

PECAN POWER!



LEVEL: Grades 4-6

SUBJECTS: Social Studies, Language, Science, Math

AZ ACADEMIC STANDARDS: 2M-E1, 2M-E2, LS-E1, LS-E2, SC04-S2C1, SC04-S3C1, SC04-S3C2, SC05-S3C1, SC05-S3C2, SC06-S2C1, SC06-S3C1, SC06-S3C2

MATERIALS

Pecan pieces, and one pecan for every student, colored pencils or markers, shells of 8 whole pecans, 1 cup water, ½ tsp. vinegar, ½ tsp. salt, hammer, scrap cloth, small saucepan, measuring cups and spoons, strainer, small jar with tight fitting lid, Colonial alphabet, Quill feathers (can buy at any craft supply store).

VOCABULARY

cholesterol, colonists, cultivated, export, fiber, groves, native, orchard, protein, species, shelling

SUPPORTING INFORMATION

The pecan tree is the only major tree that grows naturally in North America. It is considered one of our most valuable nut species. The word pecan comes from the Native American word of Algonquin origin that is used to describe “all nuts requiring a stone to crack.” Pecans pack a powerful punch in “NUTrition” as they make a complete protein which makes them popular

among vegetarians. They contain 18 essential amino acids, and 19 vitamins and minerals. Studies show that blood cholesterol levels can be lowered when pecans are incorporated into the diet. For fiber, one ounce of pecans has the same amount of fiber as an apple. Pecans are included in the U.S. Food Guide Pyramid into the meat, poultry, dried beans group. Pecans are grown in southern Arizona! Near Green Valley, 8,000,000 lbs. of pecans are harvested a year from 106,000 trees on 4,400 acres. April is National Pecan Month. This honor was bestowed because the pecan is the only tree nut considered a “true American Nut”.

GETTING STARTED

Prepare samples of pecans. Additionally, each child will need one whole pecan (in the shell), the nut ink should be made ahead of time for session two, the Colonial alphabet and pecan production chart should be xeroxed for student use.

PROCEDURES

Session One: Pecan Pals

- 1.Share background information (above) of pecans with class.
- 2.Pass around pecan pieces for the students to taste.
- 3.Students can talk within cooperative groups about how it tasted, as well as discussing other aspects of the nut (using all five senses).

BRIEF DESCRIPTION

Students familiarize themselves with pecans in a personal manner while using vital writing skills. They use an American History time line to trace the origins of the pecan, and interpret data to design a bar graph.

OBJECTIVES

The students will:
*Form a sketch and list of observations from a special pecan.
*Discuss and reflect upon a time line of the pecan in America. Use Nut Ink to express themselves with Colonial flair.
*Analyze and interpret a data table in order to create a bar graph that compares Arizona grown pecans to other states' production.

ESTIMATED TEACHING TIME

Session 1, 30 minutes;
Session 2, 45 minutes;
Session 3, 40 minutes.

PROCEDURES (cont'd)

4. Pass around a bag of pecans and tell each student to choose one that will become their "Pecan Pal". They can even give it a name if they want.
5. Students individually sketch their pecans and list as many observations as possible. They will want to be extremely descriptive in both the sketch and list of observations. They should use a coloring medium to draw the shape and shades of the nut.
6. Partners can interview each other about their Pecan Pals and introduce their partner's pal to the team.
7. Pecan Pals are placed in a cup in the center of the table along with a handful of additional pecans. After shaking the cup, students spread the pecans on the table and work in pairs to find their lost Pecan Pals. If they used descriptive words in their carefully composed list of observations, they should be able to locate their special nut.
8. End with a discussion about the importance of detailed adjectives in writing so that an audience is able to identify/visualize characters and objects clearly. Let the students keep their new pal.

Session Two: Nuts About History!

1. Discuss the following time line with the class:
Before 1492-The Caddo Indian tribe was using pecans long before the Europeans settled America. In autumn, pecans were used as a major food source because they were easy to store/keep.
1500's-Americans utilized/cultivated pecans.
1600's-Spanish colonists cultivated orchards. (Orchards-trees planted by man; Groves-trees established by natural forces)

1700's-English settlers planted pecan trees.

1775-George Washington plants pecan trees at Mount Vernon.

1779-Thomas Jefferson plants pecan trees at Monticello.

1805-Americans were exporting pecans to London.

