

III. Gather Data

A. Comparison of Different El Ninos

- Click on the "El Nino Comparison Graph" site.
- Scroll down to the graph of El Ninos.
- Record the years of El Ninos in the chart below, then answer the following questions about the El Ninos.

El Nino Years

19____ 19____ 19____ 19____ 19____ 19____ 19____

1. Which El Nino year before 1997 was the most severe? 19____
2. What was the greatest recorded sea surface temperature increase above normal? _____ degrees Celsius
3. What is the approximate month/year of the greatest sea surface temperature increase above normal? _____
4. What was the greatest recorded sea surface temperature decrease below normal? _____ degrees Celsius
5. What is the approximate month/year of the greatest sea surface temperature decrease below normal? _____
6. In what year was El Nino weakest? 19____
7. During the period around June on the left side of the graph, what was the difference in temperatures between the 1986 El Nino and the 1997 El Nino? _____ degrees Celsius

- Click "Back" to return to the El Nino "Gather Data.1" web page.
- Click "Forward" at the bottom of the page to go to the "Gather Data.2" Web page.



B. Comparison of Western Pacific Rainfall During El Ninos



- Click on the "Rainfall" site.
- Click on the statement, "I Agree to These Terms" to get the rainfall data.
- Scroll down to the "Select a Graph Type" box.
- Choose "Graph total precipitation each year for a period of years."
- Scroll down to the world map.

Western Pacific - Rockhampton, Australia



- Click on the picture of Australia
- In the box that appears, click on Australia if it is not highlighted.
- Click "Okay."
- At the "Select a station" page, scroll down and click on Rockhampton Airport.
- Scroll down to the "Select the type of units you prefer" section.
- Click metric units.
- Scroll down to the "Select a time period to graph" section. (You can use the tab key to move to the next box without scrolling.)
- Enter the years 1955 and 1988 in the boxes.
- Click "Graph Data."



Answer the following questions about Rockhampton Airport.

Keep in mind the effects of an El Nino on the western Pacific.



1. Record the latitude and longitude of Rockhampton in the chart under Question 2 below.
2. What are the rainfall amounts for Rockhampton in the El Nino years? Fill in the rainfall amounts for each year.
Each horizontal line represents about 4 cm of rainfall.



Rockhampton, Australia					
Latitude =		S	Longitude =		E
1957	1965	1972	1982	1986	

1. When are the lowest annual precipitations shown?
19____ and 19____
2. What two back-to-back years show the greatest increase in rainfall from year to year? _____

- Click "Back" to get information about Melbourne, Australia's rainfall from the stations (city) directory.
- To leave the western Pacific and go to the eastern Pacific (U.S. and South American) cities, click "Back" three times to get to the map menu. Skip the rest of section B and go directly to section C.
- To continue with the western Pacific, answer the following questions.

Western Pacific 2 - Melbourne, Australia

- From the stations menu, scroll down and select Melbourne.
- Scroll down to the "Select the type of units you prefer" section.
- Click metric units.
- Click "Graph Data."

Answer the following questions about the graphed data.
Keep in mind the effects of an El Nino on the western Pacific.

1. Record the latitude and longitude of Melbourne in the chart under Question 2 below.





2. What are the rainfall amounts for Melbourne in the El Nino years?
Fill in the rainfall amounts for each year.
Each horizontal line represents about 2 cm of rainfall.

Melbourne, Australia					
Latitude =		S	Longitude =		E
1957	1966	1972	1982	1986	

3. What was the most severe El Nino year in Melbourne? 19____
4. What was the rainfall total for the most severe El Nino year in Melbourne? _____ centimeters
5. What was the least severe El Nino year in Melbourne? 19____
6. What two back-to-back years show the greatest decrease in rainfall from year to year? _____

- Click "Back" twice to return to the country menu.

Western Pacific - Kota Kinabalu, Malaysia

- Select Malaysia.
- Click "Okay."
- At the "Select a station" page, select Kota Kinabalu.
- Scroll down to the "Select the type of units you prefer" section.
- Click metric units.
- Scroll or tab down to the "Select a time period to graph" section.
- Enter the years 1955 and 1988 in the boxes.
- Click "Graph Data,"



Answer the following questions about Kota Kinabalu.

Keep in mind the effects of an El Nino on the western Pacific.



1. Record the latitude and longitude of Kota Kinabalu in the chart under Question 2 below.
2. What are the rainfall amounts for Kota Kinabalu in the El Nino years? Fill in the rainfall amounts for each year.
Each horizontal line represents about 7.4 cm of rainfall.

