

**SPRING BRANCH INDEPENDENT SCHOOL DISTRICT**  
*Dedicated to providing every student a quality education in a safe environment.*



# **Your Child from PK-12: Academic Competencies**



## **A Parent Handbook**





**Duncan F. Klussmann, Ed.D.**  
*Superintendent of Schools*

Fall 2008

Dear Spring Branch Parents:

Spring Branch Independent School District is dedicated to providing every student a quality education in a safe environment. The district goals ensure increased and sustained academic achievement for each student and professional development for staff to support student achievement. An outstanding group of teachers and administrators created a document entitled *The Portrait of a Spring Branch Graduate*. This document defines the qualities our Spring Branch students will possess upon their graduation and is included in this booklet.

We are committed to a comprehensive and challenging curriculum promised to every student in our Mission Statement and the Portrait. Curriculum leaders and teacher representatives from each campus have collaboratively created a set of academic standards for language arts, mathematics, science, and social studies for prekindergarten through grade 12. The competencies described in this booklet outline your child's educational program. They are based upon the state standards, the Texas Essential Knowledge and Skills, and ensure that students develop the necessary concepts to move successfully from grade level to grade level. In addition to the competencies Spring Branch educators offer suggestions about important ways you can assist and support the educational process at home.

We look forward to our continuing partnership with you, as we equip all Spring Branch students with an outstanding education.

Sincerely,

A handwritten signature in black ink that reads 'Duncan Klussmann'.

Duncan F. Klussmann, Ed.D.  
Superintendent of Schools

**BOARD OF TRUSTEES**

Mike Falick   Susan Kellner   Wayne F. Schaper, Sr.   David Converse, Ph.D.   Theresa Kosmoski   Mary Grace Landrum   Susan Mathews

955 Campbell Road   ■   Houston, Texas 77024-9432   ■   Phone: (713) 464-1511   ■   Fax: (713) 365-4071   ■   [www.springbranchisd.com](http://www.springbranchisd.com)

# Table of Contents

Portrait of a Graduate .....	1
Belief Statements.....	3
Student Profile for Technology-Literate Students .....	4
Grades PK-2 .....	4
Grades 3-5.....	4
Grades 6-8.....	5
Grades 9-12.....	5
Competencies and Supporting Your Student At Home.....	6
Prekindergarten	
Language Arts.....	6
Mathematics.....	6
Science .....	7
Social Studies .....	8
Kindergarten	
Language Arts.....	8
Mathematics.....	9
Science .....	10
Social Studies .....	11
First Grade	
Language Arts.....	12
Mathematics.....	13
Science .....	14
Social Studies .....	15
Second Grade	
Language Arts.....	16
Mathematics.....	17
Science .....	18
Social Studies .....	19
Third Grade	
Language Arts.....	21
Mathematics.....	22
Science .....	23
Social Studies .....	24
Fourth Grade	
Language Arts.....	25
Mathematics.....	26
Science .....	28
Social Studies .....	29

Fifth Grade	
Language Arts .....	30
Mathematics .....	31
Science .....	32
Social Studies .....	34
Sixth Grade	
Language Arts .....	35
Mathematics .....	36
Science .....	37
Social Studies .....	38
Seventh Grade	
Language Arts .....	39
Mathematics .....	40
Science .....	41
Social Studies .....	42
Eighth Grade	
Language Arts .....	43
Mathematics .....	45
Science .....	46
Social Studies .....	47
English I .....	48
Algebra I .....	49
Integrated Physics and Chemistry .....	50
World Geography Studies .....	51
English II .....	53
Geometry .....	54
Biology .....	55
World History Studies .....	57
English III .....	58
Algebra II .....	60
Chemistry .....	61
United States History Since Reconstruction .....	62
English IV .....	64
Physics I .....	65
Government .....	67
Economics .....	68
Psychology .....	69
Sociology .....	70
Acknowledgements .....	72

# Portrait of a Graduate

## We Believe...

We believe there is a set of skills, knowledge, and attitudes essential for a productive and purposeful life so that all learners can achieve.

## Portrait of a Graduate

The Portrait of a Graduate presents a set of high expectations that reflects Spring Branch Independent School District's commitment to excellence, prekindergarten through graduation. It serves as a guide for creating a set of competencies in each curricular area and maintaining a coherent and dynamic curriculum.

## Personal Qualities, Work Habits, and Attitudes

*The Spring Branch graduate...*

- recognizes that the learning process is a lifelong journey.
- exhibits honesty, integrity, and trustworthiness.
- accepts responsibility for his/her own actions.
- utilizes organizational skills.
- perseveres and is resilient in the face of disappointment and adversity.
- possesses self-confidence and a sense of humor.

## Basics for the 21<sup>st</sup> Century

*The Spring Branch graduate...*

- acquires a sound foundation in the core academic areas.
- exhibits high levels of performance and achievement on a variety of assessments.
- participates in and appreciates the fine arts.
- furthers his/her development by participating in extra-curricular activities.
- explores knowledge of career options and pathways to their attainment.
- exhibits a healthy lifestyle.
- nurtures personal aspirations.

## **Complex and Creative Thinker and Communicator**

*The Spring Branch graduate...*

- thinks critically and analytically using effective learning techniques to acquire and apply new knowledge.
- uses logical reasoning to draw conclusions.
- uses imagination freely to generate new ideas and to anticipate and plan for the future.
- uses strategies to find and solve problems and make appropriate decisions.
- communicates effectively to reach a variety of audiences.

## **Interpersonal and Collaborative Skills**

*The Spring Branch graduate...*

- contributes to group efforts with ideas, suggestions, and hard work.
- demonstrates effective leadership skills by communicating ideas and motivating others.
- collaborates effectively with others from diverse backgrounds.
- recognizes, appreciates, and respects others' points of view.
- works toward consensus and negotiates appropriate solutions.
- utilizes conflict resolution strategies.

## **Community Contributor**

*The Spring Branch graduate...*

- embraces a sense of belonging and nurtures it in others.
- recognizes and responds to societal needs.
- values and participates in the democratic process.
- participates in efforts to preserve the environments for future generations.
- understands and appreciates diversity.

## **Technology**

*The Spring Branch graduate...*

- uses technology in a knowledgeable and ethical manner.
- utilizes information systems in personal, scholastic, vocational, and professional contexts.
- adapts to the evolution of software and hardware.
- selects appropriate tools and procedures to accomplish tasks.
- integrates technology in order to acquire knowledge and advance learning.

## **Language Arts**

*We believe...*

...a successful language arts student has ample opportunities to be actively involved in authentic listening, speaking, reading, writing, and thinking tasks for a variety of purposes. The text-rich, supportive environment will facilitate both independence and collaborative efforts within and beyond the language arts classroom.

## **Mathematics**

*We believe...*

...mathematics prepares students to use patterns and relationships to discover the connections between mathematical concepts and their application to real-world models. Using effective and efficient strategies, students make decisions, select tools, solve problems, and communicate their understanding of mathematical concepts.

## **Science**

*We believe...*

...science involves students in inquiry-based, hands-on activities, using a variety of resources, in order to build a meaningful relationship between science and everyday life. Students understand science through a balance of content, process skills, problem-solving, and practical application and are encouraged to maintain their natural curiosity and love of learning.

## **Social Studies**

*We believe...*

...social studies involves students in a systematic study of history, geography, economics, society, and government. Social studies empowers students to become critical thinkers, effective communicators, and participating members of local, state, national, and global communities.

# Student Profile for Technology-Literate Students

## Grades PK-2

- Use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g., monitor, printer) to successfully operate computers, VCRs, audiotapes, and other technologies.
- Use a variety of media and technology resources for directed and independent learning activities.
- Communicate about technology using developmentally-appropriate and accurate terminology.
- Use developmentally-appropriate multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias) to support learning.
- Work cooperatively and collaboratively with peers, family members, and others when using technology in the classroom.
- Demonstrate positive social and ethical behaviors when using technology.
- Practice responsible use of technology systems and software.
- Create developmentally-appropriate multimedia products with support from teachers, family members, or student partners.
- Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories.
- Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners.

## Grades 3-5

- Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively.
- Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide.
- Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use.
- Use general purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum.
- Use technology tools (e.g., multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.
- Use telecommunications efficiently to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests.
- Use telecommunications and online resources (e.g., e-mail, online discussions, Web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products for audiences inside and outside the classroom.
- Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities.
- Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.
- Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources.

## Grades 6-8

- Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use.
- Demonstrate knowledge of current changes in information technologies and the effect those changes have on the workplace and society.
- Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.
- Use content-specific tools, software, and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research.
- Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.
- Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.
- Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom.
- Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.
- Demonstrate an understanding of concepts underlying hardware, software, and connectivity, and of practical applications to learning and problem solving.
- Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems.

## Grades 9-12

- Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, lifelong learning, and workplace needs.
- Make informed choices among technology systems, resources, and services.
- Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole.
- Demonstrate and advocate for legal and ethical behaviors among peers, family, and community regarding the use of technology and information.
- Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence).
- Evaluate technology-based options, including distance and distributed education, for lifelong learning.
- Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications, and productivity.
- Select and apply technology tools for research, information analysis, problem-solving, and decision-making in content learning.
- Investigate and apply expert systems, intelligent agents, and simulations in real-world situations.
- Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.

# PREKINDERGARTEN

## Language Arts

Prekindergarten students have many opportunities to interact with responsive adults and other students in language and print-rich experiences. Through these experiences they develop language, listening comprehension, phonological awareness, and knowledge about letters. They begin to understand how print works and to appreciate stories, rhymes, chants, and other forms of writing. All of these experiences in language and literacy are designed so that children want to become readers.

### During prekindergarten, students will...

- Comprehend what they hear in conversations and stories with increasing accuracy.
- Pronounce speech sounds with increasing ease and accuracy.
- Experience rapid growth in the use and understanding of words.
- Become aware of the sounds of words and begin to identify those that rhyme.
- Begin to notice words that begin with the same sound.
- Learn that print carries meaning; that English is written from left to right; and that illustrations carry meaning, but cannot be read.
- Begin to follow print as it is read aloud.
- Identify 10 or more printed alphabet letters.
- Begin to make some letter/sound matches.
- Begin to identify some high-frequency words.
- Listen and respond to a variety of books and engage in “pretend” reading.
- Become familiar with story elements (characters, plot, and resolution) and begin to predict what will happen next or to retell the story.
- Imitate the special language in storybooks and use it in retellings and dramatic play, such as “*Once upon a time...*”
- Attempt to write messages, lists, stories, etc.
- Use known letters to write their own names.

### Supporting Your Student At Home—Prekindergarten Language Arts

You support the educational process by providing your student opportunities to...

- Have conversations with your child.
- Talk together about experiences, explaining the unfamiliar and providing new vocabulary.
- Read books and telling stories to your child and encouraging your child to retell the story or make up stories of his/her own.
- Point out meaningful letters (in the child’s name, mom, dad, etc.).
- Provide opportunities for your child to play with letters (magnetic letters on the refrigerator, alphabet puzzles, cutting letters out of magazines, etc.).
- Point out meaningful words in the environment (stop signs, your child’s name, the names of family members, names of favorite cereals, etc.).
- Provide pencils, markers, crayons, and scissors and encouraging their use.
- Let your child see you write messages, grocery lists, letters, etc.
- Write words or messages that your child tells you to write such as labels for pictures the child has drawn, a thank you note to Grandma, etc.

## Mathematics

Prekindergarten students begin to develop number concepts through exploration with many different types of manipulative materials. From exploration children begin to sort and classify objects by noticing how they are alike and different. They have many opportunities to count and develop their understanding of whole numbers. The foundation for algebraic thinking is laid in prekindergarten as children learn to extend and create patterns and to identify them in their environment. They use direct comparison to measure objects and learn the vocabulary to describe size relationships. They learn to name and recognize the properties of geometric shapes. They also learn to organize information into graphs and to communicate about the findings.

### **During prekindergarten, students will...**

- Count by ones to 10 or higher.
- Use objects to show quantities through 5 or higher.
- Begin to use language to compare numbers (*same, more than, less than, etc.*).
- Begin to identify first and last in a series.
- Recognize and describe the concept of zero.
- Imitate, recognize, and reproduce simple patterns (sounds, physical movements, objects).
- Begin to recognize, describe, and name shapes.
- Begin to use words that indicate where things are located (*above, below, beside, etc.*).
- Begin to make size comparisons between objects (*taller than, smaller than, etc.*).
- Order objects by size.
- Begin to use language associated with time intervals (*in the morning, after snack, etc.*).
- Describe similarities and differences between objects and match objects that are alike.
- Sort objects into groups and explain how the grouping was done.
- Participate in creating and using graphs constructed with real objects and pictures.

### **Supporting Your Student At Home—Prekindergarten Mathematics**

You support the educational process by providing your student opportunities to...

- Provide materials for your child to count, sort, and group (blocks, buttons, beads).
- Count with your child.
- Give your child opportunities to match objects one-to-one (one fork next to each plate).
- Ask your child to find a particular number of objects (four spoons for the table).
- Help your child learn to put puzzles together (make puzzles out of cereal boxes).
- Read number books to your child.
- Encourage your child to use vocabulary related to size or amount.
- Help your child find shapes in the environment.
- Let your child help you measure and cook.

## **Science**

Prekindergarten students use the processes of science to develop an understanding about their world. They use their senses to gather information, make tentative statements about events and relationships, and begin to test observations, draw conclusions, and form generalizations. Prekindergarten students learn by participating in, thinking about, and discussing simple investigations. They develop concepts about the natural and constructed environment, observe cycles and structures, and describe simple patterns that help predict what will happen next. Prekindergarten children develop an awareness that investigations help them learn about the natural world, that certain questions can be answered by investigations, and that those answers can change as new observations are made.

### **During prekindergarten, students will...**

- Demonstrate safe practices and appropriate use of materials.
- Ask questions and use one or more senses to observe and learn about objects, organisms, and events.
- Begin to perform simple investigations.
- Gather information using simple tools and measuring devices.
- Compare and sort objects and organisms into groups and describe how they were organized.
- Describe observations and offer explanations, using their own words.
- Use patterns to predict what will happen next.
- Solve simple design problems.
- Observe and describe properties of rocks, soil, and water.
- Describe properties of objects and characteristics of living things.
- Begin to observe changes in size, color, position, weather, and sound.
- Group organisms and objects as living or nonliving and recognize that living things have similar needs for water, food, and air.
- Begin to identify what things are made of.
- Begin to use scientific words and phrases to describe objects, events and living things.

## Supporting Your Student At Home—Prekindergarten Science

You support the educational process by providing your student opportunities to...

- Encourage your child to notice objects and living things in the natural environment.
- Encourage your child to collect rocks, shells, leaves, etc. and to sort them.
- Talk with your child about changes in the environment.
- Let your child help care for family pets and discussing their needs and care.
- Cook with your child and discussing how substances change.

## Social Studies

Prekindergarten students learn the skills of communicating, sharing, cooperating, and participating with others, which helps them to feel a sense of community and connection with other people. They learn to depend on events and routines that occur in a regular and predictable order, and they begin to understand past events relate to present and future events. Prekindergarten children learn to recognize common features in their immediate environment and begin to represent them symbolically. In addition, they learn about the world of work and explore the roles and relationships of consumers and producers. Prekindergarten children learn that their community benefits from many different people working in many different ways.

### During prekindergarten, students will...

- Learn to share, take turns, and cooperate with others in a group activity.
- Identify and follow classroom rules.
- Participate in classroom jobs and contribute to the classroom community.
- Identify similarities among people, including other cultures.
- Begin to categorize time intervals using words (*today, tomorrow, next time*).
- Recognize changes in the environment.
- Begin to understand cause and effect relationships.
- Identify common features in the home and school environment and represent them through drawings or constructions.
- Begin to use words to indicate relative location (*front, back, near, far*).
- Understand basic human needs for food, clothing, and shelter.
- Understand the roles, responsibilities, and services provided by community workers.
- Become aware of what it means to be a consumer.

## Supporting Your Student At Home—Prekindergarten Social Studies

You support the educational process by providing your student opportunities to...

- Encourage your children to play cooperatively with others, taking turns and sharing toys.
- Give your child age-appropriate tasks to contribute to the sense of family.
- Visit and discuss places in the community (library, grocery store, department store, park, playground, etc.).
- Point out the work done by people in the community.

# KINDERGARTEN

## Language Arts

A kindergarten student engages in meaningful and organized activities to increase oral language, foster listening comprehension, develop phonological awareness, and most importantly, nurture a love of reading. When visiting your child's classroom, look for many manipulative activities. These not only help build concepts but also develop and refine gross and fine motor skills. Each child participates in a variety of instructional settings such as whole group investigations, small group collaboration, and independent play to meet individual needs at the appropriate level. Through these meaningful experiences, your child builds a solid foundation for early literacy.

### **During kindergarten, students will...**

- Demonstrate an understanding of how print works. For example, print represents speech, conveys meaning, and moves from left to right and top to bottom.
- Make rhyming words, clap out syllables, and identify beginning and ending sounds to develop phonological awareness.
- Apply phonics knowledge by matching letters to sounds to begin to read.
- Develop vocabulary through read-aloud and shared reading experiences.
- Demonstrate comprehension through retelling, acting out, and/or illustrating events in a story.
- Use prior knowledge to gather important information and ask relevant questions related to a variety of texts.
- Interact with a variety of texts to recognize features of informational books, poems, and stories from a variety of cultures.
- Compare own experiences with language, customs, and cultures of literary characters.
- Write names, the alphabet, and captions for illustrations.
- Dictate messages using knowledge of letters and sounds in a collaborative setting.
- Use phonological knowledge to explore letter-sound relationships in writing messages.
- Generate ideas for assigned and self-selected writing topics.
- Participate in discussion to build graphic organizers for shared and independent writing.
- Use available technology to compose text.
- Write from left to right and top to bottom.
- Use correct pencil grip, paper position, and beginning strokes to develop printing skills.
- Interpret various media such as illustrations and charts.
- Identify messages found in print and film.
- Produce simple multimedia products.
- Listen critically and follow one-step and two-step instructions.
- Make announcements, give directions, and make introductions.
- Ask and answer relevant questions in small and large group discussions.
- Dramatize experiences, poems, plays, and stories.
- Gain control of oral grammar by speaking in complete sentences.

### **Supporting Your Student At Home—Kindergarten Language Arts**

You support the educational process by providing your student opportunities to...

