

Downloadable at: <http://www.seis.sc.edu/scepp/teach/module.html>

SCEPP  
LONGITUDINAL AND TRANSVERSE WAVES  
Student Instructional Guide

Note: These instructions have been prepared to provide you assistance in operating the GEE program. All bold items are menu items that you will employ.

**Exploration Phase:** Questions 2-4:

1. Open GEE.
2. Click '**Longitudinal and Transverse Waves**'. After reading the introduction, click on the Seismogram Display tab.
3. Click the 'BandaSea' folder in the 'Banda Sea Earthquake' window that appeared in the lower left corner of your screen. Seismogram station names and components will appear below it.
4. Pick one of the three stations provided and click all three of its components (N/S-axis, E/W-axis, and Up/Down-axis).

**Concept Development Phase:** Questions 1-3:

1. Select (single-click) on '**Pick Zone**' (the icon that looks like the main 'GEE' window with a second window on top of it).
2. Highlight a particular area on a seismogram by clicking and then dragging. When you release the mouse button, a magnified view of the highlighted area will appear in the '**Pick Zone**' window.
3. Click the '**Add Related Components**' icon in the '**Pick Zone**' window. This icon looks like a 3-axis coordinate system. The two additional components of motion for this station will appear in the Pick Zone.
4. Click the '**Particle Motion**' icon, and click on one of the seismograms. The Particle Motion icon looks a bit like spaghetti! A '**Particle Motion**' window will open with the Particle Motion displayed.
5. Close all '**Particle Motion**' and '**Pick Zone**' windows when finished with task.

**Application Phase:** Questions 1-4:

1. In the Seismogram Display, zoom one of the horizontal seismograms (E/W or N/S) to observe one-half period around the P-wave.
2. Repeat instructions 1 and 2 of Concept Development Phase to make a Pick Zone window containing the first 'half-period' of the P-wave.
3. Click the **Map** tab at the top of the main display.

4. Map image should now be visible in the main display:

- Seismograph stations appear as black diamonds
- Earthquake Epicenter appears as purple star

5. Click on '**Particle Motion**' window and enlarge it if possible; and compare both 'Banda' and 'Particle Motion' windows.

7. Close 'Banda' and 'Particle Motion' windows when finished with tasks.

Questions 4-5:

Repeat above steps 2-5, however, you will locate S-wave, rather than P-wave.

a. Select '**Tools**' drop down menu – highlight this option - single click; Highlight '**Show Event and Station Information**'; single click.

b. '**Show Event and Station Information**' window should now be open.

Note: This window will provide information concerning the Seismogram 'Station' and/or the actual 'Event' [Earthquake].

b. Close 'Show Event and Station Information' window when finished with task.