

Janet's Foss - My Waterfall

How I Created my Model + Case Study



Study
with annotations

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8CD





My Waterfall

This waterfall resembles a section cut out of **Janet's Foss**, which is a waterfall carrying **Gordale Beck**, a stream or a beck in Northern English, located in Malham, North Yorkshire, England. The next few slides are a case study of Janet's Foss.



Janet's Foss

Janet's Foss is a small waterfall and pool, located near Gordale Scar (gorge) in Malhamdale, North Yorkshire, England. It carries Gordale Beck (a short stream) over a limestone rock covered in a variety of limestone called tufa and into a deep plunge pool. It's also connected to River Air, a large 90 miles river in Malham.

The name Janet is from a myth that believes there is a fairy queen called Janet, who lives in a cave near the waterfall. Foss is another word for for *waterfall* or *force*.

The limestone pavements near the waterfall are a lovely climate for rare wildlife to grow. Unique flowers and ferns, like wood sorrel, Herb Robert, Green Spleenwort and Wall Rue, can be found growing there.

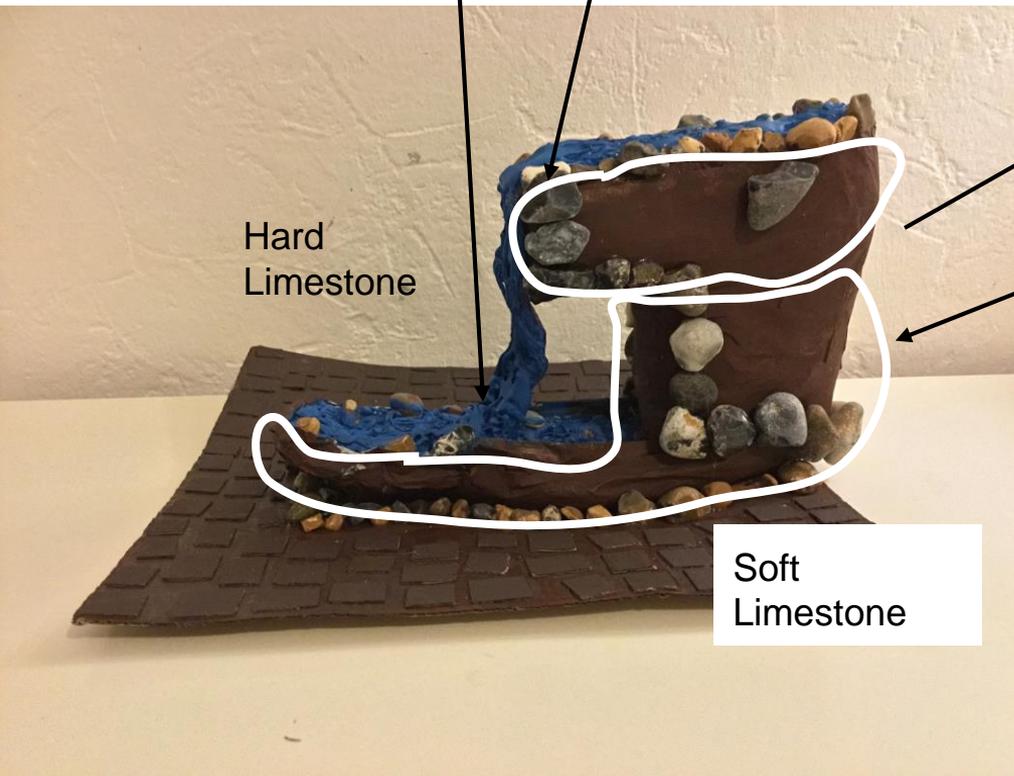


A **step** was formed from the force of the falling water crashing into the **soft rock**, soft limestone, of Janet's Foss .

Hard Limestone

Soft Limestone

This is a layer of **resistant hard rock**, hard limestone, that has been **undercut** by the **soft rock**, a softer limestone, below **eroding**. Over time, Janet's Foss continues to undercut and the hard limestone begins to overhang.





The cascading water creates a **plunge pool** by eroding and hitting the soft limestone. This is done by two forms of erosion, **abrasion** and **hydraulic action**.

The plunge pool is created by fallen limestone rocks from above grinding and rubbing against the river bed by the process of abrasion; hydraulic action also plays a part here, where cracks full of compressed air on the limestone are created by water and explode outwards from the pressure, throwing bits or rocks.