1822-Pecan budding technique is discovered.

1999-346,000,000 pounds of pecans produced in the U.S., with a large portion grown in ARIZONA!

2001-Senate declares April as National Pecan Month. This powerful nut is recognized as "the only true American nut".

2. One use of pecans was for eating, yet the colonists (1600-1800) also used them to make ink. Two of the most common inks used at that time were berry ink and nut ink.

3. Either make the ink ahead of time or make it as a demonstration in class.

Ingredients: shells of 8 whole pecans, 1 cup water, ½ tsp. vinegar, ½ tsp. salt. Crush the empty shells into very little pieces by wrapping them in scrap cloth and pounding them with a hammer. Put the crushed shells in a saucepan, add one cup of water and bring it to a boil. Turn the heat down to low and simmer. Let the pot sit for about an hour until the water turns a dark brown. Most of the water will have evaporated leaving a small amount of brown ink. Remove the ink from the heat, let it cool, then pour it through a strainer into a small jar with a tight fitting lid. Add half a teaspoon of vinegar to the ink to keep the color from fading, and a half teaspoon salt to prevent it from molding.

4. Use the tip of a quill feather to practice writing as the colonists did. Students can try fancy lettering with many elaborate flourishes. You can show students a copy of the

Declaration of Independence so they can observe how the

colonists, especially John Hancock, wrote their names.

5. For closure, review the importance of pecans over time by referring back to the time line.

Session Three: Pecan Bar Graph

1. Make an overhead/handouts of the attached pecan production table.
 2. Using the overhead/handouts, discuss the data with the class. Start out with basic observations, then use higher thinking skills in the discussion by comparing/contrasting/ predicting what 2001's growth would look like, ordering, sequencing, etc. Concentrate on highlighting Arizona's pecan production as much as possible as you direct the discussion questions. You could even refer to a map and compare/contrast/ identify the pecan producing states' locations.
 3. When the students are comfortable with interpreting the data, then they can individually make a bar graph that uses the black line master (attached) as a guide. This bar graph should compare Arizona's pecan production to four other states of the student's choice. All bar graphs need a topic, x and y axis (with titles).
 4. The students transfer their information from the bar graph handout onto a 9x11" piece of construction paper as a final draft. Add color by using markers or crayons, and mount it on a different color of paper to make it appealing to the eye.
 5. Depending on teacher preference, data could be displayed in circle graph formation or pictograph charts.
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EVALUATION OPTIONS

1. Evaluate students', *Pecan Producers Bar Graph* in Session 3 for completeness and understanding.

EVALUATION OPTIONS

(cont'd)

2. Have students finish (orally or in writing) one or more of the following phrases:
-My new feelings about Arizona pecans are...
-Some examples of the importance of pecans are...
-Pecans have been helpful to various people throughout history. For example...
3. Observe the student's participation in the cooperative groups during the Pecan Pals and Bar Graph Lessons. Their performance can be evaluated with a rubric.
4. Evaluate students' Sketch and Observations of Pecan Pals on completeness, understanding, and descriptive words.

EXTENSIONS AND VARIATIONS

1. Ask a pecan grower to come to your school to address their practices.
2. Have the class write letters to Farmer's Investment Company (FICO) or other Arizona pecan growers to gather or request information.
FICO
c/o The Pecan Store
1625 E. Sahuarita Road
Sahuarita, AZ 85629
(800)327-3226
3. Work together as a class to change the words of the song, "Found a Peanut" to "Found My Pecan" in Session One.
4. Make a poster that advertises Arizona Grown pecans to the American public. Think of a catchy jingle or slogan. These could also be transformed into commercials.
5. Using the time line from "Session Two: Nuts About History", assign groups of students to take a specific

date and illustrate the event that corresponds. Display the student-made pecan time line in the classroom.

6. Write pecan poetry in various forms: shape poem, limerick, acrostic poem, haiku, diamante. Each poem could be compiled into a class book.

7. Using the bar graph from Session Three, conduct a variety of lessons with the given data on place value, probability, comparing and ordering numbers.

8. After the students finish Session One, they can compose a creative fiction story using their Pecan Pal as the main character.

