1000 kg

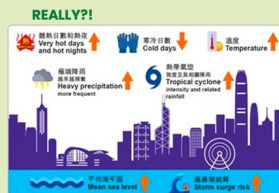
- 416 parts per million**

The concentration of carbon dioxide (CO₂) in our atmosphere, as of July 2021, is the highest it has been in human history.



How about at HK?

- Hong Kong has been warming up in the last century or so
- The number of hot nights is increasing while the number of cold days is decreasing
- Hong Kong experiences more frequent heavy rain than before
- The sea level is rising in Victoria Harbour.



Group discussion

What comes to mind when you think of the term 'eco-friendly'?

1. Remember the carbon footprint calculator? What is your carbon footprint like?



2. What is climate change?
Is it just 'hot air'? Warmer temperatures?

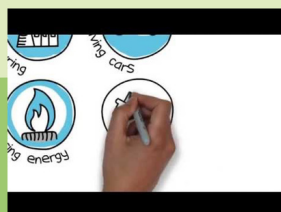


How are they related?

Video Again!

- What can we learn from it?
- What changes can we do?

1. ?
2. ?
3. ?



How do we reduce our carbon footprint?



Eco Light

Use energy efficient light bulbs/ switch off lights when you're not using them



Local crops

Eat less imported foods and eat locally grown crops



No Plastic

Bring your own bottle when going out! Don't buy plastic water bottles

SDG 13

Climate Action



Designed By

David Won
Nathan Li
Rico Poon

Subject : Environmental Science

Targeted Students : Grade 7-8



Learning Objectives:

- understands the greenhouse effect and current climate change as an anthropogenic phenomenon resulting from increased greenhouse gases
- interpret the main ecological, social, cultural, and economic consequences of climate change locally, nationally, and globally
- explain ecosystem dynamics and the environmental, social, economic and ethical impact of climate change
- knows which human activities – on a global, national, local and individual level – contribute most to climate change.
- Understand their personal impact on the world's climate, from a local to a global perspective and evaluate whether their private and job activities are climate friendly
- promote climate-protecting public policies and support climate-friendly economic activities.
- Develop strategies to combat with climate change and effectively communicate them

Skill Areas:

- Discussion
- Collaboration
- System and Critical Thinking
- Innovation and Creativity
- Presentation

Activity Prep:

- Whiteboard
- Worksheet printouts
- Writing equipment
- Presentation slides

Activity Outline (45min)



Section	Time	Activity
Lesson 1		
Introduction and stimulating question	10 minutes	<ul style="list-style-type: none">• Ask students to compare the picture with and without air pollution• Complete <u>Ecological Footprint Calculator</u> Activity

SDG 13

Climate Action



Designed By

David Won
Nathan Li
Rico Poon

Activity Outline (two 45 mins sessions)

Section	Time	Activity
Prized Q & A	20 minutes	<ul style="list-style-type: none"> Teacher ask students to explain what are the causes and consequences different sources of pollution, including air, water and land pollution (provide answers where necessary) Teacher ask students about the definition of: (provide answers where necessary) <ul style="list-style-type: none"> Ecosystem Greenhouse effect Carbon footprint Carbon neutral Renewable and Non-renewable energy
White Board Group Discussion	15 minutes	<ul style="list-style-type: none"> Students put into groups of 3, using a whiteboard, for each of the terms mentioned in the prized Q&A: <ul style="list-style-type: none"> sketch a picture Provide an example Write down an action for change
Lesson 2		
A day in Life Activity	15 minutes	<ul style="list-style-type: none"> Ask students to list out all their daily activities from waking up to sleep Students reflect how on their daily life actions might emit greenhouse gases, determine whether they are sustainable or not and what improvements could be made, for example: Sustainable Transportation, Reduce food waste, Bring your own bag
Elevator Pitch: Creative Climate Solutions	30 minutes	<ul style="list-style-type: none"> Students work in small groups of 3 to design and present one innovative idea/project individuals can implement to mitigate the effects of climate change or fight against climate change



