



How to Make a Topographic Model

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Intro: How to Make a Topographic Model

Topographic Maps are a 2D way to show elevation and shape on a map. As long as you know how to read them, you should be able to visualize what that area looks like on the actual Earth. But this isn't always easy! 3D models are an easier way to see what the Earth looks like - this is an easy set of instructions to make your own 3D model of an area shown on a topographic map.



Step 1: Step 1 - What You'll Need!

In order to build your 3D Topo Map you will need the supplies - scissors, glue, a pen or marker to trace your elevations AND the medium that you will use - I used foam paper to make mine but you can use regular paper spaced out with foam shapes, cardboard, card stock, etc. Anything that will be able to show shape and elevation!



Step 2: Step 2 - Get a Topo Map!

Obviously, you are making a 3D model of a topographic map so you will need a topographic map to start with. I chose a map that I use in my class while teaching topographic maps of the Big Island of Hawaii!

Hawaii 'Big Island'
Topography

Use the following topographic map to answer the questions below

What is the contour interval of this map? _____ meters

Using the scale, about how far apart are points A and E? _____ meters

When you look at this topographic map, you see what features?

How do you know this?

What is the elevation of point A? _____ meters. What is this number called? _____

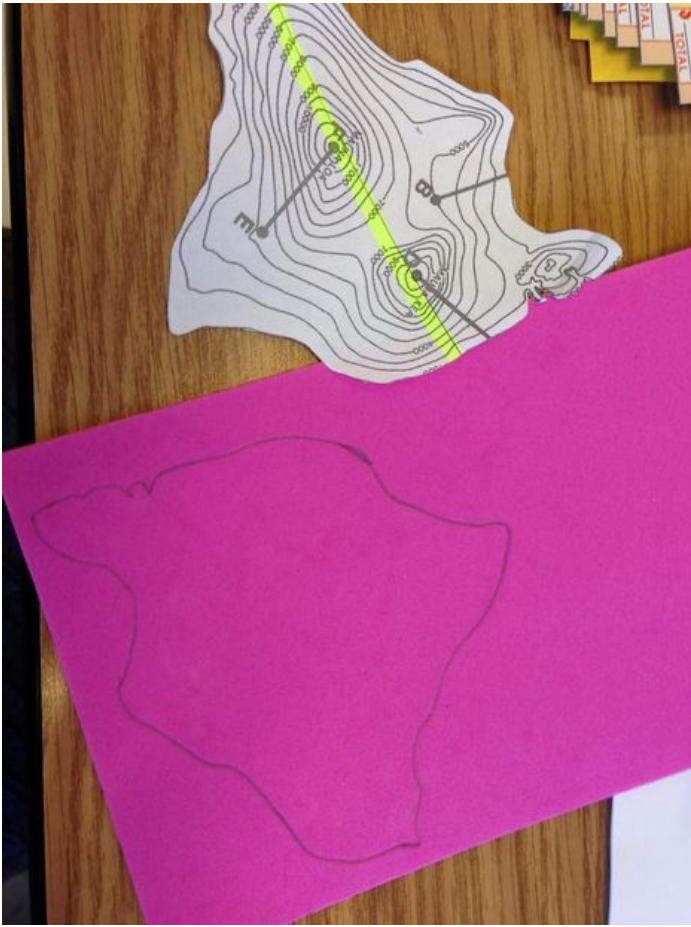
What is the elevation of point C? _____ Point B? _____ Point D? _____

Using the line drawn on the map, sketch what you think this island would look like from the side of line 1-2 – a profile:

Step 3: Step 3 - Cut out and trace the first elevation layer!

Take a look at your map. The first layer of elevation will be the first layer you trace. On my map of Hawaii, my first layer of elevation was sea level - 0. So I cut out that layer - look at the picture - you can see the outline of my 0 contour line, which is essentially an outline of the island. Keep in mind this may not be as easy on your map.

