



# FOURTH GRADE

## CONTENT STANDARDS FOR CALIFORNIA SCHOOLS

# Parent Resource Book

**Designed to Improve  
Student Performance  
through Communication  
and Partnership**

Adapted and Prepared by:

Tehama County Department of Education  
and the Eighteen School Districts of  
Tehama County, California

Larry P. Champion  
Tehama County Superintendent of Schools  
[www.tehamaschools.org](http://www.tehamaschools.org)

Tehama County Department of Education (TCDE) is dedicated to supporting schools and districts as they work to improve student achievement and meet the needs of all learners. The Department provides services and resources to educators, parents, students, and the community. Please visit our website at [www.tehamaschools.org](http://www.tehamaschools.org) for a complete listing of Department offerings. The following programs offer resources that may be especially valuable for parents:

### **Early Childhood Education Programs**

TCDE Early Childhood Education Programs provide leadership and assistance to ensure quality experiences for children ages 0 to 5 years. The goal for these programs is to give young children the tools they need to enter school with a foundation of knowledge and skills that will allow them to be successful throughout their school experience.

Contact: Paula Brown-Almond, Programs Director (530) 528-7343

### **Student Support Services**

TCDE Student Support Services provide residents of Tehama County, health and human service agencies, and schools research, materials, and/or technical assistance in the areas of substance abuse and violence prevention, health education, school safety and crisis planning, as well as resiliency and youth development.

Contact: Amy Henderson, Programs Director (530)528-7357

### **Safe Education and Recreation for Rural Families - SERRF**

SERRF provides a safe, healthy, enriching environment for school children during the after school hours. Homework tutoring, academic enrichment, recreation, social skills development, and prevention activities are all a part of the SERRF Program.

Contact: Karla Stroman, Program Director (530) 528-7392

### **Special Programs**

TCDE provides a wide range of services for children and young adults with special needs. These specialized programs and services are operated at the request of the county school districts, but it is the Individualized Education Plan Team who makes decisions about the type of placement or services a student may be provided.

Contact: Heidi Schueller, Assistant Superintendent of Special Programs and Services (530) 528-7248

## Looking For More?

Visit the TCDE website for a wealth of additional information, website links, and other free educational resources...

**[www.tehamaschools.org](http://www.tehamaschools.org)**

- \* **Internet safety information** – teach your children safe browsing skills
- \* **Early childhood education** – programs & resources
- \* **After school activities** – SERRF program, school finder, sponsored events
- \* **Free educational resources** – links to homework help, educational games and other free resources to make learning fun and enriching
- \* **Information for parents** – school safety, emergency notifications
- \* **School performance information** – learn about the schools in Tehama County



### Life Sciences

- Observe and talk about how energy can be transformed from one form to another (e.g., energy is stored in plants, which is eaten by animals, which are eaten by larger animals and/or human beings).
- Learn about the life cycle of different animals either by observing the changes or looking at pictures (e.g., frog).

### Earth Sciences

- On a nature walk, discuss and compare different ecosystems (e.g., aquatic, wetlands, forest, desert) with your child.
- On a nature walk, observe and discuss how organisms are adapted to their environment and how organisms can change their environment (e.g., beaver's teeth help it eat to survive; beaver eating trees remove trees from the environment; beaver's dams affect stream movement).

### Investigations and Experimentation

- Help your child use a:
  1. Thermometer to measure the temperature of air and water.
  2. Yardstick to measure the size of two rooms in the house.
  3. Clock to measure the time it takes to complete things.
  4. Tape measure to measure wood for a project.
  5. Measuring cup to measure ingredients for baking.
- Take the outside temperature, over a short period of time, and record the temperature readings in an organized chart. Be able to discuss this chart with others.

# The Importance of Parent Involvement and Content Standards

California Content Standards identify what students should know and be able to do at each grade level. They identify what is to be learned. There are standards for the four core academic areas of English Language Arts, Mathematics, History/Social Science, and Science. There are also standards for English Language Development, Physical Education, Health Education, Career Technical Education and the Visual and Performing Arts.

The standards for the four core academic areas are included in this resource booklet as it is important for parents to know what students are expected to learn so learning can be reinforced at home. We know from research that "students with involved parents are more likely to earn higher grades and test scores and enroll in higher-level programs, be promoted, pass their classes, earn credits, attend school regularly, have better social skills, and graduate and go on to postsecondary education."

