



Activity: Lunch box water footprints

In this activity, you will guess the water footprint of some common foods, before finding out the answers from their teacher. This can be done with or without internet research, as the answers are provided within the activity.

Procedure:

1. Complete the warm up exercise
2. Using the internet and the links in the resources section, including the [Water Footprint Network website](#) find out the relevant values per kilogram (or similar) for each of the foods shown in the lunch box photos (figure 1)
3. Using this information, calculate the water footprint for the amount of food shown in each lunch box and find the overall total for the complete box.
4. Compare and share your findings with others and consider the discussion questions below.

Warm up Exercise

Read the descriptions of each food item in table 1 and guess what the water footprint could be – that is, how much water is needed to produce the item. You should choose from the following categories A-G below and: enter the chosen letter into the third column of table 1:

- A: 1–50 litres
- B: 50–100 litres
- C: 100–200 litres
- D: 200–500 litres
- E: 500–1000 litres
- F: 1000–2000 litres
- G: over 2000 litres

Once you have submitted your guesses in table 1, you can compare these should provide feedback via the answers in table 2.



Table 1: Some common foods. Can you guess the approximate water footprint of each one?

Item	Amount	Water footprint?
Chocolate	1 bar (100 g)	
Bread	100 g	
Pasta (uncooked)	100 g	
Chicken (cooked)	100 g	
Beef (cooked)	100 g	
Hamburger	120 g patty with bun and garnish	
Apple	1 average (150 g)	
Milk	1 glass (300 ml)	
Beer	1 large glass (500 ml)	
Tea (without milk or sugar)	1 large cup (250 ml)	
Coffee (without milk or sugar)	1 small cup (125 ml)	

Discussion Questions

- Which water footprint values did you find most surprising? Did any shock you?
- What types of food do you think typically have high water footprints, and why?
- What factors do you think might contribute to the water footprint of a food?
- Why might the water footprints of similar items (e.g. coffee and tea) be very different?
- Look at the image of the available water on Earth. What does this tell you about the need to conserve water on Earth?
- If you were required to reduce your water footprint, what effect would this have on you and your family?
- One-third of the world's food production ends up as waste. How do you think we should reduce our food waste to decrease the amount of water wasted?

My Lunchbox Water Footprint



Main Activity

In this activity, students use their own research to work out the approximate water footprints of six ready-made lunch boxes. They can use this information to think about – and maybe change – what they choose to put in their own packed lunches. Again, students can work individually or in groups, remotely or in class.

Materials

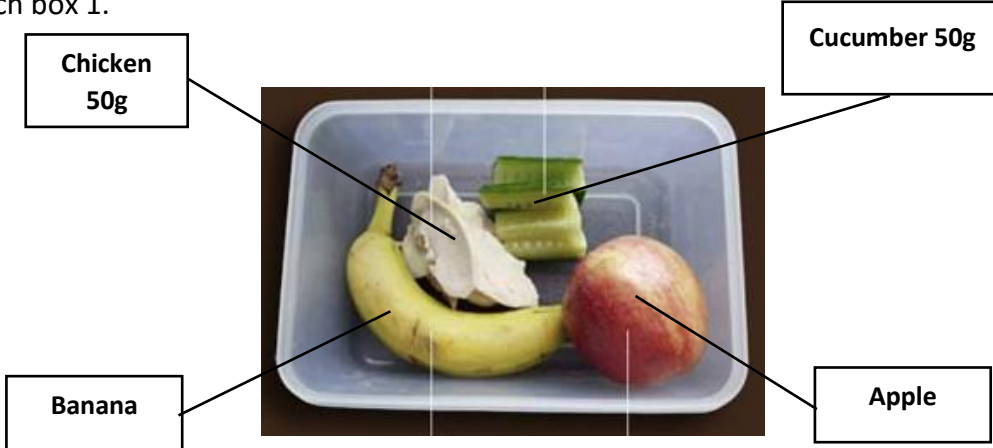
- Student resource: labelled lunch box photos (see figure 1 and additional materials section)
- Teacher resource: calculations of approximate water footprint of lunch box contents (see additional materials section)
- Internet access to research water footprint values (see resources section)

