Investigative Science

Learning goal: Understand the concept and consequences of exponential growth in a population.

Monday, September 9, 2019

Welcome to Investigative Science with Mr. Fireng

1. Get out your stampsheet/warm-up packet
2. Get out your interactive journal
3. Take out homework from binder and put on desk (this may be in your interactive journal).
4. Get out agenda from binder. Write your homework for the next day in your agenda, fold agenda back and leave open your agenda open on you desk.
5. Put Binder Away (in backpack or underdesk)

Start warm up. If you are not ready and working at the end of the 3-min drill you will lose your participation points.

4
Human pop growth scenarios

3
Trends and prediction in human pop

2
Define and id exponential growth

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Learning scale:

1	2	3	4
Define exponential growth.	Define and indentify exponential growth in a sample population.	Understand trends in human population growth and make logical predictions.	Use multiple data sets from the past and present to explain likely scenarios of uncheck human population growth.

Student's self-evaluation: *Complete at home or at the end of class, use the 4-3-2-1 Learning scale (two to three sentences).*

Homework: none.

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What is the Brundtland Definition of sustainability?

In defining sustainability, scientist agreed on four things

1.
2.
3.
4.

What was the final scientific definition?

What are the four root causes of "Un"-sustainability?

1.
2.
3.
4.

What is sustainability?

Write all Cues!!

Website link:

https://www.youtube.com/watch?v=eec0UYGIeo4

4 Energy trends ased on 3 pillars

3 Energy choices ased on 3 pillars

2 Vlultiple uses and ources of energy

1 Uses of

Summary

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EASTER ISLAND: Statistics

- There is clear evidence that Easter Island once was a heavily populated (perhaps 20,000 people) and rich society.
- There is clear evidence that this big population collapsed and most of the population died.
- When the Europeans first arrived in 1722, there were approx 2,500 natives.
- In 1877 there were only 110.

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Collapse

Rapa Nui (Easter Island)must have seemed like paradise to the first natives of perhaps 100 people.

- Forests
- Seafood
- Plenty of space

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Reasons for collapse

- Cults formed and statues were built to worship the cults.
- Many trees were cut down in order to move the statues Rats ate the seeds leaving the island without trees
- Boats slowly disappeared so people could no longer fish.
- The soil washed into the sea because there were no trees.

