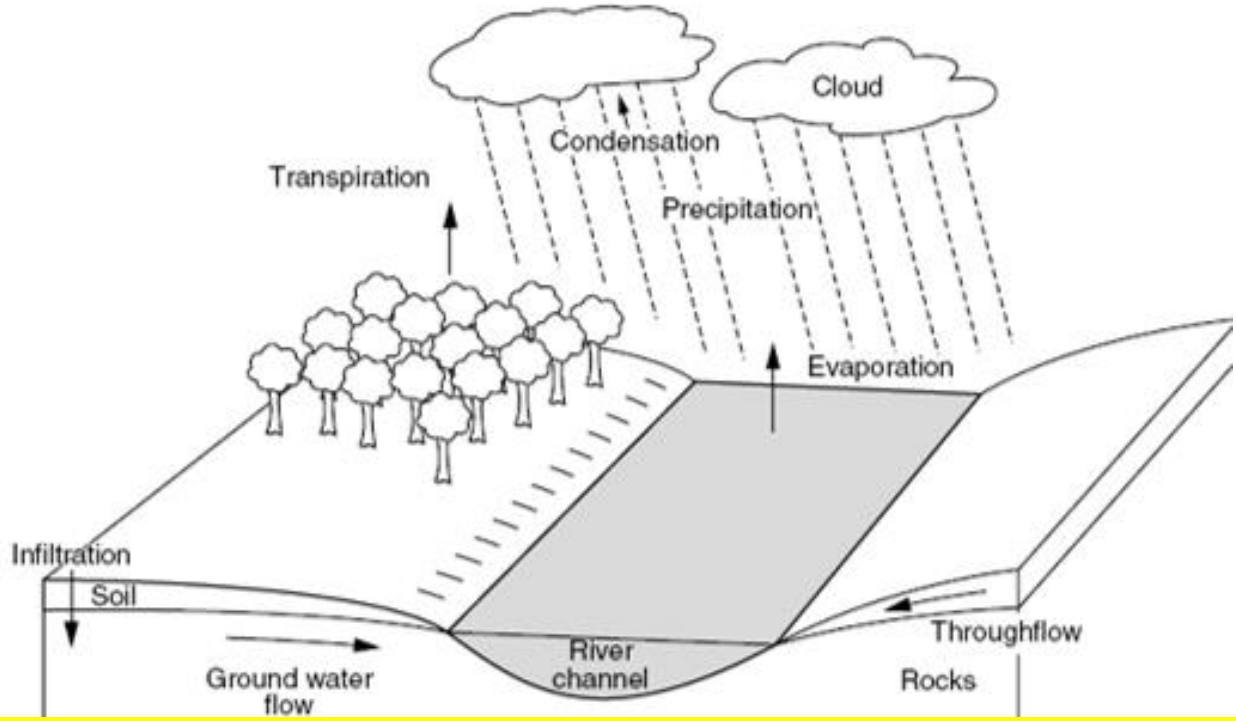
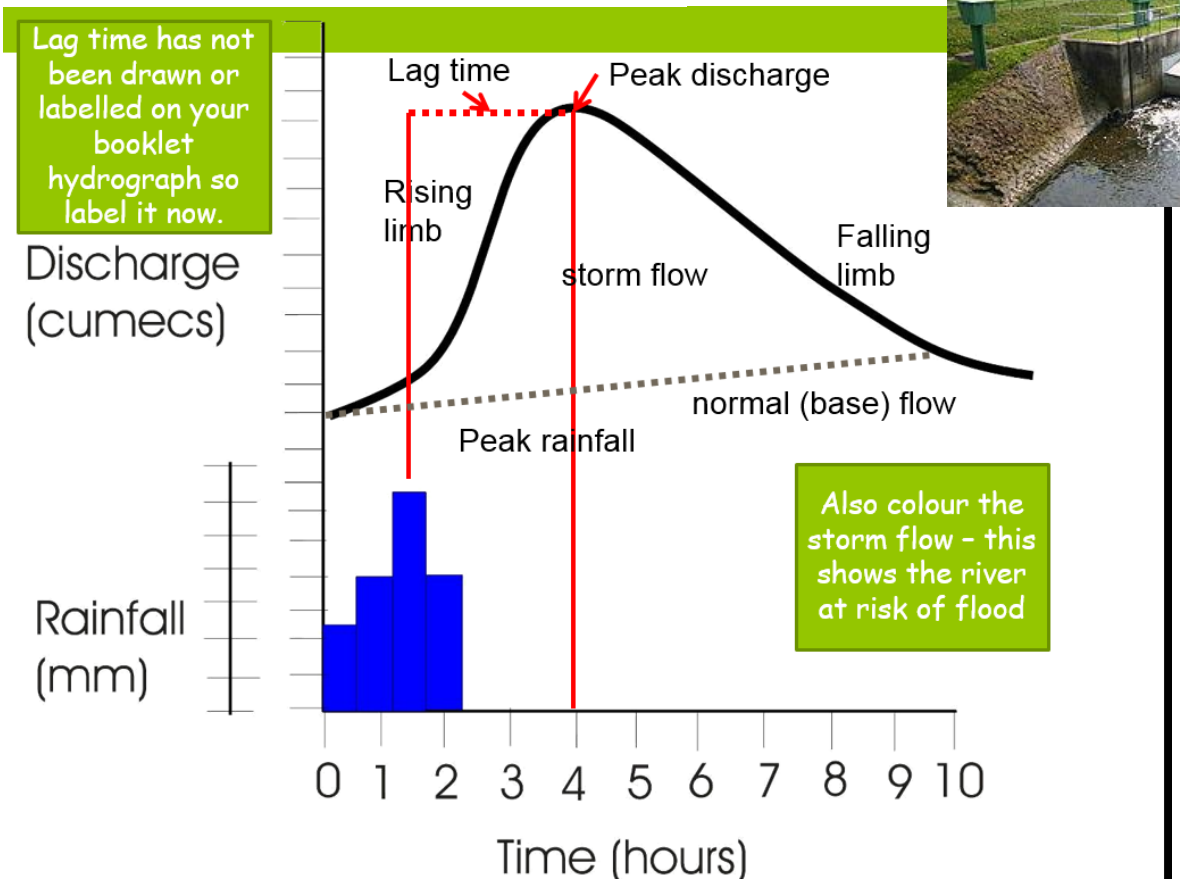
Water Cycle and Hydrographs