Procedure

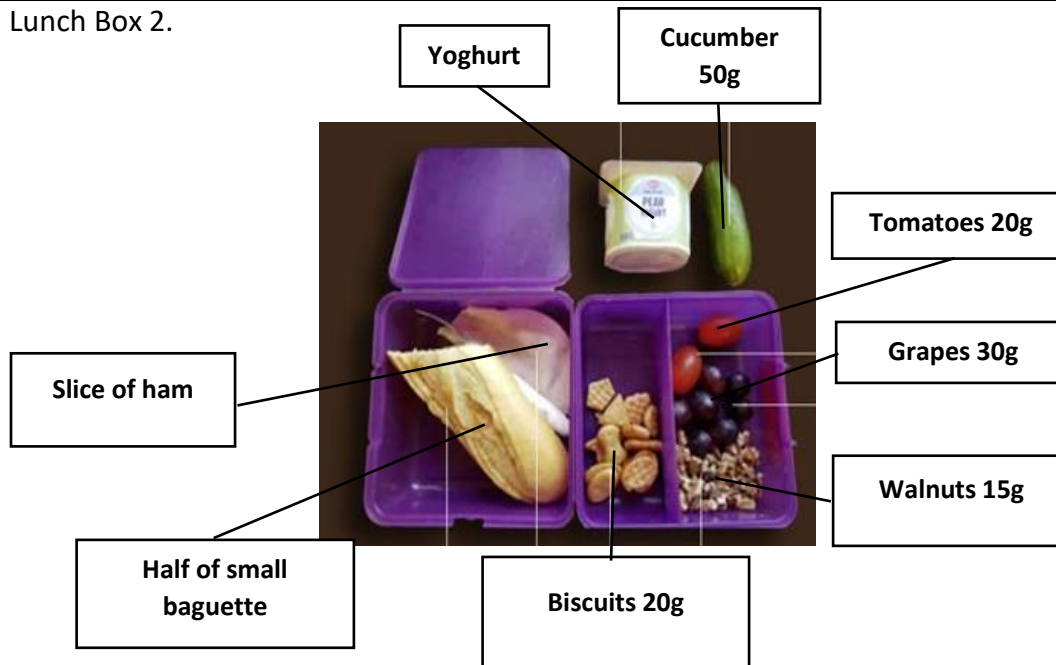
1. Students view the labelled lunch box photos (either in class or remotely).
2. Each student (or group) chooses three or more lunch boxes (ideally all of them), for which to calculate the water footprint.
3. Using the internet and the links in the resources section, students find out the relevant values per kilogram (or similar) for each of the foods shown in the lunch box photos.
4. Using this information, students then calculate the water footprint for the amount of food shown in each lunch box and find the overall total for the complete box.
5. Teachers can provide feedback to students at this stage using the supporting resource sheet 'Lunch box calculations' (see additional materials section), which provides water footprint values for each of the foods.
6. Students can then compare and share their findings with others and consider the discussion questions below.

Figure 1: Some sample lunch boxes: can students work out the water footprint of each?

Lunch box 1.



Lunch Box 2.



Lunch box 3.

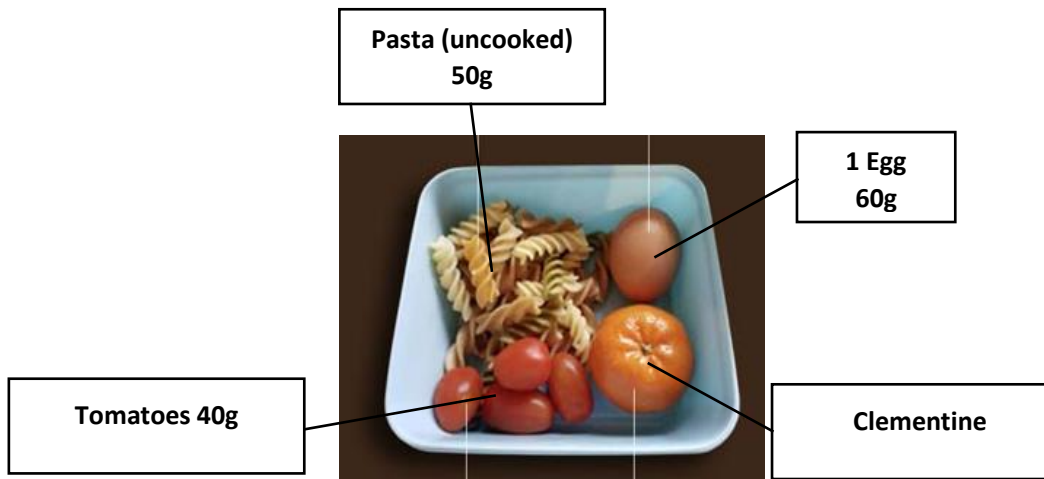




Table 2: Use this space to calculate the water foot prints for each of the lunch boxes.

Lunch Box 1

Lunch Box 2

Lunch Box 3



Discussion Questions

1. Which lunch box had the highest water footprint? Which had the lowest?

2. Which items do you think represent the best 'value' in terms of their water footprint, and which the worst?

3. Choose an item from the lunch boxes and decide whether you think that item's water footprint is sustainable over years to come. Give your reasons.

4. Think about the items you would normally choose to put in your own lunch box. What might the overall water footprint be for your normal lunch box?

5. What items in your normal lunch box have the highest water footprint? How might you replace these with better options?



Resources:

1. Use the product gallery on the [Water Footprint Network website](#) to obtain water footprint values for many items of food and drink, and some other consumables.
2. Read this article on the [FuturEnviro website](#) about the large contribution our diet makes to our water footprint.
3. Explore water footprint values for some food items in this pictorial article from [The Guardian newspaper](#).
4. Read about the water footprints of many different types of consumer product in this book. See: Leahy S (2014) [Your Water Footprint: The Shocking Facts About How Much Water We Use to Make Everyday Products](#). Richmond, ON, Canada: Firefly Books. ISBN: 9781770852952