# The X-factors of Climate

Instructional Appendix

This appendix to *The X-Factors of Climate* offers instructions and examples for the more complex script directions. The same numbering system used in the script is also used within this appendix. Please note that the Annotate and Zoom features can only be used with the iPad, updated to SOS version 4.0. If you would like more detailed instructions on how to separately operate the Annotate and Zoom features, refer to the tutorial videos on the SOS YouTube page.

2.A.) **Draw** *a circle around a temperate climate zone, and a circle around a tropical zone to direct audience attention to these areas.*

An example of how the circles should look on the sphere is shown on the right. Choose a bright color to draw the circles. To access the Draw feature, go to the Annotate interface by pressing the Annotate button along the top of the Presentation page. Within the Annotate interface, press the Draw button along the bottom. To change line color and/or width, go to the Lines button at the bottom of the Annotate interface. Remember that the Southern Hemisphere should be tilted toward you, as in the picture on the right.
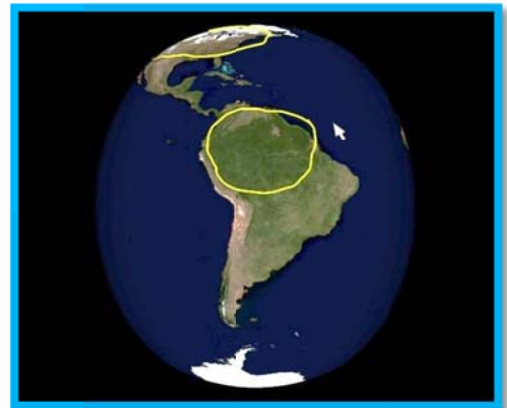
4.A/B.) **Zoom** *into the Himalayas and Rockies to show snow cover.*

Zoomed in, this is how the Himalayas (below, left) and Rockies (below, right) should appear with the dataset paused at June. As you can see, the snow pack is visible in the zoomed images. To access the Zoom feature, press the Zoom button at the top of the Presentation page.
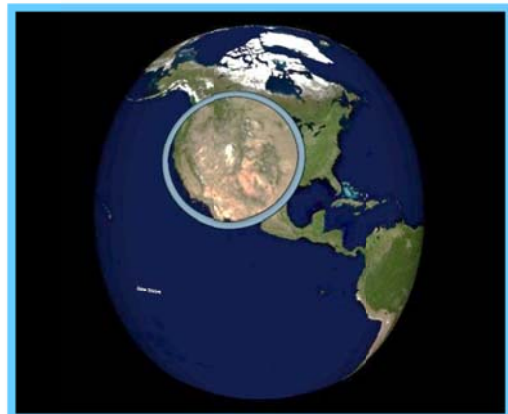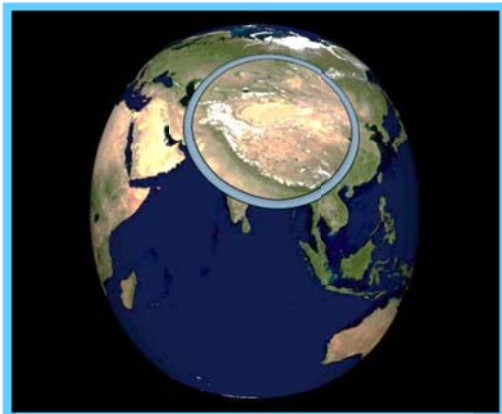
5.C.) *Pause the dataset when you find a good visual example of the jet stream, then **draw** an arrow along it.*

Choose a stopping point in the dataset when the jet stream is very visible, as in the example image on the right. Then, draw arrows along the jet stream, being sure to select a bright color for the line.


