

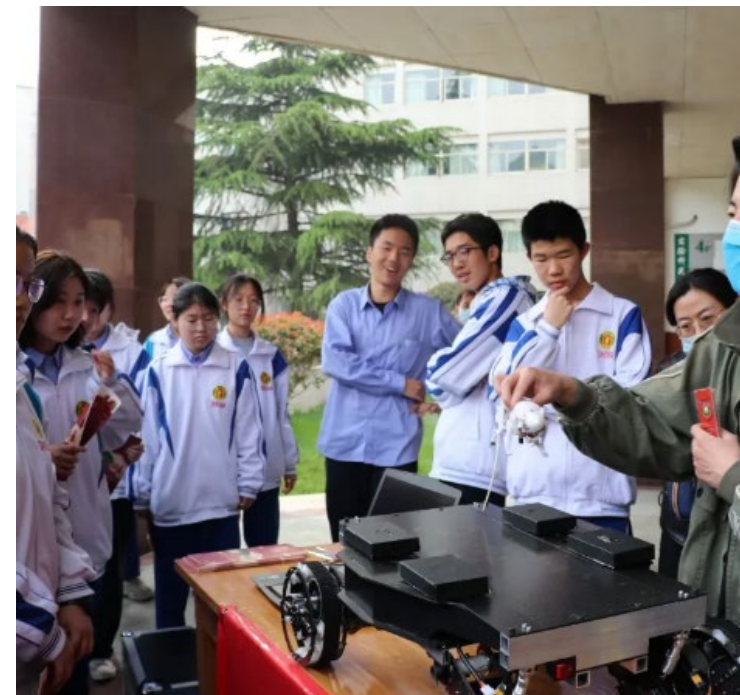


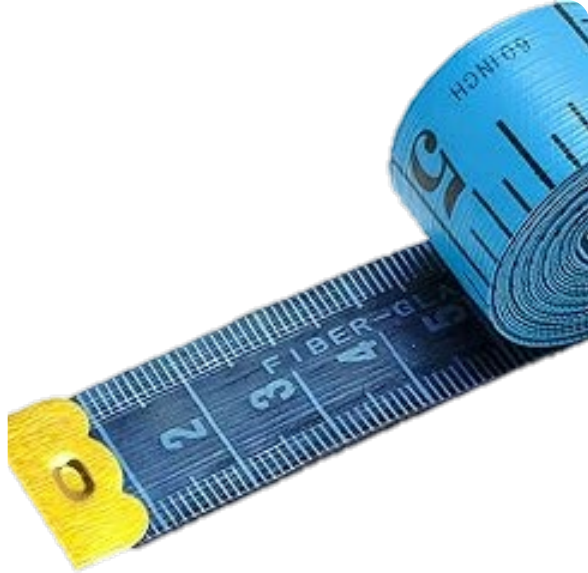
How to make a 3D Relief Globe

Zhaoxu Sui, NACIS, Tacoma 2024

Background

- Place: Shandong Experimental High School Science Fair, Jinan, China
- Time: 2017