Also included in this booklet are suggestions for setting up a home environment to optimize student learning and specific home activities in support of each of the four core areas of language arts, mathematics, history/social science, and science. We know that when parents talk to their children about school, expect them to do well, make sure that out-of-school activities are constructive, and help them plan for college, their children perform better in school.

Unleash the power of this booklet. Become familiar with the standards so you know what your child is expected to learn. Follow the five suggestions for setting up an environment to increase student learning. Engage in the suggested activities to support learning. Have fun learning together!

## **Environment for Student Learning**

**We encourage all parents to set up an environment to increase student learning:**

- 1. Strive to establish an encouraging family atmosphere by:**
  - Acknowledging and supporting your child's efforts.
  - Reinforcing positive behavior.
  - Providing opportunities for service to others.
- 2. Be involved in your child's education by:**
  - Providing help, resources, and encouragement.
  - Showing interest and supporting your child's work.
  - Upholding the school's expectations.
  - Supporting and participating in school service opportunities.
- 3. Set up an atmosphere conducive to learning by:**
  - Scheduling a regular, daily time where all family members are studying.
  - Making sure the house is quiet during this study time.
  - Establishing a location for completing homework that has appropriate lighting and supplies (e.g., paper, pencils, glue, crayons, resources).
  - Assigning a special place to keep school materials.
  - Reviewing the child's homework before it is handed in.
  - Establishing a consistent bedtime.
- 4. Strengthen communication with your child by:**
  - Spending quality time with your child.
  - Sharing resources from your community with your child (e.g., parks, libraries, special buildings).
  - Establishing and enforcing reasonable consequences for misbehavior.
- 5. Be involved in your child's school community by:**
  - Attending parent/teacher conferences.
  - Contacting your child's teacher when questions arise.
  - Spending time in your child's classroom.
  - Attending school functions.

- c. Know that moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).

## **Investigation and Experimentation**

- 6. Scientific progress is made by asking meaningful questions and conducting careful investigations.**
  - a. Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.
  - b. Measure and estimate the weight, length, or volume of objects.
  - c. Formulate and justify predictions based on cause-and-effect relationships.
  - d. Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.
  - e. Construct and interpret graphs from measurements.
  - f. Follow a set of written instructions for a scientific investigation.

## **Home Activities for Science**

### **Physical Sciences**

- When baking a cake, ask the child to help and observe the cake batter before and after it bakes. Talk about the change that took place.
- Explore the forces between objects by picking up items with a magnet, using static electricity to attract items (e.g., rub a comb with wool and pick up little pieces of paper), and observing the force of gravity (e.g., drop a rock and a marble and see which lands first).
- Observe and talk about how energy can be transformed from one form to another (e.g., take apart an electric motor and note how electromagnets cause the motor to turn, creating energy to run electric devices).
- Observe and discuss the structure of the solar system by making a model of the sun and the nine planets.
- Research the size of the sun and planets, then make a scale model of two planets such as the Earth and Jupiter.

## Life Sciences

### **2. All organisms need energy and matter to live and grow.**

- a. Know that plants are the primary source of matter and energy entering most food chains.
- b. Know that producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.
- c. Know that decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.

### **3. Living organisms depend on one another and on their environment for survival.**

- a. Know that ecosystems can be characterized by their living and nonliving components.
- b. Know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.
- c. Know that many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.
- d. Know that most microorganisms do not cause disease and that many are beneficial.

## Earth Sciences

### **4. The properties of rocks and minerals reflect the processes that formed them.**

- a. Know how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).
- b. Know how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.

### **5. Waves, wind, water, and ice shape and reshape Earth's land surface.**

- a. Know that some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.
- b. Know that natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.

## State Standards for English Language Arts

### Reading

#### **1.0 Word Analysis, Fluency, and Systematic Vocabulary Development**

- 1.1 Read text aloud with grade-appropriate fluency and accuracy.
- 1.2 Apply knowledge of word origins, derivations, synonyms, antonyms, and idioms to determine meaning of words.
- 1.3 Use knowledge of root words to determine meaning of unknown words.
- 1.4 Use common roots and affixes derived from Greek and Latin to determine meaning of complex words.
- 1.5 Use a thesaurus to determine related words and concepts.
- 1.6 Distinguish and interpret words with multiple meanings.

