

CLASS THREE

THE CLIMATE CRISIS AND OUR DAILY LIVES

([view light background](#))

“Don’t ask yourself what the world needs. Ask yourself what makes you come alive, and go do that, because what the world needs is people who have come alive.” Howard Thurman

TOTAL CLASS TIME: 120 MINUTES

10 min. Calling Together: (Scripture, Song, Poetry, Prayer, Meditation)

Review and Reflections:

Review with your group.

Highlights from Previous Classes:

◇ The first class looked at the connection between basic beliefs of faith groups and our responsibility to care for the Earth. It also

explored the history of discoveries and actions that have led us to this moment of understanding.

- ◇ Class two introduced us to the basic science of climate change, the impact of the industrial revolution on the earth, and where all this extra CO₂, methane and other greenhouse gases has and is coming from. It also touched on climate science denial.

Personal reflections on the last class: Take a few minutes to reflect on these questions. If you gather informally before the class starts, you could consider having participants respond in smaller groups before the class begins.

- What did you hear this week in the news or other sources about the climate crisis? Did you talk about the climate crisis with anyone personally? (A Yale study suggests that only 35% of Americans ever talk about the climate crisis.)
- Did you find yourself doing anything differently?
- On a scale of 1 to 10, with 10 being high anxiety or depression and 0 being no concern, how would you rate your current emotional temperature regarding the climate crisis? How does it compare with last week?

- Did you practice a creation care tip this week? If so, can you share that experience?

Preview of Class Three:

Review learning objectives and class sections for today with your group.

Learning Objectives

- ⇒ Continue to develop a common climate language.
- ⇒ Explore how our daily lives intersect with the climate crisis.
- ⇒ Begin to discover how our daily choices can make a difference.
- ⇒ Experiment with measuring your carbon footprint.

Class Three Sections

- ⇒ Section One: Developing a Common Language (continued)
- ⇒ Section Two: Contribution of Greenhouse Gases by Sector
- ⇒ Section Three: A Closer Look at Some of the Sectors in Our Daily Lives

⇒ Section Four: Measuring our Carbon Footprint

⇒ Additional Resources For Further Study

Section One: Developing a Common Language:

If participants have reviewed before class, just answer any questions. If not reviewed before class, read through these definitions aloud.

- **Exponential Growth** is growth which becomes ever more rapid in proportion to the growing total number or size. (Oxford Languages)
- **Climate Forcing** happens when the energy balance changes and forces a change in climate.
- **Climate Feedbacks** either dampen or amplify the effects of climate forcing.
- **A Carbon Source** is anything that releases more carbon into the atmosphere than it

absorbs. (climateearth.org) Examples are burning of fossil fuels, burning of forests, melting of permafrost.

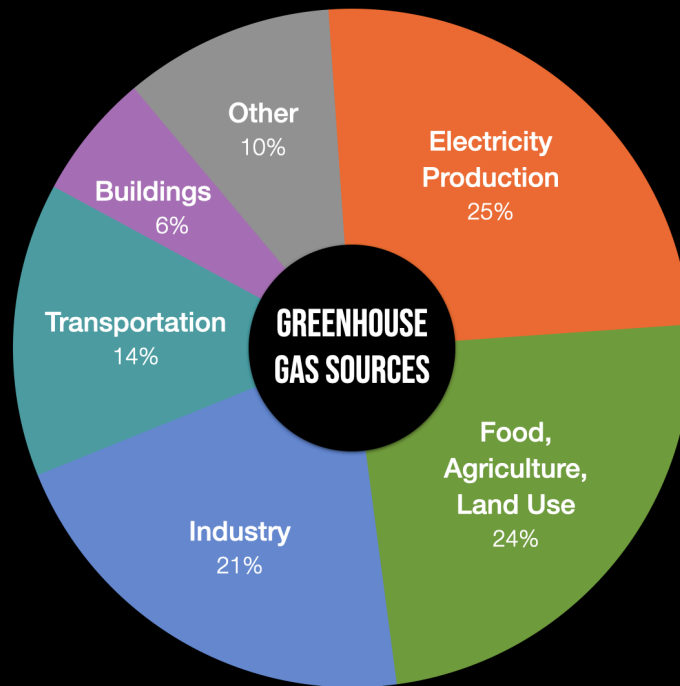
- **A Carbon Sink** is anything that absorbs more carbon from the atmosphere than it releases, for example, plants, the ocean, and soil. (climateearth.org)
- The amount of carbon dioxide and other carbon compounds emitted due to the consumption of fossil fuels by a particular person, group etc. is called the **Carbon Footprint** (Oxford Languages).

