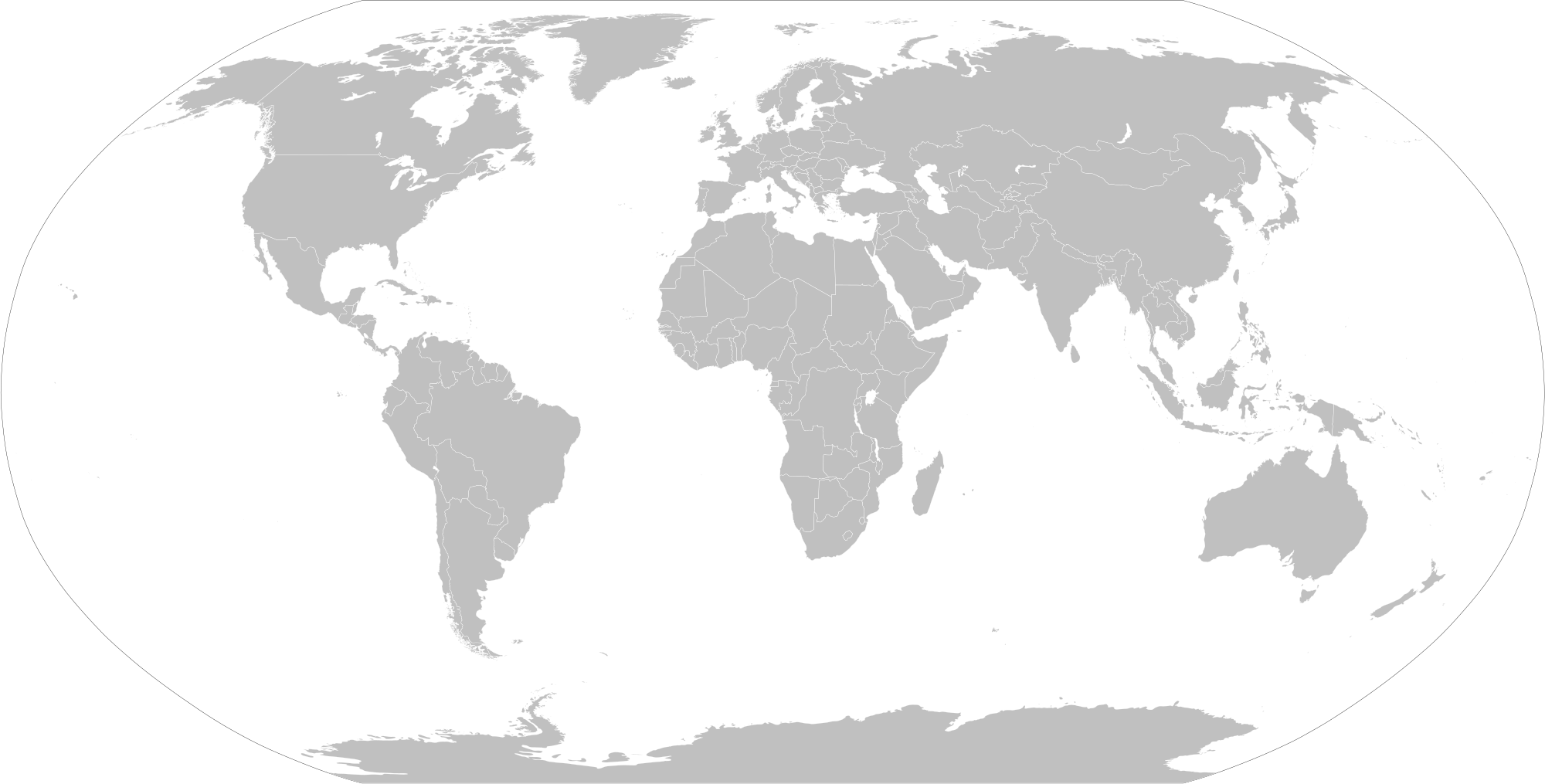
# From tap to toilet

***Education in Chemistry***May 2019  
[rsc.li/2G1LCCy](https://rsc.li/2G1LCCy)

Have you ever wondered what happens when you flush the toilet? Read through the article, What happens when I flush the loo? and find out how the contents of the flush is treated and how this treatment is different in the UK and in Singapore.

**1.** Mark the UK and Singapore on the map of the world below.



**2.** The article describes how waste water treatment can be split into four different stages:

* Preliminary screening.
* Primary treatment.
* Secondary treatment.
* Tertiary treatment.