The Channel Capacity of a River=The amount of water a river can hold is the channel capacity. People can manage flooding by increasing the channel capacity.

DISCHARGE: The volume of water multiplied by the velocity of the river at a given time, measured in cumecs (cubic metres of water per second).

Discharge is measured at a gauging station that looks like this

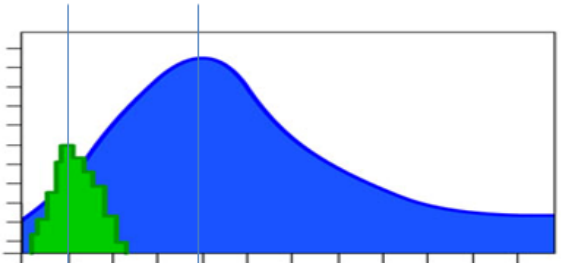


What factors Influence the Shape of a Hydrograph?

Intercepted throughflow quickly slowly groundwater flow Surface runoff

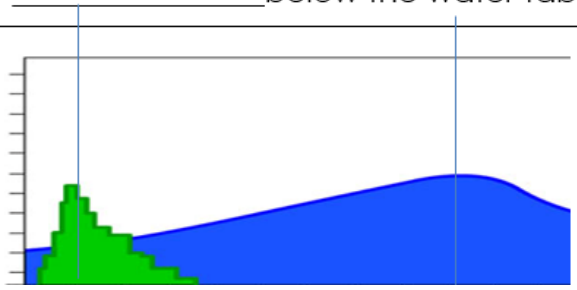
Short lag time and high flood risk

This means that precipitation is getting into the river channel_____.
This happens because the precipitation is moving as _____ _____.

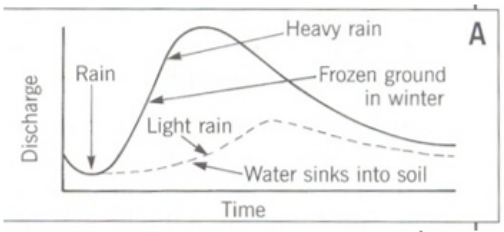


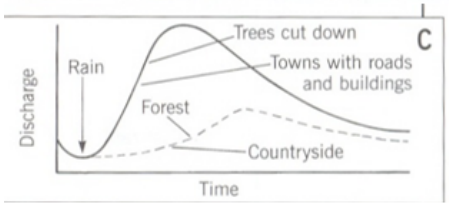
Long lag time and low flood risk

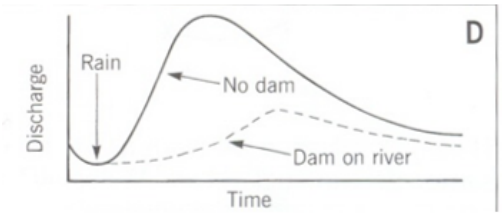
This means that precipitation is getting into the river channel_____. This happens because the precipitation has been _____ by trees. The Water also moves slowly towards the river as _____ above the water table or _____below the water table.

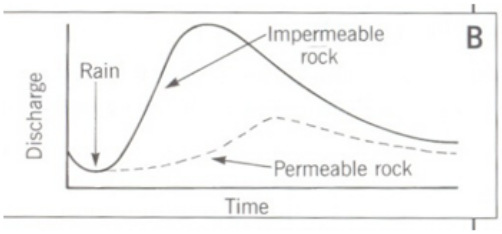


Match the hydrographs to the explanations









Precipitation and Weather: Light rain means there is more time for the water to infiltrate and a longer lag time. If the ground is frozen there will be more surface runoff and so flooding. If the ground is hard from dry weather there will be more surface runoff and so flooding.

Underlying Rock: Impermeable rock means water can't infiltrate so there is more surface runoff so more flooding. Permeable rock will allow infiltration and slow down the flow of water to the river so there is a longer lag time and lower flood risk.

Land Use: If trees are cut down there will be less interception so the water will get to the river quicker meaning there will be a steep rising limb as the discharge will rapidly increase.

River Management: By building a dam on a river the water can be controlled in times of t heavy precipitation. This means hat the rising limb is gentle and the peak discharge is always low reducing the flood risk.