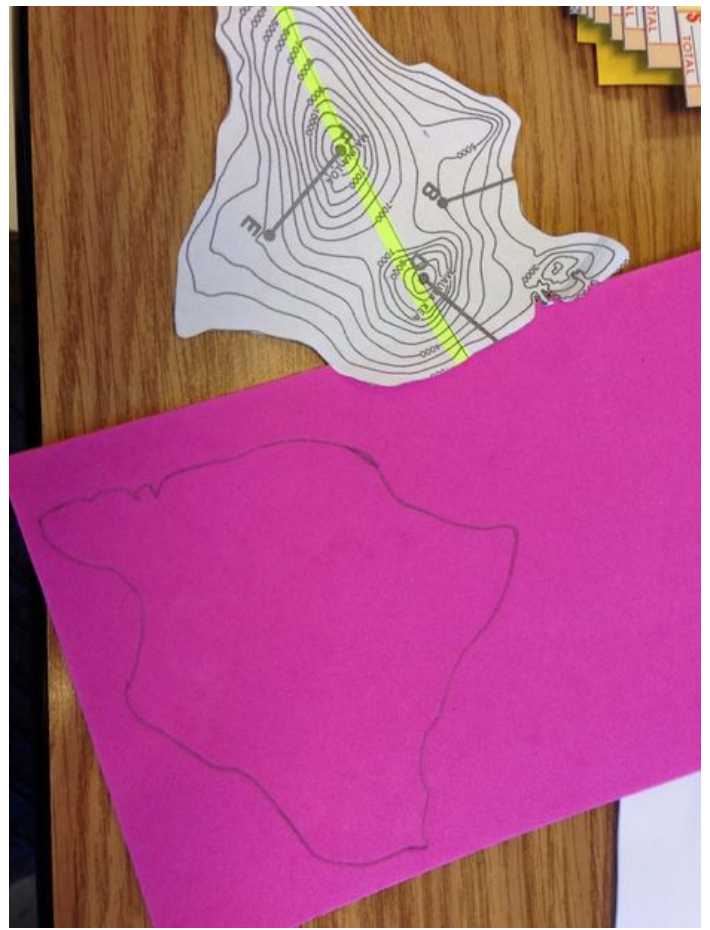
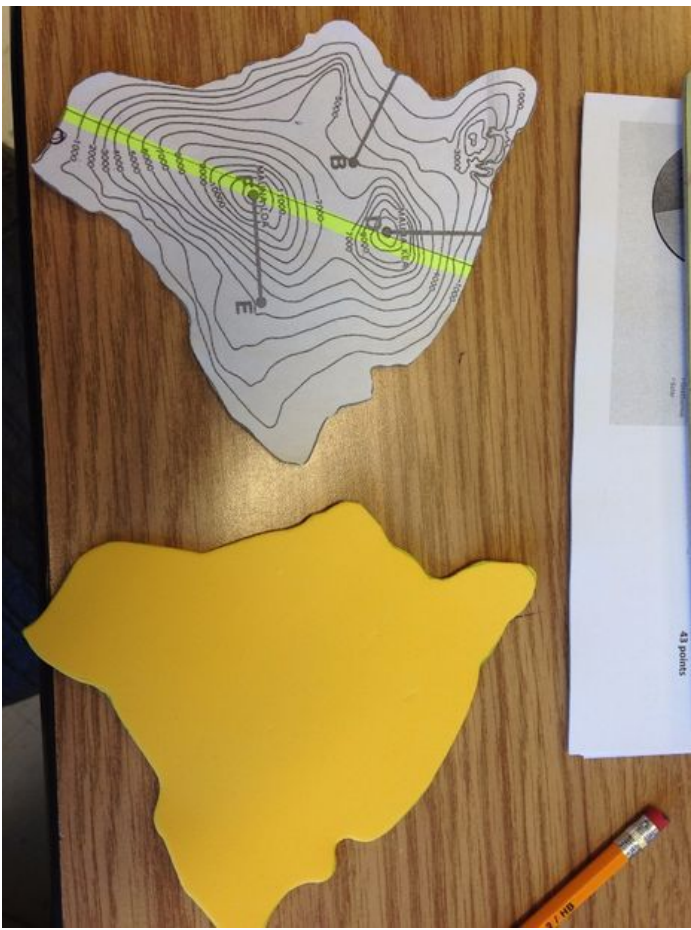
Once I cut it out, I took a piece of foam paper, which is what I used to make my model. You may be using cardboard, paper with foam shapes, or something else thick to show elevation. No matter what, this is the first step of many. You're going to place the outline of your map - your first layer - on top of whatever you're using. I placed mine on the foam paper and traced the shape with a pen.



Step 4: Step 4 - Cut it out!