9. Make pecan treats! Turtles, pecan pie, pecan tassies, teepees.

Nutty Pecan Teepees

3 ounces cream cheese
3 Tablespoons butter
½ cup chopped pecans
¼ cup chopped onion
1 (8 ounce) can cooked chicken
3 cans crescent roll frozen dough
18 pretzel sticks as garnish

Preheat the oven to 350°. In a small saucepan, melt the butter and cream cheese on low heat, stir until smooth. Add nuts, onion, chicken and remove from heat. Divide the rolls into 6" squares (2 triangles put together). Place a heaping spoonful of chicken mixture in the middle. Fold the corners in an upward motion so they form a point (like a teepee). Bake at 350° for 20 minutes. Garnish the top of the teepee with three pretzel sticks so they look like teepee poles.

10. Enter the kid's recipe contest at www.ilovepecans.org.

RESOURCES

- [How to Invest, Select, Manage, a Land of Cattle and Pecans](#). Hoff, Jennifer and John.
- National Pecan Shellers Association (404)252-3663
- [Nuts About Pecans](#) Tull, Edna
- [Pecans: A Grower's Perspective](#). Rice, Wesley
- [Pecan Lovers Cookbook](#) Blasek, Mark
- [Pecans: Past and Repast](#). Snyder, Ruth
- [Pecans, Pecans, Pecans](#). Soden, Barbara
- USDA National Agricultural Statistics Service www.usda.gov/nass
- www.ilovepecans.org

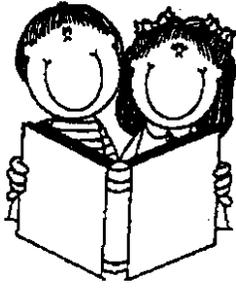
CREDITS

- Kagan Publishing, [Cooperative Learning and Hands on Science](#). 1995
- [Writing Crafts Workshop](#) Pitman Learning, Inc. The Pecan Store in Sahuarita, Arizona

EDUCATORS' NOTES

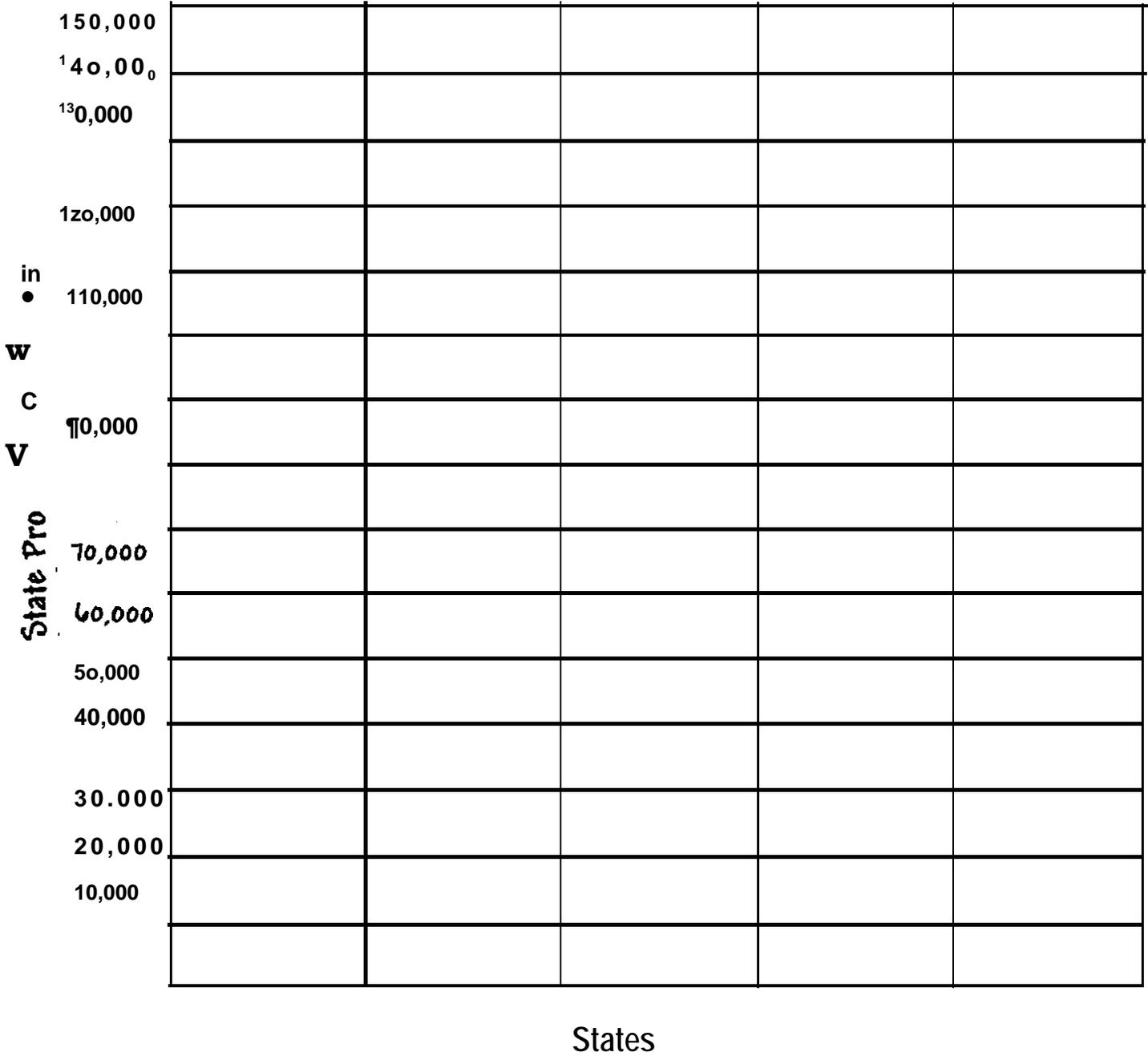
CURRICULUM DESIGN
Carrie Norton, Grade 5
Val Vista Lakes
Elementary, Gilbert
Public Schools,
Arizona