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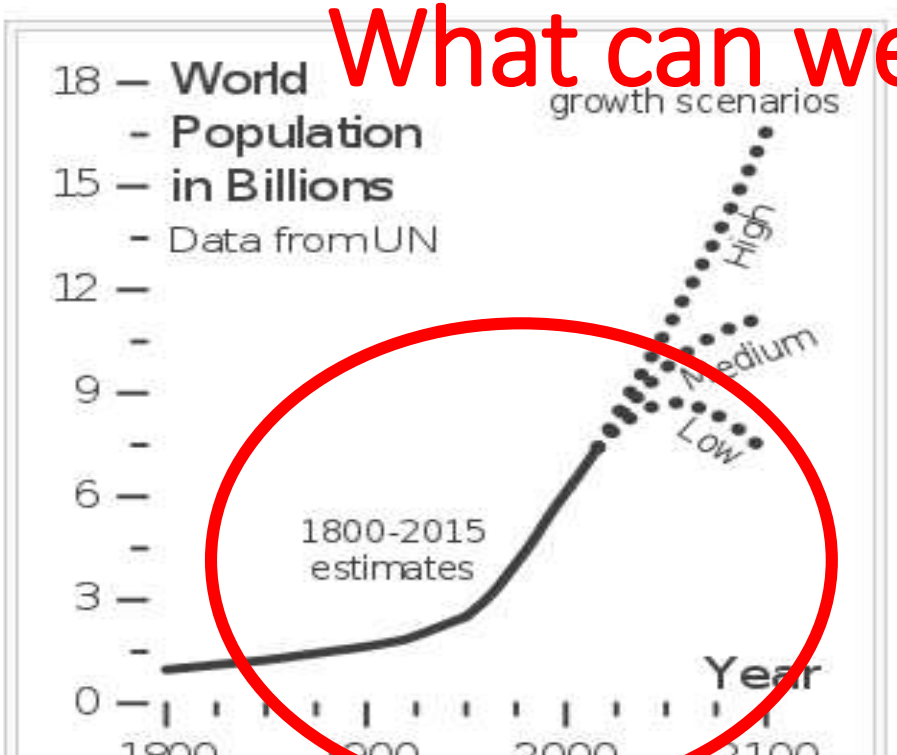
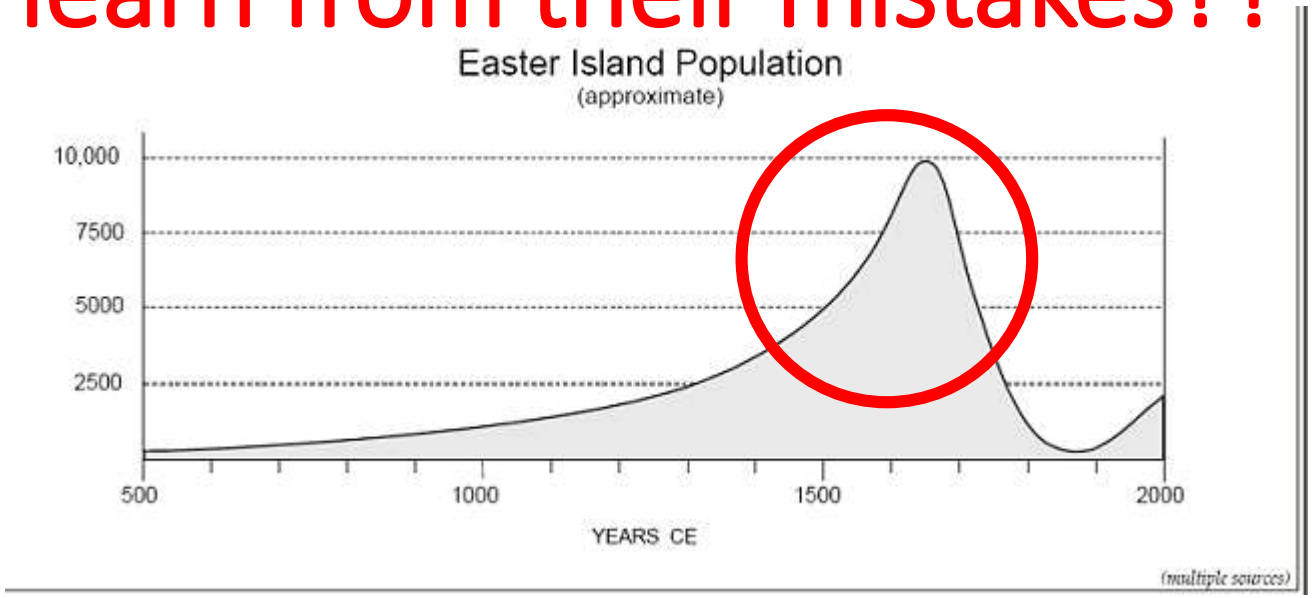
EASTER ISLAND: A model of population collapse.

Collapse: 20,000 to 100 in just a couple years

Rapa Nui (Easter Island)must have seemed like paradise to the first natives of perhaps 100 people.

What can we learn from their mistakes??





