

# Embodied Water

## Teacher Notes

Primary (3-6)

### ACTIVITY DESCRIPTION

The Embodied Water activity raises awareness of the hidden yet significant portion of our water footprint, e.g. the water required to grow, manufacture and transport products that we commonly use and eat. Students will look at different 'every day' items and are asked to match these with the amount of embodied water it contains.

### INSTRUCTIONS

#### 1. Mix and Match

Virtual or embodied water is the measurement of the amount of water used to produce each of the goods and services we use. Match each of the items (e.g. hamburger, paper, t-shirt) with the cards indicating the equivalent amount of embodied water required for the item's production and manufacture.

#### 2. Discussion

1. Which three everyday items contain the most embodied water? Why do you think this is the case?
2. Suggest reasons for why the production of beef requires so much water?
3. How might this activity affect the decisions people make about what they consume?
4. What is **one** way we can reduce the amount of embodied water required to produce the things that we consume? (e.g. 5Rs: Rethink, Refuse, Reduce, Reuse, Recycle)

### SUGGESTIONS FOR ASSESSMENT

#### Formative

1. Participation in the Embodied Water activity
2. Participation in the Discussion questions above

### BACKGROUND NOTES

Water is one of the most precious resources and vital for everyone's everyday life. People use large amounts of water for drinking, cooking and washing, but even more for producing things such as food, paper, cotton clothes, and almost every other physical product.

Everything we use, wear, buy, sell and eat takes water to make.

Embodied or virtual water is a measurement of the amount of water used to produce each of the goods and services we use. About 65% of the water we consume is in our food. Much of the virtual water we consume too, about 70%, comes from other nations, as we import goods and services into the country.

## ACTIVITY SOLUTIONS

Item	Amount of embodied water required for production and manufacture
1 piece of paper	10 litres of water
1 cup of tea	30 litres of water
1 litre of dairy milk	1,000 litres of water
1 hamburger	2,400 litres of water
1 cotton shirt	2,700 litres of water
1kg of beef	15,500 litres of water

## ACCESS THIS ACTIVITY

Visit the **CERES School of Nature and Climate** website to download the activity - <https://sustainability.ceres.org.au/education-resources/curriculum-activities/>

# Curriculum and RSS Links

## KEY CONCEPTS

Water Footprint, Water Use, Virtual Water, Conservation, Life Cycle

## KEY LEARNING INTENTIONS

1. Introducing the concept of hidden/virtual/embodied water
2. How much water it takes to produce something
3. Understanding the extent of our true water footprint

## VICTORIAN CURRICULUM

### The Humanities

<b>3 - 4</b> <b>Geography</b>  Types of natural vegetation and the significance of vegetation to the environment, the importance of environments to animals and people ( <a href="#">VCGGK082</a> )	<b>5 - 6</b> <b>Economics and Business</b>  Identify types of resources (natural, human, capital) and explore the ways societies use them in order to satisfy the needs and wants of present and future generations ( <a href="#">VCEBR003</a> )
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### Mathematics

<b>3</b>  Measure, order and compare objects using familiar metric units of length, area, mass and capacity ( <a href="#">VCMMG140</a> )	<b>4</b>  Compare objects using familiar metric units of area and volume ( <a href="#">VCMMG166</a> )	<b>5</b>  Choose appropriate units of measurement for length, area, volume, capacity and mass ( <a href="#">VCMMG195</a> )	<b>6</b>  Connect volume and capacity and their units of measurement ( <a href="#">VCMMG225</a> )
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## SUGGESTED RESOURCESMART SCHOOLS MODULE LINKS



Undertaking the activity as described above links to the *ResourceSmart Schools Water Module - actions B1.2, B1.3*

Below is a list of extension activities that link to additional actions of the Water module:

1. Based on activity, estimate whole family and/or school water footprint. Include water footprint activity in newsletter to families and share tips on how to reduce water impact (*Resourcesmart Schools Water Module - action C3.5*)
2. Students to run a meat and dairy free lunch day at your school to raise awareness around embodied water. Follow up with whole school community survey to investigate opportunities to hold these on an ongoing basis (*ResourceSmart Schools Water Module - actions B1.4, C1.2, C2.1*)
3. Look at examples of how indigenous or other cultures/countries use water on a day-to-day basis. You could invite a local indigenous group(s) to share their perspective on water use and conservation (*ResourceSmart Schools Water Module - actions B1.5, B1.6*)
4. Students to write a learning story about key findings of the activity and share in your school's newsletter and website (*ResourceSmart Schools Water Module - actions C1.1, C1.3*)
5. Students compare the volume of embodied water required for each everyday item through the construction of a 3D graph using centicubes (*ResourceSmart Schools Water Module - actions B1.1, B1.3*)

Speak to your CERES ResourceSmart Schools Facilitator about further links to the Water Module.