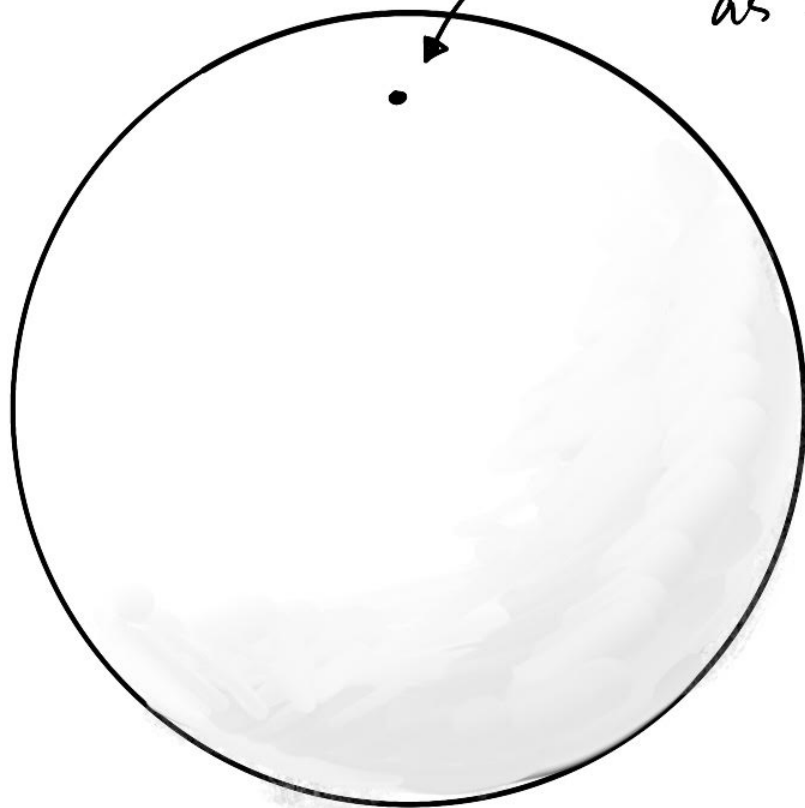


Materials

- One Big Foam Plastic Ball
- Several Modelling Clays in the following colors
 - Yellow
 - Light Green
 - Dark Green
 - Light Blue
 - Dark Blue
 - White
- One Tailor Rule
- Pen and Painting Kit



Step 1:
Choose a random point
as your north pole

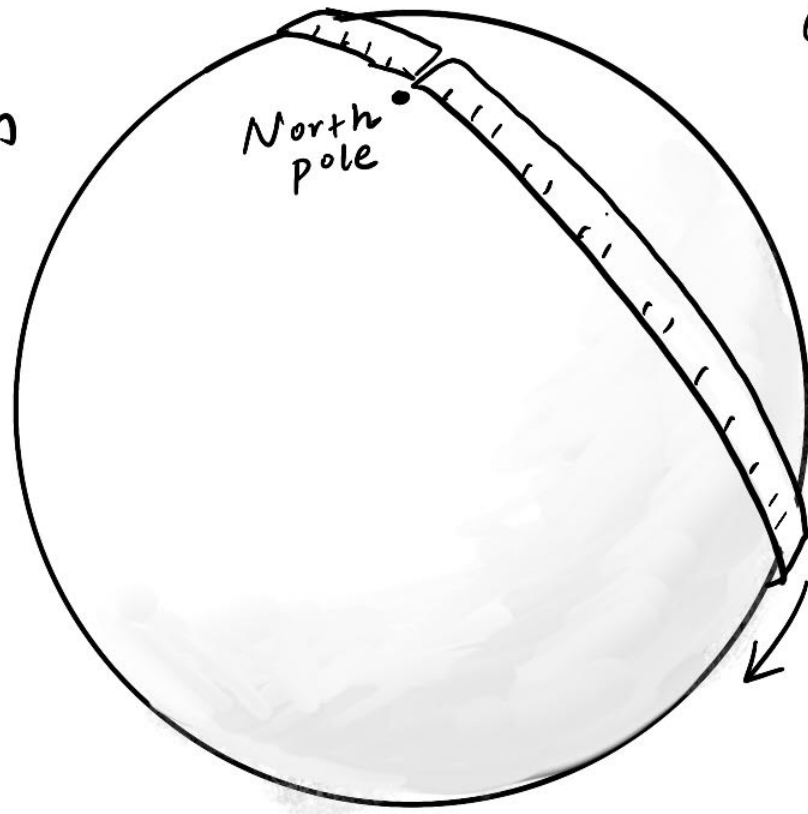


diameter = 40 cm

Circumference

$$= \pi \times 40 \text{ cm}$$

$$= 126 \text{ cm}$$



Step 2:

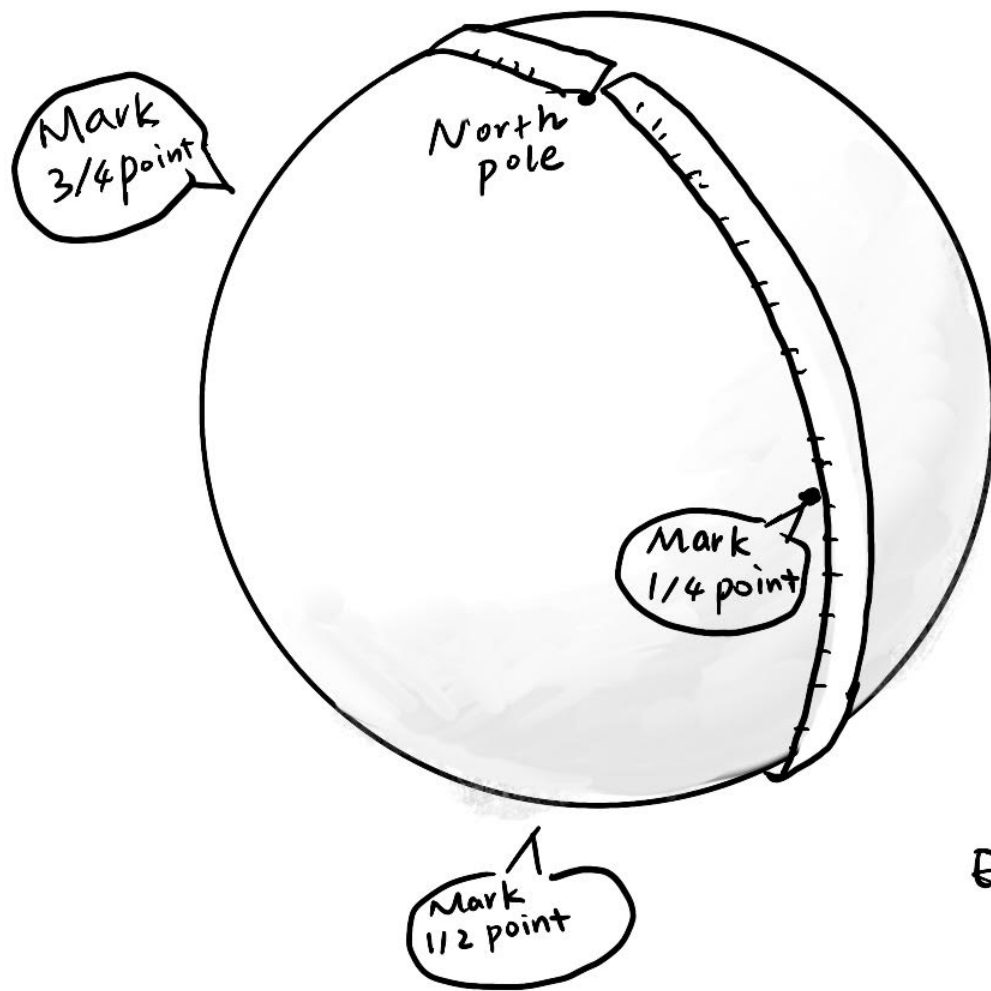
Calculate
the circumference of
your ball,

use your tailor
ruler circling the
ball, passing
north pole,



Step 2:

Calculate
the circumference of
your ball,
use your tailor
ruler circling the
ball, passing
north pole, until
you reach the
circumference length.



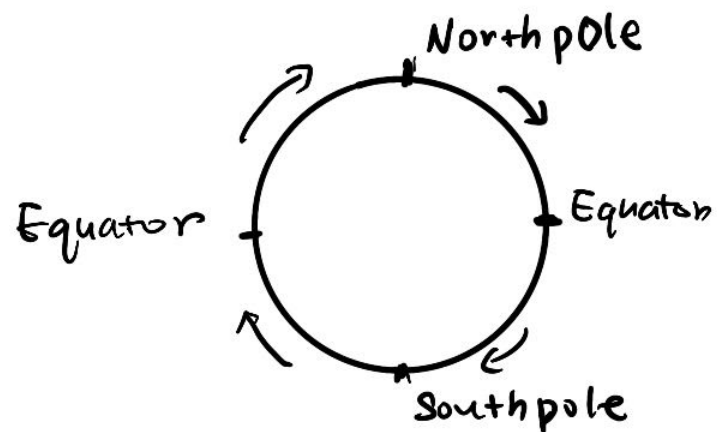
Step 3:

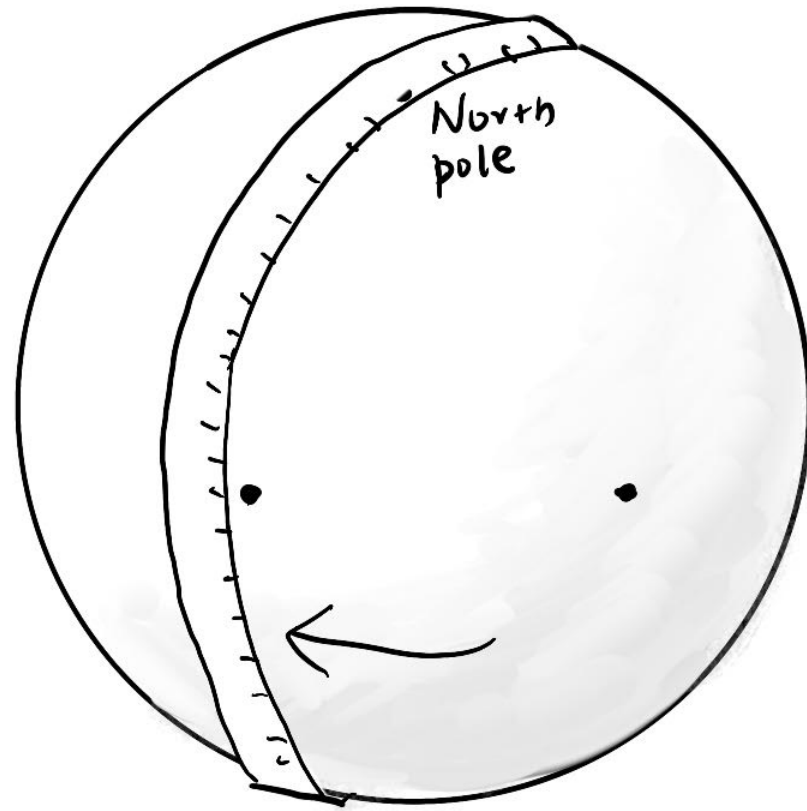
Mark

$1/4$ point (equator)

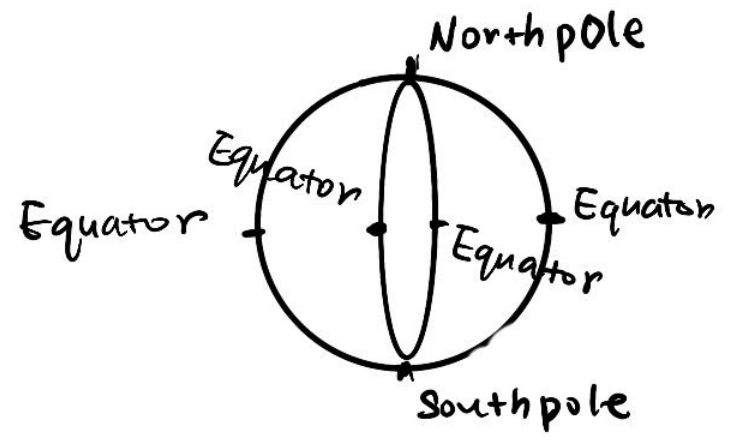
$1/2$ point (south pole)

$3/4$ point (equator)





Step 4
Repeat
Steps 2-3 in
other directions

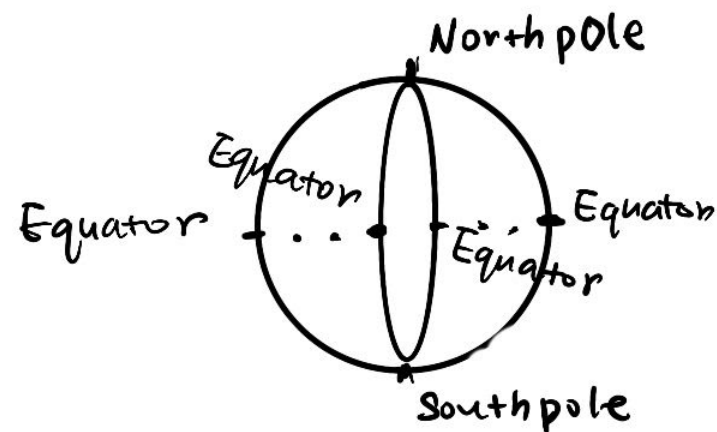




Step 4

Repeat

Steps 2-3 in
other directions
until you get
a pretty nice array
of points along
the equator