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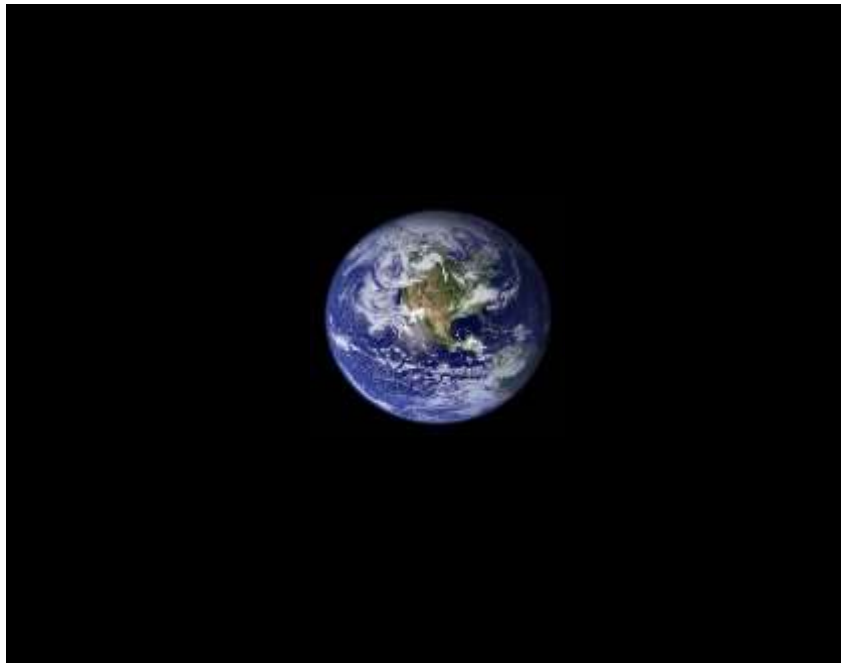
Three Pillars of Sustainability

Easter Island versus Earth: location and isolation



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What does it mean to sustain something?

What are some things in your life that you would like sustained?

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The dictionary definition of sustainability is "the ability to continue without interruption."

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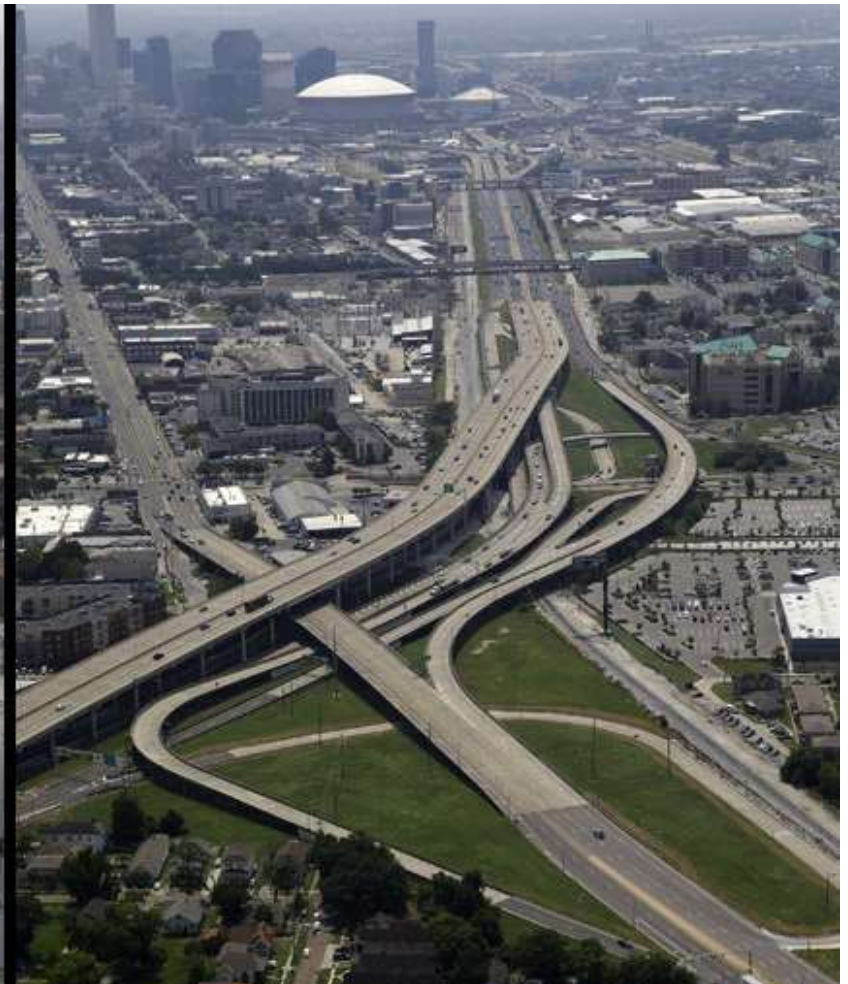
Is this sustainable? New Orleans, LA



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Is this sustainable? Port au Prince, Haiti

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Is this sustainable? Phoenix, AZ

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Traditional Definition:

SUSTAINABLE DEVELOPMENT IS DEVELOPMENT THAT MEETS THE NEEDS OF THE PRESENT WITHOUT COMPROMISING THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS.