- Listen to and discuss books read aloud daily.
- Engage in conversations and answer questions that require more than a yes or no response.
- Sing songs and recite rhymes and poems.
- Talk about print in the environment such as store signs, street signs, and packaging labels.
- Practice using pencils, crayons, and scissors.
- Write names and simple messages together. For example, label objects with magnetic letters and write grocery lists.
- Visit the library regularly.

## **Mathematics**

A kindergarten student develops whole number concepts using concrete models. Basic foundations of math concepts are built through exploration of patterns, sorting, counting, making math connections, and problem solving. Problem solving skills are demonstrated through the use of informal language to communicate early understanding of connections within and outside of mathematics. Technology and math tools are an essential part of the math program.

### **During kindergarten, students will...**

- Use one to one correspondence to count objects through 20 (including *more, less, same as*).
- Use objects to show quantities through 20.
- Describe sizes of sets of objects through 20.
- Use patterns to count to 100 by ones.
- Use objects to demonstrate addition and subtraction problems.
- Describe the position of objects, using words such as *first, second, before, after, and between*.

- Display an object and describe its relation to another by using informal language such as *over*, *under*, *above*, and *below*, etc.
- Identify, extend, and create patterns with objects and real life situations.
- Separate a whole into two equal parts and be able to explain half of a whole.
- Compare and order two or more objects according to length, area, capacity, and weight/mass using nonstandard measurement tools (longer/shorter than, covers less/more, holds more/less, heavier than/less than).
- Use time vocabulary to compare and sequence events (up to three).
- Use temperature vocabulary to compare *hotter than* and *colder than*.
- Read a calendar using days, weeks, and months.
- Identify, describe, compare, and sort a variety including two- and three-dimensional geometric figures.
- Construct graphs using real objects and pictures in order to answer questions.
- Use the SBISD problem-solving model with guidance and apply the strategies of ACTING OUT, DRAWING A PICTURE, LOOKING FOR A PATTERN, and GUESS AND CHECK.

### **Supporting Your Student At Home—Kindergarten Mathematics**

You support the educational process by providing your student opportunities to...

- Practice counting objects to 20.
- Find numbers in everyday life, on signs, newspapers, toys, etc.
- Read number books together.
- Look for and play with patterns like petals on a flower, rhymes, nature, and music.
- Look at objects (inside and/or outside) and describe position using words like *next to*, *before*, *after*, ... .
- Read and use a calendar with your child at home.
- Talk about time using now, later, yesterday, today, and tomorrow.
- Identify circles, triangles, rectangles, and squares in the environment (a window is square, a tire is a circle).

## **Science**

A kindergarten student uses simple investigations to develop the skills of asking questions, gathering information, communicating findings, and making informed decisions about the natural world. Using the five senses and common tools, the student makes observations and collects information. The student learns about the natural world by identifying and investigating rocks, water, soil, living organisms, and objects. The student is introduced to the concept of a system as a collection of cycles, structures, and processes that interact. Computers and information technology tools are used for support.

### **During kindergarten, students will...**

- Use safe practices during classroom and field investigations.
- Use and conserve resources and materials.
- Ask questions about organisms, objects, and events.
- Plan and conduct simple investigations.
- Use senses to gather information and make observations.
- Gather information using simple tools such as hand lenses, balances, cups, bowls, and computers.
- Construct reasonable explanations and make decisions using information gathered.
- Communicate findings about simple investigations.
- Discuss and justify decisions.
- Explain a problem and propose solutions.
- Identify organisms and their parts.
- Explore basic needs of living organisms and discuss their interdependence.
- Record observations about parts of plants (leaves, roots, stems, and flowers) and animals (wings, feet, heads, and tails).
- Identify and group organisms as living and non-living.
- Observe and record stages of life cycles of living things.
- Identify ways that the Earth provides resources for life.
- Observe and describe properties of rocks, soil, and water and give examples of ways they are useful.
- Learn how to use and conserve resources and materials.
- Observe and record weather changes from day to day and over seasons.

- Observe, identify, and predict patterns including seasons, growth, and day and night.
- Identify that heat causes change.
- Learn how systems have basic properties that can be described in terms of parts such as those in toys, vehicles, and construction sets.
- Identify and manipulate parts found in systems that, when put together, can do things they cannot do by themselves (cars without wheels, plants without roots).
- Observe, describe, and record changes in size, mass, color, position, quantity, time, temperature, sound, and movement.

## Supporting Your Student At Home—Kindergarten Science

You support the educational process by providing your student opportunities to...

- Practice pouring and measuring liquids into different size containers.
- Ask your child to describe the natural world (*What is the butterfly doing? What do the clouds look like?*) and draw it.
- Listen to the weather report daily and talk about it.
- Collect and sort shells, leaves, stones, and seeds.
- Look for and play with patterns such as petals on a flower and leaves on trees.
- Plan and cook simple foods together. Discuss changes observed such as cake mix to solid cake and bread dough to bread.
- Conduct simple science experiments that show change.
- Read and discuss books about water, rocks, soil, plants, and living and non-living organisms.
- Build a collection of rocks, insects, and leaves.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, Robert A. Vines Science Center, and planetariums.

## Social Studies

A kindergarten student focuses on the foundations of social studies. Concepts are built through examination, discussion, and exploration. The study of our state and national heritage begins with exploring celebrations of patriotic holidays and the contributions of historic people. A student compares family customs and traditions to develop cultural appreciation. The student learns about the geographic concept of location, as well as, the physical and human characteristics of places. Basic human needs of clothing, food, and shelter, and the ways people meet these needs are introduced. Technology and social studies skills are an essential part of the social studies curriculum.

### During kindergarten, students will...

- Learn about patriotic holidays such as Presidents' Day, Independence Day, and Memorial Day.
- Identify contributions of people such as George Washington and Stephen F. Austin.
- Place events in chronological order using words such as *before*, *after*, *next*, *first*, and *last*.
- Locate and describe the relative location of places at school using words such as *over*, *under*, *near*, *far*, *left*, and *right*.
- Identify physical characteristics of places (landforms, bodies of water, natural resources, and weather) and human characteristics (types of houses and ways of earning a living).
- Identify basic human needs (food, clothing, and shelter) and explain how they can be met.
- Identify jobs and why people have them.
- Identify purposes for having rules and ways they provide order, security, and safety.
- Identify authority figures in the home, school, and community and how they make and enforce rules.
- Identify the U.S. and Texas flags.
- Recite the Pledge of Allegiance.
- Explain voting as a method of group decision making.
- Identify similarities and differences among people (physical attributes).
- Identify family and community customs. Explain the importance of these customs.
- Identify examples of technology from home and school.
- Describe how people use technology to meet their needs.
- Obtain information from a variety of oral and visual sources.
- Sequence and categorize information.

- Identify main ideas.
- Express ideas orally and visually.
- Use problem-solving and decision-making processes.

## **Supporting Your Student At Home—Kindergarten Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more resources that support social studies.
- Use family photographs to point out similarities and differences among people.
- Identify significance of family celebrations, names, and traditions.
- Vote for simple family decisions, such as choice of restaurant, television program, dessert, or place for an outing.
- Discuss and identify the purpose of rules at home.

# **FIRST GRADE**

## **Language Arts**

A first grade student continues to develop oral language and communication skills and grows in becoming a more independent reader and writer. Each child participates in a variety of instructional settings such as guided reading and writing, as well as readers' and writers' workshop, to meet individual needs at the appropriate level. Daily reading of a variety of texts and writing for a variety of audiences increase your child's fluency and comprehension in the literacy process.

### **During first grade, students will...**

- Increase understanding of how print works: understand words are a sequence of letters, written words are separated by spaces, and punctuation/capitalization enhance meaning.
- Identify, separate, and blend sounds to read new words.
- Use multiple word identification strategies to read and comprehend simple texts. These include illustrations, phonics, re-reading, and checking for understanding of meaning.
- Develop vocabulary through purposeful and varied reading experiences such as read-aloud, guided reading, shared reading, and discussion.
- Demonstrate comprehension using a variety of texts. Students will use comprehension strategies to retell stories, predict outcomes, and recall details.
- Gather important information and ask relevant questions in independent and instructional reading experiences.
- Read with fluency (40-60 words per minute) and comprehend at a first grade level.
- Interact with a variety of texts to recognize features of informational books, poems, and stories from varied cultures.
- Connect ideas in texts to self, to other texts, and to the world.
- Use alphabetical order to locate information for research.
- Recognize and use parts of a book to gather information and gain meaning.
- Dictate and/or write news, stories, and questions in collaborative settings.
- Write in a variety of forms for different purposes such as lists, letters, poems, and journal reflections.
- Write narrative compositions.
- Generate ideas for assigned and self-selected writing topics.
- Participate in collaborative and/or independent planning to build graphic organizers for shared and independent writing.
- Use criteria generated by teacher and class to develop and evaluate selected drafts.
- Conference with peers or teacher to revise selected drafts.
- Use available technology to compose and/or publish selected works.
- Write messages from left to right and top to bottom, and use appropriate spacing between letters and words.
- Increase control of penmanship.

- Use basic capitalization for names and first letter of a sentence.
- Use basic punctuation including periods, question marks, and exclamation marks.
- Spell and write familiar grade-level words accurately and explore resources to find correct spelling.
- Use nouns and verbs to create complete and coherent sentences.
- Interpret various media such as illustrations and charts.
- Identify information found in print and film.
- Produce simple multimedia products.
- Listen critically and follow two- and three-step instructions.
- Announce, give directions, and make introductions appropriately and courteously.
- Ask and answer relevant questions in small and large group discussions.
- Dramatize experiences, poems, plays, and stories.
- Gain control of oral grammar by speaking in complete sentences.
- Speak with an increasingly complex vocabulary to tell about ideas, feelings, and experiences.

## Supporting Your Student At Home—First Grade Language Arts

You support the educational process by providing your student opportunities to...

- Listen to and discuss books read aloud daily.
- Discuss books read together and independently.
- Speak in complete sentences about daily events.
- Write or draw in a personal journal.
- Compose stories, letters, and lists.
- Review sight words and spelling words.
- Visit the library regularly.

## Mathematics

A first grade student develops an understanding of addition and subtraction number concepts using concrete objects. Basic foundations of math concepts are built by using patterns, sorting, counting, making math connections, and problem solving. A student creates and uses representations to organize, record, and communicate emerging math ideas. Technology and math tools are integrated into the math program.

### During first grade, students will...

- Read and write numbers to 99.
- Create sets of tens and ones using concrete objects.
- Compare and order numbers to 99 (less, greater than, equal to).
- Identify odd and even numbers to 99.
- Use patterns to skip count by twos, fives, and tens to 99.
- Identify the relationships between addition and subtraction facts (fact families for sums up to 18; example:  $7 + 8 = 15$ ,  $8 + 7 = 15$ ,  $15 - 7 = 8$ ,  $15 - 8 = 7$ ).
- Use objects and numbers to model and write addition and subtraction sentences up to  $9 + 9 = 18$  and  $18 - 9 = 9$ .
- Memorize all addition and subtraction facts including +1, +2, +0. (SBISD expectation)
- Recognize and know the value of a penny, nickel, dime, and quarter.
- Separate a whole into two, three, or four equal parts.
- Describe parts of a set (such as *three out of eight crayons are red*).
- Use nonstandard units to estimate and measure length.
- Compare and order objects according to length (longest to shortest), area (covers most to covers least), capacity (holds most to holds least), weight/mass (heaviest to lightest), and temperature (hottest to coldest).
- Tell time to the hour and half hour using analog and digital clocks.
- Order three or more events by length of time.
- Identify, describe, compare, and sort two- and three-dimensional geometric figures according to attributes.
- Combine shapes to create a new shape (example: use two triangles to make a square).
- Identify events as certain or impossible.
- Collect and sort data to construct and draw conclusions about real, picture, and bar graphs (horizontal and vertical).

- Use the SBISD problem-solving model with guidance and apply the strategies of ACTING OUT, DRAWING A PICTURE, LOOKING FOR A PATTERN, and GUESS AND CHECK.

## Supporting Your Student At Home—First Grade Mathematics

You support the educational process by providing your student opportunities to...

- Practice skip counting by twos, fives, and tens.
- Practice addition and subtraction facts to 18 using flash cards, board games, and strategies such as doubles, doubles plus one.
- Look for patterns in the environment (like petals on a flower, rhymes, nature, or music) and draw about them.
- Practice naming and telling the value of coins.
- Practice telling time to hour and half hour.
- Discuss if events are certain or impossible.
- Practice measuring at home using nonstandard units such as blocks, paper clips, Popsicle™ sticks.
- Identify basic shapes and three-dimensional shapes such as sphere, cylinder, and cone in the environment (*a cake is a cylinder, a ball is a sphere*).

## Science

A first grade student continues using simple investigations to develop the skills of asking questions and gathering information. The student also makes measurements, constructs explanations, and draws conclusions using non-standard units and tools to extend the five senses. The student identifies and investigates components of the natural world including rocks, soil, natural resources, heat, needs of living things, interdependence, and living versus non-living things. A first grade student continues to explore the concept of systems. Computers and information technology tools are used for support.

### During first grade, students will...

- Use safe practices during classroom and field investigations.
- Use and conserve resources and materials.
- Ask questions about organisms, objects, and events.
- Plan and conduct simple descriptive investigations.
- Use senses to gather information and make observations.
- Gather information using simple tools such as hand lenses, clocks, computers, thermometers, and balances.
- Construct reasonable explanations and draw conclusions.
- Communicate explanations about simple investigations.
- Make decisions using information gathered.
- Discuss and justify decisions.
- Explain a problem, identify a task, and propose solutions related to the problem.
- Record and compare collected information.
- Measure organisms, objects, and parts of objects using non-standard units such as paper clips, hands, and pencils.
- Identify organisms and their parts.
- Explore basic needs of living organisms and discuss their interdependence.
- Record observations about parts of plants and animals.
- Identify and group organisms as living and non-living.
- Observe and record stages of life cycles of living things.
- Observe and record weather changes from day to day and over seasons.
- Identify how rocks, soil, and water are used and how they can be recycled.
- Describe natural sources of water including streams, lakes, and oceans.
- Observe and describe differences in rocks and soil samples.
- Identify and test ways that heat causes change such as when ice melts.
- Manipulate objects such as toys, vehicles, or construction sets so that the parts are separated from the whole, which may result in the part or the whole not working.
- Identify parts found in systems that, when put together, can do things they cannot do by themselves.
- Observe, measure, and record changes in size, mass, color, position, quantity, temperature, sound, and movement.

## Supporting Your Student At Home—First Grade Science

You support the educational process by providing your student opportunities to...

- Measure and weigh fruit and vegetables at the grocery store.
- Practice sorting and recycling used objects.
- Ask questions about simple organisms and objects. (Why do the leaves turn orange in the fall? Why is it cold in winter?)
- Listen to the weather report to make decisions on what types of clothing to wear to school.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, Robert A. Vines Science Center, and planetariums.
- Group things according to whether they are living or nonliving.
- Discuss where we get our drinking water (lakes, oceans, streams, wells).
- Talk about the basic needs of living organisms (water, food, shelter).

## Social Studies

A first grade student continues to build upon early social studies concepts through literature, discussions, hands-on exploration, and simulations. The student develops patriotic identity through the study of historic figures, national anthems, state anthems, and mottoes. Development of cultural appreciation increases by describing the importance of family customs and traditions. A first grader creates and uses simple maps to draw conclusions about physical characteristics of places and their impact on daily life. Concepts of time and chronology are developed by distinguishing between past, present, and future events. Technology and social studies skills enhance and build rich concepts.

### During first grade, students will...

- Identify contributions of people (Abraham Lincoln, Sam Houston, Thomas Edison, Alexander Graham Bell).
- Describe the origins of holidays (Veterans Day; Independence Day; Martin Luther King, Jr. Day).
- Identify anthems and mottoes of the state and nation.
- Distinguish among past, present, and future.
- Use vocabulary related to chronology (*yesterday*, *today*, and *tomorrow*).
- Create calendars and timelines.
- Locate places using cardinal directions (north, south, east, and west).
- Create and use simple maps.
- Locate the community, state, and nation on maps and globes.
- Identify and describe physical characteristics of places (landforms, bodies of water, natural resources, and weather).
- Identify the impact of human interaction with places (types of houses and ways of earning a living).
- Identify uses of natural resources in the community, state, and nation.
- Identify examples and exchanges of goods and services and the role of markets in the exchange.
- Identify examples of people wanting more than they can have and explain how this requires them to make many choices.
- Describe requirements of various jobs, characteristics of well-performed jobs, and contributions of jobs to production.
- Explain the need for laws in the home, school, and community and give examples of security, order, and conflict management.
- Identify and describe the roles of leaders in the community (mayor), state (governor), and nation (president).
- Identify characteristics of good citizenship including ordinary people and historical figures (Clara Barton, Nathan Hale, and Eleanor Roosevelt) who exemplify these characteristics.
- Identify contributions of people such as Washington, Lincoln, Roosevelt, and Jefferson.
- Explain patriotic symbols such as the U.S. and Texas flags, Liberty Bell, and the Alamo.
- Recite and explain the Pledge of Allegiance and Pledge to the Texas flag.
- Use voting as a way of making choices and decisions.
- Explain how selected customs, symbols, and celebrations reflect an American love of individualism, inventiveness, and freedom.
- Describe the similarities and differences in the ways that families meet basic human needs (food, clothing, and shelter).

- Retell stories from folktales and legends.
- Identify 10 states of the United States of America.
- Describe how technology (household tools and appliances) has changed the way families live and how people work.
- Describe how technology has changed communication, transportation, and recreation.
- Sequence and categorize information.
- Identify main ideas.
- Express ideas orally and visually.
- Use problem-solving and decision-making processes.
- Obtain information from a variety of sources.

### **Supporting Your Student At Home—First Grade Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more resources that support social studies.
- Categorize family photos for time, place, and people.
- Model citizenship by discussing issues and taking your child with you when voting.
- Take advantage of Houston area ethnic festivals, theaters, and literature.
- Use grocery store flyers and trips to the store to explain family economic choices.
- Practice cardinal directions (north, south, east, west) on family outings.
- Discuss how things have changed since you were a child (technology, transportation, entertainment).
- Share the origins of holidays your family celebrates.