#### **2.0 Reading Comprehension**

- 2.1 Identify structural patterns found in informational text (e.g., compare and contrast) to strengthen comprehension.
- 2.2 Use appropriate strategies when reading for different purposes (e.g., full comprehension, location of information).
- 2.3 Make and confirm predictions about text by using prior knowledge and ideas presented in the text.
- 2.4 Evaluate new information and hypothesis by testing it against known information and ideas.
- 2.5 Compare and contrast information on the same topic found in several sources.
- 2.6 Distinguish between cause and effect and between fact and opinion.
- 2.7 Follow multi-step instructions in basic technical manuals.

#### **3.0 Literary Response and Analysis**

- 3.1 Describe the structural differences of various imaginative forms of literature including fantasies, fables, myths, etc.
- 3.2 Identify the main events of the plot.
- 3.3 Use knowledge provided in the text to determine causes for characters' actions.
- 3.4 Compare and contrast tales from different cultures.
- 3.5 Define figurative language (e.g., simile, metaphor, hyperbole, personification) and identify its use in literary works.

## **Writing**

### **1.0 Writing Strategies**

- 1.1 Select a focus for a writing based on purpose, audience, length, and format.
- 1.2 Create multiple-paragraph writings.
- 1.3 Use traditional structures for conveying information (e.g., chronological order, cause and effect).
- 1.4 Write legibly in cursive or joined italic.
- 1.5 Quote or paraphrase information sources, citing them appropriately.
- 1.6 Locate information in reference texts using organizational features such as the preface and/or appendix.
- 1.7 Use reference materials in writing.
- 1.8 Understand the organization of almanacs, newspapers, and periodicals, and how to use these printed materials.
- 1.9 Demonstrate basic keyboarding skills and familiarity with computer terminology.
- 1.10 Edit and revise text to improve coherence and progression.

### **2.0 Writing Applications**

- 2.1 Write narratives.
- 2.2 Write responses to literature.
- 2.3 Write informational reports.
- 2.4 Write summaries that contain main ideas and most significant details.

## **Written and Oral English Language Conventions**

### **1.0 Written and Oral English Language Conventions**

- 1.1 Use simple and compound sentences in writing and speaking.
- 1.2 Combine short, related sentences with appositives, participial phrases, adjectives, adverbs, and prepositional phrases.
- 1.3 Use regular and irregular verbs, adverbs, prepositions, and coordinating conjunctions in writing and speaking.
- 1.4 Use parentheses, commas in direct quotations, and apostrophes correctly.
- 1.5 Use underlining, quotations marks, or italics to identify titles of documents.
- 1.6 Capitalize proper nouns and the first word in quotations when appropriate.
- 1.7 Spell correctly roots, inflections, suffixes and prefixes, and syllable constructions.

- Explore biographies of Californians and historical events by reading, viewing documentaries, and searching the Internet (e.g., “California Heartland” and “California Gold” on PBS).
- Create a family album with pictures, recipes, map of immigration routes taken to California, family timeline, etc.

## **Transformation of California’s Economy since 1850**

- Discuss with older family members and/or friends how methods of earning a living in California have changed during their lifespan.
- Help your child earn, save, and use money wisely.

## **Government, both State and Federal**

- As a family, participate in local, state, and federal government proceedings, discussing how they are the same and different.
- On election day, talk about the voting process, your rights and responsibilities as a citizen, and take your child with you when you vote.
- Visit the State Capitol.
- Write to local, state, and federal officials.

## **State Standards for Science**

### **Physical Sciences**

1. **Electricity and magnetism are related effects that have many useful applications in everyday life.**
  - a. Know how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.
  - b. Know how to build a simple compass and use it to detect magnetic effects, including Earth’s magnetic field.
  - c. Know that electric currents produce magnetic fields and know how to build a simple electromagnet.
  - d. Know the role of electromagnets in the construction of electric motors, electric generators, and simple devices, such as doorbells and earphones.
  - e. Know that electrically charged objects attract or repel each other.
  - f. Know that magnets have two poles (north and south) and that like poles repel each other while unlike poles attract each other.
  - g. Know that electrical energy can be converted to heat, light, and motion.