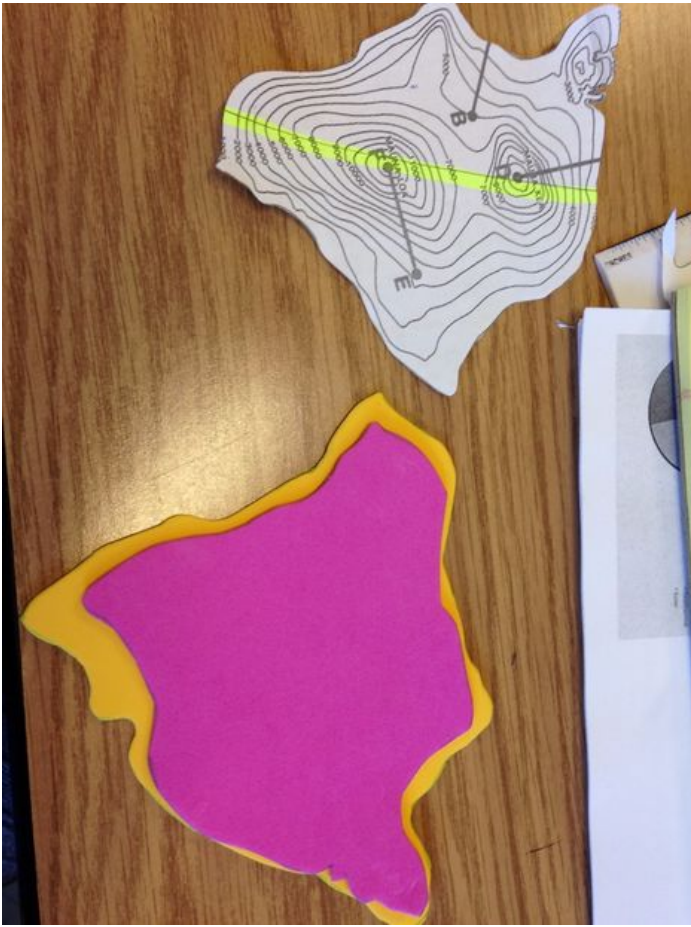
After tracing your 1st contour line, cut that out! There's your first level of elevation - you've started your model!

Now, look back at your map and cut off that first line you traced so that you now have an outline of the 2nd contour line from the bottom. Trace this onto a piece of the substance you're using, and cut it out so now you have 2 layers cut out.



Step 5: Step 5 - Glue them together!

Now you should have 2 different shapes from your topo map. The first 2 levels of elevation. Now you have to glue them together. Obviously, the smaller one goes on top of the larger one because that's the higher elevation. Make sure you are angling it correctly!



Step 6: Step 6 - Now you just keep building....

You will continue to cut, trace and glue onto your 3D model from here on out! I made each of my layers different colors so they stood out. I had 2, actually 3, hills on my topo map so I had to make sure to keep those parts of the maps to add later. See the next step on how to tackle that!



Step 7: Step 7 - Separate Sections and Hills

On my map, I had 2 large hills and 1 small hill. When I got to the elevation where they began to separate, I made sure to keep the other hill so I could go back and finish it after finishing the 1st hill. If you look at the picture, you can see that I finished the taller hill first before going back and completing the 2nd hill.



Step 8: Step 8 - Once you run out of layers.....

You're DONE! Just keep cutting and tracing those lines until you run out! Check out my awesome model!



Related Instructables



TwitMap: Topographical Colorado Twitter Map by ianisborn



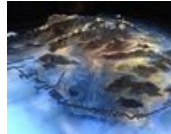
How to make a 3D topographic map by MIstyLeo12



Making a relief model of Edgewood Park by jschremp



Map Making Online by SaraE3



San Francisco: Past, Present, Future by gkapriel



How to Fold a Topo Map by 3leftturns

Comments

3 comments

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stechi says:

If you stick a pin through a couple of fixed points like the dots on the hill tops when you trace each layer you can use the holes to line up the layers as you go and keep everything perfectly aligned

Oct 25, 2015. 3:10 PM [REPLY](#)



Sunbutt Shimmer says:

I remember in 4th grade when we had the option to do this

Oct 24, 2015. 7:14 AM [REPLY](#)



DIY Hacks and How Tos says:

This is a really fun way to make 3D maps.

Oct 24, 2015. 7:05 AM [REPLY](#)

Making a topo map at home