## **SECOND GRADE**

### **Language Arts**

A second grader reads and writes independently and has many opportunities to use spoken language. The student automatically recognizes a large number of words and uses a variety of word identification strategies. Reading familiar classic and contemporary works, a second grader increases fluency and demonstrates understanding by producing a variety of products. The student transitions to reading longer texts with less picture support. Second graders compose and begin to revise and edit their own writing to make ideas clear, precise, and legible.

#### **During second grade, students will...**

- Increase automaticity and enhance comprehension by building upon a core of known high frequency words.
- Demonstrate independence in choosing appropriate word identification strategies to gain knowledge from text including picture clues, letter-sound knowledge, re-reading, and checking for understanding.
- Demonstrate comprehension and respond to a variety of texts by summarizing stories, predicting outcomes, and recalling details.
- Interact with text in a variety of settings including read-aloud, guided reading, shared reading, and independent reading.
- Read with fluency (50-70 words per minute) and comprehend at a second grade level for increasing amounts of time.
- Recognize and analyze the characteristics of various types of texts such as informational books, poems, and stories from varied cultures.
- Develop vocabulary through purposeful and varied reading experiences such as read-aloud, guided reading, shared reading, and discussion.
- Connect ideas to self, to other texts, and to the world.
- Gather important information, ask relevant questions, and conduct simple research using multiple resources.
- Write in a variety of forms for different purposes such as note-taking, letters, poems, and journal reflections.
- Write narrative and informational compositions.

- Generate ideas by using prewriting techniques for assigned and self-selected topics.
- Participate in collaborative and/or independent planning to build graphic organizers for shared, guided, and independent writing.
- Use simple criteria generated by teacher and class to develop and evaluate selected drafts that contain increased elaboration.
- Conference with peers or teacher to revise, edit, and publish selected drafts.
- Use available technology to compose and/or publish selected works.
- Review a collection of personal works to monitor growth as a writer.
- Write messages using appropriate letter size, spacing, and margins.
- Gain increased control of penmanship.
- Use basic capitalization for proper nouns and the first letter of sentences.
- Write texts that include abbreviations and complex punctuation such as commas, apostrophes, and quotation marks.
- Use subject-verb agreement and appropriate verb tenses in complete and coherent sentences.
- Spell and write familiar grade-level words accurately and explore and use resources to find correct spelling.
- Recognize word parts within multisyllabic words.
- Interpret more complex media such as illustrations, graphs, and charts.
- Compare and contrast information found in print and film.
- Produce multimedia products.
- Listen critically and follow multi-step instructions.
- Announce, give directions, and make introductions appropriately and courteously.
- Ask and answer relevant questions in small and large group discussions.
- Speak in complex sentences using correct grammar and precise word choices.
- Speak with an increasingly complex vocabulary to tell about ideas, feelings, and experiences.

## **Supporting Your Student At Home—Second Grade Language Arts**

You support the educational process by providing your student opportunities to...

- Listen to and discuss books read aloud daily.
- Discuss books read together and independently.
- Speak in complete sentences with increasingly complex vocabulary to tell about ideas, feelings, and experiences.
- Write or draw in a personal journal.
- Compose thank you notes, letters, and stories.
- Review sight words and spelling words.
- Play thinking games such as “I Spy” and “Twenty Questions.”
- Visit the library regularly.
- Receive books and magazines as gifts.

## **Mathematics**

A second grade student continues to build a basic foundation of math concepts, especially an understanding of the base ten place value system. A student uses numbers to compare and order when solving problems. Whole number addition and subtraction problems are solved first with concrete models and then with symbolic representation to achieve fluency. Using informal and formal language, a student communicates math reasoning in verbal and written forms. Technology and math tools continue to be integrated into the math program.

### **During second grade, students will...**

- Use concrete models to read, write, order, compare ( $>$ ,  $<$ ,  $=$ ), and find patterns in numbers through 999.
- Locate and name whole numbers on a number line.
- Memorize and apply basic addition and subtraction facts to 18.
- Model and solve addition and subtraction problems, with and without regrouping, using numbers to 99.
- Use patterns to understand that addition and subtraction are related fact families ( $4 + 2 = 6$ ,  $2 + 4 = 6$ ,  $6 - 2 = 4$ ,  $6 - 4 = 2$ ).
- Model, create, and describe multiplication and division situations (equivalent groups).
- Find patterns in numbers using a 100s chart.

- Identify, describe, and extend repeating and additive patterns to solve problems.
- Identify, extend, and create a list of paired numbers (example: 1 bicycle = 2 wheels, 2 bicycles = 4 wheels, 3 bicycles = 6 wheels, etc.).
- Identify usage of cent, dollar symbols, and decimal point.
- Determine the value of a collection of coins up to \$1.00.
- Use concrete models to represent and name fractional parts (up to twelfths) of a whole or set of objects.
- Use concrete models to determine if a fractional part of a whole is closer to zero,  $\frac{1}{2}$ , or 1.
- Tell time to hour, half hour, and 5-minute increments.
- Describe activities that take approximately one second, one minute, and one hour.
- Identify concrete models that approximate standard units of length and use them to measure length.
- Select a non-standard unit of measure to determine capacity and weight/mass of a given container or object.
- Read a thermometer.
- Select non-standard unit of measure to determine area of a 2-dimensional figure.
- Identify, describe, compare, and sort attributes of 2-dimensional and 3-dimensional figures.
- Cut geometric shapes apart and identify the new shapes made.
- Collect and sort data to construct and draw conclusions about picture and bar graphs (horizontal and vertical).
- Explain why an event is more likely or less likely to happen.
- Use the SBISD problem-solving model with guidance and apply the strategies of ACTING IT OUT, DRAWING A PICTURE, LOOKING FOR A PATTERN, MAKING A SIMPLE TABLE, and SYSTEMATIC GUESSING AND CHECKING.
- Use logical reasoning to justify thinking using objects, pictures, words, numbers, and technology.

### **Supporting Your Student At Home—Second Grade Mathematics**

You support the educational process by providing your student opportunities to...

- Practice reading and writing numbers to 999 and finding numbers at the grocery store or on television, etc.
- Practice addition and subtraction facts to 18 using flash cards, board games, calculators, and strategies such as doubles, and doubles plus one.
- Use money in real life situations such as an allowance or buying an item at the store.
- Create word problems using newspapers, and magazines.
- Time how long it takes to do activities at home, take a bath, brush teeth, etc.
- Practice telling time to the nearest 5 minutes.
- Discuss if an event is more likely or less likely to happen.
- Find objects that approximate standard units and use them to measure length (such as an inch—a paper clip; such as a foot—a dad’s foot). Use a pound of sugar to measure approximate weight (a pound).
- Weigh objects at the grocery store.
- Identify three-dimensional figures such as spheres, cylinders, and cones in the environment (a can is a cylinder, a ball is a sphere).

## **Science**

A second grade student plans and conducts investigations to develop the skills for making measurements using non-standard and standard units. Components and processes of the natural world, including the water cycle and use of resources, are identified. The second grader observes melting, evaporating, weathering, and pushing and pulling of objects. The student also observes living and nonliving things, needs of plants and animals, functions of plants, and how living organisms depend on their environment. The student continues to explore change and constancy in systems. Computers and information technology tools are used for support.

### **During second grade, students will...**

- Demonstrate safe practices during classroom and field investigations.
- Use and conserve resources and dispose of materials.
- Ask questions about organisms, objects, and events.
- Plan and conduct simple descriptive investigations.
- Use senses to gather information and make observations.
- Gather information using simple tools such as rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, and balances.

- Construct reasonable explanations and draw conclusions using information and prior knowledge.
- Communicate explanations about investigations.
- Record and compare collected information.
- Make, discuss, and justify decisions using information.
- Explain a problem, identify a task, and propose solutions related to the problem.
- Compare results of investigations with what students and scientists know about the world.
- Measure organisms, objects, and parts of objects using standard and non-standard units.
- Identify, classify, and sequence characteristics of living organisms.
- Observe and record the functions of plant and animal parts.
- Compare and give examples of plant and animal characteristics.
- Compare ways that organisms depend on each other and their environment.
- Identify external characteristics of different kinds of plants and animals that allow their needs to be met.
- Observe, measure, and analyze changes including weather, the night sky, and seasons.
- Describe and illustrate the water cycle.
- Identify uses of natural resources.
- Identify, predict, and test the ways that heat causes change such as melting and evaporation.
- Manipulate, predict, and identify parts found in systems that, when put together, can do things they cannot do by themselves such as flashlights without batteries and construction sets.
- Observe, measure, record, analyze, predict, and illustrate changes in size, mass, color, position, quantity, temperature, sound, and movement.
- Demonstrate a change in the motion of an object by giving the object a push or a pull.

### **Supporting Your Student At Home—Second Grade Science**

You support the educational process by providing your student opportunities to...

- Time how long it takes to do activities at home such as eating breakfast, getting dressed, and doing homework.
- Read and discuss books about science that interest your child.
- Go on a nature walk to the park and have your child draw and discuss some observations about nature such as bird types, squirrel homes, and insects.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, Robert A. Vines Science Center, and planetariums.
- Play with blocks and electronic construction sets.
- Use tools to take apart old electronic objects such as old VCRs, can openers, radios, and flashlights.
- Observe and watch the changes in cakes baking, ice cubes melting, glue drying, and wax melting.
- Watch the television news or read the newspaper to find the weather predictions.

## **Social Studies**

A second grade student focuses on a study of community. The student will learn about important individuals and events in the history of the community, state, and nation. Students continue to develop concepts of time, government functions, and basic economic principles. The student acquires knowledge of important customs, symbols, and celebrations that represent American beliefs and principles. In geography a student locates places and compares information found in different sources.

### **During second grade, students will...**

- Explain the significance of celebrations (Independence Day, Memorial Day, and Thanksgiving Day) and of landmarks (county courthouses and state and national capitol buildings).
- Describe and measure calendar time (day, week, month, and year).
- Use vocabulary related to chronology including *past*, *present*, and *future*.
- Describe the order of historical events using concepts of time and chronology.
- Create and interpret timelines.
- Name several sources of information about a given event.
- Compare various interpretations of the same time period using evidence such as photographs and interviews.
- Identify contributions of people such as Henrietta King, Robert Fulton, Thurgood Marshall, and Amelia Earhart.

- Use symbols, find locations, and determine directions on maps and globes.
- Draw maps showing places and routes.
- Identify 20 states of the United States of America.
- Identify major landforms and bodies of water on maps and globes (continents and oceans).
- Compare information from different sources about places and regions.
- Describe how weather patterns, natural resources, seasonal patterns, and natural hazards affect activities and settlement patterns.
- Locate Houston, Texas, United States, and selected countries on maps and globes.
- Understand how humans use and modify the physical environment.
- Explain how work provides income.
- Explain choices people make in a free enterprise system about money (earning, saving, spending, and deciding where to live and work).
- Distinguish between the roles of producers and consumers and identify ways that people both produce and consume.
- Trace the development of a product.
- Identify functions of government.
- Identify governmental services in the community (libraries, schools, and parks) and their value to the community.
- Compare roles of public officials (mayor, governor, and president) and identify ways they are selected (election and appointment to office).
- Describe how governments establish order, maintain security, and manage conflict.
- Identify characteristics of good citizenship (justice, truth, equality, and responsibility).
- Identify historic figures (Florence Nightingale, Paul Revere, and Sojourner Truth) and ordinary people who exemplify good citizenship.
- Identify patriotic songs (*America the Beautiful*).
- Identify state and national symbols (Uncle Sam, birds, flowers, and flags).
- Explain how customs, symbols, and celebrations reflect an American love of individualism, inventiveness, and freedom.
- Identify and explain the significance of local cultural heritage (stories, poems, paintings, and statues).
- Explain how science and technology have changed ways people meet basic needs.
- Describe how science and technology have changed communication, transportation, and recreation.
- Obtain information from a variety of sources.
- Use tables of contents and glossaries to locate information.
- Sequence and categorize information.
- Identify main ideas, make predictions, and compare and contrast.
- Express ideas orally and create written and visual material.
- Use problem-solving and decision-making processes.

## **Supporting Your Student At Home—Second Grade Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more resources that support social studies.
- Earn money or tokens for simple age-appropriate chores.
- Find locations on maps while traveling.
- Visit city and county parks, libraries, and landmarks.
- Share your family history.
- Interview an older relative or friend about their childhood.

# THIRD GRADE

## Language Arts

A third grader spends significant blocks of time reading and writing independently. Using increasingly complex word identification strategies, the student builds vocabulary and enhances comprehension. A third grader reads from a variety of classic, contemporary, and informational literature and supports ideas and inferences by citing portions of text. Writing is more focused and developed. The student revises and edits to produce final products. A third grader listens critically to spoken messages to make contributions during discussions.

### During third grade, students will...

- Independently choose appropriate word identification strategies to gain knowledge from text. These include root words, prefixes, suffixes, and word endings.
- Demonstrate comprehension by using a variety of strategies such as re-reading, searching for clues, and citing portions of the text being discussed to support ideas and inferences.
- Read with fluency (60–80 words per minute) and comprehension at a third grade level for increasing amounts of time with attention to accuracy, expression, appropriate phrasing, and punctuation.
- Generate questions and conduct research from multiple resources to compile information for a variety of purposes.
- Analyze and compare the characteristics of fictional and informational literature such as biographies, poetry, and fables from a variety of cultures.
- Develop vocabulary through a variety of experiences such as literature, word studies, and reference materials.
- Connect ideas and themes across texts.
- Write in a variety of forms for different purposes such as note-taking, letters, poems, and journal reflections.
- Write narrative and informational compositions.
- Generate ideas by using prewriting techniques for assigned and self-selected writing.
- Participate in collaborative and/or independent planning to select and build graphic organizers for guided and independent writing.
- Use criteria generated by teacher and class to develop and evaluate selected drafts.
- Enhance writing by making precise word choices and creating vivid images.
- Confer with peers and teacher to revise, edit, and publish selected drafts.
- Use available technology to compose and/or publish selected works.
- Review a collection of personal works to monitor growth as a writer.
- Increase control of penmanship such as appropriate letter size, spacing, and margins.
- Use basic capitalization for proper nouns and the first letter of sentences.
- Add complex punctuation, with increasing accuracy, including commas in a series and apostrophes in contractions and possessives.
- Spell and write grade-level words accurately and use resources to find correct spelling.
- Increase understanding of parts of speech to create complete and coherent sentences.
- Interpret more complex media such as maps, graphs, and charts.
- Compare and contrast information found in print and film.
- Produce multimedia products.
- Listen critically and respond courteously to multi-step instructions, questions, stories, poems, and presentations.
- Ask and answer relevant questions in small and large group discussions.
- Speak in complex sentences using correct grammar and an increasing vocabulary.

### Supporting Your Student At Home—Third Grade Language Arts

You support the educational process by providing your student opportunities to...

- Discuss books read together and independently.
- Answer questions about what is happening during television shows (What do you think will happen next? How do you think the character is feeling?).
- Speak in complete sentences with increasing vocabulary to tell about ideas, feelings, and experiences.
- Write and illustrate in a personal journal.

- Compose thank you notes, letters, and stories.
- Study spelling words.
- Play thinking games such as “I Spy” and “Twenty Questions.”
- Visit the library regularly.
- Receive books and magazines as gifts.

## Mathematics

A third grade student is expected to have mastered the addition and subtraction of whole numbers and further advances that understanding by using concrete and pictorial models to develop the concepts of multiplication and division. An additional emphasis is the connection of fractional models to symbols. The student begins to use estimation and mathematical reasoning to solve real-world problems and is able to rationalize and communicate decisions effectively. Throughout third grade mathematics, the student evaluates, adapts, and selects appropriate strategies, vocabulary, and tools to solve problems.

### During third grade, students will...

- Read, write, compare, order, and identify place value for numbers through 999,999.
- Locate and name whole numbers, halves, and fourths on a number line.
- Model and solve addition and subtraction problems, with and without regrouping, using numbers to 999.
- Estimate reasonable sums and differences by rounding to the nearest ten or hundred.
- Understand that multiplication and division are related fact families ( $4 \times 2 = 8$ ,  $2 \times 4 = 8$ ,  $8 \div 2 = 4$ ,  $8 \div 4 = 2$ ).
- Use concrete and pictorial models to represent multiplication and division.
- Learn and apply multiplication facts to 12 by 12 and use these facts in problem-solving situations.
- Memorize multiplication facts for zeros, ones, twos, fives, tens, and squares. (SBISD Expectation)
- Develop strategies to solve problems involving one digit multipliers (2 digits times 1 digit).
- Choose addition, subtraction, multiplication, or division of whole numbers to solve problems, justify choice, and determine reasonableness of solutions.
- Use concrete and pictorial models to name and compare fractional parts of a whole or set of objects.
- Determine the value of a collection of coins and bills.
- Identify, extend, and create patterns using tables, numbers, paired numbers, and geometric shapes to solve problems and make predictions.
- Tell and write time to the minute on digital and analog (traditional) clocks.
- Estimate and measure length using metric and customary units. Students will learn to use a ruler, yardstick, and meterstick.
- Find perimeter of a shape using standard units.
- Find area of 2-dimensional surfaces using concrete and pictorial models.
- Determine volume of 3-dimensional figures using concrete models.
- Identify standard units and use them to measure weight/mass.
- Identify standard units (cups, liters) and use them to measure capacity.
- Measure, interpret, and record temperature in degrees Fahrenheit.
- Name, describe, and compare 2-dimensional and 3-dimensional figures.
- Identify and create congruent 2-dimensional figures and lines of symmetry.
- Collect, organize, record, display, and analyze relevant data in picture and bar graphs to draw reasonable conclusions and make predictions.
- Predict and describe events as more likely than, less likely than, or equally likely as.
- Use the SBISD problem-solving model and apply the strategies of ACTING IT OUT, DRAWING A PICTURE, LOOKING FOR A PATTERN, MAKING A SIMPLE TABLE, WORKING A SIMPLER PROBLEM, SYSTEMATIC GUESSING AND CHECKING, or WORKING BACKWARDS.
- Make generalizations from patterns or sets of examples and non-examples.

### Supporting Your Student At Home—Third Grade Mathematics

You support the educational process by providing your student opportunities to...

- Use flashcards and calculators to practice addition, subtraction, multiplication, and division facts.
- Play games that emphasize math skills (dominoes and playing cards to practice addition and subtraction, chess and Monopoly™).