Section Two: Sources, Contribution of Greenhouse Gases by Sector

Facilitator walk through the chart and sectors below the chart.

In what sectors of our lives do we humans continue to add greenhouse gases to our air and oceans? There are different ways to divide up and report greenhouse gas emissions. The

upcoming video by Drawdown divides them globally this way:



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DRAWDOWN
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Image: Jonathan Foley
Source: IPCC WG3 AR5

Electricity production 25%

(When coal and natural gas (methane) are used to produce electricity, CO₂ is released into the atmosphere.)

Food, Agriculture, land use 24%

(This figure includes burning of forests (deforestation) to create places to grow food for animals that we eat, methane produced

by livestock, and nitrous oxide produced by over fertilization.)

Industry, making things 21%

(Fossil Fuels are burned to create the high temperatures needed to create steel and other products. The chemical process to make cement also releases large amounts of CO₂.)

Transportation of ourselves and our goods 14%

(This includes road vehicles 10%; air travel 2%; boats, trains, etc. 2%)

Buildings 6 %

(This includes heating, cooling and hot water for personal dwellings 4% and public buildings 2%)

Other 10%

(These greenhouse gases are a result of leakage in the energy industry, in refining, transporting and other miscellaneous areas.)

Watch this video from Drawdown's Climate 101 series: [Unit 3, Reducing Sources](#) (24 minutes).

Exercise: Turn to the person next to you and reflect on these questions remembering the guidelines in class one regarding talking about the climate crisis.

1. What surprised you in this video?
2. What do you think is the largest contributor to the climate crisis in your own life? On a world scale?
3. How much is the climate crisis caused by individual consumers, & how much is it caused by larger societal issues, like governments' decisions about incentivizing selected ways to generate energy?
4. Increased energy efficiency often leads to doing more with the same amount of energy (or, worse, doing much more with more energy), rather than doing the same with less energy. To read more about this, check out this website: (<https://www.sciencedirect.com/science/article/abs/pii/S0921800905001084>) Therefore, reducing energy use requires more than just efficiency. How might your personal beliefs and values impact your energy use? Is that an important part of the equation?

In your large group take a few minutes to share some of your reflections, as time allows.

Section Three: A Closer Look at Some of The Sectors In Our Daily Lives

Facilitator remind participants that this section is using a different source, Our World in Data, thus the numbers will be somewhat different than in section two. Different organizations who make these calculations for us divide things up a bit differently. [HERE](#) is the source.

Exercise: Let's look more closely at some contributing factors to emissions from the food we eat. Participants read aloud the material below and then watch the strawberry video. Discuss as a group how we might reduce these greenhouse gases.

What We Eat: 18.4 to 25%

This category includes agriculture, forestry and land use, which account for 18.4% of greenhouse gas emissions. The food system as a whole including refrigeration, food processing, packaging, and transport accounts for about 25% of anthropogenic greenhouse gas emissions globally. Below is the breakdown for different parts of this contributor.

Livestock & manure (5.8%): Animals (mainly ruminants, such as cattle and sheep) produce

greenhouse gases through a process called enteric fermentation. Microbes in the digestive systems break down the animals' food and produce methane as a by-product.

Therefore, beef and lamb have a high carbon footprint. Eating less of these products can reduce the emissions of your diet. Nitrous oxide and methane can be produced from the decomposition of animal manures under low oxygen conditions. This often occurs when large numbers of animals are managed in a confined area (such as dairy farms, beef feedlots, and swine and poultry farms), where manure is typically stored in large piles or disposed of in lagoons and other types of manure management systems. 'Livestock' emissions here include direct emissions from livestock only. It does not consider impacts of land use change for pasture or animal feed.

Agricultural soils (4.1%): Nitrous oxide, a significant greenhouse gas, is produced when

synthetic nitrogen fertilizers are applied to soils. This figure includes emissions from agricultural soils used for the production of all agricultural products, including food for direct human consumption, animal feed, biofuels and other non-food crops, such as tobacco and cotton.

