

# Sonoran Desert Time Line

## Activity Summary

Students will create a time line and place selected events which occurred in the Sonoran Desert at the appropriate places on the time line. Each event is a geologic, biologic, cultural, or otherwise historical occasion which happened since the last ice age, around 10,000 years ago. Students will also focus on recent history and make future predictions.

## Bringing it Together

The purpose of this activity is for children to gain a perception of time and change in the Sonoran Desert. Geologic, biologic, and cultural events have all shaped the Sonoran Desert and it is still changing. Since the end of the last ice age, the climate has changed, plant and animal life has varied, communities have been built and fallen to ruin, and a diversity of people have come and gone and come again. Often children look at the

world around them and believe it was always that way. When something "unusual" happens, it can be disturbing. Understanding that things are always changing is not only an important ecological concept, it helps children deal with

situations that occur in the present -- it is OK if things change, they always have. Understanding that change is normal and natural also gives students a better perspective on environmental issues.

This activity exposes children to major events in the region which have occurred in the last 10,000 years. We begin the time line at a point to include the end of the last ice age (or Pleistocene). This is a history lesson as well as a science lesson. The activity also involves math skills of proportion and space. Geological, biological, and cultural events are treated equally in this time line and are all considered to be contributors to the Sonoran Desert as it is today. The final questions in this activity are "What events might occur in the future?" and "What would you like to see occur?"

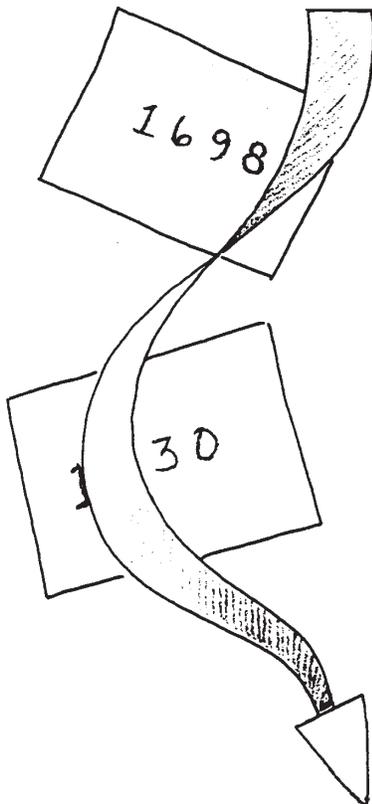
### Objectives

Students will:

- use skills of proportion, time, and space to locate events within a time sequence.
- describe the difference between a geologic, biologic, and cultural event.
- list and describe several significant events which occurred in the history of the Sonoran Desert.

### Materials

- Length of string, tape, or long paper strips to create a time line (ideally 10 meters)
- Sonoran Desert Time Line Reference Dates (provided). *Each reference date should be cut and placed at the appropriate place along the time line.*
- "Sonoran Desert Events" Activity Sheets (provided). *Each event should be cut out separately along the dotted lines. One event will be assigned to each student to read and place on the Sonoran Desert Time Line.*



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## Activity Procedure

1) Before you begin the activity, make a copy of the master, "Sonoran Desert Events." Cut out the thirty events as indicated. Also cut out your reference dates as indicated. Prepare the materials you will be using for your time line.

2) Create your Sonoran Desert Time Line using the following guidelines:

To create your time line, you may use string, tape, or long lengths of paper (width may vary but it is best to keep the line thin to leave room for events). Affix your chosen material to the classroom wall. The time line may be "broken" and continued in a space below or on another wall. Be sure to include enough space above and below the time line to add the "Events."

Create the time line to encircle as much of the classroom as possible. The ideal length of the time line is 10 meters (approx. 30 feet). This would allow each meter to represent 100 years. If space is limited, shorten the length of your time line proportionally to fit the selected area. Be sure to make the time line in a length that may easily be divided into 10 units, each unit representing 1000 years. Remember also that the time line starts 10,000 years ago or near the time of the end of the Pleistocene (or ice age). Since most of the events on the time line will occur in the last 200 years (with the majority in the last 100 years), be sure the length of an individual unit is long enough to accommodate the bulk of events.