- Roll two dice and multiply the numbers together. Use that product to create two multiplication sentences and the related division fact families.
- Practice counting money using coins and bills.
- Practice locating wholes, halves, and fourths on a ruler or yardstick.
- Practice telling time with digital and traditional clocks.
- Use measurement skills in real-life situations, such as weighing food at the grocery store, measuring liquids when cooking, and charting height.
- Identify 3-dimensional figures such as spheres, cylinders, and cones in the environment (a can is a cylinder, a ball is a sphere).
- Use newspapers and magazines to find and discuss examples of graphs, tables, and charts.
- Communicate regularly with your child about what they learned in school, including math vocabulary.

## Science

A third grade student plans and implements investigations to collect information using tools such as microscopes. The student also makes inferences, communicates conclusions, and makes informed decisions. The student identifies the importance of components of the natural world including rocks, soil, water, atmospheric gases, and forces that change the Earth. The student explores magnetism, gravity, needs of organisms, habitats, and competition within an ecosystem. A third grade student continues to explore constancy and change in systems. Computers and information technology tools are used for support.

### During third grade, students will...

- Demonstrate safe practices during classroom, laboratory, and field investigations.
- Make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- Plan and implement descriptive investigations including well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology.
- Collect information by observing, measuring, and using tools such as calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses.
- Analyze and interpret information to construct reasonable explanations from direct and indirect evidence.
- Communicate valid conclusions.
- Construct simple graphs, tables, maps, and charts to organize, examine, and evaluate information.
- Analyze, review, and critique scientific explanations as to their strengths and weaknesses using scientific evidence and information.
- Draw inferences based on information related to promotional materials for products and services.
- Represent the natural world using models and know that these models have limitations.
- Evaluate the impact of research on scientific thought, society, and the environment.
- Connect third grade science concepts with the history of science and contributions of scientists.
- Demonstrate that repeated investigations may increase the reliability of results.
- Recognize that living organisms need food, water, light, air, a way to dispose of waste, and a safe environment in which to live.
- Describe how species adapt and compete to meet their needs within their environment.
- Observe, identify, and analyze characteristics among species that allow them to survive, adapt, and reproduce in their environment.
- Identify inherited traits of plants and animals.
- Recognize that the Earth's surface can be changed by forces such as earthquakes or glaciers.
- Identify and describe the Earth's materials including rocks, soil, water, and gas.
- Classify the Earth's materials as renewable, non-renewable, or inexhaustible resources.
- Identify and record properties of soils.
- Identify the planets in the solar system in relative position to the Sun.
- Describe the characteristics of the Sun.
- Identify matter as liquid, solid, or gas.
- Observe and identify simple systems and describe the role of various parts.
- Measure changes in an object's position when a force is applied.
- Gather data about temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter.

## Supporting Your Student At Home—Third Grade Science

You support the educational process by providing your student opportunities to...

- Practice using a calculator to solve simple problems.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, Robert A. Vines Science Center, and planetariums.
- Discuss how advertisers are trying to promote their products through propaganda.
- Build, test, and improve ramps for toy cars or marbles.
- Play ball together and note what occurs when the throwing force or size of ball is changed.
- Play with magnets and discuss to what magnets are attracted and not attracted.
- Read books together and independently about natural forces that can change our Earth. Discuss what was learned.
- Discuss our basic needs and why we need to dispose of wastes in a safe manner so that our environment will be clean and safe.
- Participate in local recycling initiatives.

## Social Studies

A third grade student learns how individuals changed their communities and consequently their world. The lives of heroes and how their contributions resulted in new ideas, new innovations, and new communities are explored. The student investigates the responsibility of local government and how it meets the needs of our communities. The student uses geography skills and concepts to find places on maps and globes and to create his/her own maps. Economic and governmental vocabulary is acquired.

### During third grade, students will...

- Identify reasons people formed communities and describe how individuals, events, and ideas have changed communities over time.
- Compare ways people in communities meet their needs for government, education, communication, transportation, and recreation in the past and present.
- Create and interpret timelines and describe historical times in terms of years, decades, and centuries.
- Identify individuals such as Pierre-Charles L'Enfant, Christopher Columbus, Meriwether Lewis, and William Clark who have shaped and contributed to the expansion of existing communities or the creation of new communities.
- Use vocabulary related to chronology including *ancient and modern times* and *past, present, and future*.
- Compare how people in different communities adapt to or modify variations in the physical environment such as climate, landforms, natural resources, and natural hazards.
- Use cardinal and intermediate directions, compass rose, grid, and symbols to locate places (Amazon River, Himalayan Mountains, and Washington, D.C.) and to interpret maps and globes.
- Use scale to determine the distance between places on maps and globes.
- Identify 30 states of the United States of America.
- Draw maps of places and regions that contain map elements including a title, compass rose, legend, scale, and grid system.
- Identify ways of earning, spending, and saving money.
- Analyze a simple budget for saving and spending.
- Define scarcity and give examples of its impact on goods and services and on interdependence within and among communities.
- Explain how supply and demand affects price and how cost of production and selling price affect profits (free market).
- Give examples of how a simple business operates.
- Identify historic figures such as Henry Ford and also ordinary people in the community who have started new businesses.
- Describe the basic structure of local government, identify local government officials, and explain how they are chosen.
- Identify services commonly provided by local governments and explain how they are financed.
- Explain the importance of the consent of the governed to the function of local government.
- Identify characteristics of good citizenship (justice, truth, equality, and responsibility for the common good).

- Explain the importance of civic participation and identify examples of actions people can take to improve the community.
- Identify examples of organizations that serve the common good such as nonprofit and civic organizations like the Red Cross.
- Identify historical and ordinary people who exemplify good citizenship such as Jane Addams, Helen Keller, and Harriet Tubman.
- Explain the significance of ethnic and/or cultural celebrations in the state, nation, and world such as St. Patrick's Day, Cinco de Mayo, and Kwanzaa.
- Identify and retell the heroic deeds of state/national heroes, and American folktales and legends such as Daniel Boone, Davy Crockett, Pecos Bill, and Paul Bunyan.
- Retell the heroic deeds of characters of Greek and Roman myths.
- Identify how selected fictional characters such as Robinson Crusoe created new communities.
- Identify selected writers and artists and explain how their works exemplify the cultural heritage of communities around the world.
- Compare ethnic and/or cultural celebrations in Texas, the United States, and other nations.
- Identify scientists and inventors who have created new technology such as Louis Daguerre (photography), Cyrus McCormick (farm equipment), Louis Pasteur (pasteurization), and Jonas Salk (vaccines).
- Explain the impact of new technology on communities around the world.
- Obtain information from a variety of sources.
- Use parts of a source to locate information.
- Sequence and categorize information.
- Interpret information using main idea, cause and effect, and comparing and contrasting.
- Interpret visuals.
- Use appropriate math skills to interpret social studies information.
- Express ideas orally and create written and visual materials using standard grammar, spelling, sentence structure, and punctuation.
- Identify problems and situation requiring decisions, gather information, consider options, predict consequences, take action, and evaluate solutions/decisions.

### **Supporting Your Student At Home—Third Grade Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more resources that support social studies.
- Look for evidence of physical changes in your neighborhood such as new development, erosion, or water-related damage.
- Save money over a period of time for something special.
- Find information from the news media about different organizations and ordinary citizens that help people in our community.
- Read myths, legends, and tall tales about heroic deeds.
- Visit downtown Houston and local sites with your family.

## **FOURTH GRADE**

### **Language Arts**

A fourth grade student spends significant blocks of time engaged in reading and writing independently. The student reads in a wide variety of subjects and adjusts reading rate and strategies to meet the demands of the text and purpose for reading. A fourth grader reads many types of texts for a variety of purposes: to gain meaning, to paraphrase text, and to analyze textual elements. The student selects different forms of writing and uses style, voice, and complete sentences to enhance meaning. A fourth grade student is a proficient speller and edits based on current knowledge of grammar and usage. The student produces polished written compositions and multimedia presentations.

## **During fourth grade, students will...**

- Independently choose appropriate word identification strategies to gain knowledge from text.
- Select and appropriately use reference materials including a dictionary, thesaurus, and electronic media.
- Monitor comprehension by using a variety of strategies such as re-reading and checking for understanding when meaning breaks down.
- Develop vocabulary through a variety of experiences such as reading, word study, research, and real-world encounters.
- Establish purposes for reading and adjust reading rate accordingly in a variety of texts.
- Consult and analyze multiple resources, including electronic media, to conduct research and organize information for a variety of purposes.
- Analyze, compare, and evaluate the characteristics of informational and fictional literature. These include historical fiction, poetry, drama, and literature from a variety of cultures.
- Find connections, similarities, and differences of ideas and themes across texts.
- Write in a variety of forms for different purposes including narrative and informational compositions.
- Enhance writing by developing voice in compositions.
- Generate ideas and plans for writing using tools such as diagrams and outlines.
- Develop and evaluate selected drafts using increasingly advanced writing strategies.
- Consult resources to refine drafts and research relevant information.
- Confer with peers or teacher to revise, edit, and publish selected drafts for general and specific audiences.
- Use available technology to compose, revise, edit, and publish selected works.
- Use available technology to interact and collaborate with other writers.
- Review a collection of personal works to self-monitor growth as a writer and set goals.
- Write legibly by selecting print or cursive form, as appropriate.
- Use capitalization and punctuation correctly to clarify and enhance meaning.
- Spell and write grade-level words accurately, and use resources to find correct spelling for final drafts.
- Increase understanding of how to create compound and complex sentences.
- Use appropriate subject-verb agreement and verb tenses to write complete and coherent sentences.
- Interpret more complex messages in media such as graphics, charts, and video.
- Analyze and critique messages found in film, print, and electronic media.
- Create multimedia presentations and reports to extend meaning.
- Listen to gain information.
- Monitor understanding of a spoken message, and seek clarification when needed.
- Interpret speakers' messages (both verbal and nonverbal), purposes, and perspectives.
- Clarify and support spoken ideas with evidence, elaboration, and examples.
- Identify how language reflects regions and cultures.

## **Supporting Your Student At Home—Fourth Grade Language Arts**

You support the educational process by providing your student opportunities to...

- Discuss books read together and independently.
- Answer questions about what is happening during television shows (What do you think will happen next? How do you think the character is feeling?).
- Elaborate when telling about ideas, feelings, experiences, and current events.
- Write and illustrate in a personal journal.
- Compose thank you notes, letters, and stories.
- Study and use spelling words.
- Play word games such as Scrabble™, Boggle™, and Taboo™.
- Visit the library regularly.
- Receive books and magazines as gifts.

## **Mathematics**

A fourth grade student learns to create and apply mathematical concepts in a more abstract manner than in earlier grades. The student learns to reason independently, justify answers, and communicate about thinking processes using appropriate math language and tools. The major skills for the student include: applying place

value concepts, comparing and ordering fractions and decimals, using multiplication and division algorithms, and developing ideas related to measurement and statistics.

### **During fourth grade, students will...**

- Use place value to read, write, compare, and order whole numbers through 999,999,999.
- Use objects and pictorial models to read, write, compare, and order decimals through 0.99.
- Locate and identify points on number lines using whole numbers, fractions (such as halves and fourths), and decimals.
- Use addition and subtraction of whole numbers and decimals through the hundredths place in problem-solving situations.
- Estimate reasonable sums, differences, products, and quotients by rounding to the nearest ten, hundred, or thousand.
- Multiply by 10 and 100 to estimate products.
- Multiply using two-digit numbers ( $37 \times 87$ ) and divide using one-digit divisors ( $724 \div 6$ ) to solve real-world problems.
- Choose addition, subtraction, multiplication, or division of whole numbers to solve problems, justify choices, and determine reasonableness of a solution.
- Demonstrate an understanding of factors and products using array and area models.
- Use patterns and relationships to develop strategies to recall multiplication and division facts (fact families).
- Describe relationships between two sets of data (if 1 book equals \$12, then 3 books =  $n$  because...).
- Use objects and pictures to compare and order fractions and create equivalent fractions.
- Use objects to model fraction quantities greater than one ( $2 \frac{3}{4}$ ).
- Use models to relate decimals to fractions that name tenths and hundredths.
- Use measurement tools to estimate and measure weight/mass and capacity/volume using metric and customary units.
- Measure length (including perimeter), time, temperature, and area to solve problems.
- Use appropriate language to identify and describe right, acute, and obtuse angles and parallel and perpendicular lines in 2-dimensional and 3-dimensional figures.
- Use appropriate language such as edges, vertices, and faces to identify and describe 2-dimensional and 3-dimensional figures.
- Use objects and pictures to create translations, reflections, and rotations (slides, flips, and turns).
- Identify congruency and lines of symmetry in geometric figures and real-life objects.
- Collect, organize, record, display, and interpret data using bar graphs to draw reasonable conclusions and make inferences.
- Use objects or pictures to determine all possible combinations in a problem situation (*Example*: Find all possible combinations for 3 shirts, 4 pants, 5 hats).
- Use the SBISD problem-solving model with guidance and apply the strategies of ACTING IT OUT, DRAWING A PICTURE, LOOKING FOR A PATTERN, MAKING A SIMPLE TABLE, WORKING A SIMPLER PROBLEM, WORKING BACKWARDS, or SYSTEMATIC GUESSING AND CHECKING.

### **Supporting Your Student At Home—Fourth Grade Mathematics**

You support the educational process by providing your student opportunities to...

- Practice mental addition, subtraction, multiplication, and division facts and extend their understanding by having them write and illustrate real-world problems.
- Practice counting money and giving correct change. (Play store with your child.)
- Practice time-telling skills. (Calculate elapsed time.)
- Play board and card games which reinforce basic operations and problem-solving skills.
- Apply problem-solving skills such as estimation (prices, weights, and distances) and reasonableness (calculating recipes and measuring area and perimeter) in real-world situations.
- Use a variety of measurement tools such as rulers, meter sticks, pints, quarts, liters, scales, and thermometers (ex. a pint of milk, quart of milk, liter of soda).
- Practice reading and interpreting data from different types of graphs (bar—horizontal and vertical—and picture) and tables from newspapers and magazines.

# Science

The fourth grade student plans and implements investigations using the scientific method. The student analyzes and makes decisions while using tools such as compasses to collect information. The student identifies components and processes of the natural world such as properties of soil, effects of oceans, the role of the Sun as our energy source, the physical properties of matter, and causes of change in states of matter. The student observes the roles of living and non-living components and recognizes that adaptations of organisms have increased survival. The student investigates the differences between learned characteristics and inherited traits. A fourth grade student continues to explore change and constancy in systems. Computers and information technology tools are used for support.

## **During fourth grade, students will...**

- Demonstrate safe practices during classroom, laboratory, and field investigations.
- Make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- Plan and implement descriptive investigations including well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology.
- Collect information by observing and measuring using tools such as calculators, microscopes, cameras, safety goggles, sound recorders, rulers, meter sticks, hand lenses, clocks, timing devices, thermometers, balances, compasses, and computers.
- Analyze and interpret information to construct reasonable explanations from direct and indirect evidence.
- Communicate valid conclusions.
- Construct simple graphs, tables, maps, and charts to organize, examine, and evaluate information.
- Analyze, review, and critique scientific explanations as to their strengths and weaknesses using scientific evidence and information.
- Draw inferences based on information related to promotional materials for products and services.
- Represent the natural world using models and know that these models have limitations.
- Evaluate the impact of research on scientific thought, society, and the environment.
- Connect fourth grade science concepts with the history of science and contributions of scientists.
- Demonstrate that repeated investigations may increase the reliability of results.
- Identify and describe the roles of some organisms in living systems such as plants in a school yard.
- Predict and draw conclusions about the role of organisms in a system and what happens when any part of that system is removed.
- Identify characteristics that allow survival and reproduction of species.
- Identify species that lived in the past and compare them to existing species.
- Compare adaptive characteristics of species.
- Identify patterns of change such as metamorphosis.
- Distinguish between and provide examples of inherited traits and learned characteristics.
- Identify and observe effects of events that require time for change to become noticeable such as growth, erosion, flow, and dissolving.
- Identify patterns of change such as in weather and objects in the sky.
- Draw conclusions about “what happened before” using fossils, charts, tables, and timelines.
- Test properties of soil.
- Summarize the effects of oceans on land.
- Identify the Sun as a major energy source and its role in the growth of plants, the creation of wind, and the water cycle.
- Observe and record changes in the states of matter caused by the addition or reduction of heat.
- Conduct tests, compare data, and draw conclusions about physical properties of matter including states of matter, conduction, density, and buoyancy.
- Illustrate that certain characteristics of an object can remain constant when rotated, translated, and reflected.
- Use reflections to verify symmetry.

## **Supporting Your Student At Home—Fourth Grade Science**

You support the educational process by providing your student opportunities to...

- Build a nature collection, read about it, and classify it for display.
- Check daily newspaper or the Internet for weather, ozone levels, and night sky readings.
- Keep a journal on night sky observations including constellations.

- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, Robert A. Vines Science Center, and planetariums.
- Record the lengths of shadows and placement of the Sun at certain times throughout the day.
- Build and maintain an aquarium or terrarium.
- Observe natural changes within their environment (leaf changes, insects) and discuss.
- Participate in local recycling initiatives.
- Note lunar changes on calendars at home.

## Social Studies

A fourth grade student studies important events, issues, and people of the 19<sup>th</sup> and 20<sup>th</sup> centuries. The student examines Texas history from ancient times to the present in regard to human and natural characteristics of the regions of Texas. Emphasis is placed on the understanding of the impact of Native Americans, European explorers, and Mexican influences, as well as other cultural groups on Texas.

