May 2020

**Live zoom tours – Hockerton Housing Project**

**Answers to exercises on carbon footprint**

All of these answers are taken from Mike Berners-Lee’s book “How bad are bananas?” (London 2010). These are based on UK living.

Below are the answers to the exercises with the items under each letter sorted (lowest to highest) into an order according to their carbon footprint equivalent (CO2 e), plus some more added as information for comparison.

1. **Water**
* b) 0.14g CO2 e: Tap water (pint)
* additional info) 50g CO2 e: Boiling a litre of water on a gas kettle (with lid on), on a fairly low heat
* c) 70g CO2 e: Boiling a litre of water in an electric kettle
* a) 110g CO2 e: Bottled water (500ml) – locally sourced and using local distribution
* additional info) 215g CO2 e: Bottled water (500ml) – travelling 600 miles by road
1. **Technology**
* d) 0.7g CO2 e: A web search from an efficient laptop (a lower estimate)
* additional info) 4.5g CO2 e: A web search from a power-hungry machine
* b) 12g CO2 e: Electricity consumption of an energy-efficient laptop (per hour)
* c) 150g CO2 e: Electricity consumption of an old desktop machine (per hour)
* a) 200kg CO2 e: A simple low-cost laptop (only the machine itself – production)
* additional info) 800kg CO2 e: An all-the-frills desktop (only the machine itself – production)
1. **Communication**
* b) 0.3g CO2 e: A spam email
* c) 4g CO2 e: A regular (not spam) email without attachment
* f) 34g CO2 e: 1hr TV on a 15-inch LCD flat screen
* a) 50g CO2 e: An email with a long attachment that you have to read
* d) 140g CO2 e: A 10g letter made from recycled paper and recycled by you
* g) 220g CO2 e: 1hr TV on a 42-inch LCD flat screen
* e) 390 – 820g CO2 e: Daily newspaper, recycled
1. **Travel: London to Glasgow and return (all scenarios are based on one person travelling the 405 miles each way on their own)**
* c) 53kg CO2 e: Bicycle (the cyclist is powered by eating bananas only for this journey)
* b) 66 kg CO2 e: Coach
* d) 120kg CO2 e: Train
* e) 330kg CO2 e: Small efficient car
* f) 500kg CO2 e: Plane
* a) 1100kg CO2 e: Large four-wheel drive car
1. **Food**
* b) 69g CO2 e: 1kg apple, local and in season
* c) 90g CO2 e: Bowl of cereal with milk
* a) 250g CO2 e: 1kg carrots, local and in season (raw)
* e) 480g CO2 e: 1kg bananas
* f) 500g CO2 e: 1kg oranges, average
* d) 1.1kg CO2 e: 1kg apples, cold stored and inefficiently produced
* g) 5.5kg CO2 e: 1kg oranges, air-freighted for the start of the season

If you would like to buy Mike Berners-Lee latest book it is available in our shop via this link