



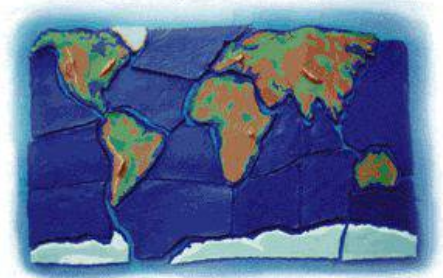
Map puzzle of clay

Wouldn't it be fun to make your own miniature world, complete with mountains, valleys, rivers, lakes, and volcanoes?

Now what does map-making have to do with space? Excellent question!

Well, where would you have to go for the real world to look like a map? More on that later. Meanwhile . . .

Cut the continents and oceans out of clay or dough, then add the details. Here's how.



What you need:

- Pattern for your map (print it here: <http://spaceplace.nasa.gov/review/topomap-puzzle/worldmap1.pdf>)
- Scissors
- Clay, self-hardening or oven-fired OR stiff modeling dough, oven-hardening (about 3 cups-worth)
- Waxed paper (for surface on which to roll out clay)
- Rolling pin
- Dull, thin knife
- Cookie sheet or pizza pan
- Acrylic paints in "earth tones" like dirt brown, forest green, mountain purple, ocean blue, snow white, dry grass yellow--or whatever colors you want.
- Paint brush
- Magnifying glass (if you have it)

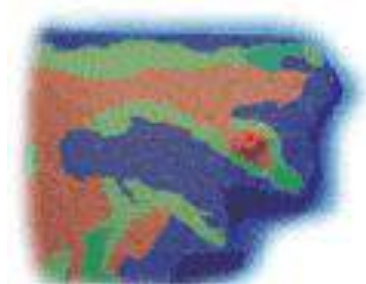
What to do:

1. Print out the map pattern. (Of course you don't need to print it in color. You will be painting the finished puzzle your own colors, anyway.) Tape the two pages together down the middle of Africa so you have one big 11-by-17-inch map.

Find this activity online by visiting NASA's Space Place website: <http://spaceplace.nasa.gov/topomap-puzzle>.
Find more fun activities at <http://spaceplace.nasa.gov/menu/do>.



2. Cut out the puzzle pieces along the white lines. It's okay to make the edges straighter or to cut in different places. These lines are only suggestions.
3. If you are using clay, place it on waxed paper. If you are using dough, place it on a lightly floured countertop or table. Use the rolling pin to roll the clay or dough to about one-half a centimeter (or about 1/4 inch) thick all over. You should have enough clay or dough to roll out to at least as big as the map, with a little left over for features like mountains and volcanoes.
4. Place the paper pattern pieces on the clay or dough and cut around the pattern with the knife. Peel off the paper, and carefully lift the pieces and place them on the cookie sheet.
5. Make "topographical" features on the surface of your "land masses." Use your fingers, toothpicks, the dull knife, or whatever tools are handy to make shallow dents or cracks for rivers, lakes, or craters. Add bits of clay or dough to fashion mountain ranges, gently rolling hills, volcanoes, forests, cities, or whatever strikes your fancy.
6. Dry or bake the puzzle pieces, following the directions for the clay or dough you are using. Make sure the puzzle pieces are completely dry before you paint them!
7. Tiny bump makes a volcano When you pick up ocean pieces or any other smooth pieces from the cookie sheet after they are dry, make a mark (like an "X") on the back so you don't paint the back of the piece by mistake!
8. Paint the pieces, making the surface features you added look interesting. Use the paper map as a guideline for where to paint the borders of the continents. You can paint in the islands (shown in black on our map pattern) too, if you want.
9. When the paint is dry, put your puzzle together and admire your beautiful world!



If you have a magnifying glass, look at your topographical features through it and see how interesting they are!

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