### During fourth grade, students will...

- Compare similarities and differences of Native American groups in Texas and the Western Hemisphere before European exploration.
- Explain causes and effects of European exploration (Cabeza de Vaca, Christopher Columbus, Francisco Coronado) and of the colonization of Texas and the Western Hemisphere (Moses Austin, Stephen F. Austin, and Martin de Leon).
- Analyze the causes and effects of the Texas Revolution, the successes and problems of the Republic of Texas, the annexation of Texas to the United States, and the associated events and leaders (Sam Houston, Mirabeau Lamar, and Anson Jones).
- Describe political, economic, and social changes in Texas during the last half of the 19<sup>th</sup> century.
- Describe important issues, events, and individuals of the 20<sup>th</sup> century in Texas.
- Use geographic tools to collect, analyze, and interpret data found on maps.
- Identify and locate 40 states of the United States of America.
- Analyze, interpret, and communicate data into a variety of formats such as raw data to graphs and maps.
- Describe political, economic, and physical regions in Texas and the Western Hemisphere.
- Explain the location and patterns of settlement and the geographic factors that influence where people live in Texas.
- Describe the ways people adapt to and modify the Texas environment, past and present. Identify the reasons for adaptation and analyze the consequences.
- Explain economic patterns of Native American and European immigrants to Texas and the Western Hemisphere.
- Identify economic motivation for European exploration, settlement, and colonization in Texas.
- Understand patterns of work and how people in the past and present earn their living in Texas.
- Explain how the geographic factors influenced the location of economic activities in Texas.
- Analyze the effects of immigration, migration, and limited resources on the economic development and growth of Texas.
- Compare how Native American groups and early Texans governed themselves.
- Identify characteristics and influences of Spanish and Mexican colonial governments.
- Identify important ideas in significant Texas historical documents (Texas Declaration of Independence, the Constitution, and Treaty of Velasco).
- Identify and explain basic functions of the branches of state government.
- Explain the meaning of Texas symbols, customs, and celebrations.
- Describe the origins and significance of Texas celebrations and landmarks (the six flags that flew over Texas; San Jose Mission; the San Jacinto Monument; *Texas, Our Texas*; Pledge to the Texas Flag; Texas Independence Day; and Juneteenth).
- Explain the importance of individual voluntary participation in local and state democratic processes.
- Identify the importance of historical figures.
- Identify leaders in state and local government and tell how to contact them.
- Identify similarities and differences of racial, ethnic and religious groups and their customs, celebrations, and traditions.
- Summarize contributions of racial, ethnic, and religious groups.

- Identify famous inventors and scientists and their contributions.
- Describe and predict how present and future scientific discoveries and technological innovations impact Texas development.
- Differentiate between and use primary and secondary sources.
- Identify different points of view and frames of reference.
- Use mathematical skills to interpret maps and graphs.
- Use social studies terminology correctly.
- Incorporate main and supporting ideas in verbal and written communication.
- Express ideas orally.
- Create written and visual materials.
- Use standard grammar, spelling, sentence structure, and punctuation.
- Identify problems and situations requiring decisions, gathering and listing information, considering options, predicting consequences, taking action, and evaluating solutions and decisions.

### **Supporting Your Student At Home—Fourth Grade Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more resources that support social studies.
- Visit Texas historical sites, especially the San Jacinto Monument and Battlefield, Washington-on-the-Brazos, and the Alamo.
- Use state or national maps to practice map skills.
- Identify Texas products in the home to teach about economic resources from the different regions of Texas.
- Collect copies of Texas historical documents from museums and state parks.
- Collect toys representing the different cultures of Texas.

## **FIFTH GRADE**

### **Language Arts**

A fifth grade student continues to spend significant blocks of time engaged in independent reading and writing while refining and applying knowledge and skills in increasingly complex tasks. The student analyzes and evaluates classic, contemporary, and informational literature to enhance comprehension and create new understanding. Additionally, a fifth grade student selects and uses various forms of writing for specific purposes. Utilizing multiple resources, a fifth grader gains proficiency in creating polished final products including multimedia presentations as well as a variety of written texts.

#### **During fifth grade, students will...**

- Independently choose appropriate word identification strategies to gain knowledge from text.
- Select and use appropriate reference materials such as a dictionary, thesaurus, and electronic media.
- Demonstrate and monitor comprehension by using a variety of strategies and make modifications when understanding breaks down.
- Develop vocabulary through a variety of experiences such as reading, word study, and research.
- Establish purposes for reading and adjust the reading rate in a variety of texts.
- Consult and analyze multiple resources, including electronic media, to conduct research and organize information for a variety of purposes.
- Analyze, compare, and evaluate the characteristics of classic and contemporary literature from a variety of cultures.
- Connect, compare, and contrast ideas and themes across texts, with personal experiences and world events.
- Write in a variety of forms for different purposes such as research and reflection.
- Write narrative and informational compositions.
- Enhance writing using literary devices such as suspense, dialogue, and figurative language.
- Generate ideas and plan for writing using prewriting techniques including graphic organizers for assigned and self-selected topics.

- Use increasingly more complex criteria generated by teacher and class to develop and evaluate selected drafts with emphasis on ideas, organization, voice, word choice, sentence fluency, and conventions.
- Consult references and resources to refine drafts and research relevant information.
- Confer with peers or teacher to revise, edit, and publish selected drafts for general and specific audiences.
- Use available technology to compose, revise, edit, and publish selected works.
- Use available technology to interact and collaborate with other writers.
- Analyze and evaluate a collection of personal works to monitor growth as a writer and set goals.
- Write legibly by selecting print or cursive form as appropriate.
- Use capitalization and punctuation correctly to clarify and enhance meaning.
- Spell and write grade-level words accurately and use resources to find correct spelling for final drafts.
- Increase understanding of how to use parts of speech and elaboration to create compound and complex sentences with increasing accuracy.
- Interpret more complex messages in media such as graphics, charts, and video.
- Analyze and critique messages found in film, print, and electronic media.
- Extend meaning by producing multimedia presentations and reports.
- Analyze a speaker's message for content, persuasive technique, and tone.
- Distinguish between a speaker's opinion and verifiable fact.
- Listen to proficient oral reading of classic and contemporary works.
- Clarify and support spoken ideas with evidence, elaboration, and examples.
- Identify how language use reflects regions and cultures.

### **Supporting Your Student At Home—Fifth Grade Language Arts**

You support the educational process by providing your student opportunities to...

- Read and talk about a variety of materials (catalogs, magazines, newspapers, comics, recipes) to explain, describe, compare, summarize, or predict.
- Explore Internet resources with your supervision (for planning vacations, communicating, and gathering information for school projects).
- Discuss and evaluate television shows, movies, and commercials.
- Elaborate when telling about ideas, feelings, experiences, and current events.
- Write and illustrate in a personal journal.
- Compose thank you notes, letters, and stories.
- Study and use spelling words.
- Play word games such as Scattergories™, Balderdash™, or Picture This™.
- Visit the library regularly.
- Receive books and magazines as gifts.

## **Mathematics**

A fifth grade student applies a strong foundation of whole numbers to develop a deeper understanding of decimal and fraction concepts. A student independently integrates and applies knowledge of different mathematical strands to make meaningful connections and solve problems. The primary focal points of fifth grade are representing and interpreting data in graphs, applying whole number operations in problem-solving situations, and extending concepts related to measurement and geometry. Skills are sharpened by justifying thinking and communicating understanding using appropriate language and tools.

### **During fifth grade, students will...**

- Use place value to read, write, compare, and order whole numbers through the billions place and decimals through the thousandths place.
- Generate a fraction equivalent to a given fraction such as  $\frac{1}{2}$  and  $\frac{3}{6}$  or  $\frac{4}{12}$  and  $\frac{1}{3}$ .
- Use models to relate decimals to fractions that name tenths, hundredths, and thousandths.
- Use addition and subtraction to solve problems with whole numbers and decimals.
- Use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology; example:  $324 \times 56 =$  ).
- Use division to solve problems involving whole numbers (no more than two-digit divisors and three-digit dividends without technology; example:  $324 \div 56 =$  ).
- Identify common factors of a set of whole numbers.

- Add and subtract fractions with like denominators using concrete objects, pictures, words and numbers.
- Use strategies including rounding to estimate answers to addition, subtraction, multiplication, and division problems.
- Describe relationships between sets of data in lists, tables, charts, and diagrams.
- Use tables of related number pairs to make line graphs.
- Identify prime and composite numbers using concrete objects and pictorial models.
- Identify critical attributes including parallel, perpendicular, and congruent parts of two- and three-dimensional geometric figures.
- Sketch the results of translations, rotations, and reflections on a coordinate grid.
- Perform simple conversions within the same measurement system (customary and metric).
- Select and use appropriate units and formulas to measure length, perimeter, area, and volume.
- Solve problems involving changes in temperature.
- Solve problems involving elapsed time.
- Use fractions to describe and predict the results of a probability experiment (4 out of 6 =  $4/6 = 2/3$ ).
- Describe characteristics of data presented in tables and graphs including median, mode, and range.
- Find all possible outcomes of a probability experiment (*Example*: tossing 2 coins can result in 2 heads; 1 head, 1 tail; or 2 tails).
- Use the SBISD problem-solving model with guidance and apply the strategies of ACTING IT OUT, DRAWING A PICTURE, LOOKING FOR A PATTERN, MAKING A SIMPLE TABLE, WORKING A SIMPLER PROBLEM, WORKING BACKWARDS, or SYSTEMATIC GUESSING AND CHECKING.

## Supporting Your Student At Home—Fifth Grade Mathematics

You support the educational process by providing your student opportunities to...

- Practice reading and ordering large numbers such as populations of cities.
- Use estimation to calculate distances, prices, time, and number of items or packages needed for events.
- Reinforce fraction concepts through the use of recipes (halving or doubling amounts).
- Add and subtract money amounts (make change, total bills, or balance checkbook registries).
- Practice rounding money to the nearest dollar.
- Practice transferring knowledge of money (decimals) to fractional parts (example: 10¢ is  $1/10$  of a dollar).
- Use a variety of measurement tools such as rulers, meter sticks, pints, quarts, liters, scales, and thermometers.
- Recognize translations, reflections, and rotations in architecture, quilts, tiles, and other forms of interior design.
- Play board games such as Yahtzee™ which reinforce probability concepts.
- Play card games and dominoes to reinforce basic operations and problem-solving skills.
- Create new games using cards, spinners, dice, and other materials.
- Practice reading and interpreting data from different types of graphs (bar—horizontal and vertical, line, pie, picture) from newspapers and magazines.

## Science

A fifth grade student understands that science is a way of learning about the natural world. The student investigates science as a vast body of changing and increasing knowledge described by physical, mathematical, and conceptual models. The student develops skills in the areas of investigation and use of scientific equipment. The emphasis of study covers the structures and functions of life science, earth science, chemistry, and physics. The student investigates that change and constancy in systems can be observed and measured as patterns. Computers and information technology tools are used for support.

### During fifth grade, students will...

- Demonstrate safe practices during classroom, laboratory, and field investigations.
- Make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- Plan and implement descriptive and simple investigations to include well-defined questions, testable hypotheses, selection and use of equipment, and technology.
- Collect information by observing, measuring, and recording findings.
- Collect information using tools (calculators, microscopes, cameras, safety goggles, sound recorders, rulers, meter sticks, hand lenses, clocks, timing devices, thermometers, balances, hot plates, magnets, collecting nets, compasses, and computers).

- Analyze and interpret to construct reasonable explanations from direct and indirect evidence.
- Communicate valid conclusions.
- Construct simple graphs, tables, maps, and charts using tools to organize, examine, and evaluate information.
- Analyze, review, and critique scientific explanations as to their strengths and weaknesses using scientific evidence and information.
- Draw inferences based on information related to promotional materials for products and services.
- Represent the natural world using models and know that these models have limitations.
- Evaluate the impact of research on scientific thought, society, and the environment.
- Connect fifth grade science concepts with the history of science and contributions of scientists.
- Demonstrate that repeated investigations may increase the reliability of results.
- Describe cycles, structures, interactions, and processes found in systems and life cycles.
- Compare adaptive characteristics of species that improve their ability to survive and reproduce.
- Analyze and describe adaptive characteristics that result in an organism's special role (niche) in an ecosystem.
- Compare and predict adaptive characteristics required for survival and reproduction of an organism in an ecosystem.
- Identify traits inherited from parents to offspring in plants and animals. Describe examples of learned characteristics that result from the influence of the environment.
- Identify events and describe changes that occur in daily, weekly, and seasonal cycles.
- Identify the significance of the water, carbon, and nitrogen cycles.
- Observe that growth, erosion, and weathering are examples of past events that led to the formation of the Earth's renewable, non-renewable, and inexhaustible resources.
- Interpret how land forms are a result of constructive and destructive forces such as deposition of sediment and weathering.
- Describe formation processes responsible for coal, gas, oil, and minerals (the Earth's renewable, non-renewable, and inexhaustible resources).
- Compare the physical characteristics of the Earth and moon.
- Identify gravity as a force that keeps the planets and the moon in orbit.
- Demonstrate how some mixtures and solutions maintain the physical properties of their original ingredients.
- Identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving sugar in water.
- Observe and measure properties of substances that remain constant such as boiling points and melting points.
- Investigate physical states of matter.
- Describe light, sound, heat, and electricity as forms of energy.
- Identify and demonstrate with everyday examples ways in which light is reflected and refracted.
- Demonstrate that electricity can flow in a circuit and can produce heat, light, sound, and magnetic effects.
- Verify that a vibrating object can produce sound.
- Differentiate forms of energy including heat, light, electrical, and solar.

### **Supporting Your Student At Home—Fifth Grade Science**

You support the educational process by providing your student opportunities to...

- Choose a scientific topic, identify personal questions, research, and investigate it.
- Observe the weather or pollution levels every day for several months. Encourage your child to keep a journal documenting changes observed.
- Check daily newspapers, television, or the Internet for weather, pollution levels, and ozone readings.
- Create and observe a compost bin.
- Hatch a fish or tadpole and observe the changes as it grows.
- Point out similarities and differences between parents and offspring.
- Produce sounds on musical instruments and other objects. Note the vibration.
- Build a simple circuit.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, Robert A. Vines Science Center, and planetariums.
- Participate in local recycling initiatives.

# Social Studies

A fifth grade student learns about the history of the United States from its early beginnings to the present. The roots of the national democratic government as well as important ideas in the Declaration of Independence and the U.S. Constitution are identified. Through social studies, the fifth grade student uses critical thinking skills (sequencing, categorizing, summarizing information, and making inferences while drawing conclusions) to study the history of the United States.

## During fifth grade, students will...

- Explain the causes and effects of European colonization, including search for the Northwest Passage, and the accomplishments of colonial leaders.
- Identify contributions of individuals during the revolutionary period through the 20<sup>th</sup> century.
- Analyze the events prior to, during, and after the American Revolution leading to the establishment of the American government.
- Identify and explain political, economic, and social changes in the United States during the 19<sup>th</sup> century such as Western Expansion, causes and effects of the Civil War, mechanization of agriculture, and contributions of immigrant groups.
- Understand important issues and events of the 20<sup>th</sup> century such as the use of oil and gas, world wars, and the Great Depression.
- Describe political, population, and economic regions resulting from patterns of human activity.
- Locate the fifty states on a map and identify regions.
- Describe areas and patterns of settlement in the United States.
- Analyze the location of cities and their past and present distribution.
- Explain geographic influences on settlement patterns.
- Describe the reasons and ways people adapt to and modify the environment.
- Analyze the consequences of environmental modifications.
- Apply geographic tools (grid systems, legends, symbols, scales, and compass roses) to construct and interpret maps and translate geographic data into a variety of formats such as raw data to graphs and maps.
- Explain Native American and European colonial economic patterns.
- Identify economic reasons for exploration and colonization.
- Identify colonial industries.
- Describe the developments, benefits, and workings of the U.S. free enterprise system.
- Explain how supply and demand affects U.S. consumers and producers.
- Evaluate the effects of supply and demand on business, industry, and agriculture.
- Explain past and present patterns of work and economic activities and the influence of geographic factors, mobility, resources, mass production, specialization, division of labor, transportation, and communication.
- Explain the impact of American ideas about progress and equality of opportunity on the U.S. economy.
- Identify examples of representative government in the American colonies including the Mayflower Compact and the Virginia House of Burgesses.
- Identify and explain important ideas and the purpose of the Declaration of Independence and the Preamble to the U.S. Constitution.
- Identify and explain basic functions of the three branches of U.S. government and the system of checks and balances.
- Distinguish between and compare responsibilities of state and national governments in the federal system.
- Explain important American customs, symbols, landmarks, and celebrations.
- Summarize reasons for creating the Bill of Rights.
- Describe the fundamental rights of American citizens including freedom of religion, speech, and press; the right to assemble and petition the government; trial by jury; and the right to an attorney.
- Summarize selected amendments to the U.S. Constitution.
- Explain ways individuals participate in the democratic process and identify role models.
- Analyze the role of the individual in national elections.
- Explain how to contact leaders in the national government.
- Identify national leaders, political parties, and qualities of leadership in a democratic society.
- Identify significant examples of the arts from various periods of U.S. history.
- Explain how the arts reflect the times in which they were created.
- Identify and summarize contributions of various racial, ethnic, and religious groups to national identity.
- Describe selected racial, ethnic, and religious customs and celebrations.

- Describe contributions of famous U.S. inventors and scientists.
- Explain how scientific discoveries and technological innovations influenced U.S. economic development.
- Analyze environmental changes brought about through science and technology.
- Predict how future discoveries and innovations could affect U.S. life.
- Continue to use both primary and secondary sources to do in-depth research.
- Analyze, organize, and interpret information.
- Identify different points of view and frames of reference.
- Use appropriate math skills to interpret maps and graphs.
- Use social studies terminology correctly.
- Incorporate main and supporting ideas in verbal and written communication.
- Express ideas orally.
- Identify 50 states of the United States of America.
- Create written and visual materials.
- Use standard grammar, spelling, sentence structure, and punctuation.
- Identify problems and situations requiring decisions, gather information, consider options, predict consequences, take actions, and evaluate solutions/decisions.

### **Supporting Your Student At Home—Fifth Grade Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more resources that support social studies.
- Take a real or virtual tour of important U.S. historical sites such as Plymouth Plantation, Williamsburg, Washington D.C., and battlefields.
- Read historical fiction (*Johnny Tremain*, *Sign of the Beaver*, *My Brother Sam*, the American Girl series) and use maps to trace events.
- Make arts and crafts focusing on the historical past.
- Visit an antique store, the art museum, and other places of interest. Many Houston museums have free admission on Thursday evenings.
- Play games used by children in the past.

## **SIXTH GRADE**

### **Language Arts**

The sixth grade student is actively involved with a variety of texts, including electronic media. The student reads for different purposes and employs multiple strategies to build vocabulary and increase comprehension. As students make connections beyond the text, reading responses reflect higher-level thinking. Sixth grade writers develop polished pieces with increased organization and varied sentence structure. Students have multiple opportunities to use language as a tool for collaboration. They listen to, produce, and critique oral performances and visual representations.