#### **4.5 Students understand the structures, functions, and powers of the local, state, and federal governments as described in the U.S. Constitution.**

1. Discuss what the U.S. Constitution is and why it is important (i.e., a written document that defines the structure and purpose of the U.S. government and describes the shared powers of federal, state, and local governments).
2. Understand the purpose of the California Constitution, its key principles, and its relationship to the U.S. Constitution.
3. Describe the similarities (e.g., written documents, rule of law, consent of the governed, three separate branches) and differences (e.g., scope of jurisdiction, limits on government powers, use of the military) among federal, state, and local governments.
4. Explain the structures and functions of state governments, including the roles and responsibilities of their elected officials.
5. Describe the components of California's governance structure (e.g., cities and towns, Indian rancherias and reservations, counties, school districts).

### **Home Activities for History–Social Science**

#### **Geography of California**

- On a California map showing latitude and longitude, locate the State Capitol, other cities (e.g., San Francisco, Los Angeles, San Diego) and the Pacific Ocean.
- As you travel throughout California, compare and contrast the different regions, including the human and natural resources.
- On a globe, find the North and South Poles, Prime Meridian, Tropics of Cancer and Capricorn, and the hemispheres.
- Use maps when planning a trip, discussing the route to be taken and marking the route with a felt pen.
- Discuss reasons why your ancestors moved to California.

#### **History of California**

- Visit California's historical sites such as Indian museums, missions, mines, dams, festivals, and celebrations. Look for items that pertain to mining or pioneer history.
- Together make a timeline for completing a project or chore. Discuss the purpose/use of timelines.
- Visit restaurants of different cultures and point out cultural foods, architecture, and customs.

### **Listening and Speaking**

#### **1.0 Listening and Speaking Strategies**

- 1.1 Ask thoughtful questions and respond to relevant questions with appropriate elaboration in oral settings.
- 1.2 Summarize major ideas with supporting evidence presented in spoken messages and formal presentations.
- 1.3 Identify how language usages (e.g., sayings, expressions) reflect regions and cultures.
- 1.4 Give precise directions and instructions.
- 1.5 Present effective introductions and conclusions that guide and inform the listener's understanding of ideas and evidence.
- 1.6 Use traditional structures for conveying information (e.g., cause and effect, posing and answering a question).
- 1.7 Emphasize points in ways that help the listener or viewer to follow important ideas and concepts.
- 1.8 Use details, examples, anecdotes, or experiences to explain and clarify information.
- 1.9 Use volume, pitch, phrasing, pacing, modulation, and gestures appropriately to enhance meaning.
- 1.10 Evaluate the role of the media in focusing attention on events and in forming opinions on issues.

#### **Speaking Applications**

- 2.1 Make narrative presentations.
- 2.2 Make informational presentations.
- 2.3 Deliver oral summaries of articles and books that contain the main ideas of the events and significant details.
- 2.4 Recite brief poems, soliloquies, or dramatic dialogues with clear diction, tempo, volume, and phrasing.

## **Activities for Language Arts**

### **Reading**

- Read to and with your child on a regular basis.
- Visit the local library or local bookstore to select appropriate reading materials.
- Set an example by reading.
- Have your child read every night.

### **Reading Comprehension**

- Have discussions about things family members have read, talking about the various characters in a story, the plot, setting, etc.
- After reading a story, ask your child questions about the story that relate to the main idea, story details, sequence of events, and different story endings.

### **Writing**

- Invite your child to write about daily events in their journal.
- Invite your child to write letters on a regular basis.
- Invite your child to write and send E-mail messages to friends.
- Invite your child to use a computer for writing, using the spell check and editing procedures.

### **Written and Oral English Language Conventions**

- Play word games such as Scrabble, Probe, Scattergories, Pictionary with your child.
- Look at a newspaper with your child and together highlight nouns, verbs, adjectives, and adverbs.
- Gently edit together the letters your child has written looking for correct punctuation, capitalization, and sentence structure. Celebrate your child's writing.
- Model correct language usage.

### **Listening and Speaking**

- Encourage your child to give oral directions to another member of the family.
- Encourage your child to recite a poem.
- Discuss daily events together.
- Invite your child to explain how to do different things, such as making cookies, building a model, playing a game, etc.
- Have fun singing a song or telling a story into a tape recorder and listening to it.

