Rivers provide us with food, energy, recreation, transportation routes, and of course water for irrigation and for drinking. But where do they start and where do they end?

Rivers begin in mountains or hills, where rain water or snowmelt collects and forms tiny streams called gullies. Gullies either grow larger when they collect more water and become streams themselves or meet streams and add to the water already in the stream. When one stream meets another and they merge together, the smaller stream is known as a tributary. The two streams meet at a confluence. It takes many tributary streams to form a river. A river grows larger as it collects water from more tributaries. Streams usually form rivers in the higher elevations of mountains and hills.

The areas of depression between hills or mountains are known as valleys. A river in the mountains or hills will usually have a deep and steep V-shaped valley as the fast moving water cuts away at the rock as it flows downhill. The fast moving river picks up pieces of rock and carries them downstream, breaking them into smaller and smaller pieces of sediment. By carving and moving rocks, running water changes the earth's surface even more than catastrophic events such as earthquakes or volcanoes.

Leaving the high elevations of the mountains and hills and entering the flat plains, the river slows down. Once the river slows down, the pieces of sediment have a chance to fall to the river bottom and be "deposited". These rocks and pebbles are worn smooth and get smaller as the water continues flowing.

Most of the sediment deposition occurs in the plains. The wide and flat valley of the plains takes thousands of years to create. Here, the river flows slowly, making S-shaped curves which are known as meanders. When the river floods, the river will spread out over many miles on either side of its banks. During floods, the valley is smoothed and tiny pieces of sediment are deposited, sculpting the valley and making it even smoother and more flat. An example of a very flat and smooth river valley is the Mississippi River valley in the United States.

Eventually, a river flows into another large body of water, such as an ocean, bay, or lake. The transition between river and ocean, bay or lake is known as a delta. Most rivers have a delta, an area where the river divides into many channels and river water mixes with sea or lake water as the river water reaches the end of its journey. A famous example of a delta is where the Nile River meets the Mediterranean Sea in Egypt, called the Nile Delta.

From the mountains to the delta, a river does not just flow - it changes the surface of the earth. It cuts rocks, moves boulders, and deposits sediments, constantly attempting to carve away all of the mountains in its path. The goal of the river is to create a wide, flat valley where it can flow smoothly towards the ocean.

A river conducts water by constantly flowing perpendicular to the elevation curve of its bed, thereby converting the positional energy of the water into kinetic energy. Where a river flows over relatively flat areas, the river will meander: start to form loops and snake through the plain by eroding the river banks. Loops that are formed are sometimes cut off, forming a shorter river channel and leaving a remnant, oxbow lake. Rivers that carry large amounts of sediment develop conspicuous deltas at their mouths. Rivers whose mouths are in saline tidal waters may form estuaries.

Where a river descends quickly over sloped topography, rapids with whitewater or even waterfallss occur. Rapids are often used for recreational purposes (*see Whitewater canoeing and kayaking*). Waterfalls are sometimes used as sources of energy, via watermills and hydroelectric plants.

Rivers begin at their source in higher ground, either rising from a spring, forming from glacial meltwater, flowing from a body of water such as a lake, or simply from damp, boggy places where the soil is waterlogged. They end at their sink where they flow into a larger body of water, the sea, a lake, or as a tributary to another (usually larger) river. In arid areas rivers sometimes end by losing water to evaporation and percolation into dry, porous material such as sand, soil, or pervious rock.

Every river in this universe has a point of origin and the gravity plays a significant role in the direction of the flow of a river. The points of origination of rivers are the marshes, lakes, and melting glaciers.

One of the sources of water that replenish the rivers is either the melting snow or the rainwater. This process is known as the precipitation.

Another major source of river water is the rain. When it rains heavily in the hills, the water trickles down the steep slopes and flows onto a riverbed. Initially, the water from the hills flows in an evenly distributed fashion and is called surface run-off. A brook flows through a valley. The volume of the water in a brook becomes constant when it gains sufficient volume of groundwater. The brook becomes a river when the water level in the brook increases.