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Bar Graph

Title: _____



Name _____ Date _____

A B C D E F G

H I J K L M

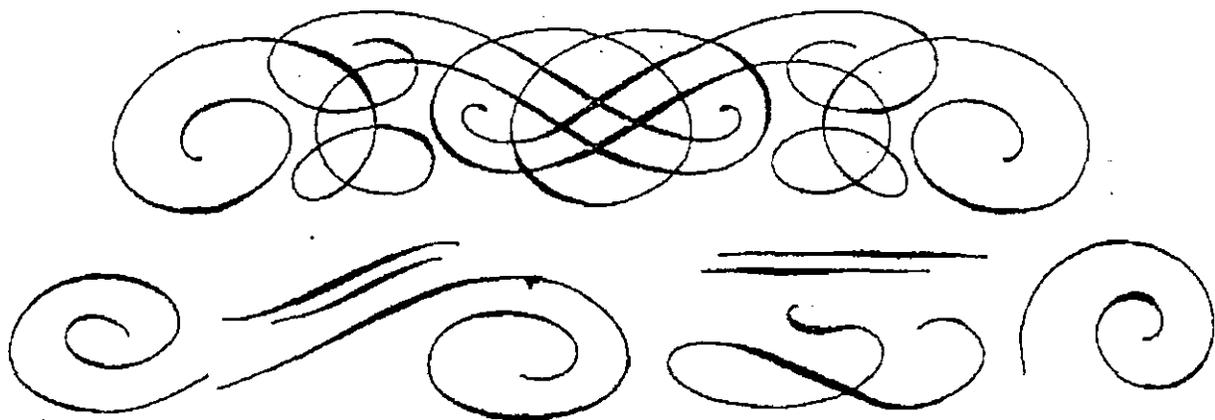
N O P Q R S T

U V W X Y Z

a b c d e f g h i j

k l m n o p q r

s t u v w x y z



Utilized Production of Pecans by State and United States 1997-2000
Utilized Production - 1,000 Pounds

State	1997	1998	1999	2000
AL	13,000	5,000	13,000	15,000
AZ	17,500	13,000	21,700	14,500
AR	4,600	550	3,800	900
CA	2,500	1,700	2,400	3,400
FL	1,800	1,300	2,900	3,300
GA	105,000	40,000	90,000	80,000
KS	4,200	50	3,500	550
LA	12,000	16,000	18,000	18,000
MS	4,000	1,200	4,000	3,500
NM	43,000	32,000	50,000	35,000
NC	1,500	2,500	1,300	1,600
OK	35,000	2,000	45,000	2,500
Sc	4,000	1,100	1,100	1,600
TX	90,000	30,000	90,000	30,000
TOTAL	338,100	146 400	346,700	209,850

Source: USDA National Agricultural Statistics Service