### **4.4 Students explain how California became an agricultural and industrial power, tracing the transformation of the California economy and its political and cultural development since the 1850s.**

1. Understand the story and lasting influence of the Pony Express, Overland Mail Service, Western Union, and the building of the transcontinental railroad, including the contributions of Chinese workers to its construction.
2. Explain how the Gold Rush transformed the economy of California, including the types of products produced and consumed, changes in towns (e.g., Sacramento, San Francisco), and economic conflicts between diverse groups of people.
3. Discuss immigration and migration to California between 1850 and 1900, including the diverse composition of those who came; the countries of origin and their relative locations; and conflicts and accords among the diverse groups (e.g., the 1882 Chinese Exclusion Act).
4. Describe rapid American immigration, internal migration, settlement, and the growth of towns and cities (e.g., Los Angeles).
5. Discuss the effects of the Great Depression, the Dust Bowl, and World War II on California.
6. Describe the development and locations of new industries since the turn of the century, such as the aerospace industry, electronics industry, large-scale commercial agriculture and irrigation projects, the oil and automobile industries, communications and defense industries, and important trade links with the Pacific Basin.
7. Trace the evolution of California's water system into a network of dams, aqueducts, and reservoirs.
8. Describe the history and development of California's public education system, including universities and community colleges.
9. Analyze the impact of twentieth-century Californians on the nation's artistic and cultural development, including the rise of the entertainment industry (e.g., Louis B. Meyer, Walt Disney, John Steinbeck, Ansel Adams, Dorothea Lange, John Wayne).

3. Describe the Spanish exploration and colonization of California, including the relationships among soldiers, missionaries, and Indians (e.g., Juan Crespi, Junipero Serra, Gaspar de Portola).
4. Describe the mapping of, geographic basis of, and economic factors in the placement and function of the Spanish missions; and understand how the mission system expanded the influence of Spain and Catholicism throughout New Spain and Latin America.
5. Describe the daily lives of the people, native and nonnative, who occupied the presidios, missions, ranchos, and pueblos.
6. Discuss the role of the Franciscans in changing the economy of California from a hunter-gatherer economy to an agricultural economy.
7. Describe the effects of the Mexican War for Independence on Alta California, including its effects on the territorial boundaries of North America.
8. Discuss the period of Mexican rule in California and its attributes, including land grants, secularization of the missions, and the rise of the rancho economy.

**4.3 Students explain the economic, social, and political life in California from the establishment of the Bear Flag Republic through the Mexican-American War, the Gold Rush, and the granting of statehood.**

1. Identify the locations of Mexican settlements in California and those of other settlements, including Fort Ross and Sutter's Fort.
2. Compare how and why people traveled to California and the routes they traveled (e.g., James Beckwourth, John Bidwell, John C. Fremont, Pio Pico).
3. Analyze the effects of the Gold Rush on settlements, daily life, politics, and the physical environment (e.g., using biographies of John Sutter, Mariano Guadalupe Vallejo, Louise Clapp).
4. Study the lives of women who helped build early California (e.g., Biddy Mason).
5. Discuss how California became a state and how its new government differed from those during the Spanish and Mexican periods.

## State Standards for Mathematics

### Number Sense

#### **1.0 Place Value**

- 1.1 Read and write whole numbers to millions.
- 1.2 Order and compare whole numbers and decimals to two decimal places.
- 1.3 Round whole numbers through the millions.
- 1.4 Decide/explain when a rounded solution is appropriate.
- 1.5 Explain different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers).
- 1.6 Write tenths and hundredths in decimal and fraction notations and know the fraction and decimal equivalents for halves and fourths (e.g.,  $1/2 = 0.5$  or  $.50$ ;  $7/4 = 1\ 3/4 = 1.75$ ).
- 1.7 Write the fraction represented by a drawing of parts of a figure; represent a given fraction by using drawings; and relate a fraction to a simple decimal on a number line.
- 1.8 Use concepts of negative numbers.
- 1.9 Identify, on a number line, the relative position of positive fractions, positive mixed numbers, and positive decimals to two decimal places.

#### **2.0 Computation – Decimals**

- 2.1 Estimate and compute the sum or difference of whole numbers and positive decimals to two places.
- 2.2 Round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer.