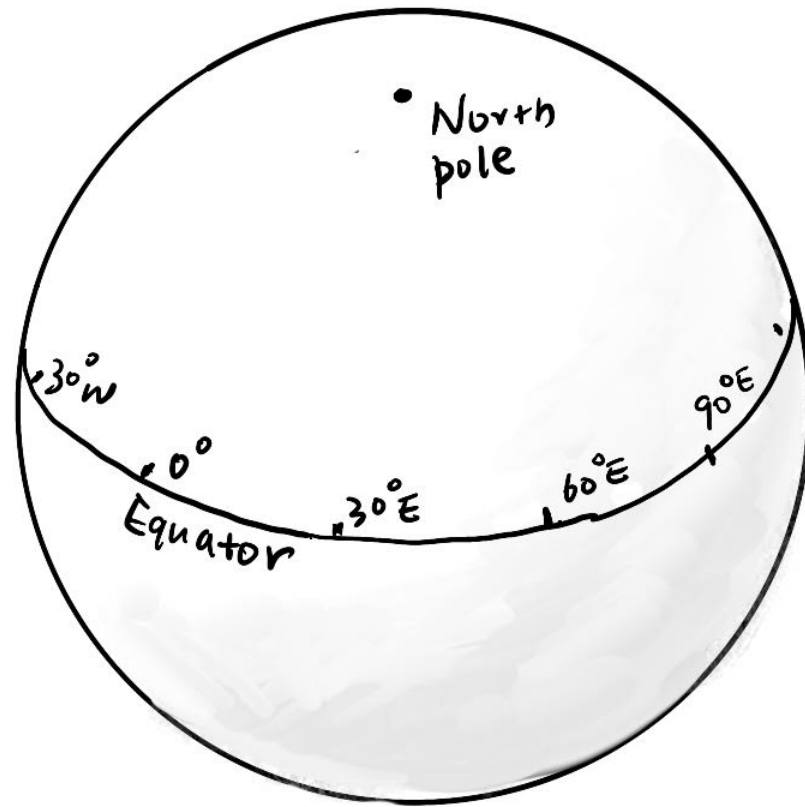




Step 4

Repeat

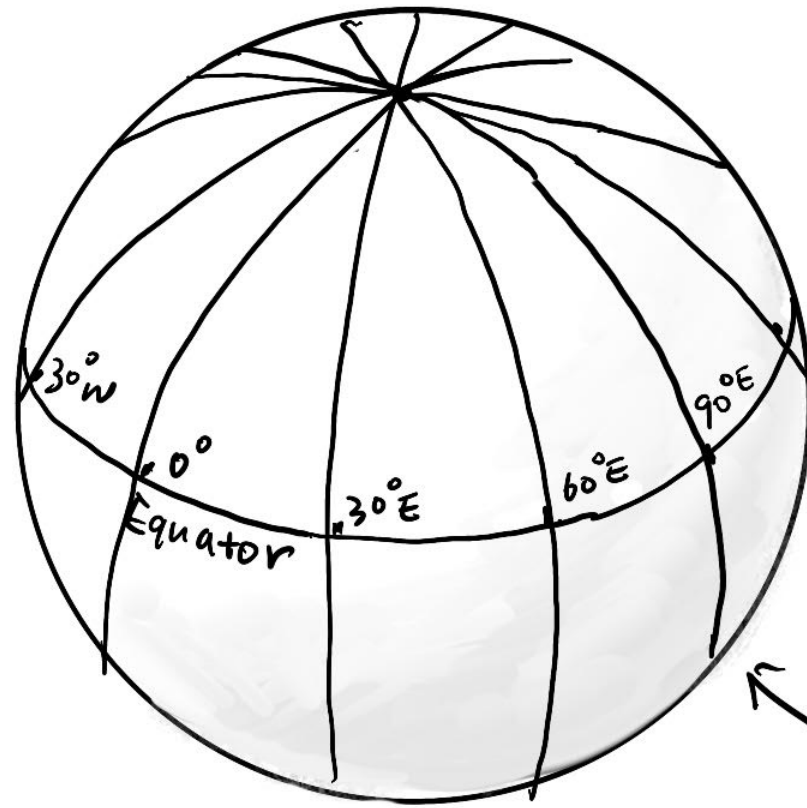
Steps 2-3 in
other directions
until you get
a pretty nice array
of points along
the equator,
and then
connect them!