#### **During sixth grade, students will...**

- Read a variety of texts—fiction, nonfiction, poems, and plays—for different purposes.
- Use comprehension strategies such as identifying organization of ideas, finding main ideas and supporting details, drawing inferences, and making generalizations with texts of increasing difficulty.
- Identify the unique features of various kinds of fiction and nonfiction.
- Learn new words found in fiction and nonfiction by applying a variety of strategies such as knowledge of affixes, context clues, and utilization of outside reference tools.
- Respond to, apply, and analyze story elements and various literary devices such as flashback, symbolism, and foreshadowing.
- Make connections about ideas, themes, and issues across texts and across cultures.
- Interact with writers inside and outside the classroom.

- Set goals as a writer by reviewing published models
- Write for a variety of audiences and purposes to inform, express, entertain, describe, and persuade.
- Use prewriting strategies such as brainstorming, webbing, or other graphic organizers to generate ideas.
- Select appropriate forms for writing such as electronic texts, letters, narratives, reports, instructions, journals, and poems.
- Use the writing process—draft, revise, edit—to produce publishable texts which show logical progression of ideas, effective transitions, elaboration, and precise wording.
- Write using accurate spelling, punctuation, and capitalization in final drafts.
- Apply accepted standards of grammar and usage to final drafts such as subject-verb agreement, proper pronoun case and referent, and consistent use of verb tenses.
- Use a variety of sentence structures including simple, compound, and complex sentences when composing.
- Apply criteria to evaluate writing, individually and with peers.
- Use appropriate word processing tools to format texts.
- Use writing strategies such as note-taking and graphic organizers as learning tools for research.
- Organize information gathered from a variety of sources, including technology resources, to develop questions, summarize key concepts, and draw conclusions with teacher support.
- Select, organize, and present information gathered from research in various forms such as timelines, learning logs, and multimedia for presentations.
- Compare and contrast print, visual, and electronic media.
- Interpret meaning and evaluate effectiveness of visual images from a variety of media.
- Speak for a variety of purposes and audiences, adjusting content and delivery as appropriate.
- Listen to oral information to analyze and evaluate content, credibility, and delivery.
- Analyze oral traditions and use of language across regions and cultures.
- Compare own perceptions of spoken messages with those of others.

### **Supporting Your Student At Home—Sixth Grade Language Arts**

You support the educational process by providing your student opportunities to...

- Read aloud on a regular basis.
- Observe and talk about real-life applications of reading and writing.
- Read from an ample supply of magazines, newspapers, and books.
- Visit the library and bookstores.
- Communicate in writing such as in letters, thank you notes, and to-do lists, both written and electronic.
- Keep a journal or personal diary.
- Talk about the plots of movies and television shows to enhance the sense of story.

## **Mathematics**

A sixth grade student further develops algebraic thinking, formal and informal reasoning, and communication of mathematical ideas. The focus of sixth grade shifts from basic operations with whole numbers to describing proportional relationships and addition and subtraction of decimals and fractions. Using various strategies, a student estimates, solves real-world problems, evaluates reasonableness of answers, and justifies processes and outcomes. Throughout sixth grade, a student uses technology along with other mathematical tools to enhance conceptual understanding. A student also uses ratios to describe proportional situations and make predictions.

### **During sixth grade, students will...**

- Estimate, solve, and communicate solutions to ratio and rate problems using scale factor, multiplication, and division.
- Identify factors and multiples (products) for whole numbers.
- Write prime factorizations using exponents.
- Compare and order non-negative rational numbers (whole numbers, fractions, decimals).
- Estimate, solve, and communicate solutions to real-world problems that involve adding and subtracting fractions with and without models.
- Estimate, solve, and communicate solutions to real-world problems that involve adding and subtracting decimals.
- Multiply and divide decimals by whole numbers with and without models.
- Express numbers as percents, fractions, and decimals with and without models.

- Choose addition, subtraction, multiplication, or division to solve problems, justify choice, and determine reasonableness of solution.
- Formulate equations from problem situations.
- Represent and describe real-world situations using integers {..., -2, -1, 0, 1, 2, ...}.
- Classify and measure angles using a protractor.
- Select and justify the use of appropriate units, tools, and formulas to solve problems.
- Convert between measures in the same system.
- Identify angle relationships in triangles and quadrilaterals.
- Describe the relationship between the radius, diameter, and circumference of a circle.
- Use relationships to generate formulas (perimeter, circumference, area, and volume).
- Estimate and evaluate reasonableness of measurements.
- Locate and name points on the coordinate plane using ordered pairs with positive values.
- Draw and compare different graphs of the same data, including line plot, line graph, bar graph, and stem and leaf plot.
- Sketch circle graphs.
- Describe data using measures of central tendency (median, mode, and range).
- Collect, organize, display, and interpret data to represent relationships and solve problems.
- Construct sample spaces (outcomes) using lists and tree diagrams.
- Find the probability of a simple event (draw a marble from a bag) occurring or not occurring.

### **Supporting Your Student At Home—Sixth Grade Mathematics**

You support the educational process by providing your student opportunities to...

- Use math in everyday situations such as measuring, budgeting, shopping, etc.
- Establish a routine for completing daily assignments and for sharing completed assignments with you.
- Explain and justify his/her thinking.
- Review and practice basic facts.
- Play games that involve logical thinking and strategy.
- Ask questions and seek extra help when needed.
- Observe your positive attitude toward mathematics.

## **Science**

A sixth grade student understands that science is a way of learning about the natural world. The student knows that science has a vast body of changing and increasing knowledge described by physical, mathematical, and conceptual models. The student develops skills in the areas of investigation, use of scientific equipment, and technology. The emphasis of study is life science, earth science, chemistry, and physics. The student recognizes that there are patterns that exist within cycles, structures, and processes that interact.

### **During sixth grade, students will...**

- Conduct safe, environmentally appropriate, and ethical field and laboratory investigations.
- Make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- Plan and implement investigative procedures.
- Collect data by observation and measuring.
- Analyze data and interpret information.
- Communicate valid conclusions.
- Construct graphs, tables, maps, and charts.
- Analyze, review, and critique scientific explanations.
- Draw inferences based on data related to promotional materials for products and services.
- Represent the natural world using models and know that these models have limitations.
- Evaluate the impact of research on science, society, and the environment.
- Connect science concepts with the history of science and scientists.
- Collect, analyze, and record information using scientific tools.
- Identify patterns in collected information using percent, average, range, and frequency.
- Describe energy flow in food chains and food webs.
- Understand how an organism's structure impacts its function.
- Observe and describe the function of cells.

- Identify the organization of organs, organ systems, organisms, and populations.
- Identify the location of genetic material within cells.
- Interpret the role of genes in inheritance.
- Observe genetic changes over time (pedigree charts).
- Learn about an organism's responses to internal stimuli such as thirst, hunger, and heat.
- Learn about an organism's responses to external stimuli such as the presence or absence of heat or light.
- Identify the components of an ecosystem.
- Recognize that a larger system is a combination of two or more systems.
- Differentiate the properties of a system from the properties of its parts.
- Identify forces that shape the Earth including uplifting, movement of water, and volcanic activity.
- Identify characteristics of our solar system.
- Describe equipment and transportation devices needed for space travel.
- Summarize the rock cycle.
- Compare and contrast groundwater and surface water.
- Describe components of the atmosphere such as oxygen, nitrogen, and water vapor.
- Identify how atmospheric movement affects weather change.
- Recognize that substances have physical and chemical properties.
- Classify substances by their physical and chemical properties.
- Define matter and energy.
- Explain interactions between matter and energy such as in the water cycle and the decay of biomass.
- Identify and describe the relationship between force and motion.
- Graph changes in motion.
- Identify energy transformations such as electrical energy to heat energy.
- Identify energy types as renewable or non-renewable.
- Identify uses of transformed energy in devices such as water heaters, cooling systems, or hydroelectric and wind power plants.

## **Supporting Your Student At Home—Sixth Grade Science**

You support the educational process by providing your student opportunities to...

- Use science in everyday situations such as measuring, cleaning, recycling, cooking, analyzing events, and communicating observations.
- Maintain a routine for completing assignments and studying.
- Read scientific literature and incorporate vocabulary into conversations.
- Identify how systems work in common household appliances.
- Explore technological opportunities through the use of computers, scientific programs, and videos.
- Observe nature.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, and planetariums.
- Maintain a positive attitude toward science.

## **Social Studies**

A sixth grade student understands the concept of diversity in our world from the study of contemporary world cultures and their contributions to civilization. The student identifies the relationship of ancient cultures and their influences on our modern society. They are able to locate geographic features that help them analyze the ways people adapt and modify their physical environment. Higher levels of thinking are developed by the use of primary and secondary sources, maps, and the study of scientific discoveries and technological innovations. Through the understanding of world history and its contributions, the student learns to better understand the important role of a citizen in a democratic society.

### **During sixth grade, students will...**

- Describe, analyze, and evaluate the influence of historical events on modern societies including war, conquest, invasion, trade, colonization, and immigration.
- Explain the significance of selected individual and group contributions on contemporary societies.
- Create maps, graphs, charts, models, and databases to explain how geographic factors influence economics, politics, government policies, culture, and population patterns.

- Analyze the effects of physical processes and the environment on humans and describe ways people adapt to and modify the physical environment including the role of technology in the process.
- Compare ways societies organize economic systems and describe indicators of economic development.
- Describe economic factors and indicators that influence societies including scarcity, economic interdependence, and production.
- Describe characteristics and identify examples of limited and unlimited government.
- Identify the historical origins of democracy.
- Compare how governments function in selected world societies.
- Describe the roles and responsibilities of citizens and identify the importance of civic participation.
- Compare the roles of U.S. citizens with the roles of citizens in other contemporary societies.
- Explain ways individual political participation varies.
- Explain relationships among individual rights, responsibilities, and freedom in democratic societies.
- Define culture and explain similarities and differences among world cultures.
- Analyze how cultural traits spread and explain effects and consequences of cultural borrowing.
- Explain the relationship between society and its art, architecture, music, and literature.
- Explain relationships among religious ideas, philosophical ideas, and culture.
- Give examples of scientific discoveries and technological innovations that have shaped the world.
- Explain how technology is affected by resources, belief systems, economic factors, and political systems.
- Predict consequences of future discoveries and innovations.
- Students will expand on skills taught in K-5 grades.
- Differentiate between and use primary and secondary sources to expand research.
- Use different points of view and frames of reference.
- Problem solve by gathering information using varied media resources, considering options, predicting consequences, evaluating solutions/decisions, and taking action.

### **Supporting Your Student At Home—Sixth Grade Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies. Then click on the curriculum link.
- Watch news shows, Discovery Channel, History Channel, Travel Channel, CNN.
- Use the computer for monitored Internet exploration.
- Read newspapers, current events, and magazines on travel and people.
- Attend cultural festivals and events.
- Visit libraries and check out books on history or historical figures.
- Read biographies and other books for information on countries.
- Allow your child to enjoy and play video games that have to do with travel or places.
- Travel to give first hand experiences of places being studied.
- Visit museums and exhibits.
- Play geography games and puzzles.

## **SEVENTH GRADE**

### **Language Arts**

The seventh grade student utilizes language to research, analyze, communicate, and evaluate. Students continue to apply comprehension strategies and examine literature to make connections between ideas, themes, and issues across texts and cultures. Using increased organization and varied sentence structure, students produce written pieces for a variety of purposes and audiences. Seventh grade students obtain data from primary and secondary sources, including the Internet, for use in research reports and projects.

## **During seventh grade, students will...**

- Read a variety of texts, fiction, nonfiction, poems, and plays for different purposes.
- Use comprehension strategies such as identifying organization of ideas, finding main ideas and supporting details, drawing inferences, and making generalizations with texts of increasing difficulty.
- Build vocabulary by using knowledge of affixes and Greek and Latin roots, previously learned word recognition strategies, and multiple reference tools.
- Analyze and evaluate the author's use of literary devices such as style, tone, mood, flashback, foreshadowing, and symbolism.
- Connect, compare, and contrast ideas, themes, and issues across texts and cultures.
- Interact with writers inside and outside the classroom.
- Set goals as a writer by reviewing published models.
- Write for a variety of audiences and purposes to inform, express, entertain, describe, and persuade.
- Select appropriate prewriting strategies such as brainstorming, webbing, or other graphic organizers to generate ideas.
- Select appropriate forms for writing such as electronic texts, narratives, reports, instructions, and poems with appropriate voice and style for audience.
- Use the writing process—draft, revise, edit—to produce publishable texts which show logical progression of ideas, effective transitions, elaboration, and precise wording.
- Write using accurate spelling of commonly misspelled words.
- Capitalize and punctuate correctly to create coherent final drafts.
- Apply accepted standards of grammar and usage to final drafts such as subject-verb agreement, proper pronoun case and referent, and consistent use of verb tenses.
- Use a variety of sentence structures including simple, compound, and complex sentences to enhance interest and meaning.
- Apply criteria to evaluate writing, individually and with peers.
- Use appropriate word processing tools to format texts.
- Use writing strategies such as note-taking and graphic organizers as learning tools for research.
- Organize information gathered from a variety of sources, including technology resources, to develop questions, summarize key concepts, and draw conclusions with teacher support.
- Select, organize, and present information gathered from research in various forms such as timelines, learning logs, and multimedia for presentations.
- Interpret meaning and evaluate effectiveness of visual images from a variety of media.
- Analyze and evaluate elements used to convey meaning in a variety of media such as film and political cartoons.
- Demonstrate effective oral communication for a variety of purposes and audiences.
- Listen to a speaker's message to understand and evaluate it for major ideas and supporting evidence.
- Analyze oral traditions and use of language across regions and cultures.
- Compare own perceptions of spoken messages with those of others.

## **Supporting Your Student At Home—Seventh Grade Language Arts**

You support the educational process by providing your student opportunities to...

- Observe you reading.
- Develop daily reading habits by providing reading material at home.
- Communicate by writing thank-you notes and keeping a daily journal, both written and electronic.
- Visit libraries and bookstores.
- Talk about current issues and note bias when present in the media.
- Evaluate ads for fact, opinion, and propaganda.
- Read and follow directions such as for model-building, video games, and digital technology.

## **Mathematics**

A seventh grade student continues to make connections to the real world by extending the understanding of proportionality, geometry, measurement, probability, and statistics. The student uses models to develop the algorithms for multiplication and division of fractions and decimals, as well as all operations with integers. Through the application of these skills and the use of technology, the seventh grader uses algebraic thinking, reasoning, and communication to justify processes and outcomes.

### **During seventh grade, students will...**

- Find unit rates (miles per hour or cost per item) and ratios of proportional relationships.
- Estimate, solve, and communicate solutions to real-world problems that involve proportions and percents.
- Write a mathematical expression to describe patterns in data and graph the relationship.
- Use order of operations and exponents.
- Solve equations using models and symbols.
- Represent multiplication and division of fractions and decimals using models.
- Estimate, solve, and communicate solutions to real-world problems that involve adding, subtracting, multiplying, and dividing fractions and decimals.
- Convert and compare fractions, decimals, and percents.
- Compare and order integers.
- Add, subtract, multiply, and divide integers using models to make connections to algorithms.
- Choose addition, subtraction, multiplication, or division to solve problems, justify choice, and determine reasonableness of solution.
- Identify angle pairs as complementary or supplementary.
- Classify two- and three-dimensional figures.
- Explore and define similarity using models.
- Sketch all views and make nets (picture of an unfolded box) of three-dimensional figures.
- Generate formulas to solve problems that involve measurement conversions, scale drawings, area, perimeter, circumference, and volume.
- Estimate measurements and solve problems with length, area, and volume.
- Represent squares and square roots using models.
- Apply geometric concepts and properties to solve problems.
- Locate and name points on the coordinate plane using ordered pairs with integers.
- Graph reflections and translations on a coordinate plane.
- Select, use, and justify appropriate representations of collected data (line, bar, and circle graphs; Venn diagrams; stem and leaf plots; tables; and charts).
- Justify the use of mean, mode, median, or range to describe a set of data.
- Make inferences and convincing arguments based on data.
- Construct sample spaces (outcomes) for simple or composite experiments (tossing a coin and spinning a spinner).
- Find probability of independent events.

### **Supporting Your Student At Home—Seventh Grade Mathematics**

You support the educational process by providing your student opportunities to...

- Use math in everyday situations such as discount, sales tax, tip, etc.
- Maintain a routine for completing daily assignments and for sharing completed assignments with you.
- Explain and justify his/her thinking.
- Play games that promote logical thinking and strategy.
- Ask questions and seek extra help when needed.
- Observe your positive attitude toward mathematics.

## **Science**

The seventh grade student continues to learn about the natural world. As the concepts increase in depth and complexity, the student develops problem-solving skills to think critically and make informed decisions. The student uses models of objects and events as tools for understanding the natural world and systems. The emphasis of study continues to be life science, earth science, chemistry, and physics.

### **During seventh grade, students will...**

- Conduct safe, environmentally appropriate, and ethical field and laboratory investigations.
- Make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- Plan and implement investigative procedures.
- Collect data by observation and measuring.
- Analyze data and interpret information.

- Communicate valid conclusions.
- Construct graphs, tables, maps, and charts.
- Analyze, review, and critique scientific explanations.
- Draw inferences based on data related to promotional materials for products and services.
- Represent the natural world using models and know that these models have limitations.
- Evaluate the impact of research on science, society, and the environment.
- Connect science concepts with the history of science and scientists.
- Collect, analyze, and record information using scientific tools.
- Collect and analyze information to recognize patterns.
- Identify components of an ecosystem.
- Identify and describe various biomes.
- Observe and describe changes in an ecosystem over time.
- Observe and describe ecosystem changes needed to reach equilibrium.
- Research the structure and function of human body systems.
- Identify how organisms maintain stable internal conditions such as shivering, sweating, or panting.
- Compare the diversity of asexually and sexually produced offspring.
- Compare traits of organisms of different species that enhance their survival and reproduction.
- Identify dominant and recessive traits.
- Analyze physical conditions that may result from internal stimuli such as a fever or vomiting.
- Identify responses in organisms to external stimuli such as the presence or absence of light.
- Identify the Earth's seasonal changes and their causes.
- Identify moon phases.
- Describe and predict the impact of different catastrophic events on the Earth.
- Analyze effects of regional deposition and weathering.
- Identify and demonstrate chemical changes.
- Determine properties and position of elements on the periodic table.
- Recognize that compounds are composed of elements.
- Identify the relationships between force and motion by investigating simple machines.
- Demonstrate Newton's First Law of Motion.
- Relate basic processes in living organisms to natural forces such as flow of blood and emergence of seedlings.
- Identify potential and kinetic energy.
- Identify radiant energy from the Sun as related to photosynthesis.
- Make inferences and draw conclusions about effects of human activity on the Earth's renewable, non-renewable, and inexhaustible resources.

