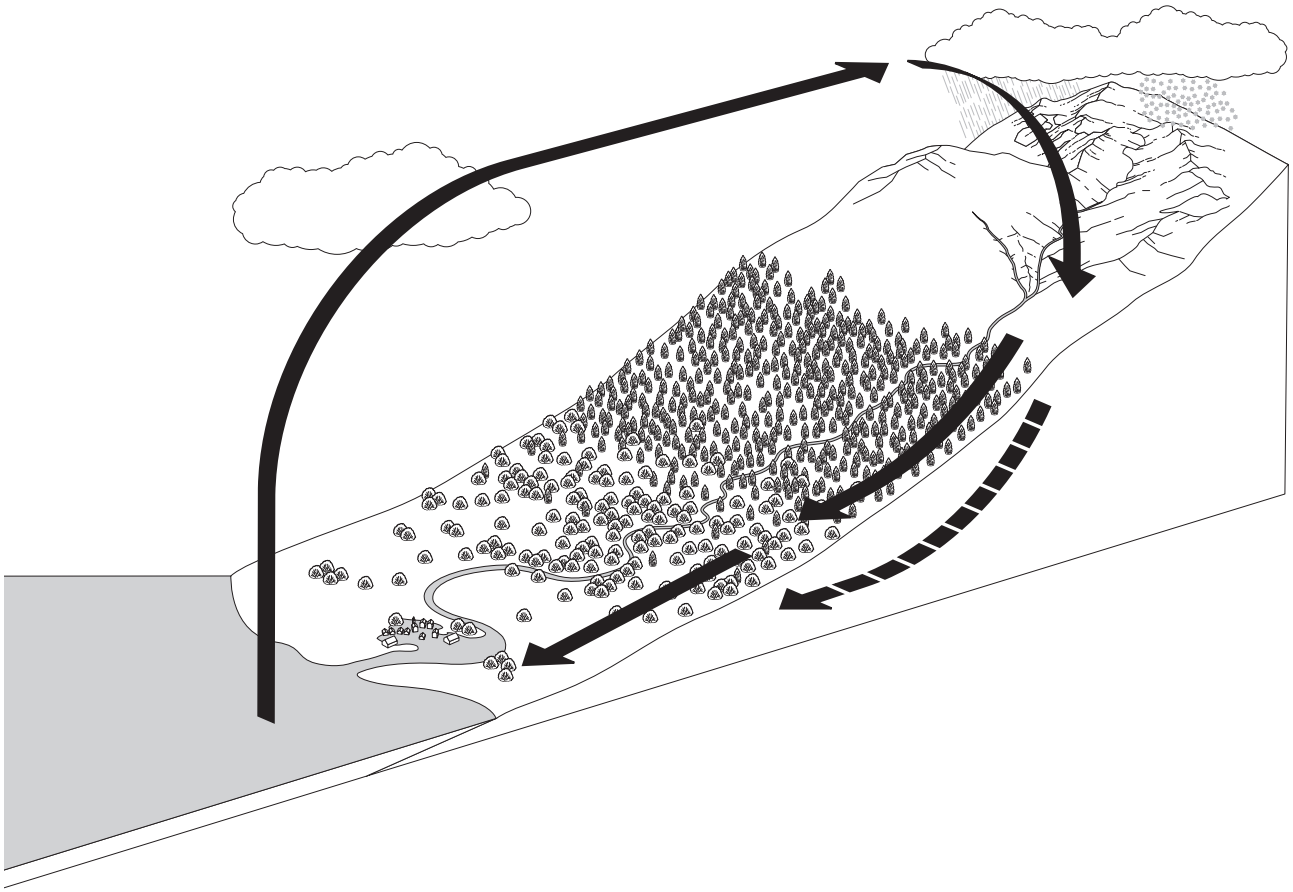
3 A

Name:..... Form:.....

See **pages 8 and 9** of *The Water Book*

Where water comes from

The water we use begins in the oceans, rises to form clouds, falls as rain then seeps through the soil into rivers. It is part of the water cycle.



Q1. On the diagram above, write what each arrow shows.

Q2. How does the water get into rivers?

✎ .....

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Q3. Could you stop water running back to the sea?

✎ .....

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Answers

1. **The arrows (starting from the ocean) show evaporation; movement of clouds over land; rainfall (snowfall) running over the surface; water flowing through the soil (dotted line); water flowing in rivers back to the sea.**
2. **By seepage through the soil (not usually by rain running over the surface).**
3. **This is an open question.**

   The answer is yes, for a while, by building reservoirs. But as we shall discover, reservoirs can only hold a small amount of the total rainfall in a year and so, if they were asked to hold the whole year's water, they would have to be immense. The purpose of raising the issue now is to try to give an opportunity to think about the magnitudes of water involved in the water cycle.

Notes

The water cycle is one of the places where water supply and river studies intersect. Children should be encouraged to think carefully about the water cycle and understand how it works because it affects the whole of the rest of the study.

Evaporation, condensation (to make clouds) and the transfer of water as clouds onto land will affect the amount of water that is available for use. If the amount of rainfall is small, the amount of water for use will be restricted. This is an obvious point, but it is important to make it clearly, especially for the spreads concerned with drought.

One part of the water cycle not drawn onto the diagram is evapo-transpiration, the evaporation and transpiration of water from living plants. This is water that is taken from the soil and returned to the air. It explains why, even in a place with steady rainfall throughout the year, the soils dry up in summer but get waterlogged in winter.

Children should also be shown that rainfall does not run over the soil, except in very unusual and exceptional circumstances. To make this point, you may care to take them outside when it is raining and get them to feel the soil for any running water. They will not find it because it all seeps in.

The infiltration of water into the soil and its percolation deep into the soil and through permeable rocks is central to the understanding of water supply. Rivers are primarily fed by seepage from rocks and soil, NOT by water running over the soil. If it were the latter then rivers would quickly dry up after rain (as they do in rocky regions with no soil or permeable rock). The slow flow of water through the soil gives us the reliability we need and prevents us having to build far bigger reservoirs. This is why it is important that children do not misunderstand this crucial point.