#### **3.0 Computation – Whole Numbers**

- 3.1 Solve addition and subtraction problems with multidigit numbers.
- 3.2 Show an understanding of standard algorithms for multiplication of multidigit numbers by two-digit numbers and division of multidigit numbers by a one-digit number.
- 3.3 Solve problems involving multiplication of multidigit numbers by two-digit numbers.
- 3.4 Solve problems involving division of multidigit numbers by one-digit numbers.

#### **4.0 Factoring**

- 4.1 Understand that many whole numbers break down in different ways (e.g.,  $12 = 4 \times 3 = 2 \times 6 = 2 \times 2 \times 3$ ).
- 4.2 Know that numbers such as 2, 3, 5, 7, and 11 do not have any factors except 1 and themselves and that such numbers are called prime numbers.

#### **Algebra and Functions**

##### **1.0 Number Sentences**

- 1.1 Use letters, boxes, or other symbols to stand for any number in simple expressions or equations (e.g., demonstrating an understanding and the use of the concept of a variable).
- 1.2 Interpret and evaluate mathematical expressions that now use parentheses.
- 1.3 Use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations.
- 1.4 Use and interpret formulas (e.g.,  $\text{area} = \text{length} \times \text{width}$  or  $A = lw$ ) to answer questions about quantities and their relationships.
- 1.5 Understand that an equation such as  $y = 3x + 5$  is a prescription for determining a second number when a first number is given.

##### **2.0 Manipulate Equations**

- 2.1 Know equals added to equals are equal.
- 2.2 Know equals multiplied by equals are equal.

#### **Measurement and Geometry**

##### **1.0 Area and Perimeter**

- 1.1 Measure the area of rectangular shapes by using appropriate units, such as square centimeter ( $\text{cm}^2$ ), square meter ( $\text{m}^2$ ), square inch ( $\text{in}^2$ ), square yard ( $\text{yd}^2$ ), or square mile ( $\text{mi}^2$ ).
- 1.2 Recognize that rectangles that have the same area can have different perimeters.
- 1.3 Understand that rectangles that have the same perimeter can have different areas.
- 1.4 Understand and use formulas to solve problems involving perimeters and areas of rectangles and squares. Use those formulas to find the areas of more complex figures by dividing the figures into basic shapes.

## **State Standards for History–Social Science**

### **California: A Changing State**

#### **4.1 Students demonstrate an understanding of the physical and human geographic features that define places and regions in California.**

- 1. Explain and use the coordinate grid system of latitude and longitude to determine the absolute locations of places in California and on Earth.
- 2. Distinguish between the North and South Poles; the equator and the prime meridian; the tropics; and the hemispheres, using coordinates to plot locations.
- 3. Identify the state capital and describe the various regions of California, including how their characteristics and physical environments (e.g., water, landforms, vegetation, climate) affect human activity.
- 4. Identify the locations of the Pacific Ocean, rivers, valleys, and mountain passes and explain their effects on the growth of towns.
- 5. Use maps, charts, and pictures to describe how communities in California vary in land use, vegetation, wildlife, climate, population density, architecture, services, and transportation.

#### **4.2 Students describe the social, political, cultural, and economic life and interactions among people of California from the pre-Columbian societies to the Spanish mission and Mexican rancho periods.**

- 1. Discuss the major nations of California Indians, including their geographic distribution, economic activities, legends, and religious beliefs; and describe how they depended on, adapted to, and modified the physical environment by cultivation of land and use of sea resources.
- 2. Identify the early land and sea routes to, and European settlements in, California with a focus on the exploration of the North Pacific (e.g., by Captain James Cook, Vitus Bering, Juan Cabrillo), noting especially the importance of mountains, deserts, ocean currents, and wind patterns.

- Encourage your child to keep track of the weather (e.g., high and low temperatures, wind speed) for one month and make a chart summarizing the information. Then explain the chart.
- When working on a science project, encourage your child collect and record data.
- Encourage your child read periodicals and discuss the graphs/charts.
- Invite your child to play card or dice games. Discuss the probability of winning.

### **Mathematical Reasoning**

- Play games, such as “Connect Four” and “Battleship,” with your child.
- Work together with your child to solve puzzles (e.g., riddles, crossword).
- Make a double batch of cookies with your child, solving the problem, How do you double a recipe?