SDG 13

Climate Action

13 CLIMATE ACTION



Designed By

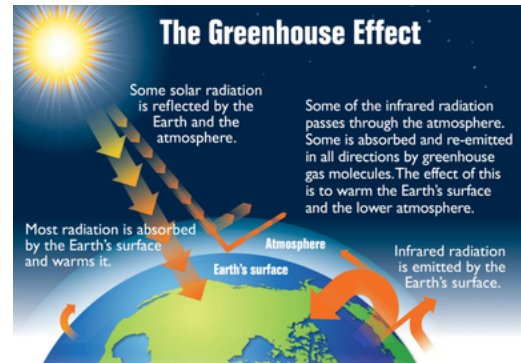
David Won
Nathan Li
Rico Poon

Activity Resources

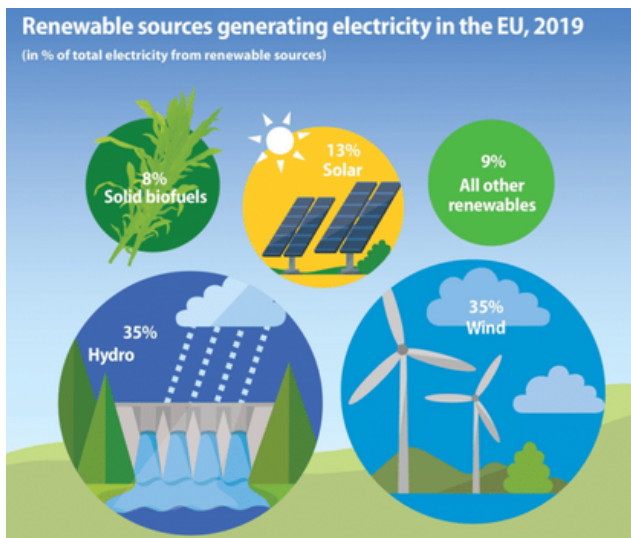
Air Pollution Stimulating Picture



Greenhouse Effect



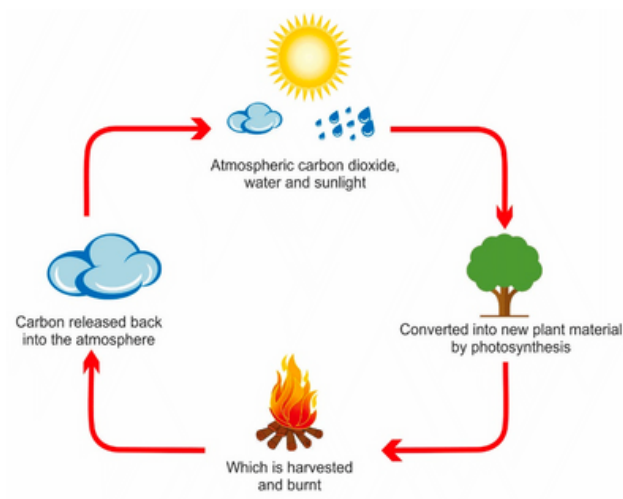
Renewable Energy



Carbon Footprint



What is Carbon neutral



Non-renewable Energy



SDG 13

Climate Action

13 CLIMATE ACTION




Designed By

David Won

Nathan Li

Rico Poon

Whiteboard Activity Example

	Picture	Example	Change
Greenhouse Effect			
Climate Change			
Anthropogenic Example		burning coal to produce electricity	producing energy with green alternatives
Consequences		example	










A Day in Life Activity Example



Activity	Sustainable?	Improvement
Car to school	X	Take the bus
Turning the AC on	X	Use the fan
Meat based diet	X	Reduce meat or turn to vegetarian
Taking the train home	✓	
Switching the lights off when not in use	✓	
Watching the TV all evening	X	Exercise more

Elevator Pitch Guide

Students work in small groups of 3 - 4 to design and present one idea/project individuals can implement to mitigate the effects of climate change or go against them. For instance:

-  – Switch to Energy Saving Mode! Educate and inspire the public to make energy-efficient lifestyle changes, including switching to LED lighting, motion sensor lighting, smart thermostats, power-strip use, etc.)
-   – Go for a Cool Roof! Get your school, district, or city to commit to cool roof upgrades or solar panels.
-  – Be a Water Saver! Educate and inspire the public to make water-efficient changes, like shorter showers and turn off the tap – as well as retro-fit changes like switching to low-flow toilets, showerheads, and faucets, installing greywater systems for laundry and landscape irrigation, installing rain barrels and rain and native gardens.
-   – Host “Fix-A-Leak” Week: Educate and inspire the public to fix the common household leaks in faucets, showerheads, and irrigation that account for nearly 10,000 gallons of wasted water a year.
-  – Plant Trees! Host a community tree planting at your school, in your neighborhood, in a local park or wilderness area.