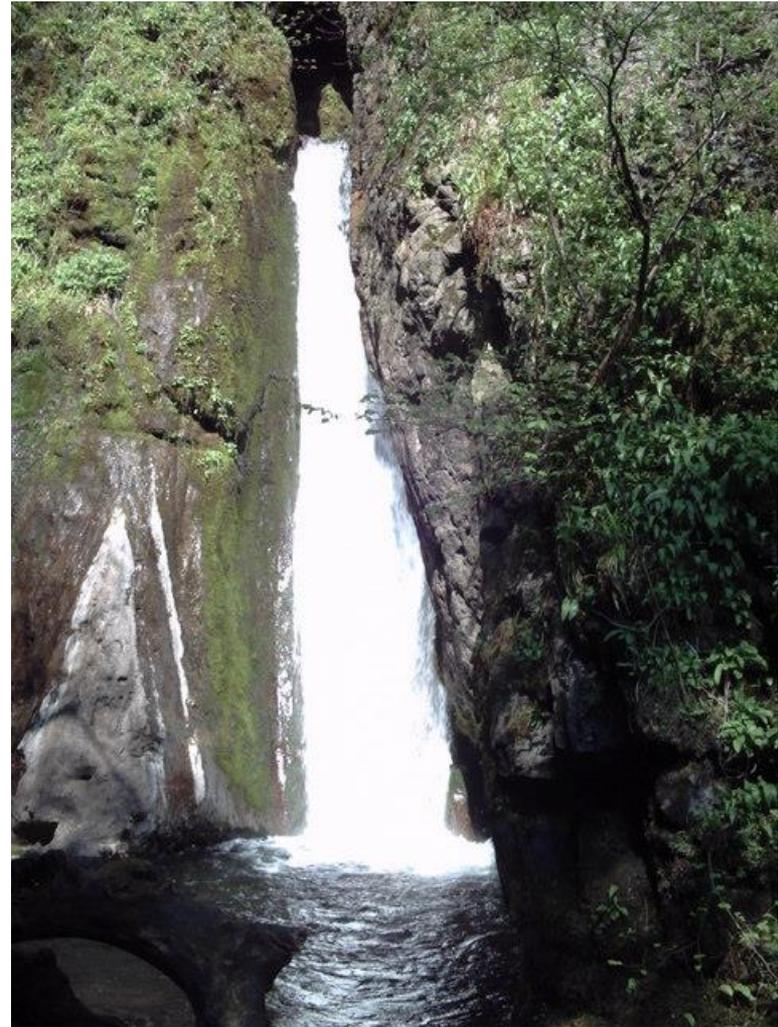
Over time, the **overhanging** hard limestone collapses with further erosion and splashing back from the falling water. Small limestone rocks erode away by knocking into each other and breaking into smaller, rounder pebbles. With more erosion, the waterfall becomes **steeper** and **retreats** back.

As a waterfall continues to retreat upstream, a **gorge** is left behind. A gorge is a steep-sided valley that has a river running through it.

Janet's Foss is retreating back day by day and slowly a small gorge is growing bigger and bigger. This waterfall hasn't reached that point yet.

However, the **Alva Burn** is a small river and a tributary of the **River Devon** that once had a waterfall, which is now replaced with a gorge, called the **Alva Glen** in Scotland.

The Alva Glen is a rocky gorge that actually has 5 waterfalls around every corner. Together, they all form the Alva Glen.



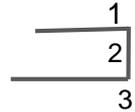
The Process of creating the Janet's Foss

While I was scouring the internet for a good waterfall tutorial that I can alter to create a replica of **Janet's Foss** to support my case study, I found this great [video](#) that I followed along with to create my model. I changed some of the steps for the model to turn out exactly like a section cut out of Janet's Foss. Here are my steps:

1. I started off my folding pieces of newspaper into three different cuboids, small, medium and large. I then covered each cuboid with masking tape and attached all three to each other to resemble this shape.



2. I then stuck long pieces of newspaper surrounding the edge of cuboid 3 to represent a plunge pool. After this, I painted a long line of blue at the top of cuboid 1 to resemble the water



travelling across the ground. I stuck a line of rocks on each side of this blue line to show the path of the water flow.

1. Next, I painted the rest of the blank waterfall brown. I glued some rocks here and there to make the waterfall prettier and realistic.
2. After this, I covered the plunge pool in hot glue to represent water collecting there; I painted this hot glue blue for added color.
3. For step 5, I stuck a long piece of clear tape from the overhanging rock to the plunge pool. Using this guideline, I covered the clear tape in hot glue from back to front and painted it blue to represent cascading water.
4. Finally, I glued my waterfall onto a big piece of brown cardboard with glued on pebbles. For more detail, I cut out small squares of cardboard, painted each one brown and stuck it onto the large piece of cardboard. DONE!