Each of the statements below applies to one or more of these stages. Match each statement to the stage to which it applies.

|  |  |  |  |
| --- | --- | --- | --- |
| **Uses ultra-fine filters.** | **Solid particles settle out of the liquid portion by gravity.** | **Fishes out large pieces of waste.** | **Reduces the organic components in the water.** |
| **Lowers the BOD (biological oxygen demand).** | **Requires additional chemical treatments.** | **Microbes break down all the unsavoury stuff.** | **Forms a sludge that can be used to fertilise fields.** |

**3.** Which of these stages is currently used in the Singaporean system but not in the UK system?

**4.** Would you be happy to drink water that has been recycled from the contents of a toilet flush?

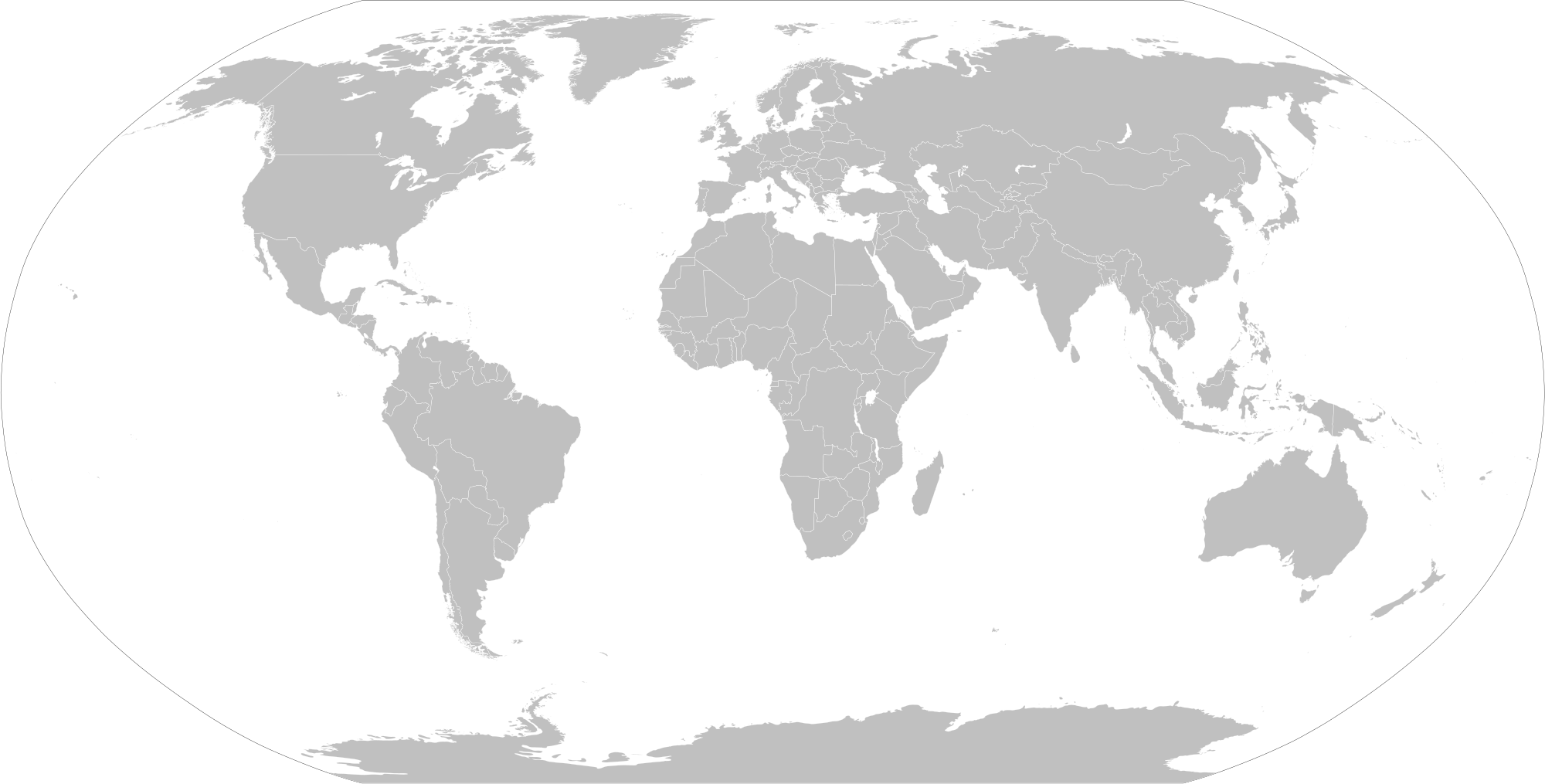
Justify your opinion.

## Answers

**1.**

Singapore

United Kingdom (England, Northern Ireland, Scotland and Wales)



**2.** **Preliminary screening**

* Fishes out large pieces of waste.

**Primary treatment**

* Solid particles settle out of the liquid portion by gravity.
* Forms a sludge that can be used to fertilise fields.
* Reduces the organic components in the water.
* Lowers the BOD (biological oxygen demand).

**Secondary treatment**

* Microbes break down all the unsavoury stuff.
* Lowers the BOD (biological oxygen demand).

**Tertiary treatment**

* Uses ultra-fine filters.
* Requires additional chemical treatments.

**3.** The tertiary treatment phase is currently used in the Singaporean system but not in the UK system. Similar approaches have also been adopted in Australia and parts of the US.

**4.** Student personal opinion with suitable justification.