SDG 15

Life on Land



Designed By

Dora Liao
Gabe Zhang
Ingrid Wang

Subject : Biological and Environmental Science

Targeted Students : Grade 5-6

Summary and Rationale:

We rely on nature for survival, yet human activity has led to deforestation and desertification, both of which pose major challenges to sustainable development. Restoring forests and land is critical for improving livelihoods, improving health, and reducing associated economic risks.

Students will explore terrestrial ecosystems in order to understand the importance of biodiversity as well as how human has contributed to deforestation and desertification.



Learning Objectives:

- Explain why forests and land are essential to all life on Earth
- Discuss how the health of our planet impacts our health
- Recognize the importance of biodiversity in relation to human actions (eg. poaching)
- Identify simple actions they could take to support a healthy ecosystem

Essential Questions:

- Why is combating deforestation, desertification, poaching, and biodiversity loss important?
- What are the consequences of deforestation, desertification, poaching, and biodiversity loss?
- What can students and young people do to help?

Activity Prep:

- Presentation Slides
- Students' digital device for [kahoot game](#)
- Story Books (if available)
 - The Lorax by Dr. Seuss
 - Flush by Carl Hiaasen
 - Cast Away: Poems of Our Time by Naomi Shihab Nye

Additional Resources:

- Video Clips:
 - [Climate 101: Deforestation | National Geographic](#)
 - [Amazon deforestation animation in Google Earth](#)
 - [What is desertification? | ACCIONA Sustainability for all](#)
 - [How nature can protect us from pandemics](#)
 - [Dr. Seuss' the Lorax \(2012\) – Let It Grow Scene \(10/10\) | Movieclips](#)
- [Google Earth Timelapse](#)

SDG 15

Life on Land



Designed By

Dora Liao
Gabe Zhang
Ingrid Wang

Activity Outline (60 min)

Section	Time	Activity
Opening Discussion	5 minutes	<ul style="list-style-type: none"> What do you think are possible consequences of deforestation and desertification?
Concepts	30 minutes	<ul style="list-style-type: none"> Introduce SDG 15, its key targets, why it is important, and how it connects to other SDGs Discuss the importance of forests and negative impacts of deforestation using slides, video, and Google Earth timelapse to emphasize its severity Explain desertification, its consequences, and measure that has been taken using video and slide Discuss why biodiversity is crucial for a healthy environment and how it is related to human health, specifically COVID-19 and other zoonotic diseases Introduce what are invasive species and why they are harmful to ecosystems Case study: trafficking of elephants in Tanzania Encourage students to take action (planting trees, reduce the use of paper, raise awareness, etc)
Review and consolidate ideas	15 minutes	<ul style="list-style-type: none"> Kahoot Game
Concluding Questions & Reflection	10 minutes	<ul style="list-style-type: none"> Review - each student share one thing about the nature they've learnt from this lesson Provide additional resources



SDG 15

Life on Land



Designed By

Dora Liao
Gabe Zhang
Ingrid Wang

Activity Slides

SDG 15: Life on Land

By Dora Liao, Gabe Zhang, Ingrid Wang

Overview

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.



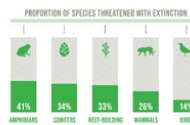
Discussion Question:

What are some possible consequences of deforestation (cutting down many trees) and desertification (fertile land becoming a desert)?



Some Numbers...

MORE THAN A QUARTER OF SPECIES ASSESSED BY THE IUCN RED LIST ARE THREATENED WITH EXTINCTION

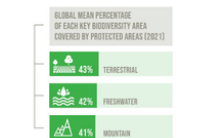


WITH RED LIST TRACKS DATA ON MORE THAN 24,000 SPECIES OF MAMMALS, BIRDS, AMPHIBIANS, REEF-BUILDING CORALS AND CONIFERS, MORE THAN 27,000 SPECIES ARE THREATENED WITH EXTINCTION.

PROGRESS HAS BEEN MADE TOWARDS SUSTAINABLE FOREST MANAGEMENT

BUT THE WORLD HAS LOST 100 MILLION HECTARES OF FOREST IN TWO DECADES (2000-2015)

PROGRESS TO SAFEGUARD KEY BIODIVERSITY AREAS HAS STALLED OVER THE LAST 5 YEARS



ALMOST ALL COUNTRIES HAVE ADOPTED LEGISLATION FOR PREVENTING CONTROLLING INVASIVE ALIEN SPECIES



INVASIVE ALIEN SPECIES NEARLY AFFECT NATIVE BIODIVERSITY AND COST THE GLOBAL ECONOMY BILLIONS OF DOLLARS ANNUALLY

Key Targets

- Conserve & restore terrestrial & freshwater ecosystems
- End deforestation & restore degraded forests
- End desertification & restore degraded land
- Ensure conservation of mountain ecosystems
- Protect biodiversity & natural habitats
- Promote access to genetic resources & fair sharing of the benefits
- Eliminate poaching & trafficking of protected species
- Prevent invasive alien species on land & in water ecosystems



Why is Life on Land Important?