The time line should have an arrow at the endpoint on the left or beginning side. This indicates that time continues in that direction (other events occurred before) and that your time line is not starting "at the beginning of time." There should also be an arrow at the present (or right) side to indicate the future and that time goes on.

Cut out and place the reference dates at the appropriate places on the time line. (Note that there are two ways to read the reference dates: the "calendar" date and number of years ago -- "Before Present".) You may work with the students to locate and place the reference dates on your time line.

3) Once the time line is in place with the reference dates marked, hand out one event to each student. If there are less than thirty students, some students may have two. After handing out events, have students come to the front of the class and read their events. (We have presented the events in chronological order from earliest to most recent, so have students come up in the correct order. The events are numbered to facilitate this process.) After a student has read his or her event have them locate where on the

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## Activity Extension: Homesteading Opportunities

This activity will require imagination and research on the part of your students. Explain to the students that they are living in the late 1800's to mid-1900's. (Remind them that there are no stores as we know them today, and that transportation was by horse or rail). The scenario goes like this: They are traveling across the United States looking for a place to settle and make a living. President Lincoln has already signed the homestead act, which has made it possible for settlers to claim 160 acres of federal land as their own. Have your students find an area on the map of the United States they feel would be a good place to homestead. It is important that they know about the area. After they have learned about the area they wish to homestead, have them answer the following questions. Once they have established their homestead, have them write an imaginary letter to Congress applying for homestead rights to their land. They will need to remember the requirements for claiming a homestead.

### Questions:

Where are they going to settle?

How can they meet the requirements for property ownership?

Is there water available?

Where are their children going to go to school?

What will they eat?

What materials will they make their home out of?

time line it should be placed and, using tape, have them affix their event on the time line. To expedite the activity, you may have five students come up at a time, read their events, and locate their places on the time line together. You may also have students come up in groups by century or decade, etc.

4) After all the events are in place, as a class, sit back and admire your work! Look at all that has gone on in your desert home! Discuss points of interest of the students. Which of the events were they already familiar with? Which of the events have stories or legends behind them (recall Stories from the Desert People)? Which events are biological, geological, or cultural?

5) The arrow of the present points to an unknown future. Have students consider this future of the Sonoran Desert. Create a hypothetical future on the time line and have students write events they would like to see occur in this unknown future. Events may be personal (such as the birth of their own children, etc.) but have them consider broader cultural, biological, and geological events which might cause greater change. Given possibilities of major events such as excessive population growth, global warming, a volcanic eruption, or world peace, etc., what events do students think would have the greatest positive or negative implications on life in the Sonoran Desert? Is there anything they personally can do to influence the occurrence of these events?

## Taking it Home and Other Extensions

Have students conduct further research on their particular event. They may write essays and read them to the class. Students can also research additional events, which they consider to be relevant, and add them to the time line.

Create a Sonoran Desert Time Line skit. Students can play roles which depict the various events. Put the skit on for other classes.

# Sonoran Desert Time Line Reference Dates

10,000 years ago (B.P.) 8005 BC	5,000 years ago (B.P.) 3005 BC
2500 years ago (B.P.) 505 BC	1000 years ago (B.P.) 95 BC
500 years ago (B.P.) 1495 AD	200 years ago (B.P.) 1795 AD
100 years ago (B.P.) 1895 AD	75 years ago (B.P.) 1920 AD
50 years ago (B.P.) 1945 AD	25 years ago (B.P.) 1970 AD
10 years ago (B.P.) 1985 AD	5 years ago (B.P.) 1990 AD
Present 1995	

