

Exercise Module 2
Basics of HydroGeology

Try to move from rainfall to recharge – but follow only the true statements. Best to do this in group of 2 or 3 and discuss – see which group finds the correct route.

RAINFALL	Most water on earth is salt	An aquitard is a very old aquifer	Shallow aquifers are more prone to organic pollution than deep aquifers	Most fresh water on earth occurs as groundwater	In clay you will not find much groundwater	Groundwater with high sodium content is called sodawater
All aquifers are permeable	Confined aquifers are 'sandwiched' between impermeable layers	Some rivers are recharged by groundwater	Some aquifers are recharged by rivers	Because of overpumping, farmers may suffer from 'cones of depression'	The effects of chemical groundwater pollution may last for centuries, if not more	Fossil groundwater is not recharged
Groundwater flows best in layers of coarse sand and gravel	If too much groundwater is used, land may sink	High fluoride levels in groundwater can cause dental problems and kidney failure	The transmissivity of an aquifer depends on its thickness and the hydraulic conductivity	A tubewell is a horizontal well	Water tables do not have four legs	Unconfined aquifers extend across country borders
The age of groundwater can be from weeks up to millennia	The zone of aeration is the aquifer underneath a recreational area	Granite formations are not very permeable	Groundwater discharge can be through wells, lakes, wetlands, rivers or waterlogged areas	If a well is first developed, it yields sparkling water	Some groundwater is naturally chemically contaminated	In artesian wells water flows upstream
Shallow aquifers recharge quickly	Hydraulic conductivity measures the voltage of groundwater	A deeper well will always yield more water	Contamination is caused by pesticides, industrial/urban waste, oil and human waste	Most groundwater flows in underground rivers	Most groundwater is too heavy to evaporate	RECHARGE

The right route....

correct answers in yellow and the correct statements are added to the wrong answers

RAINFALL	Most water on earth is salt	An aquitard is a very old aquifer	Shallow aquifers are more prone to organic pollution than deep aquifers	Most fresh water on earth occurs as groundwater	In clay you will not find much groundwater	Groundwater with high sodium content is called sodawater
All aquifers are permeable	Confined aquifers are 'sandwiched' between impermeable layers	Some rivers are recharged by groundwater	Some aquifers are recharged by rivers	Because of overpumping, farmers may suffer from 'cones of depression' NOT TRUE: A 'cone of depression' is the area around a well from which water is pumped away	The effects of chemical groundwater pollution may last for centuries, if not more	Fossil groundwater is not recharged
Groundwater flows best in layers of coarse sand and gravel	If too much groundwater is used, land may sink	High fluoride levels in groundwater can cause dental problems and kidney failure	The transmissivity of an aquifer depends on its thickness and the hydraulic conductivity	A tubewell is a horizontal well NOT TRUE: A tubewell is a vertical well. In some countries there are horizontal wells (qanats).	Water tables do not have four legs	Unconfined aquifers extend across country borders NOT TRUE: Unconfined aquifers are 'open' from above
The age of groundwater can be from weeks up to millennia	The zone of aeration is the aquifer underneath a recreational area NOT TRUE: The zone of aeration is the area of infiltration above the saturated part of an aquifer	Granite formations are not very permeable	Groundwater discharge can be through wells, lakes, wetlands, rivers or waterlogged areas	If a well is first developed, it yields sparkling water NOT TRUE: Sparkling water is nice to drink	Some groundwater is naturally chemically contaminated	In artesian wells water flows upstream
Shallow aquifers recharge quickly	Hydraulic conductivity measures the voltage of groundwater NOT TRUE: Hydraulic conductivity measures the voltage of groundwater	A deeper well will always yield more water NOT TRUE: A deeper well will not necessarily yield more water	Contamination is caused by pesticides, industrial/urban waste, oil and human waste	Most groundwater flows in underground rivers NOT TRUE: There are very few underground rivers – most groundwater moves through formations	Most groundwater is too heavy to evaporate NOT TRUE: Groundwater and surface water are the same water	RECHARGE