Step 5:

Mark breaks
on the equator
by using your
ruler, and label
them

(Every 30°
means you
have to divide
the circumference
by 12)

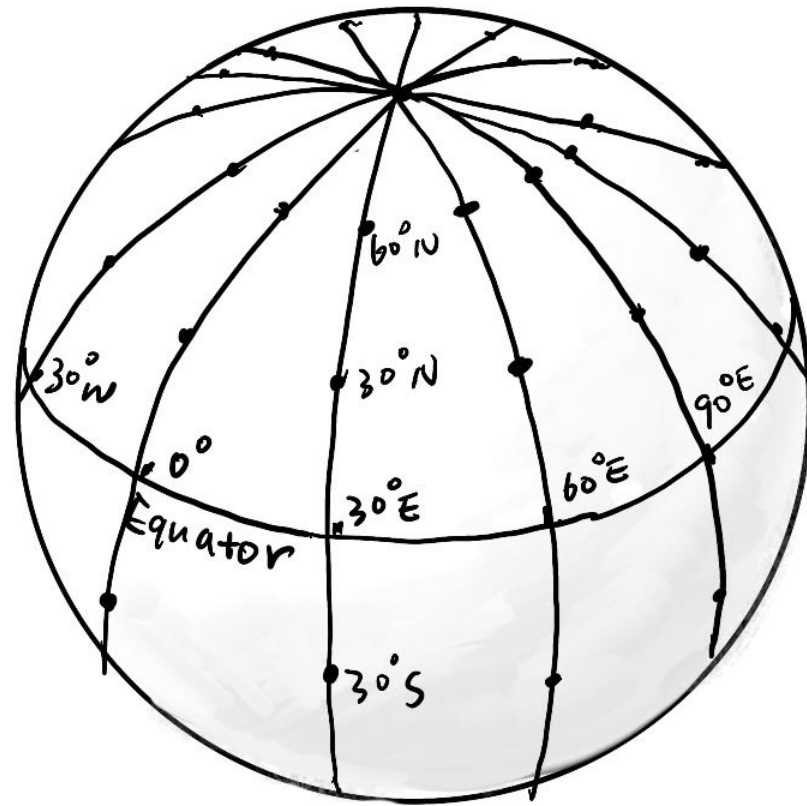


Step 6:

Connect
reference points
with poles

(draw 6 big
circles)

Yes,
these are
longitude
lines.



Step 7:

and divide
longitude lines
into equal
portions, label
breaks as
latitudes.



Step 8:

Let's draw
coastlines and
other important
physical features!



Step 8:
Let's draw
coastlines and
other important
physical features!
Label them
if necessary
(like colors of clay)