Grassland (0.1%): Grassland loses carbon as CO₂ when it is degraded and sequesters carbon when it is restored. Currently, more CO₂ is created than sequestered.

Cropland (1.4%): Cropland also either adds to greenhouse gases or sequesters them, depending on the management process. Currently, cropland increases greenhouse gases.

Deforestation (2.2%): Deforestation adds to greenhouse gases. Reforestation decreases CO₂. Deforestation currently adds to a net increase of greenhouse gases.

Crop burning (3.5%): Leftover vegetation from crops such as rice, wheat, sugar cane, and other

crops when burned releases carbon dioxide, nitrous oxide and methane.

Rice cultivation (1.3%): Flooded paddy fields produce methane through a process called anaerobic digestion. Globally, rice supplies mankind with one fifth of the calories needed to support life.

Food Waste: Over 1/3 of the food produced is wasted, either in the field, the processing plant, in distribution or after arrival to its final destination (home, restaurant, etc.). View [THIS SHORT VIDEO](#) on the life of a strawberry. How can we reduce food waste?

Exercise: Let's look more closely at some contributing factors to emissions from the clothing we wear. Participants read the material below aloud and watch the fast fashion video below, then discuss as a group how we might reduce these greenhouse gases.

What We Wear: 8 to 10%

(Total emissions from the fashion and clothing industry have been difficult to estimate. A

Quantis study in 2018 estimated that 8% of total global greenhouse gas emissions are from apparel and footwear. Other estimates are higher.)

The clothing industry is a large contributor to the climate crisis in numerous ways. According to Brian Resnick in The Goods by Vox, 60% of the materials used globally for clothing production in 2019 were petroleum based synthetic fibers, such as nylon, polyester, acrylic, lycra, etc. Why are they a problem? The production of these petroleum-based materials results in the release of 3.2 billion tons of greenhouse gases annually (Nature Review). Synthetic products take a long time to decompose, thus adding to our **waste problem**. Eighty pounds of clothing per person are added to our landfills in the US each year. News.un.org reported that every second, one garbage truck of textiles is landfilled or burned. Many people believe that if they give their used clothing to

non-profit organizations to recycle, they are reducing their waste. But many of these donations actually go to a landfill or are burned, in both cases releasing more greenhouse gases into our atmosphere.

The fashion and textile industries are also major **polluters of water** at all stages of the value chain: agricultural runoff from cottonfields causes algal blooms that choke rivers; the dyeing process of fabric releases a cocktail of toxic chemicals. In addition, washing clothes made of these fabrics releases microplastic fibers which end up in our rivers and oceans and contribute to the plastic pollution problem. These fibers are consumed by marine life and eventually make their way into the human body. (“Out of Fashion-the Hidden Cost of Clothing Is a Water Pollution Crisis” by Mike Scott September 19, 2020 in Forbes magazine.)

In the 1990’s **FAST FASHION** was introduced into the US by a retailer, Zara, from Spain.

Zara's mission is to provide inexpensive products in stores just 15 days after the design process is completed. Similar companies sprang up, including H&M, Topshop, Primark and many others. The target population for this product market is 18 to 24 year-olds, especially young women. Production is often outsourced to countries with poor labor laws resulting in low pay and unsafe working conditions for workers. The cheap prices and increase in production have led to overconsumption and many of these products end up in our landfills in a short time. View [THIS SHORT VIDEO](#) on the fashion industry and fast fashion.

Three things happened historically that led to the fast fashion industry. First the industrial revolution replaced much of human labor for fabrication of materials with machines, speeding the process. Clothing still has to be sewn together and globalization allows for cheap labor for this part of the process by

sending that work to the global south. And, finally, the introduction in the 1970's of synthetic fabrics made from fossil fuels produced cheap materials. Fast fashion may be cheap to the purchaser, but it is costly to the workers and the Earth.

Exercise: Now let's look more closely at some contributing factors to emissions from transportation, trash and buildings. Participants read aloud and then turn to your neighbor and share answers to the questions below.

How We Travel and Transport Things: 16.2%

(This information comes from Our World in Data based on stats from 2016. The percentage includes a small amount of electricity used...indirect emissions..., as well as all direct emissions from burning fossil fuels to power transport activities. These figures do not include emissions from the manufacturing of motor vehicles or other transport equipment.)