- Forests cover nearly 31% of our planet's land area. Forests provide us with the air we breathe, the water we drink, and the food we eat
- Forests are home to more than 80% of all terrestrial species of animals, plants and insects
- Globally, 1/5 of the Earth's land area are degraded (loss of the productive capacity of the soils for the present and future)
- Land degradation undermines the well-being of billions of people, driving species to extinction and intensifying climate change
- Loss of biodiversity undermines (weakens) resilience to climate change



Forests

- Around 1.6 billion people depend on forests for their livelihood, including 70 million indigenous people
- Forests are home to more than 80% of all terrestrial species of animals, plants and insects
- Between 2010 and 2015, the world lost 3.3 million hectares of forest areas. Poor rural women are especially affected by their depletion
- Currently, land degradation has reduced productivity in 23% of the global terrestrial area
- \$235 billion – \$577 billion in annual global crop output is at risk as a result of pollinator loss



Deforestation

<https://www.youtube.com/watch?v=1c-16hcSKa8>



SDG 15

Life on Land

15 LIFE ON LAND



Designed By

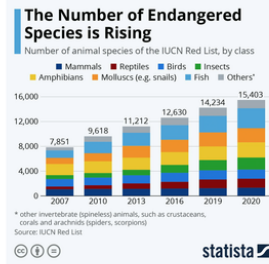
Dora Liao
Gabe Zhang
Ingrid Wang

Activity Slides



Consequences of Loss of Forests

- Disappearance of livelihoods in rural communities
- Increased carbon emissions
- Diminished biodiversity
- Degradation of land
- Species extinction
 - Upsets the balance of nature and makes ecosystems more fragile and less resistant to disruptions
 - Around 1 million animal and plant species are now threatened with extinction



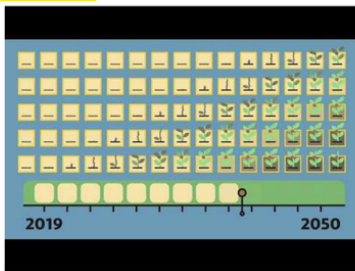
Google Earth Timelapse: Amazon Rainforest

<https://www.youtube.com/watch?v=IsIB8isLew>



What is Desertification?

<https://www.youtube.com/watch?v=WWhAduom6ik>



Desertification

- Arable land loss is 30–35 times the historical rate
- Due to drought and desertification, 12 million hectares are lost each year → within one year, 20 million tons of grain could have been grown
- 74% of the poor are directly affected by land degradation globally
- Habitat loss and deterioration have reduced global terrestrial habitat integrity by 30% relative to an unimpacted baseline



Biodiversity

- Illicit poaching and trafficking of wildlife → nearly 7,000 species of animals and plants were reported in illegal trade involving 120 countries
- Of the 8000+ animal breeds known, 8% are extinct and 22% are at risk of extinction
- Only ten species of fish provide about 30% of marine capture fisheries
- Over 80% of the human diet is provided by plants → only three cereal crops – rice, maize and wheat – provide 60% of energy intake
- 80% of people living in rural areas in developing countries rely on traditional plant-based medicines for basic healthcare



How does the Health of Ecosystems Affect Our Health?

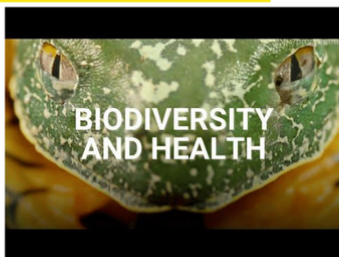
Emergence of **zoonotic diseases** – diseases transmitted from wildlife to people (ex. COVID-19).

