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## DAY 17: SOIL

# our lesson plan:

### We Talk About The Issues

Climate change is our biggest concern for the future. If our earth's average temperature rises by 2 degrees Celsius, which at this rate will occur before the end of the 21st century, we will almost certainly face catastrophes in deserts, coastal cities, polar regions, and more.

Catastrophic weather is linked to both global warming and the rise of conflicts in developing countries. Around a decade ago, Syrian territories experienced a drought which impoverished massive amount of Syrians and acted as a cause for migration to cities.

This placed further stress of their inadequate government and eventually strengthened tensions to the point of the war in Syria. However, improving the health of our soil can play a large role in combating climate change.

Then we discuss  
three solutions.

### 1st: carbon farming

Farms can suck up a huge amount of CO<sub>2</sub> because of a lot of crops they contain, which absorb carbon dioxide and emit oxygen instead. Does anyone know what carbon can be used for? Carbon is used to grow plant tissue above the soil and underground. When organic materials decompose underground, they form a matter that can store carbon in the soil, containing around 58% carbon. Organic soil matter is extremely beneficial for plants, being drought-resistant, less prone to erosion, and containing a larger percentage of beneficial organisms.

Carbon farming is important to consider, because not only do farms have enormous potential for combating climate change but if not managed properly, they also have the potential to cause harm. It is estimated that agricultural soils could absorb up to 8 billion metric tons of carbon dioxide, for up to 30 years. This idea of environmental revival has taken root in the company Kiss the Ground, which publicizes the importance of healthy soil, and uses their garden to work with media, education, homeless youth, and farmers all over.

### 2nd: eliminating the use of synthetic nitrogen fertilizers

Synthetic fertilizers make up around 60% of the earth's nitrous oxide production, which is around 300 times more heat-trapping than carbon dioxide. It can also leak into groundwater and seep into freshwater lakes or oceans, creating algae blooms which block the sun from reaching underwater plants. These plants are necessary for the production of dissolved oxygen that aquatic life needs in order to live. This leads to a dead zone in bodies of water and is extremely harmful to the biodiversity of aquatic areas. Synthetic chemicals over the years have degraded our soil health so drastically that agricultural industries have collapsed in certain regions. Nearly three-quarters of carbon have been lost from industrial soils, adding to atmospheric carbon dioxide, acidic bodies of water, and causing decreased crop production. The overuse of chemicals has also acted as a selecting agent for harmful insects and plant pathogens which has produced populations of resistant organisms. Decreasing the usage of synthetic chemicals will, in turn, lower the emissions of greenhouse gases, create healthier and more fertile soil, and can restore watersheds.

Instead of using synthetic nitrogen fertilizers, farmers can opt for organic compost, which is fairly easy to make, which mitigates the harms of food waste in landfills as well as providing for the long-term health of their soil. The Center for Food Safety is another company that utilizes their outreach to promote a healthier soil. It focuses on regenerative forms of agriculture that are holistic and natural, as well as drawing atmospheric carbon dioxide back into our soil in order to promote a gradual progress towards a balanced carbon cycle.

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## our lesson plan:

### 3rd: remaking the textile industry to be eco-friendly

“Fast fashion,” or clothes that are designed to be cheap and quickly discarded, plays a large role in the contribution of greenhouse gases. The textile industry consists of a huge chain of manufacture, from cotton farming to dyeing, printing, and bleaching. The cotton industry alone deals a huge blow to our atmosphere; it is one of the most water-intensive crops to farm, making up around 2.6 percent of the world’s water usage. To increase crop yield, farmers also use high volumes of pesticides and fertilizers, which contributes to Problem #1 and Problem #2. Additionally, the EPA says that 13.1 million tons of fabrics and clothes are trashed each year in the United States alone. Synthetic fibers also do not biodegrade; even wool produces methane when left in landfills to decompose. Donation of second-hand clothing to charities may seem like a viable option, however, the excess of clothes means that developing countries are losing jobs and hindering economic growth. Sustainable textile initiatives include upcycling clothing instead, purchasing less, and making sure to purchase quality, organic clothes that are not involved in the fast fashion industry. Company Fibershed aims to combat the damages caused by the textile industry by endorsing regionally grown, natural wool cloth, by developing regional, regenerative fiber systems and re-establishing soil-to-soil textile processes. They track carbon through atmospheric emissions throughout the carbon cycle and the pedosphere.

Then we discussed  
two  
soil-heroes

#### John W. Roulac

John W. Roulac is the founder and CEO of Nutiva. Nutiva is the world’s leading organic superfoods brand of hemp, coconut, chia, and red palm superfoods. It’s dedicated to nourishing people and planet. John has written four books on environmental topics that have combined sales of over one million copies. He is known for his expertise on whole foods, organic farming, natural healing, hemp agriculture, forestry, permaculture, recycling, composting, and the conservation of water and energy. He’s also an advocate for healthy people and ecosystems and has founded four nonprofit ecological groups.

#### Paul Hawken

Paul Hawken found a love for the environment and is currently an environmentalist, entrepreneur, journalist, and author. Starting at age 20, he dedicated his life to sustainability and changing the relationship between business and the environment. His practice has included starting and running ecological businesses, writing and teaching about the impact of commerce on living systems, and consulting with governments and corporations on economic development, industrial ecology, and environmental policy.

## SOURCES

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