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Multiple uses and sources of energy

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Uses of energy

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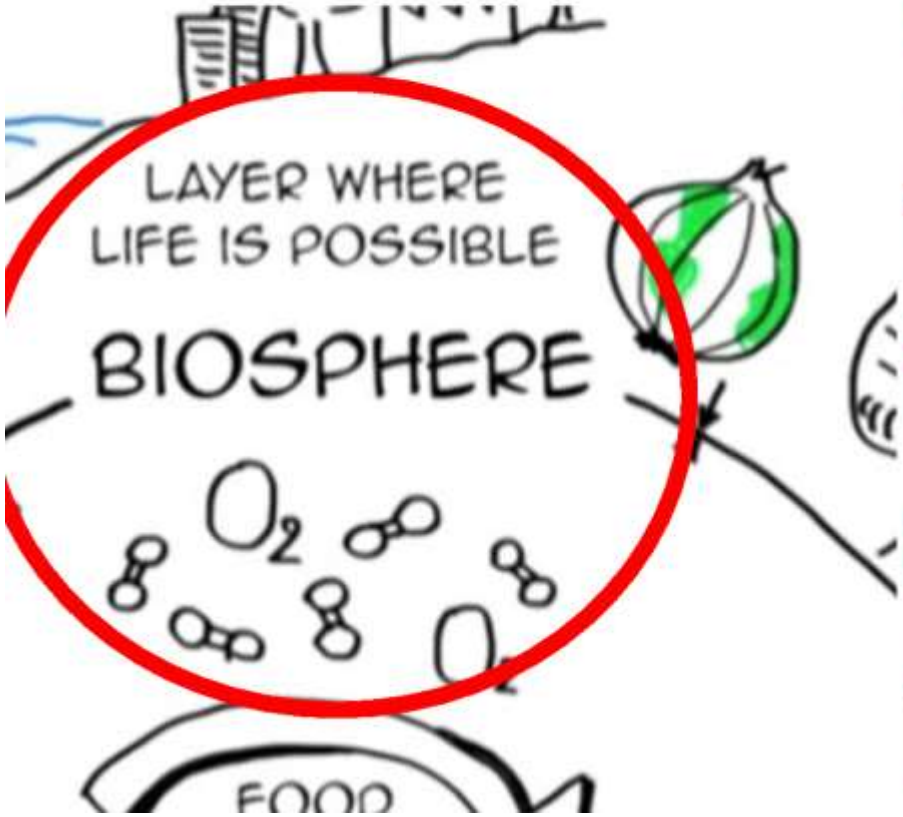
In defining sustainability, scientist agreed that..