### **Supporting Your Student At Home—Seventh Grade Science**

You support the educational process by providing your student opportunities to...

- Use science in everyday situations such as measuring, observing, inferring, analyzing, and drawing conclusions.
- Maintain a routine for completing daily assignments and studying.
- Read scientific literature and incorporate vocabulary into conversations.
- Explore technological opportunities through the use of computers, scientific programs, and videos.
- Observe nature.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, and planetariums.
- Maintain a positive attitude toward science.

## **Social Studies**

The seventh grade student learns about the history of Texas from early times to the present. The student uses primary and secondary sources (biographies, novels, speeches, letters, and diaries) to acquire information about Texas. The Texas History content enables the student to understand the importance of patriotism, to function in a free enterprise society, and to appreciate the basic democratic values of our state and nation.

## **During seventh grade, students will...**

- Compare the cultures of Native Americans in Texas.
- Examine significant events and policies from European exploration and colonization of Texas.
- Trace the development of significant issues and events in Texas during the 19<sup>th</sup> century including the Texas Revolution, the Republic of Texas, statehood, the U.S. Civil War, and Reconstruction.
- Create geographic tools (maps, charts, graphs, tables) to collect, analyze, and interpret data related to Texas in the 19<sup>th</sup> and 20<sup>th</sup> centuries.
- Locate and compare places and regions in Texas, analyzing the interactions of physical and human factors on the environment.
- Analyze the characteristics and migration patterns of Texas populations in the 19<sup>th</sup> and 20<sup>th</sup> centuries.
- Trace the factors that led to urbanization of Texas.
- Analyze the impact of free enterprise on the Texas economy and its interdependence with U.S. and world markets.
- Identify the basic principles reflected in the Texas Constitution highlighting the influence of the U.S. Constitution on the Texas Constitution.
- Describe the structure and function of government at the municipal, county, and state level.
- Summarize the rights and civic responsibilities of Texans.
- Identify and describe the importance of different points of view, freedom of speech, and the freedom of the press.
- Identify the leadership qualities and contributions of elected and appointed leaders from Texas.
- Explain ethnic diversity within Texas and describe how groups maintain their cultural heritage.
- Identify the Spanish influence in Texas on place names, vocabulary, and architecture.
- Analyze the role of scientific discoveries and technology on the political, economic, and social development of Texas.
- Identify Texas leaders in science and technology.
- Analyze how science and technology have created interdependence in Texas.
- Reinforce the evaluation of primary and secondary sources (biographies, novels, speeches, letters, and diaries).
- Continue to communicate social studies information through oral, written, and visual forms.
- Expand the use of problem solving and decision making using current events and Texas history curriculum.

## **Supporting Your Student At Home—Seventh Grade Social Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies. Then click on the curriculum link.
- Use print and electronic media (newspaper, radio, TV, and the Internet) to obtain current events information.
- View historical programs sponsored by Texas Parks and Wildlife, the History Channel, and the Public Broadcasting Service.
- Visit local and state historical sites such as the San Jacinto Monument, Washington-on-the-Brazos, Sam Houston's home, Stephen F. Austin State Park, Galveston, and the Port of Houston.
- Read Texas periodicals (Texas Highways, Texas Parks and Wildlife, and Texas Monthly).

# **EIGHTH GRADE**

## **Language Arts**

The eighth grade student demonstrates proficiency in using language to research, analyze, communicate, and evaluate. The student reads widely in classic, contemporary, and informational texts. Using multiple strategies, the eighth grader reads with increasing comprehension and responses demonstrate higher level thinking. Compositions and presentations reflect thoughtful organization for varied purposes and audiences. Students participate in designing criteria to assess writing, reading, and speaking activities.

## **During eighth grade, students will...**

- Read for different purposes a variety of texts such as fiction, nonfiction, poems, and plays.
- Apply higher level thinking skills and comprehension strategies through reading increasingly difficult texts.
- Identify the unique features of various kinds of fiction and nonfiction.
- Build vocabulary using knowledge of Greek and Latin affixes and roots as well as other previously learned word recognition strategies.
- Interact with a variety of texts, including classic and contemporary works, by analyzing and evaluating an author's use of story elements and literary devices such as symbolism and allusion.
- Connect, compare, and contrast ideas, themes, and issues across texts and across cultures.
- Interact with writers inside and outside the classroom.
- Set goals as a writer by reviewing published models and using them as a framework to compose for authentic audiences.
- Write for a variety of audiences and purposes to inform, express, entertain, describe, and persuade.
- Use writing for self-reflection, learning, and research to produce products such as journals, notes, and graphic organizers.
- Select appropriate forms for writing such as electronic texts, narratives, reports, instructions, and poems with appropriate voice and style for audience.
- Select appropriate prewriting strategies such as brainstorming, webbing, or other graphic organizers to generate ideas.
- Use the writing process—draft, revise, edit—to produce publishable texts which show logical progression of ideas, effective transitions, elaboration, and precise wording.
- Write using accurate spelling of commonly misspelled words.
- Capitalize and punctuate correctly to create coherent final drafts.
- Apply accepted standards of grammar and usage to final drafts such as subject-verb agreement, proper pronoun case and referent, and consistent use of verb tenses.
- Use a variety of sentence structures including simple, compound, complex, and compound-complex sentences to enhance clarity, interest, and meaning.
- Apply criteria to evaluate writing in a variety of formats, individually and with peers.
- Use appropriate word processing tools to format texts.
- Research, organize, and evaluate information gathered from a variety of sources, including technology resources, with minimal teacher support.
- Present and/or publish information gathered from research in various forms such as timelines, learning logs, and multimedia presentations.
- Interpret meaning and evaluate effectiveness of visual images from a variety of media.
- Analyze and evaluate elements used to convey meaning in a variety of media such as film and political cartoons.
- Produce visual presentations which reflect how language and medium contribute to the message.
- Demonstrate effective oral communication for a variety of purposes and audiences.
- Analyze oral traditions and use of language across regions and cultures.
- Analyze and evaluate a speaker's techniques including the use of persuasion.
- Compare own perceptions of spoken messages with those of others.

## **Supporting Your Student At Home—Eighth Grade Language Arts**

You support the educational process by providing your student opportunities to...

- Read self-selected material daily for pleasure.
- Visit libraries and bookstores.
- Express viewpoints by writing to local newspapers or national magazines.
- Practice creative writing and keep a personal portfolio.
- Read and follow directions such as for model building, video games, and digital technology.
- Read charts and tables such as nutrition analysis on food packaging, transportation schedules, floor plans, travel brochures, and sports statistics.
- Talk about current issues and analyze political cartoons.
- Evaluate magazine advertising and television commercials.

# Mathematics

An eighth grade student uses the basic principles of algebra to analyze and represent proportional and non-proportional relationships. The student extends and communicates knowledge of geometry, spatial reasoning, measurement, probability, and statistics and then makes applications to real-world situations. In preparation for Algebra I, students use technology and other mathematical tools to explore and describe increasingly complex situations involving rational and irrational numbers.

## During eighth grade, students will...

- Use unit rate to represent proportional relationships (cost per item or words per minute).
- Compare and contrast proportional and non-proportional relationships.
- Estimate, solve, and communicate solutions to real-world problems involving percent and proportions.
- Solve one and two step equations with and without models.
- Represent a set of data or a pattern using a model, table, graph, and equation.
- Find and evaluate an algebraic expression to determine any term in an arithmetic sequence.
- Compare and order rational numbers (negative and positive numbers including fractions and decimals).
- Choose and justify the use of the appropriate form of a rational number to solve real life problems.
- Select appropriate operations, justify choices, and determine reasonableness of solutions to problems involving rational numbers.
- Express numbers in scientific notation ( $2.3 \times 10^7 = 23,000,000$ ).
- Approximate irrational numbers, such as  $\pi$  (pi) and  $\sqrt{2}$  (square root of 2).
- Use pictures or models to demonstrate the Pythagorean Theorem and use it to solve real-world problems.
- Predict, find, and justify solutions to real-world problems.
- Find the missing length in similar figures using proportions.
- Draw three-dimensional figures from different perspectives.
- Connect the models of surface area and volume to formulas.
- Estimate and find surface area and volume using models and nets (a picture of an unfolded box).
- Describe the effect on perimeter, area, and volume when the dimensions of a figure are changed.
- Locate and name points on the coordinate plane using ordered pairs with rational numbers.
- Generate similar shapes by using dilations (enlargements or reductions).
- Graph reflections, translations, and dilations (enlargements and reductions).
- Apply geometric concepts and properties to solve problems.
- Make predictions from scatterplots.
- Select the appropriate measure of central tendency to describe data.
- Recognize misuses of graphical or numerical representations and evaluate predictions.
- Select and use appropriate representations of collected data with line plots, line graphs, stem and leaf plots, circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams.
- Evaluate methods of sampling to determine validity of an inference made from a set of data.
- Find and use probability of dependent and independent events to make predictions.
- Select and use different models to conduct an experiment to simulate an event.

## Supporting Your Student At Home—Eighth Grade Mathematics

You support the educational process by providing your student opportunities to...

- Use math in everyday situations such as discussing statistical data reported in media, interest, discount, tax, tip, etc.
- Maintain a routine for completing daily assignments and for sharing completed assignments with you.
- Explain and justify his/her thinking.
- Play games that promote logical thinking and strategy.
- Ask questions and seek extra help when needed.
- Observe your positive attitude toward mathematics.

# Science

The eighth grade student further develops knowledge about the natural world. The student analyzes and communicates knowledge gained from scientific investigations. Building on prior knowledge, the student uses patterns to make predictions about the natural world and the effects of change over time. The emphasis continues to be life science, earth science, chemistry, and physics.

## During eighth grade, students will...

- Conduct safe, environmentally appropriate, and ethical field and laboratory investigations.
- Make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- Plan and implement investigative procedures.
- Collect data by observation and measuring.
- Analyze data and interpret information.
- Communicate valid conclusions.
- Construct graphs, tables, maps, and charts.
- Analyze, review, and critique scientific explanations.
- Draw inferences based on data related to promotional materials for products and services.
- Represent the natural world using models and know that these models have limitations.
- Evaluate the impact of research on science, society, and the environment.
- Connect science concepts with the history of science and scientists.
- Collect, analyze, and record information using scientific tools.
- Make predictions from collected information.
- Identify a problem, predict the outcome, design a model, test the model, evaluate the results, and make recommendations for improving the model.
- Describe interactions among human body systems.
- Identify feedback mechanisms that maintain equilibrium such as body temperature, turgor pressure, and chemical reactions.
- Describe interactions within ecosystems.
- Identify the impact of environmental conditions on the survival of organisms.
- Understand the difference between inherited traits and mutations.
- Predict possible genetic outcomes using Punnett Squares.
- Describe interactions between solar, weather, and ocean systems.
- Illustrate and predict the lunar and rock cycles.
- Recognize that oceans affect climate changes.
- Observe the carbon, water, and nitrogen cycles and predict the results of changes in these cycles.
- Describe the components of the universe such as stars and galaxies.
- Use light years to describe distances in the universe.
- Describe theories of the origin of the universe.
- Predict land features resulting from gradual changes in mountain building, beach erosion, subsidence, and continental drift.
- Investigate how human activities have modified the quality of soil, water, and air.
- Analyze events that may have contributed to extinction.
- Describe the structure and parts of an atom.
- Identify the properties of the parts of an atom (mass and electrical charge).
- Demonstrate that substances may react chemically to form new substances.
- Interpret information on the periodic table.
- Recognize the importance of formulas and equations.
- Identify physical and chemical properties that influence development and application of products (cooking surfaces, insulation, adhesives, and plastics).
- Illustrate interactions between matter and energy including specific heat.
- Identify reactions which are endothermic (absorbing heat) and exothermic (releasing heat).
- Demonstrate how unbalanced forces change speed and direction.
- Recognize that waves are generated and can travel through different media.

## Supporting Your Student At Home—Eighth Grade Science

You support the educational process by providing your student opportunities to...

- Use science in everyday situations such as measuring, observing, inferring, analyzing, and drawing conclusions.
- Maintain a routine for completing daily assignments and studying.
- Read scientific literature and incorporate vocabulary into conversations.
- Explore technological opportunities through the use of computers, scientific programs, and videos.
- Observe nature.
- Visit science museums, arboretums, zoos, aquariums, IMAX presentations, and planetariums.
- Maintain a positive attitude toward science.

## Social Studies

The eighth grade student studies the history of the United States from exploration to the time of Reconstruction, as well as aspects of geography, government, and economics. The student learns from a variety of sources in order to acquire information and a deep appreciation of our country's history. An advanced approach utilizing social studies skills (analysis, research, and technology) helps the student prepare for the more rigorous high school curriculum.

### During eighth grade, students will...

- Identify reasons for European exploration and colonization of North America.
- Identify the significant grievances, events, issues, and people related to the Revolutionary era.
- Analyze foreign and domestic issues during the early years of the Republic.
- Trace the roots of westward expansion and its effects on national development; explain the meaning of the phrase *Manifest Destiny*.
- Analyze political, economic, and social events and issues that led to the growth of sectionalism, the Civil War, and Reconstruction.
- Create and use geographic tools to collect, analyze, and interpret data.
- Locate and analyze physical and human geographic factors on events in the United States.
- Analyze the impact of human adaptations and modifications on the environment.
- Explain reasons for the differences in economic development across the United States.
- Analyze industrialization and urbanization in the 19<sup>th</sup> century.
- Trace the development, characteristics, and benefits of the free enterprise system.
- Identify and discuss significant historical documents including the U.S. Constitution and its amendment process.
- Explain and give examples of seven principles of the U.S. Constitution.
- Analyze the arguments of Federalists and Anti-Federalists.
- Describe conflicts over states' rights.
- Summarize and evaluate the impact of landmark U.S. Supreme Court cases.
- Identify the roles and responsibilities of citizens in a democratic process.
- Explain the importance of freedom to express different points of view in a democratic society.
- Describe the qualities, contributions, and conflicts of diverse groups that settled in the United States.
- Analyze the qualities and contributions of effective leaders in a democratic society.
- Describe and evaluate the major reform movements of the 19<sup>th</sup> century.
- Describe the development of religious freedom and its influence on the American way of life.
- Trace and describe the arts and cultural activities that reflect the times in which they were created.
- Explain the ways technology and scientific innovation affect U.S. economic development and daily life.

## Supporting Your Student At Home—Eighth Grade Social Studies

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies.
- Read the daily newspaper and current magazines.
- Visit libraries and bookstores with your child.
- Share an oral history of your family.
- View television news and/or listen to news broadcasts on the radio.

- Visit local historical sites (Galveston, San Jacinto Battleground). If possible, visit national sites (Williamsburg; Washington, D.C.)
- Attend events such as plays, performances, and musicals pertaining to American history.

# ENGLISH I

## Language Arts

An English I student increases and refines communication skills. Students regularly plan, draft, edit, and complete polished compositions. They write to persuade, report, and describe. Students read extensively and analyze literary works in multiple genres from world literature, both contemporary and classic. They listen to, present, and interpret oral presentations and visual representations.

### During English I, students will...

- Read world literature from a variety of sources for entertainment, information, or appreciation of writer's craft.
- Expand vocabulary by using discussions, context clues, and word analysis such as prefixes, suffixes, and roots to understand unfamiliar words.
- Use strategies such as re-reading, note-taking, questioning, and summarizing to increase comprehension.
- Identify main idea and supporting ideas, draw inferences and conclusions, and make generalizations and predictions.
- Analyze text structures such as compare and contrast, cause and effect, and chronological order for their effect on meaning.
- Analyze literary elements such as theme, setting, and characterization to understand the defining characteristics of different literary forms such as the epic, drama, and the novel.
- Recognize the effect of poetic elements such as metaphors, similes, personification, and sound devices on meaning.
- Analyze texts such as editorials and advertisements for logical argument, bias, and persuasive techniques.
- Use technology as well as other resources for information acquisition to research self-selected and assigned topics.
- Use self-generated and assigned topics to write in a variety of forms, including business correspondence, personal, literary, and persuasive texts for various audiences.
- Write to persuade, report, and describe with an emphasis placed on organizing logical arguments.
- Include a clearly expressed thesis as well as supporting evidence in writing.
- Write in a voice and style appropriate to audience and purpose.
- Use writing as a tool for formulating questions, compiling information from primary and secondary sources, and creating reports, summaries, and other formats to draw conclusions.
- Use writing process, including prewriting strategies, developing drafts, proofreading, revising, and publishing.
- Evaluate own writing and respond productively to peer review.
- Develop fluency through a variety of writing processes.
- Accumulate and review one's own written work to determine its strengths and weaknesses and to set own goals as a writer.
- Analyze and discuss published pieces as writing models and apply criteria developed by self and others to evaluate writing.
- Rely increasingly on the conventions and mechanics of written English, including the rules of grammar and usage, to write clearly and effectively.
- Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization such as italics and ellipses.
- Demonstrate control over grammatical elements such as subject-verb agreement, pronoun-antecedent agreement, verb forms, and parallelism.
- Compose increasingly more complex sentences that contain gerunds, participles, and infinitives in their various functions.
- Use technology to create, revise, edit, and publish writing.

- Produce error-free final drafts.
- Distinguish purposes of various media forms such as texts that inform, entertain, or persuade.
- Recognize how visual, sound, and design techniques convey messages in media.
- Evaluate and critique the persuasive techniques of media messages.
- Compare, contrast, and critique various media coverage of the same event.
- Create, test, and revise a presentation using available technology when appropriate.
- Engage in critical, empathic, appreciative, and reflective listening.
- Prepare, organize, and present a variety of accurate informative and persuasive messages using available technology.
- Plan and present literary interpretations.
- Respond appropriately to presentations and performances of peers and artists.

### **Supporting Your Student At Home—English I**

You support the educational process by providing your student opportunities to...

