

Model Pieces Construction

Below are the instructions on what materials and pieces are needed to build the model.

Materials needed:

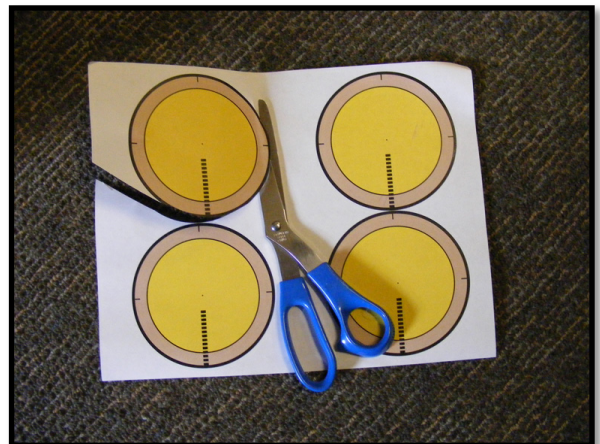
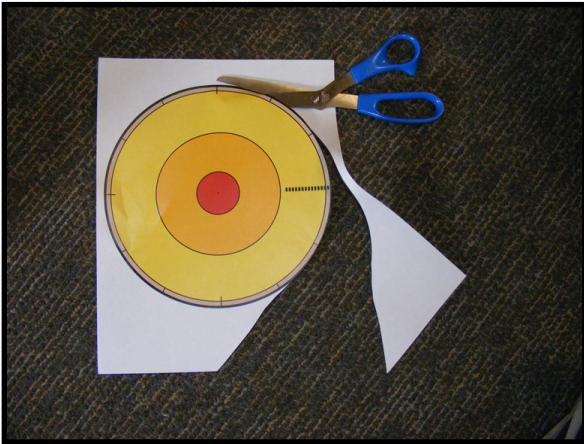
8.5" x 11" sheets of paper (thirteen)
Printer (color or black and white)
Cardboard (three 8.5"x11" pieces)
Manila Folder (three 8.5"x11" pieces)
Glue
String (4 "student" arm lengths)
Paper Clip (3 paper clips)

1. Print out circles and half circles:

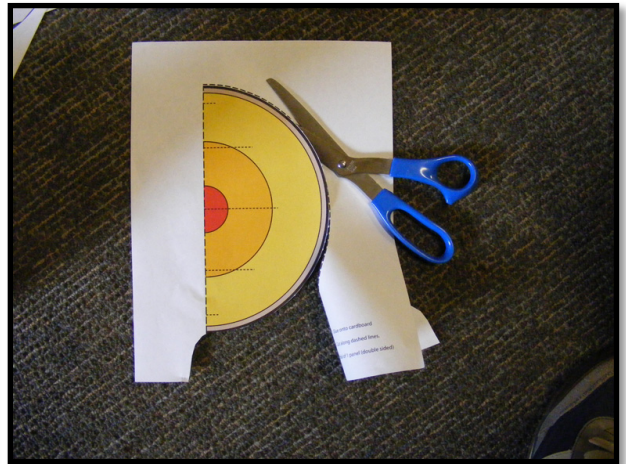
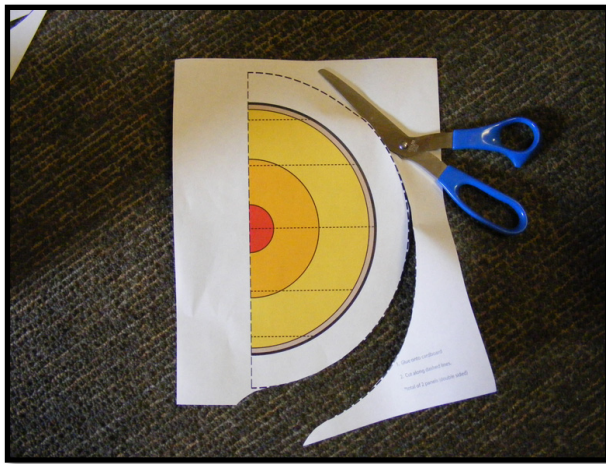
1x Equator.pdf
4x 30_latitude.pdf
1x 60_latitude.pdf
4x Vertical_long_1.pdf
2x Vertical_long_2.pdf

*Optional Print out the protractor and ruler (protractor.pdf and ruler.pdf)