1. We live in the biosphere, the layer where life is possible

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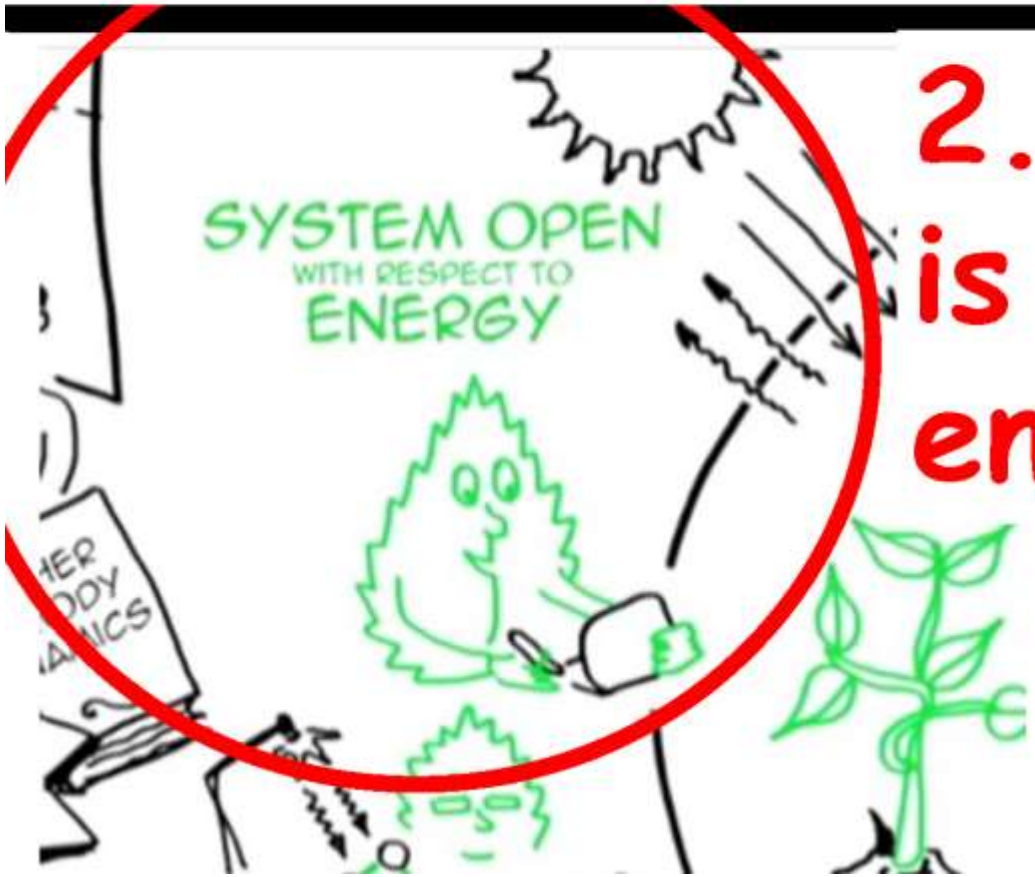

2. The system is open to energy

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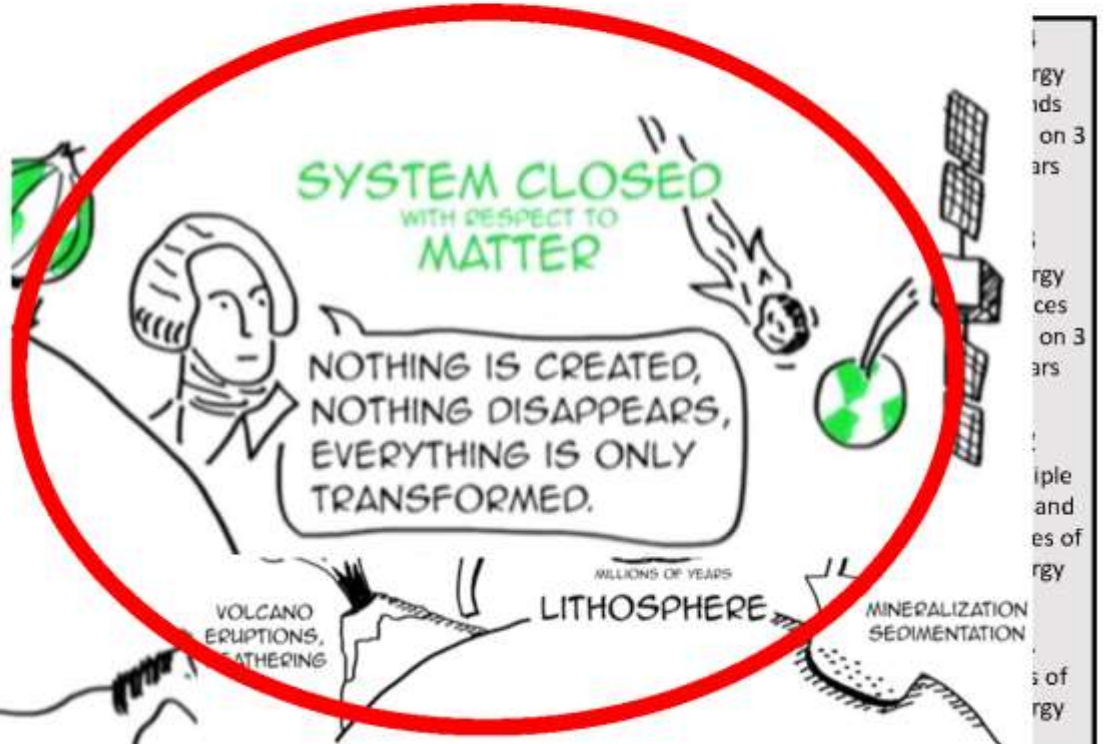
In defining sustainability, scientist agreed that..

