

Go to the [PhET website](#)

Click on Run Now!

Spend a few minutes exploring the simulation. Don't worry, you can't break it. Select the "Crust" tab at the top of the simulation. Under view select "Both".

1) What are the 3 **variables** that can be changed in this simulation? (Scale or zoom is a nice feature, but not a variable.)

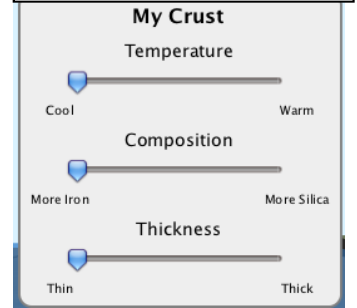


2) Try to duplicate the **continental crust** as accurately as possible by adjusting the **variables**. Show on the diagram where you set each variable. (In other words, draw where you must move the slides on the diagram at the right.)

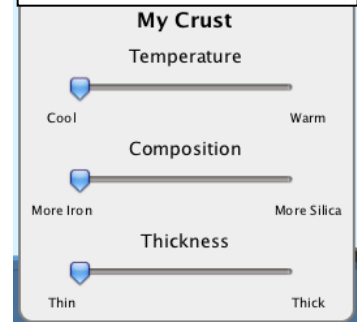
3) Try to duplicate the **oceanic crust** as accurately as possible by adjusting the variables. Show on the diagram where you set each variable.

4) In terms of the three variables you have investigated, describe how continental crust differs from oceanic crust.

Q2 – Continental Crust



Q3 – Oceanic Crust



Select the "Plate Motion" tab at the top of the screen. Under view select "Both".

5) Investigate the following convergent boundaries by dragging the designated pieces of crust into the appropriate side of the simulation. Click and drag one of the red levers in the direction of the green arrows until the motion stops. Click on New Crust to change the type of crust. Report your findings in the following table:

Left Side Crust	Right Side Crust	Which Crust is more Dense?	Which Crust Subducts?	Do non-volcanic Mountains Form?	Does a Trench Form?	On Which Crust Do Volcanoes Form?
Continental	Continental					
Continental	Old Ocean					
Old Ocean	Continental					
Continental	Young Ocean					
Young Ocean	Continental					
Old Ocean	Young Ocean					
Young Ocean	Old Ocean					

6) Describe the relative motion of the plates at ALL convergent plate boundaries.

7) Three times you used the same two types of crust, but switched left and right sides. What do you observe about the results? Is the side the crust is placed on important?

8) Look for patterns in density, subduction, and volcanoes in the table. When volcanoes form, on which plate do they always form? _____

9) Explore how a continental-young oceanic crust collision differs from a continental-old oceanic crust collision.

☼ Describe the difference in the angle of subduction between old and new plates.

☼ How does the distance between the volcanoes and the plate boundary differ between old and new plates? _____

10) Investigate divergent boundaries by dragging pieces of crust into the simulation. Click and drag one of the red levers in the direction of the red arrows until the motion stops. Click show labels.

Describe the relative motion of ALL plates at divergent boundaries.

11) What is generated at ALL divergent plate boundaries?

12) Investigate transform fault boundaries by dragging pieces of crust into the simulation. Click and drag one of the red levers in the direction of the blue arrows until the motion stops. Describe the relative motion of ALL plates at transform fault boundaries.