5.D.) ***Draw** a normal longwave trough in red. Then **draw** a shallow longwave trough in yellow to illustrate the differences.*

An example of what the normal and shallow longwave troughs should look like when drawn on the sphere is shown on the right.
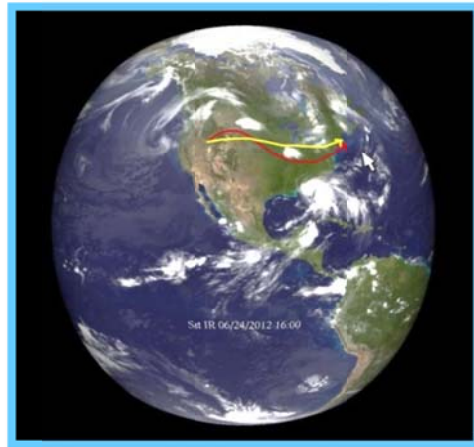

6.C.) ***Place a map marker icon*** (⦿) *over the approximate locations of London and Calgary. Connect both cities with a line to show how each city is located along the same line of latitude.*

On the left is an example of how the sphere should look with map marker icons over London and Calgary and an approximate line of latitude connecting the two cities. To place a map marker icon on the sphere, go to the Icons button at the bottom of the Annotate interface. Select a map marker from the icon list. In this example white map marker icons were used. Press and hold one finger on the iPad screen to make the icon appear.
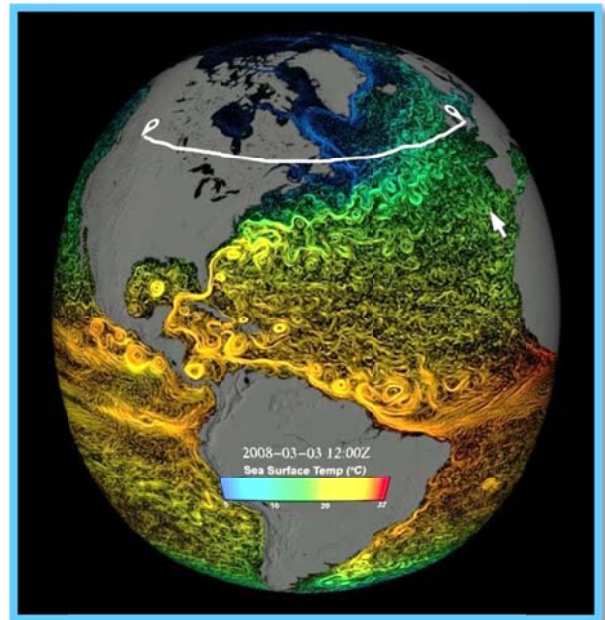
8.B.) *Move the **Pointer** and/or **draw** (via **Annotate**) around the green area in New England and the corresponding vegetation type in the ribbon of labels. Once the correct answer is given, turn the sphere to show Japan and move the **Pointer** and/or **draw** (via **Annotate**) around Japan.*

Below are two examples of how you might choose to connect the vegetation color in New England (below, left) and Japan (below, right) to the corresponding vegetation label.
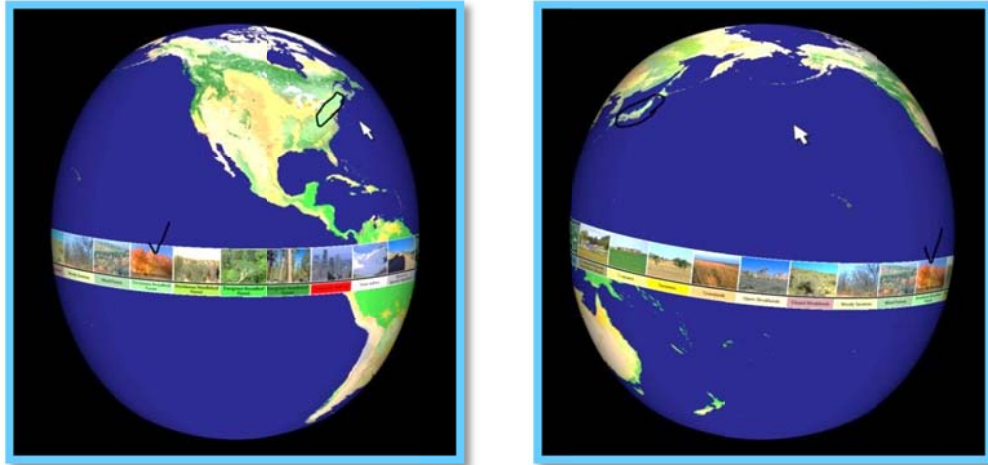
9.D.) ***Draw** a line through the graph showing the upward trend.*

The trend line should look similar to what is shown below. Be sure to select a color which will stand out on the dataset.