3. The system is closed to matter



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4. Other geological cycles bring matter from the earth into the biosphere

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Scientific Definition:

SUSTAINABILITY IS THE CAPACITY OF OUR HUMAN SOCIETY TO CONTINUE INDEFINITELY WITHIN THESE NATURAL CYCLES

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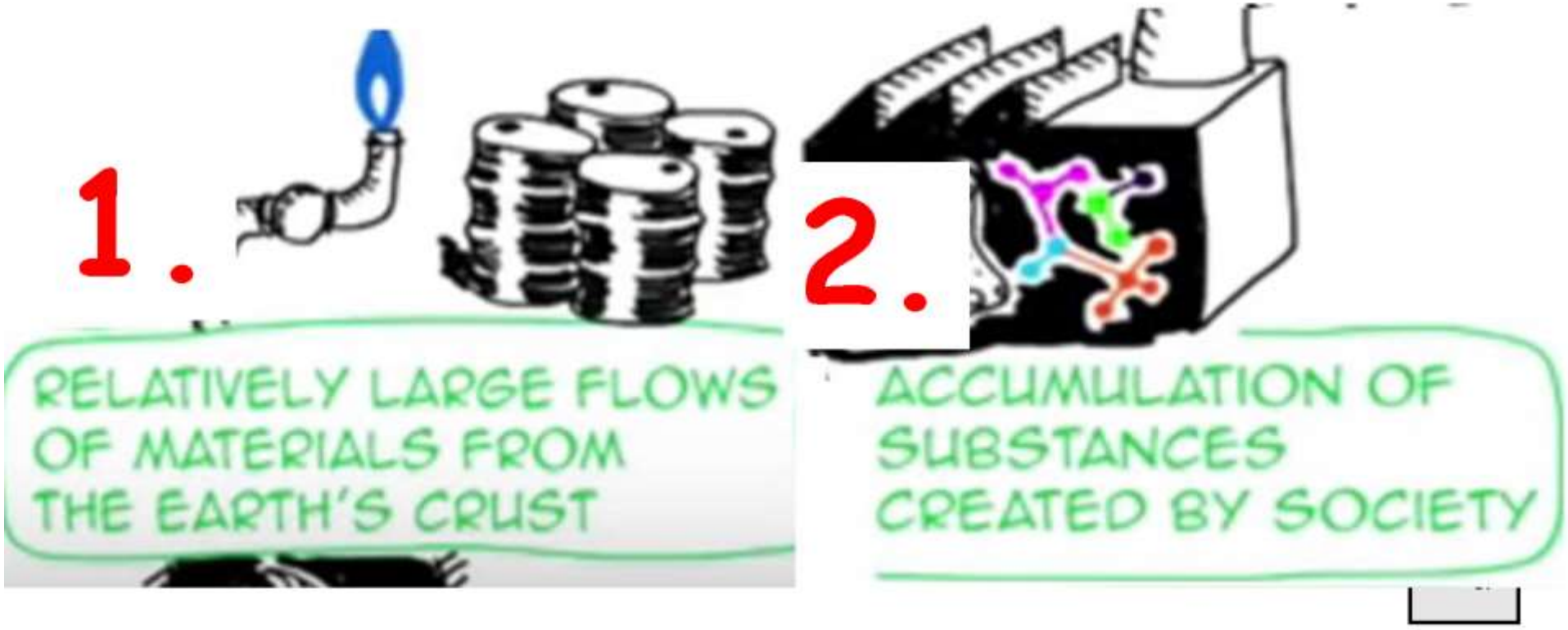
In Lea of Roots of Un-Sustainability



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