WATER AVAILABILITY CASE

Extensions, Lesson 1: Information Gathering



EASY

o Replace the *Getting Information* worksheet (page 1) with *Getting Info Easy.doc*

CHALLENGE

 Replace the *Getting Information* worksheet (page 1) with *Challenge.doc* Getting Info

- o Replace the *Making the Headlines* worksheet (page 4) with *Headline Challenge.doc* to challenge students to create graphs instead of selecting pictures. These students will also need a copy of *WWRB Datasheet.xls*. Alternatively, ask them to copy the data for the country, if not the entire WWRB data table.
- Ask students about the comparison of their assigned country relative to the UK or London.
- o Distribute printed copies of *Numbers and Units Challenge.doc* to give students more practice with converting numbers and units.
- Distribute printed copies of *Data Table Challenge.pdf* to give students practice with converting to standard form.

REAL-WORLD CONNECTIONS

- Allow students to explore visual representations of their country using Google Earth.
- o Ask students about the comparison of their assigned country relative to the UK or London.

MULTI-DISCIPLINARY LINKS

- Coordinate with Geography teacher to facilitate related discussions in support of this case.
- Link to Science discussions on units, and using *Numbers and Units Challenge.doc*, to standard form.

WATER AVAILABILITY CASE

Extensions, Lesson 2: Making a Fair Comparison



EASY

CHALLENGE

- Reiterate the magnitude of the numbers they are working with (i.e., millions of people, billion cubic metres). Consider revisiting relevant discussions from the previous lessons, particularly the supplementary worksheet *Numbers and Units Challenge.doc*, if used.
- Lead a discussion on unit analysis.
 - o If you divide water use by population, you get the amount of water used per person. This is water used per capita expressed as cubic meters per person.
 - o When adding water and population, what do you get? A nonsensical measure.
- o To conduct a deeper analyses using more countries, the following teacher file provides a sequence of activities that has students: create and compare *per capita* measures across 25 countries; create graphs of these measures; and refine the graph to highlight important aspects of the data. The student file should be distributed to students (in electronic form) to allow them to work with the data.
 - WWRB_Extended_Teacher_Datasheet.xls
 - WWRB Extended Student Datasheet.xls

REAL-WORLD CONNECTIONS

- Reflect on how the students' headlines for the 3 countries compares to the water situation in the UK.
- Think about other news headlines and articles that incorporate the data versus those that do not. Which is more convincing? Which is more accurate? Which do you tend to prefer? Why or why not?
- o Challenge students to keep within the water availability per capita of one of the 3 countries then reflect on how easy/ hard it is. Many of our daily routines require water: drinking, washing hands, flushing toilets, laundry, etc.
- Ask students to estimate their individual water use in a day. Then multiply this by 365 to get the amount used per year. How does this compare with the water availability per capita of their assigned country?

MULTI-DISCIPLINARY LINKS

o Link to Science, where density and speed are common compound measures.



WATER AVAILABILITY CASE

Extensions, Lesson 3: Argumentation



EASY

o At the beginning of the lesson, review students' answers to question 9 of *Making a Fair* Comparison (page 7).

CHALLENGE

- Allow students to search for additional data on the internet, at the library, etc. If they opt to include this in their poster, they must provide the same information for the other countries in order to make a fair comparison. They should also cite their source/s.
- Suggest that groups list the assumptions underlying their arguments as well as potential counterarguments.

REAL-WORLD CONNECTIONS

MULTI-DISCIPLINARY LINKS

Link to lessons in English, ICT and Science.