- Every year, 1–2 million people (mostly in low- and middle-income countries) die from neglected zoonotic diseases
- Can cause severe illness, deaths, and productivity losses among livestock populations → keeps many small-scale farmers in severe poverty
- In the last two decades, zoonotic diseases have caused economic losses of more than \$100 billion (not including COVID-19)



How Nature Can Protect Us From Pandemics

https://www.youtube.com/watch?v=aXUaC_Fne0I



Invasive Species

- Approximately 42% of threatened or endangered species are at risk due to invasive species
- Invasive species: any kind of living organism that is not native to an ecosystem and causes harm
 - grow and reproduce quickly
 - spread aggressively
- Invasive species are primarily spread by human activities, often unintentionally
 - ex. released pets
 - ex. smaller boats may carry them on their propellers
- Threats to native life
 - No natural predators or controls → it can breed and spread quickly
 - Prey on native species
 - Outcompete native species for food or other resources
 - Cause or carry disease
 - Prevent native species from reproducing, or kill a native species' young



SDG 15

Life on Land



Designed By

Dora Liao
Gabe Zhang
Ingrid Wang

Activity Slides

Case Study - Elephants in Tanzania

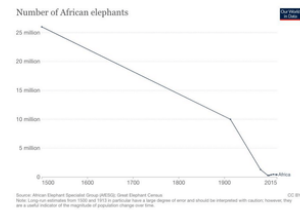
How to protect the elephants:

- Actively watch over the elephants
 - Put labels and GPS on elephants, using satellite to locate them.
 - Enable reserve management and government rangers to track elephant movements, identify and act against threats in real-time.
- Ensure zero poaching (hunting)
 - Ensure there are enough properly equipped rangers to work closely with the local communities surrounding the protected area.
 - Ensure that poachers face severe penalties, which also deters others from poaching.



Case Study - Elephants in Tanzania

- Elephants are an important part of the wildlife in the savannas of Africa.
- In recent years, their population has decreased significantly.
- Since ivory (elephant tusk) is widely used as jewellery, hunters have been capturing and killing many elephants.
- Even when governments outlawed elephant hunting, people have continued to do it for profit.



Connections to Other SDGs

SDG 14: Life Below Water

- Ecosystems connect life on land and in water
- Food chains can be devastated when any wildlife is threatened
- Lack of drinkable water can endanger many species on land



SDG 13: Climate Action

- Forests capture greenhouse gas, slowing down climate change
- Worsening climates can destroy the habitats of many species on land



SDG 2: Zero Hunger

- Forests provide billions of people with food
- Land degradation has reduced global crop output



Connections to Other SDGs

SDG 3: Good Health and Wellbeing

- Land degradation undermines the well-being of many people worldwide, reducing their access to food, shelter, and plant-based medicines
- Zoonotic diseases negatively affects the health of many people



SDG 6: Clean Water and Sanitation

- Clean water is crucial to the survival of all life on Earth



SDG 17: Partnerships for the Goals

- Countries must work together as one to protect terrestrial ecosystems around the world because it either benefits or hurts us all



Take Action!

- Protect the natural ecosystem
 - Participate in a cleanup event
- Raise awareness about the conservation of terrestrial ecosystems
 - Plant trees and share a photo on social media
- Protect trees to reduce the speed of deforestation
 - Write documents digitally instead of on paper
- Do not release alien (foreign) species in the wild (they may compete with native species for resources)
- Do not bring along living things when travelling abroad
- Participate in charity organizations that aim to protect wildlife



Conclusion

Key points:

- Targets and importance of SDG 15: Life on Land
- Importance of forests and consequences of deforestation
- Desertification and its consequences
- Biodiversity and our health (zoonotic diseases - COVID-19)
- Invasive species and how they are harmful
- Case study about the trafficking of elephants in Tanzania
- Connections to other SDGs
- How to take action :)



Let's play a review game!

<https://create.kahoot.it/details/8693c0be-28d8-4470-bc40-1154c7124857>

Link for students to join: kahoot.it



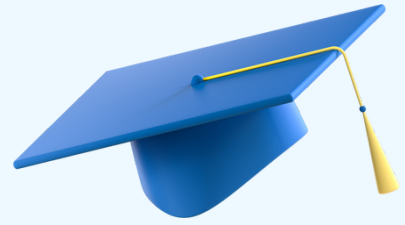
Discussion Time & Reflection

Some questions to consider:

- What do you plan to do to help protect terrestrial ecosystems?
- What are some aspects of life on land that we didn't get a chance to cover?
- What do you hope the future of life on land to be like?
- How can you influence and encourage others to also take part in this cause?



Contributors



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Youth SDG Advocators

Education for Sustainable Development for our Better Future



United Nations
Educational, Scientific and
Cultural Organization
聯合國教育科學及文化組織



Hong Kong Institute of
Education for Sustainable Development
香港可持續發展教育學院
The Movement of Centres of UNESCO