Road transport (11.9%): This includes emissions from the burning of petrol and diesel from all

forms of road transport which includes cars, trucks, motorcycles and buses. Sixty percent of road transport emissions come from passenger travel (cars, motorcycles and buses); and the remaining forty percent from road freight (trucks). This means that, if we could electrify the whole road transport sector, and transition to a fully decarbonized electricity mix, we could feasibly reduce global emissions by 11.9%.

Aviation (1.9%): This number represents total emissions from both domestic and international passenger and freight travel, with 81% of the total emitted in passenger travel, and 19% in freight.⁷ Sixty percent of passenger emissions are created by international travel, and 40% by domestic.

Shipping (1.7%): These are emissions from the burning of petrol or diesel on boats. This includes both passenger and freight transport.

Rail (0.4%): Emissions from passenger and freight rail travel are included here.

Pipeline (0.3%): Fuels and commodities (e.g. oil, gas, water or steam) often need to be transported (either within or between countries) via pipelines. This requires energy inputs, which results in emissions. Poorly constructed pipelines can also leak, leading to direct emissions of methane into the atmosphere. However, this aspect is captured in the category “Fugitive emissions from energy production”.

What We Do With Our Trash: 3.2%

(from Our World in Data based on stats from 2016)

Wastewater (1.3%): Organic matter and residues from animals, plants, humans and their waste products can collect in wastewater systems. When this organic matter decomposes it produces methane and nitrous oxide.

Landfills (1.9%): Landfills are often low-oxygen environments. In these environments, organic matter is converted to methane when it decomposes.

Where We Live and Work: 17.5%

(from Our World in Data based on stats from 2016)

Residential buildings (10.9%): This is the percentage of energy-related emissions from the generation of electricity for lighting, appliances, cooking and heating/cooling our homes.

Commercial buildings (6.6%): These are energy-related emissions from the generation of electricity for lighting, appliances, and heating/cooling in commercial buildings such as offices, restaurants, and shops.

Exercise: Turn to your neighbor and share answers to the following questions:

1. What did you learn that was new about the causes of the climate crisis that you could share with a friend or family member?
2. Where could you make a difference and what would you do?

Section Four: Measuring Our Carbon Footprint

For those who measured their carbon footprint before class, discuss what you learned. Any surprises? Any ideas for reducing? Does it make sense for individuals to try to decrease their footprint?

[HERE](#) and [HERE](#) are two of many sites that will help you measure your carbon footprint. It will take some effort to collect the information to get an accurate picture, but it will provide a baseline for measuring your progress in decreasing the climate crisis as you decrease your carbon footprint. There are many different apps available, so find one that seems easy for you to use.

10 min. Closing

- Review Learning Objectives

Review and evaluate how well the objectives for this class were met.

- What Did You Learn?

Give participants an opportunity to note one thing they learned today.

- Creation Justice Tips

Review the Creation Justice Tips below and choose one for action.

- Prayer, Poem, Song, Meditation, Scripture

Remind participants of the preparation steps for the next class that are listed below and the recommended video.

CREATION JUSTICE TIPS

- Extracting and burning fossil fuels for energy (electricity, transportation and heat) create the vast majority of carbon emissions. In the U.S. and other industrialized nations, this accounts for over 80% of annual emissions. It will not be possible to prevent a climate crisis until we STOP burning fossil fuels.

- Refuse fast fashion allure and consumerism pressures. Reduce the amount of clothing you buy. Reuse your garments for many years. Repair minor problems like a missing button or a loose hem. Recycle textiles responsibly. Remember the “lilies of the field” and Jesus’ assurance. (Matthew 6:28-33).
- From our United Methodist social principles: “we urge United Methodists to adopt sustainable habits and practices, including refraining from overconsumption, repurposing and recycling materials, avoiding products that pollute or otherwise harm the environment, and reducing the carbon footprints of individuals and families by reducing overall reliance on fossil fuels for heat, transportation, and other goods.”
- Go thrifty; save the earth! When you purchase from a thrift or second-hand

store, your choice uses fewer resources, generates fewer emissions and less waste, gives other people work, extends the life of the clothing, and keeps textiles out of the landfill. Try [thred up](#), an online source, or one of the 4,245 goodwill stores. Some churches also offer “nearly new” clothing at low or no cost.