### **2.0 Coordinate Grids**

- 2.1 Draw the points corresponding to linear relationships on graph paper (e.g., draw 10 points on the graph of the equation  $y = 3x$  and connect them by using a straight line).
- 2.2 Understand that the length of a horizontal line segment equals the difference of the x-coordinates.
- 2.3 Understand that the length of a vertical line segment equals the difference of the y-coordinates.

### **3.0 Geometry**

- 3.1 Identify lines that are parallel and perpendicular.
- 3.2 Identify the radius and diameter of a circle.
- 3.3 Identify congruent figures.
- 3.4 Identify figures that have bilateral and rotational symmetry.
- 3.5 Know the definitions of a right angle, an acute angle, and an obtuse angle. Understand that  $90^\circ$ ,  $180^\circ$ ,  $270^\circ$ , and  $360^\circ$  are associated, respectively, with  $1/4$ ,  $1/2$ ,  $3/4$ , and full turns.
- 3.6 Visualize, describe, and make models of geometric solids (e.g., prisms, pyramids) in terms of the number and shape of faces, edges, and vertices; interpret two-dimensional representations of three-dimensional objects; and draw patterns (of faces) for a solid that, when cut and folded, will make a model of the solid.
- 3.7 Know the definitions of different triangles (e.g., equilateral, isosceles, scalene) and identify their attributes.
- 3.8 Know the definition of different quadrilaterals (e.g., rhombus, square, rectangle, parallelogram, trapezoid).

### **Statistics, Data Analysis, and Probability**

#### **1.0 Data Analysis**

- 1.1 Formulate survey questions; systematically collecting and representing data on a number line; and coordinating graphs, tables, and charts.
- 1.2 Identify the mode(s) for sets of categorical data and the mode(s), median, and any apparent outliers for numerical data sets.
- 1.3 Interpret one- and two-variable data graphs to answer questions about a situation.

## **2.0 Making Predictions**

- 2.1 Represent all possible outcomes for a simple probability situation in an organized way (e.g., tables, grids, tree diagrams).
- 2.2 Express outcomes of experimental probability situations verbally and numerically (e.g., 3 out of 4;  $3/4$ ).

## **Mathematical Reasoning**

### **1.0 Make Decisions about a Problem**

- 1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.
- 1.2 Determine when and how to break a problem into simpler parts.

### **2.0 Solve Problems and Justify Reasoning**

- 2.1 Use estimation to verify the reasonableness of calculated results.
- 2.2 Apply strategies and results from simpler problems to more complex problems.
- 2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.
- 2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; supporting solutions with evidence in both verbal and symbolic work.
- 2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.
- 2.6 Make precise calculations and check the validity of the results from the context of the problem.

### **3.0 Make Generalizations**

- 3.1 Evaluate the reasonableness of the solution in the context of the original situation.
- 3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.
- 3.3 Develop generalizations of the results obtained and applying them in other circumstances.

## **Home Activities for Mathematics**

### **Number Sense**

- Invite your child to play number games such as dice games, Domino's and Racko.
- When shopping, give your child real and practical experiences such as weighing fruit, comparing prices, calculating discounts, figuring change, estimating the amount spent, etc.
- Encourage your child to make a budget for his/her allowance. Next have your child keep track of their spending for a month and compare their actual spending to their budget.
- Model reading aloud numbers over six digits. Encourage your child to read numbers that are seven digits or higher.

### **Algebra and Functions**

- Provide your child with sequential activities such as building a model, planning a trip or reading a recipe.
- Play the game "Fill in the Blank" with your child, saying; "4 times what number is 36" or "24 divided by what number is 8?"

### **Measurement and Geometry**

- Work with your child in planning home improvement projects such as measuring for a book case, finding the area of a room before purchasing floor covering, measuring for new curtains, etc.
- Encourage your child to create a growth chart showing his/her height and weight for one year.
- Encourage your child to find parallel (e.g., railroad tracks, snow skis) and perpendicular (e.g., wall and floor, table top and table legs) objects.
- Help your child to locate and discuss geometric shapes in the world (e.g., buildings, signs).

### **Statistics, Data Analysis, and Probability**

- Encourage your child to graph and chart personal accomplishments (e.g., 4H, scouting, sports).