# Sonoran Desert Time Line Events

<p><b>10,000 B.P.</b> Ending of the ice age. Humans inhabit the area - prehistoric people were hunters. Large animals inhabit area including saber toothed tiger, tapir, dire wolf and mastodons.</p>	<p><b>1300 B.P.</b> The Hohokam, aboriginal people of Arizona thrived in the Phoenix Basin and surrounding desert including areas near Tucson.</p>	<p><b>1519</b> Hernan Cortez lands on Mexico's east coast.</p>
<p><b>10,000 - 4,000 B.P.</b> Large Pleistocene mammals die out, cactus migrate north. Humans in the area become farmers. They grow cotton and weave textiles</p>	<p><b>600-900 B.P.</b> The Hohokam Culture reaches its climax in size and development</p>	<p><b>1692</b> Father Kino named the village of Bac "San Francisco del Bac" after his patron saint.</p>
<p><b>2,000 B.P.</b> Volcanic Eruption! Cinder cones in the Pinacate area of Mexico north of the Sea of Cortez and west of the Tucson Basin erupt.</p>	<p><b>1492</b> Christopher Columbus lands in the Americas.</p>	<p><b>1695</b> Father Eusebio Francisco Kino visited the Tucson Basin and named it "San Agustin de Oiaur".</p>

# Sonoran Desert Time Line Events

<p style="text-align: center;"><b>1698</b></p> <p>Father Kino's 2nd trip to "the valley" - the Tucson Basin.</p>	<p style="text-align: center;"><b>1779</b></p> <p>Apaches began active warfare against the Tucson Presidio.</p>	<p style="text-align: center;"><b>1906</b></p> <p>San Xavier District of the Tohono O'odham Nation is recognized as their land and they receive their reservation.</p>
<p style="text-align: center;"><b>1752</b></p> <p>Fort Tubac (Tubac Presidio) built and Franciscans convert the indigenous people.</p>	<p style="text-align: center;"><b>1854</b></p> <p>Gadsden Purchase. 29,640 square miles are purchased from Mexico for the price of 10 million dollars. The land extends from the Colorado River eastward across Arizona, the Tucson Basin joins the United States.</p>	<p style="text-align: center;"><b>1912</b></p> <p>Arizona Statehood! Arizona becomes a state of the United States of America.</p>
<p style="text-align: center;"><b>1767</b></p> <p>Marques de Rubio recommends that the fort at Tubac be moved to Tucson for greater protection.</p>	<p style="text-align: center;"><b>1887</b></p> <p>Last major earthquake in Southern Arizona - there should be another in the next 1000 years.</p>	<p style="text-align: center;"><b>1916</b></p> <p>Sentinel Peak first becomes known as "A" Mountain - a tradition started by University of Arizona students.</p>

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<p style="text-align: center;"><b>1929</b></p> <p>Cactus throughout Arizona become protected under the Arizona Native Plant Law.</p>	<p style="text-align: center;"><b>1961</b></p> <p>President John F. Kennedy signs legislation creating the Tucson Mountain District of Saguaro National Monument.</p>	<p style="text-align: center;"><b>1988</b></p> <p>Mexican long-nosed bat is listed as an endangered species in the U.S. The bat is a known pollinator of the saguaro cactus.</p>
<p style="text-align: center;"><b>1933</b></p> <p>Saguaro National Monument established. Lands are taken from the Coronado National Forest to establish the new preserve.</p>	<p style="text-align: center;"><b>1976</b></p> <p>Saguaro Wilderness Area established to further protect Sonoran Desert habitat.</p>	<p style="text-align: center;"><b>1994</b></p> <p>Saguaro National Monument is officially designated Saguaro National Park, the 52nd National Park in the U.S.</p>
<p style="text-align: center;"><b>1940</b></p> <p>University of Arizona begins a long-term cooperative study on diseased Saguaro.</p>	<p style="text-align: center;"><b>1984</b></p> <p>The Papago name is officially recognized as Tohono O'odham.</p>	<p style="text-align: center;"><b>1995 - Present</b></p> <p>Students from elementary schools in Tucson visit Saguaro National Park to learn about the Sonoran Desert.</p>