- Read the clothing labels. Avoid fossil-fuel-based synthetics (polyester, nylon, acrylic, spandex, lycra). Choose items made of natural fibers (organic cotton, linen, wool, silk, hemp), recycled materials and fibers (including polyester), or sustainable plant-based [tencel](#).
- Have eco-friendly fun with friends. Host a party for passing along the clothes children outgrow so quickly or for exchanging outfits with friends of the same size. Set a stitch-it-up time for learning the how-tos of mending,

getting the repairs done, and talking about caring for the earth and one another.

- When you need to buy clothing, shop for the company, not just the product. Support businesses that practice sustainability and fair worker treatment in their products and production. Here's a list of [35 ethical and sustainable clothing brands](#).
- Make your clothes last longer. Wash them in cold water, which is less damaging than hot. Wash a full load, which reduces the agitation's wear-and-tear on the items. Add a few pinches of salt rather than color-"safe" chemical bleaches, which are hard on the materials. Choose other [natural remedies for getting stains out](#). Hang your clothes outside to dry.
- Avoid the landfills. Charities, thrift stores, "upcyclers," and selected manufacturing all benefit from your donations through retold, a mail-in service for recycling not just clothing

but also household textiles, such as blankets, towels, and so on)—even wedding dresses. [Retold](#) takes items in poor condition as well as those worthy of resale. By carefully sorting through donations, the company has already diverted 18 million tons from landfills.

- Look at what you are wearing. Whose hands cut the fabric? Whose labor stitched the pieces? Were they safe in their working conditions? Were they paid a living wage? Pray and advocate for garment workers. When you dress, say a blessing for those who provide for you.
- Nurdles (microplastics) leached from the wastewater of washing machines cleaning clothing made of synthetic (petroleum-based) fibers, end up in the water systems of the world. Untold numbers of fish and other marine life try to eat them and starve to death. Untold numbers of people eating fish are ingesting plastic. Switch to clothes made

of organic fibers or use a [guppyfriend washing bag](#) to stop microwaste.

- Use a carbon footprint calculator from the internet to quickly see how much carbon pollution comes from your individual use of energy at home and on the go. You'll be able to compare that to an average usage. Armed with that information, you can make changes that will save both energy and money.
- According to the 2019 U.N. Report on Climate Change, what we eat matters. Current food choices cause 25–30% of greenhouse gas emissions. Meat, especially beef, is the single food with the greatest impact. Choose more of your food from grains, fruits, vegetables, and nuts.

To Prepare for Next Week's Class:

- ⇒ Review the new vocabulary.
- ⇒ Read through the class as you desire.

⇒ Calculate your carbon footprint:

www.brightaction.app There are many sites for doing this. Pick one that is user friendly to you.

⇒ At the beginning of each class, participants are invited to reflect on these questions. It may be helpful to think about these questions during the week and even jot down some notes:

1. What is one thing you learned from last week's class? What did you hear about the climate crisis during the week?
2. Share anything you did differently this week as a result of your learning.
3. On a scale of 1 to 10, with 10 being high anxiety or depression and 0 being no concern, how would you rate your current emotional temperature regarding the climate crisis?
4. Did you practice a creation care tip this week? If so, can you share that experience?

⇒ This week's recommended documentary is [Climate Refugees](#) on YouTube.

Critical Beliefs Underlying This Curriculum

1. Individuals can make a difference, especially as part of a large grassroots

movement which you are helping to create by participating in this study.

2. In addition to individual actions, we can make a difference by influencing governments, corporations, organizations through our votes, our voices and our pocketbooks.
3. Talking about the climate crisis is critical. Share your thoughts and stories with friends, family, acquaintances and on social media.

Additional Resources for Further Study:

Documentary: Climate Refugees on YouTube

To explore the idea of exponential growth and understand why there is a sense of urgency among scientists about how quickly climate

change is impacting all of creation and why there is a need to act now, watch [THIS VIDEO](#).

[HERE](#) is an interesting written interview with Katharine Hayhoe on carbon footprints and carbon shadow.

Website: [The Planetary Healthy Diet](#) from The Eat-Lancet Commission.