Kota Kinabalu, Malaysia					
Latitude =		N	Longitude =		E
1957	1965	1972	1982	1986	

3. What was the most severe El Nino year in Kota Kinabalu? 19_____
4. What was the rainfall total for the most severe El Nino year in Kota Kinabalu? _____ centimeters
5. What were the least severe El Nino years in Kota Kinabalu?
19_____ and 19_____
6. What was the increase in rainfall from 1972 to 1973?
_____ centimeters

- Click "Back" three times to return to the map menu.



C. Comparison of Eastern Pacific Rainfall During El Ninos.

Eastern Pacific 1 - La Serina, Chile



- Click on western South America.
- At the country menu, select "Chile."
- Click "Okay."
- At the "Select a station" page, select "La Serina."
- Scroll down to the "Select the type of unit" section.
- Click metric units,
- Scroll or tab down to the "Select a time period to graph" section.
- Enter the years 1955 and 1988 in the boxes,
- Click "Graph Data."

1. Record the latitude and longitude of La Serina in the chart under Question 2 below.
2. What are the rainfall amounts for La Serina in the El Nino years?
Fill in the rainfall amounts for each year.
Each horizontal line represents about 0.7 cm of rainfall.

La Serina, Chile					
Latitude =		S	Longitude =		W
1957	1965	1972	1982	1986/87	

Answer the following questions about La Serina, Chile.
Keep in mind the effects of an El Nino on the eastern Pacific.

3. What was the most severe El Nino year in La Serina? 19____
4. What was the rainfall total for the most severe El Nino year in La Serina? _____ centimeters



5. What was the least severe El Nino year in La Serina? 19_____
6. What two back-to-back years show the greatest increase in rainfall from year to year? 19_____ and 19_____

- To continue investigating the eastern Pacific, click "Back" three times to return to the map menu. Go to the "Eastern Pacific - 2" section below.

- To skip the eastern Pacific and go on to the next section, click "Back" until you return to the "El Nino" main page, or choose the El Nino site from your Favorites or Bookmarks.

Eastern Pacific 2 - Santa Cruz, California, USA



- Click on the United States.
- At the "Select a country" page, click "Okay."
- At the "Select a state" page, click Santa Cruz."
- Scroll down to the "Select the type of unit" section.
- Click metric units,
- Scroll or tab down to the "Select a time period to graph" section.
- Enter the years 1955 and 1988 in the boxes,
- Click "Graph Data."

Answer the following questions about Santa Cruz, California.
Keep in mind the effects of an El Nino on the eastern Pacific.



1. Record the latitude and longitude of Santa Cruz in the chart under Question 2 below.
2. What are the rainfall amounts for Santa Cruz in the El Nino years? Fill in the rainfall amounts for each year.
Each horizontal line represents about 3.5 cm of rainfall.



Santa Cruz, California, USA					
Latitude =		N	Longitude =		W
1957	1966	1973	1983	1986	

3. What as the most severe El Nino year in Santa Cruz? 19_____
4. What was the rainfall total for the most severe El Nino year in Santa Cruz? _____ centimeters
5. What was the least severe El Nino year in Santa Cruz? 19_____
6. What two back-to-back years show the greatest increase in rainfall from year to year? _____



- Click "Back" once to return to the stations menu.

Eastern Pacific 32 - Los Angeles International Airport, California, USA



- Select Los Angeles International Airport.
- Click "Graph Data."

Answer the following questions about Los Angeles International Airport. Keep in mind the effects of an El Nino on the eastern Pacific.



1. Record the latitude and longitude of Los Angeles International Airport in the chart under Question 2 below.
2. What are the rainfall amounts for Los Angeles in the El Nino years? Fill in the rainfall amounts for each year.
Each horizontal line represents about 1.6 cm of rainfall.



Los Angeles, California, USA					
Latitude =		N	Longitude =		W
1957	1965	1973	1983	1986	

3. What as the most severe El Nino year in Loa Angeles? 19_____
4. What was the rainfall total for the most severe El Nino year in Los Angeles? _____ centimeters
5. What was the least severe El Nino year in Los Angeles? 19_____
6. What two back-to-back years show the greatest increase in rainfall from year to year? _____

- Choose Favorites or Bookmarks in your browser to return to the NOAA Research "El Nino" main page.
- Click on "Application."