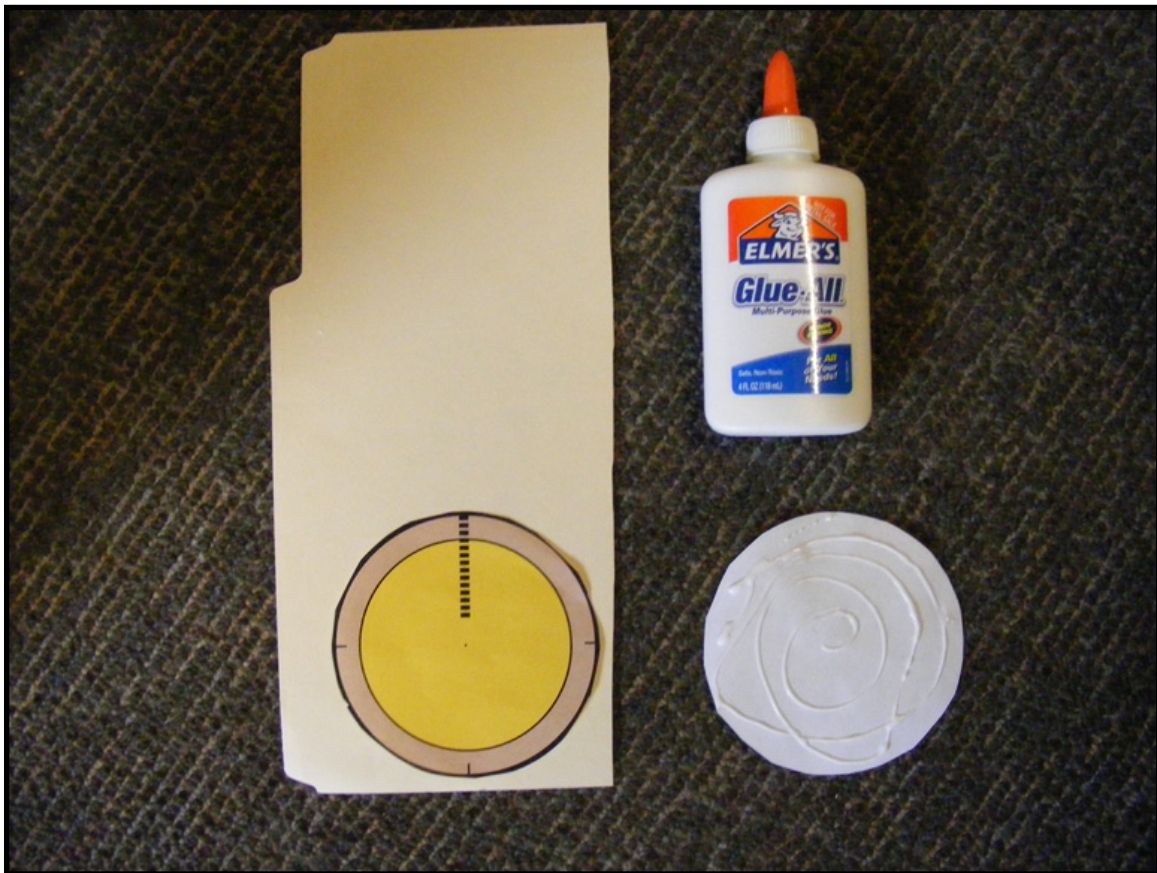
2. Cut out all circles. Make sure to cut around the black outer line. See images below:



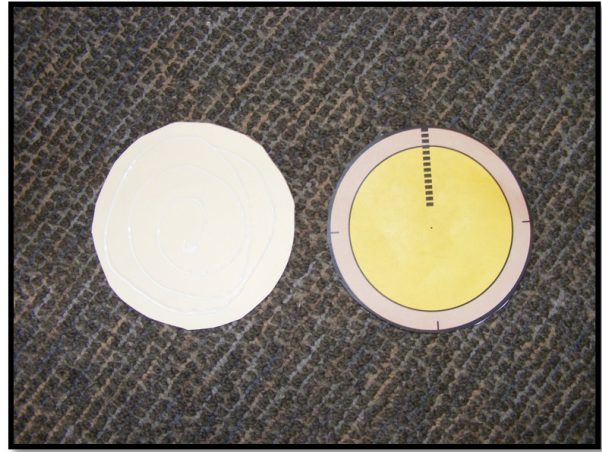
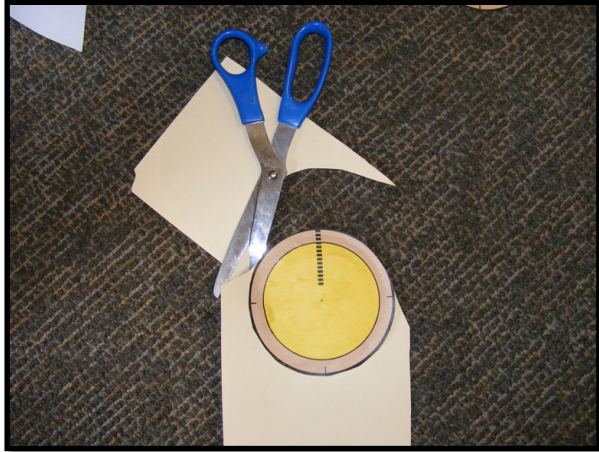
3. Cut out the half-circles. Make sure to cut along the bordering dashed lines. See the images below:



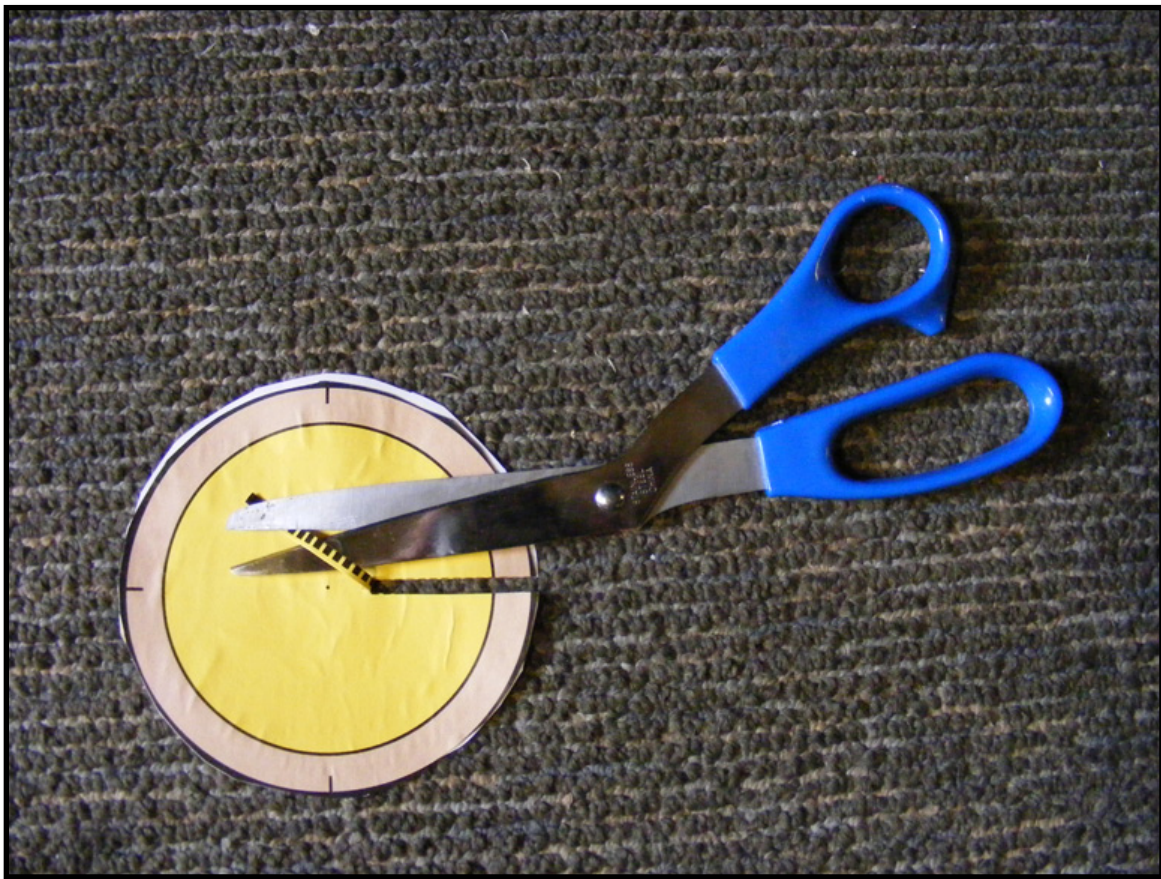
4. Next you need manila folders or similar material. Take one of the smallest circles and glue it onto the manila folder material. See image below:



5. Next, cut out the disc on the manila folder. Select another small circle print-out and glue it to the other side of the manila folder. *Make sure the dashed line lines up on both sides!!* See image below:



6. Cut out the dashes line on the small circle. See image below.

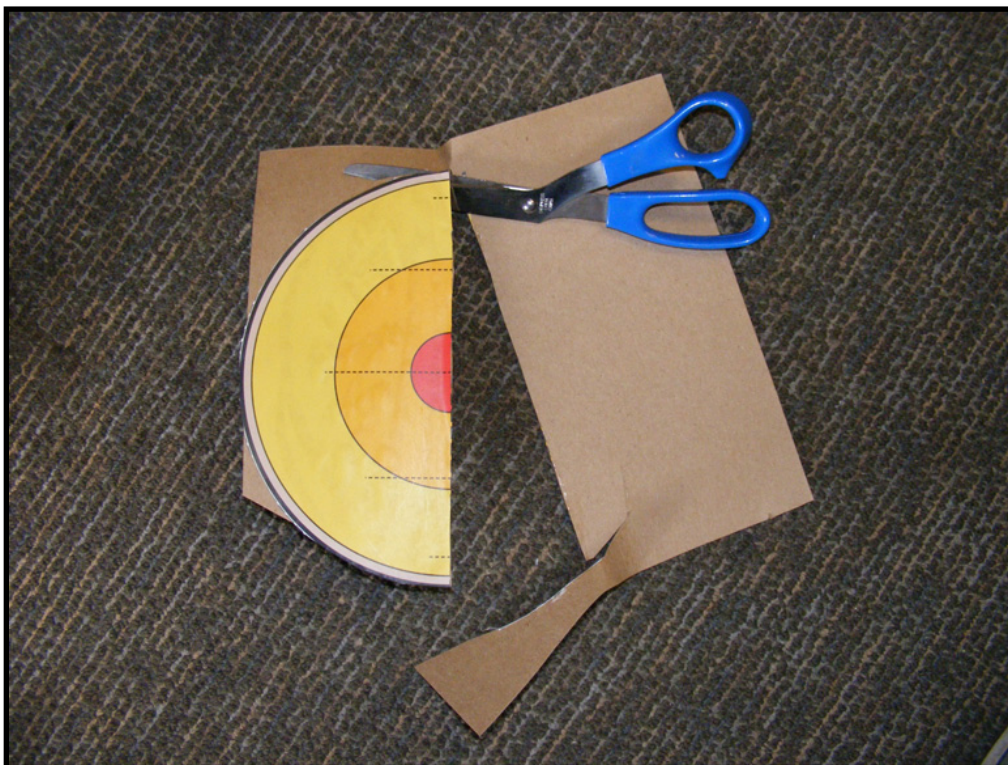


7. Repeat steps 4, 5, and 6, for the remaining small, medium, and large circles. DO NOT USE MANILA MATERIAL FOR HALF-CIRCLES.

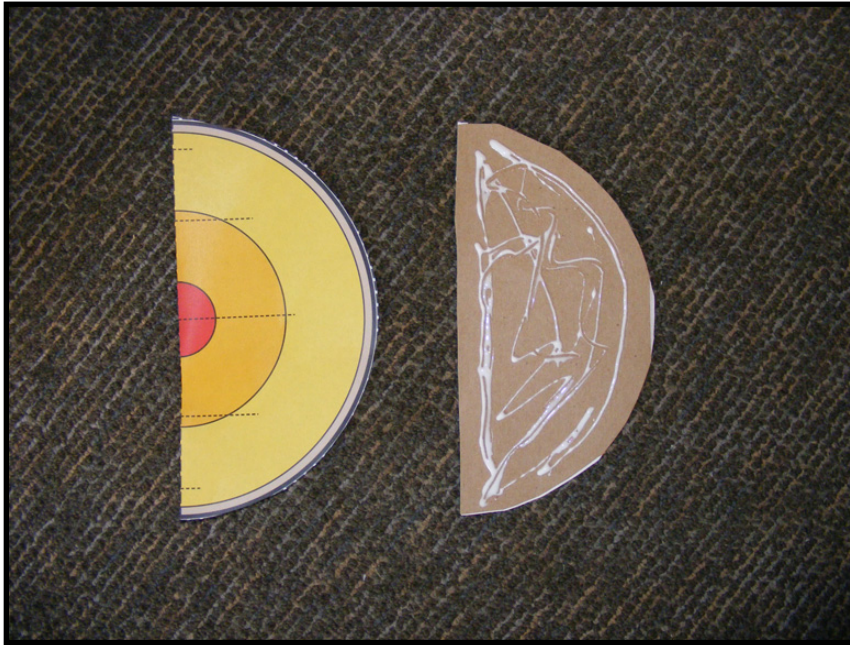
8. Glue one half-circle printout onto cardboard. See image below:



9. Cutout half-circle on cardboard. See image below:



10. Glue matching half-circle print out on blank side of cardboard. Make sure to line-up layers and dashed lines. See image below:



11. Repeat steps 8, 9, and 10, for all half-circles. Make sure not to cut out the white outer layer on four of the half-circles. Next, cut along the dashed lines on the half-circles. Notice that the dashed lines on the half-circle without the outer white layer do not extend to the edge. Only cut to where the dashed lines stop. See image below:



12. Make sure you have all pieces and then move onto *Building the Model.pdf*