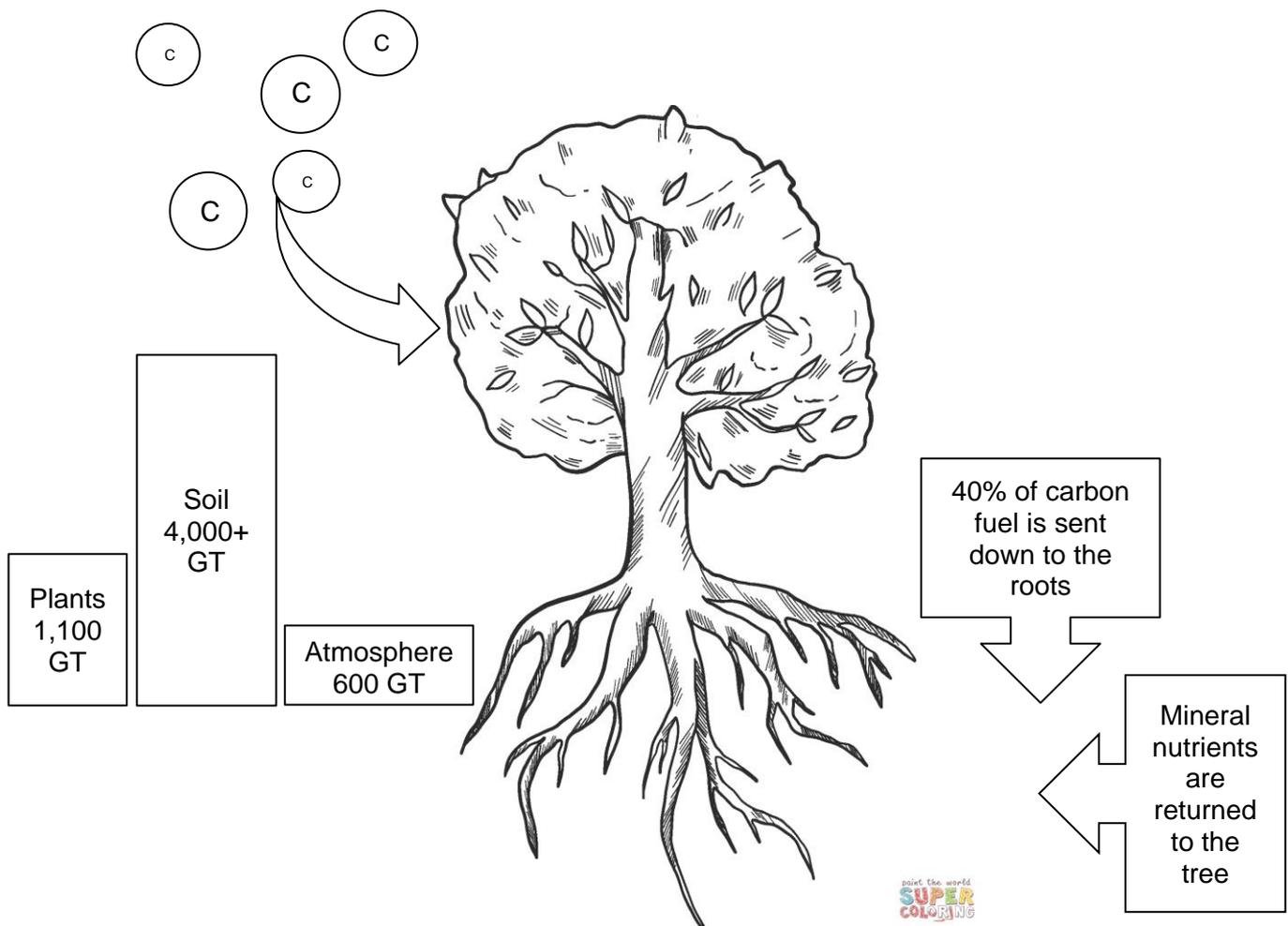


# Christmas movie activity sheet

## Kiss the Ground answers

### Answers

1. It can sequester vast quantities of greenhouse gases, it could balance our climate, replenish our fresh water supplies, and feed the world.
2. Erosion.
3. The Dust Bowl, caused by farmers ploughing and tilling the once fertile Midwest plains and leaving them exposed.
4. It's a gas, we breathe it out, and plants breathe it in. We also make carbon by burning fossil fuels. We're 16% carbon.
5. Plants pull carbon dioxide out of the atmosphere, using sunlight as energy, to turn it into a 'carbon fuel'. And that's how they grow. 40% of that carbon fuel is sent down to their roots, with leakage then feeding soil microorganisms. Mineral nutrients are returned. The soil microbes make a carbon glue (called Glomalin) and make micro habits in the soil. This is how carbon is sequestered.



6. In any given handful of healthy soil there are more organism than the number of people who have ever lived-on planet Earth.



7. These soils are completely devoid of microorganisms.
8. War. Single industry infrastructure was developed post-war involving the decoupling of livestock and row crops. Since 1970 chemical agriculture has ramped up worldwide and we have lost one-third of the Earth's topsoil.
9. Corn, it is sprayed with glyphosate, which is linked to cancer. Glyphosate kills the bacteria in the soil but also the microbes in your gut.
10. Land that is turning to desert, when bare ground is created, and topsoil is lost. About two-thirds of the world is desertified. By 2050 1 billion people will be refugees from soil desertification.
11. Within 60 years.
12. Removal and storage of carbon from the atmosphere by plants or bacteria in the sink of the soil.
13. About 1,000 billion tonnes of carbon dioxide into the atmosphere. Even if all GHGs are stopped today this carbon dioxide is still there (reducing emissions isn't enough).
14. Regeneration (repairing damage and making things better e.g., agroforestry).
15. It aids topsoil. Firming wheels hold residue and only a small amount of soil is moved on top of the seed. Soil that is not tilled stores more water, thus increasing microbe growth, leading to plant growth, and even more local rainfall. A virtuous cycle of regeneration. It also pulls more carbon from the atmosphere. For every 1% increase of organic matter, an acre of soil draws down 10 more tonnes of carbon. Monoculture crops are replaced with cover crops.
16. It uses US taxes to give farmers price guarantees for growing specific (staple) crops (wheat, corn, barley, rice, soybeans) which are ultimately used for intense cattle farming.
17. Incentivise people by fining residents for not recycling food waste. Compost is made from food scraps from restaurants and people's homes in the city.
18. She founded Detroit Dirt, collecting zoo manure and restaurant food waste.
19. Composting toilets.
20. The 25 nature-based solution are listed below.

Improved rice cultivation	Tropical forests	Silvopasture	Regenerative agriculture	Temperate forests
Peatlands	Tropical staple trees	Afforestation	Conservation agriculture	Tree intercropping
Managed grazing	Planet-rich diet	Composting	Seaweed farming	Bamboo
Forest conservation	Indigenous peoples land management	Perennial biomass	Coastal wetlands	System of rice intensification
Landfill methane	Farmland restoration	Farmland irrigation	Biochar	Green roofs