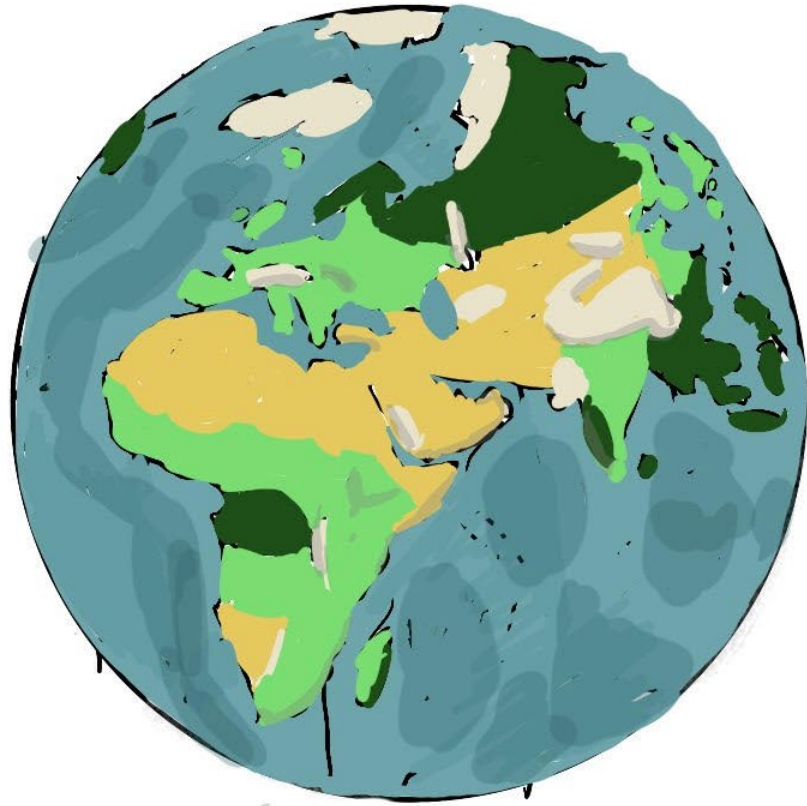


Step 9:

With those
reference
drawings on
the foam
plastic ball...

Let's get
some modeling
clay on!

be aware
of the
elevation!

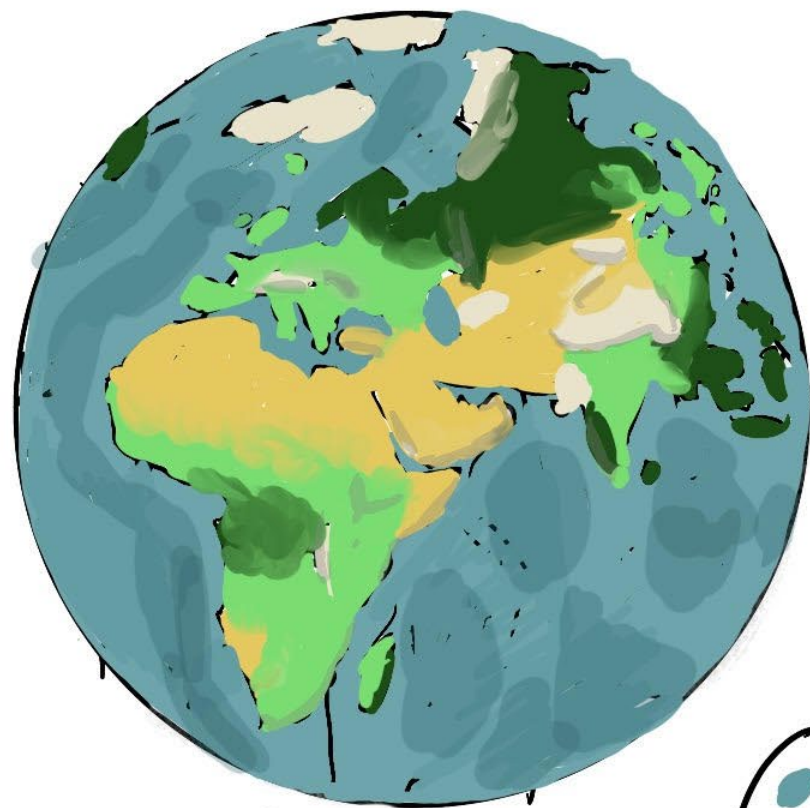


Step 9:

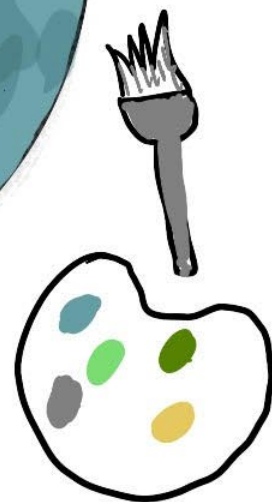
With those
reference
drawings on
the foam
plastic ball...

Let's get
some modeling
clay on!





Step 10:
Finally...
paint!







- Congratulations!
- You made a 3D relief Globe on yourself!
- Please scan the QR Code to see the tutorials online!



- <https://zhaoxusui.com/Globe>