- Know that you support and encourage reading.
- Develop time-management skills and assume responsibility for meeting reading and writing deadlines.
- Read independently in areas of personal interest.
- Talk to you about reading and writing assignments.
- Write in a personal journal or diary.

# **ALGEBRA I**

## **Mathematics**

Algebra I is the foundation for all high school mathematics. An algebra student builds on prior knowledge to expand understanding through new mathematical experiences. Symbolic reasoning plays an essential role in algebra and provides a powerful way to represent mathematical situations. A student begins to explore the relationship between functions and equations to represent and model real-world problems. To understand underlying relationships between functions and equations, a student uses a variety of representations, tools, and technology. The capabilities of the graphing calculator enable students to solve more meaningful problems. Problem solving, language and communications, connections within and outside mathematics, and reasoning are fundamental processes of Algebra I.

### **During Algebra I, students will...**

- Represent relationships among quantities in a variety of ways including the use of concrete models, diagrams, graphs, verbal descriptions, equations, and inequalities.
- Write and solve quadratic equations including real-world applications.
- Represent single variable data using several types of graphs.
- Use symbols to represent unknowns.
- Use commutative, associative, and distributive properties in problem situations.
- Search for patterns to make generalizations by using variables when given data in various forms.
- Write and solve equations, inequalities, or systems modeled by linear functions including real-world applications.
- Develop the concept of a function (a mathematical cause-and-effect relationship).
- Develop the concept of slope as a rate of change.
- Describe independent and dependent quantities for functions and find reasonable domain and range values for given situations.
- Use graphs to interpret, determine, and predict slope and intercepts of linear functions.
- Collect and record data or use data sets to determine, interpret, and draw conclusions from functional relationships.
- Analyze data to make and interpret scatter plots and find the trend line to solve real-world problems.
- Identify and sketch the parent functions  $y = x$  and  $y = x^2$ .
- Recognize and describe the effects of parameter changes on linear and quadratic functions.
- Interpret and create situations for graphs.

- Determine whether the relationships between quantities are linear or quadratic.
- Determine the roots of quadratic functions and describe the relationship between the roots and the solutions.
- Perform operations with polynomials and factor polynomials in problem situations.
- Use patterns to generate and apply laws of exponents.
- Use concrete models and algebraic methods to analyze and describe data and represent situations involving inverse variation and exponential growth and decay.

### **Supporting Your Student At Home—Algebra I**

You support the educational process by providing your student opportunities to...

- Make connections to algebra through real life situations.
- Have a positive attitude about mathematics and observe your positive attitude about mathematics.
- Establish a routine for completing daily assignments and for sharing completed assignments with you.
- Make daily school attendance a priority.
- Ask for extra help and attend tutorials as needed.
- Have a scientific or teacher-recommended graphing calculator.

# **INTEGRATED PHYSICS AND CHEMISTRY**

## **Science**

An Integrated Physics and Chemistry (IPC) student continues to study the natural world. The student conducts field and laboratory investigations and uses critical thinking, in addition to problem-solving skills, to make informed decisions. This course integrates the disciplines of physics and chemistry. Topics include motion, waves, energy transformations, properties of matter, changes in matter, and solution chemistry.

### **During Integrated Physics and Chemistry, students will...**

- Plan and implement safe investigative procedures including asking questions, formulating testable hypotheses, and selecting the proper equipment and technology.
- Collect data and make accurate measurements.
- Organize collected data to make predictions and inferences.
- Evaluate and analyze data and communicate valid conclusions based on the data.
- Use scientific evidence and information to analyze, review, and critique scientific explanations.
- Evaluate the impact of research on scientific thought, society, and the environment.
- Describe connections between physics and chemistry and future careers.
- Research and describe the history of physics and chemistry including contributions of scientists in those fields.
- Calculate speed, momentum, acceleration, work, and power in systems such as in the human body, moving toys, and machines.
- Investigate and describe applications of Newton's laws (vehicle restraints, sports activities, geological processes, and satellite orbits).
- Analyze the effects caused by changes in a force or distance within simple machines as demonstrated in household devices, the human body, and vehicles.
- Investigate and demonstrate mechanical advantage and efficiency of various machines such as levers, motors, wheels and axles, pulleys, and ramps.
- Describe the Law of Conservation of Energy.
- Investigate and demonstrate the movement of heat through solids, liquids, and gases by convection, conduction, and radiation.
- Analyze the efficiency of energy conversions responsible for the production of electricity (radiant energy, nuclear energy, geothermal energy, fossil fuels, and the movement of water or wind).
- Investigate and compare the economic and environmental impact of using various energy sources such as rechargeable or disposable batteries and solar cells.
- Measure the thermal and electrical conductivity of various materials and explain results.
- Investigate and compare series and parallel circuits.
- Analyze the relationship between an electric current and the strength of its magnetic field using simple electromagnets.

- Analyze the effects of heating and cooling processes in weather, living, and mechanical systems.
- Demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves.
- Demonstrate wave interactions including interference, polarization, reflection, refraction, and resonance within various materials.
- Identify uses of electromagnetic waves in various technological applications such as fiber optics, optical scanners, and microwaves.
- Demonstrate the application of acoustic principles such as echolocation, musical instruments, noise pollution, and sonograms.
- Investigate and identify properties of fluids including density, viscosity, and buoyancy.
- Research and describe the historical development of the Atomic Theory.
- Identify the composition of various materials such as metal salts, light sources, fireworks displays, and stars using spectrum analysis techniques.
- Relate the chemical behavior of an element, including bonding, to its placement on the periodic table.
- Classify samples of matter from everyday life as elements, compounds, or mixtures.
- Distinguish between physical and chemical changes in matter such as oxidation, digestion, changes in states, and stages in the rock cycle.
- Analyze energy changes that accompany chemical reactions such as those occurring in heat packs, cold packs, and glow sticks.
- Investigate and identify the Law of Conservation of Mass.
- Describe types of nuclear reactions such as fission and fusion and their applications (medicine and energy production).
- Research and describe the environmental and economic impact of the end products of chemical reactions.
- Relate the structure of water to its function as the universal solvent.
- Relate the concentration of ions in a solution to physical and chemical properties such as pH, electrolytic behavior, and reactivity.
- Simulate the effects of acid rain on soil, buildings, statues, or microorganisms.
- Demonstrate how various factors influence solubility including temperature, pressure, and nature of the solute and solvent.
- Demonstrate how factors such as particle size influence the rate of dissolving.

### **Supporting Your Student At Home—Integrated Physics and Chemistry**

You support the educational process by providing your student opportunities to...

- Maintain a positive attitude about science.
- Encourage regular school attendance.
- Help the student to develop a time management schedule that allows for extra-curricular activities and homework.
- Attend tutorials as needed.
- Develop an awareness of chemistry and physics in everyday situations.
- Encourage reading and discussion of current events that involve chemistry and physics.
- Discuss what the student has learned in class.
- Visit science museums to stimulate an interest in science.

# **WORLD GEOGRAPHY STUDIES**

## **Social Studies**

The ninth grade World Geography student understands the relationships between people, places, and environments by mapping information about them in a spatial context. The student identifies the physical processes that shape patterns in the physical environment. The student uses maps and other representations to acquire, process, and report information. The student studies the characteristics, distributions, and complexity of Earth's cultural groups and understands how human actions modify the physical environment and how physical systems affect human systems. The student understands how to apply geography to interpret the past, to analyze the present, and to plan for the future.

## **During World Geography Studies, students will...**

- Analyze the ways physical and human geographical patterns and processes affect events and regions.
- Describe the human and physical characteristics of a place over time and how perceptions of that place change society.
- Describe how the physical environment is shaped by the Earth-Sun relationship and other physical processes.
- Explain climate distribution and factors that influence climate regions.
- Relate physical process to the development of landforms and explain the distribution of plants and animals.
- Analyze the political, economic, social, and cultural characteristics of places and regions and how these determine the level of development and standard of living.
- Locate settlements and explain the processes that influence the location, size, and distribution of cities.
- Construct and analyze data to explain characteristics of societies and predict rates of growth.
- Explain the political, economic, social, and environmental factors that contribute to human migration.
- Describe past trends in population growth and develop and defend a hypothesis of future trends.
- Compare the ways human and physical processes modify the environment; describe and analyze the ways the environment reacts to abnormal and/or hazardous environmental conditions.
- Identify physical and human factors that constitute a region.
- Describe the characteristics of and explain how traditional, command, and market economies operate.
- Compare the way people meet their basic needs through production of goods and services.
- Map the locations of and factors affecting economic activities.
- Describe how changes in technology, transportation, and communication affect economic activities.
- Compare global trade patterns and analyze how the creation and distribution of resources affect the location and patterns of movement of products, capital, and people.
- Analyze how policies related to the use of resources impact geography and economics.
- Prepare maps of political entities and interpret the distribution of political power using maps.
- Define and cite historical and contemporary examples of *Spatial Exchange*.
- Explain the physical, human, and geographic processes that interact to form political divisions.
- Explain how conflict and cooperation shape the balance of power on the Earth's surface.
- Explain the ways geographic factors shape foreign policies.
- Identify different points of view and analyze how they influence the development of public policies and decision-making processes at all government levels.
- Describe cultural patterns and landscapes.
- Compare life in different places and give examples of ways various groups view cultures, places, and regions.
- Describe patterns of culture that make regions of the world distinctive.
- Compare the economic opportunities available to different regions.
- Describe processes which prompt cultural change and analyze changes in specific regions and traditional cultures.
- Evaluate case studies to identify cultural convergence and divergence.
- Evaluate the ways technology and human-environmental interaction influence the physical environment.
- Describe the impact of technology, new markets, and revised perceptions of resources.
- Analyze the role of technology in economic activity and its environmental consequences.
- Construct and interpret maps to obtain and analyze data.
- Apply basic statistical concepts and analytical methods to analyze and evaluate historical and geographic information from a variety of sources.
- Present geographic information in written and visual forms.
- Communicate orally and use geographic terminology correctly.
- Plan, organize, and complete a group project using problem-solving and decision-making processes.

## **Supporting Your Student At Home—World Geography Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies.
- Locate on a world map the places mentioned on television or radio news broadcasts and describe the cultural, political, and economic characteristics of the places.

- Use a road atlas, travel brochures, and guidebooks to plan a personal trip and identify points of interest along the route.
- Use a bus schedule, shuttle bus map, or city map to plan a trip from home to a sports arena, theater, or other point of interest using public transportation.
- Plan a tour of your community that highlights the community's most important physical and human geographic characteristics.
- Draw a map and give detailed instructions on how to get to your home from specific points in the community that could be used by people who wish to visit.

## ENGLISH II

### Language Arts

An English II student increases and refines communication skills. Students regularly produce polished drafts in all forms of writing with an emphasis on persuasive forms. They read extensively in multiple genres from world literature. Students read critically and research self-selected and assigned topics. They produce, analyze, appreciate, and evaluate oral performances and visual representations.

#### **During English II, students will...**

- Read extensively in multiple genres from world literature such as selected short stories, dramas, novels, and poetry to discover models for writing.
- Expand vocabulary by recognizing context clues, figurative language, idioms, multiple-meaning words, and technical terms.
- Analyze analogies, homonyms, synonyms, antonyms, connotations, and denotations.
- Use strategies such as rereading, note taking, questioning, and summarizing to increase comprehension.
- Identify main idea and supporting ideas, draw inferences and conclusions, and make generalizations and predictions.
- Analyze text structures such as compare and contrast, cause and effect, and chronological order for their effect on meaning.
- Compare and contrast themes, conflicts, and characters to defend responses and interpretations using the text.
- Examine the language, form, and rhythm of poetry from a variety of time periods.
- Recognize logical, deceptive, and faulty modes of persuasion.
- Use technology as well as other resources for information acquisition to research self-selected and assigned topics to produce reports and projects for various audiences.
- Use self-generated and assigned topics to write in a variety of forms, including business, personal, literary, and persuasive texts for various audiences.
- Write to persuade, report, and describe with an emphasis placed on organizing logical arguments and expressions of opinion.
- Include a clearly expressed thesis as well as supporting evidence in writing.
- Write in a voice and style appropriate to audience and purpose with increased precision.
- Use writing as a tool for formulating questions, compiling information from primary and secondary sources, and creating reports, summaries, and other formats to draw conclusions.
- Use writing process, including prewriting strategies, developing drafts, proofreading, revising, and publishing.
- Evaluate own writing and respond productively to peer review.
- Develop fluency through a variety of writing processes.
- Accumulate and review one's own written work to determine its strengths and weaknesses and to set own goals as a writer.
- Analyze and discuss published pieces as writing models and apply criteria developed by self and others to evaluate writing.
- Rely increasingly on the conventions and mechanics of written English, including the rules of grammar and usage, to write clearly and effectively.

- Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization such as italics and ellipses.
- Demonstrate control over grammatical elements such as subject-verb agreement, pronoun-antecedent agreement, verb forms, and parallelism.
- Compose increasingly more complex sentences that contain gerunds, participles, and infinitives in their various functions.
- Use technology to create, revise, edit, and publish writing.
- Produce error-free final drafts.
- Distinguish purposes of various media forms such as texts that inform, entertain, or persuade.
- Recognize how visual, sound, and design techniques convey messages in media.
- Evaluate and critique the persuasive techniques of media messages.
- Compare, contrast, and critique various media coverage of the same event.
- Create, test, and revise a project using available technology when appropriate.
- Engage in critical, empathic, appreciative, and reflective listening.
- Prepare, organize, and present a variety of accurate informative and persuasive messages using available technology.
- Plan and present literary interpretations.
- Respond appropriately to presentations and performances of peers and artists.

### **Supporting Your Student At Home—English II**

You support the educational process by providing your student opportunities to...

- Improve reading skills by providing materials at home such as books, newspapers, and magazines.
- Know that you support and encourage reading.
- Read independently in areas of personal interest.
- Talk to you about reading and writing assignments.
- Write in a personal journal or diary.

# **GEOMETRY**

## **Mathematics**

A geometry student uses prior knowledge of algebraic concepts as a bridge to explore geometry. A connection is made between geometry and the real and mathematical worlds using geometric ideas, relationships, and properties to solve problems. Spatial reasoning plays a critical role in geometry and provides a way to express generalizations about space and spatial relationships. Properties and relationships having to do with size, shape, location, direction, and orientation of geometric figures are studied. To understand relationships between spatial figures and their properties, a student uses a variety of representations, tools, and technology. Problem solving, language and communications, connections within and outside mathematics, and reasoning are fundamental processes of geometry.

### **During Geometry, students will...**

- Represent relationships among quantities in a variety of ways including the use of concrete models, diagrams, graphs, verbal descriptions, equations, and inequalities.
- Use models, patterns, equations, and theorems to explore, test, and prove geometric properties.
- Use constructions, transformations, coordinates, explorations, patterns, and concrete models to verify conjectures about geometric properties.
- Solve problems using appropriate representations (concrete, pictorial, graphical, verbal, symbolic).
- Predict and test geometric properties using transformations (translations, rotations, reflections), slopes, and equations of lines.
- Make connections between mathematics and the real world using properties of transformations and their compositions.
- Use inductive and deductive reasoning about triangle congruencies to prove statements that are true; determine if converses are true or false.
- Understand and use the properties of similarity and congruence.

- Develop, use, and extend properties of right triangles (Pythagorean Theorem, special right triangles, and trigonometric relationship).
- Analyze the characteristics of three-dimensional figures and their parts.
- Use the relationship between three-dimensional objects and related two-dimensional representations (cross sections and other slices, nets, and perspective views) to analyze, describe, and solve problems.
- Find perimeter and area of polygons and circles.
- Predict the effects on perimeter, area, and volume when one of the dimensions of the figure is changed.
- Investigate geometric relationships by using analytic geometry.
- Find the surface area and volume of three-dimensional solids.

### **Supporting Your Student At Home—Geometry**

You support the educational process by providing your student opportunities to...

- Make connections to geometry through real life situations.
- Have a positive attitude about mathematics and observe your positive attitude about mathematics.
- Develop time-management skills and establish goals for meeting deadlines.
- Make daily attendance a priority.
- Ask for extra help and attend tutorials as needed.
- Have a scientific or teacher-recommended graphing calculator.
- Have a ruler, compass, and protractor.

# **BIOLOGY**

## **Science**

A Biology I student continues to study the natural world. During the course of study, the student conducts field and laboratory investigations and makes informed decisions using critical thinking and scientific problem solving. Topics include the structure and function of cells and viruses, plants in the environment, growth and development of organisms, genetics, taxonomy, living systems, homeostasis, energy relationships, ecology, and evolution.

### **During Biology, students will...**

- Demonstrate safe practices during field and laboratory investigations.
- Make wise choices in the use and conservation of resources and the disposal or recycling of materials.
- Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.
- Collect data and make measurements with precision.
- Organize, analyze, evaluate, make inferences, and predict trends from data.
- Communicate valid conclusions.
- Analyze, review, and critique scientific explanations as to their strengths and weaknesses using scientific evidence and information.
- Evaluate promotional claims that relate to biological issues such as product labeling and advertisements.
- Evaluate the impact of research on scientific thought, society, and the environment.
- Describe the connection between biology and future careers.
- Evaluate models according to their adequacy in representing biological objects or events.
- Research and describe the history of biology and contributions of scientists.
- Identify the parts of prokaryotic and eukaryotic cells.
- Investigate and identify cellular processes including homeostasis, permeability, energy production, transportation of molecules, disposal of wastes, function of cellular parts, and synthesis of new molecules.
- Compare the structures and functions of viruses to cells.
- Describe the role of viruses in causing diseases and conditions such as acquired immune deficiency syndrome, common colds, smallpox, influenza, and warts.
- Identify and describe the role of bacteria in maintaining health (digestion) and in causing diseases (streptococcus infections and diphtheria).
- Evaluate the significance of structural and physiological adaptations of plants to their environments.

- Survey and identify methods of reproduction, growth, and development of various types of plants.
- Compare cells from different parts of plants and animals including roots, stems, leaves, epithelia, muscles, and bones to show specialization of structure and function.
- Identify cell differentiation in the development of organisms.
- Sequence the levels of organization in multicellular organisms to relate the parts to each other and to the whole.
- Describe the components of deoxyribonucleic acid (DNA) and illustrate how information for specifying the traits of an organism is carried in the DNA.
- Explain replication, transcription, and translation using models of DNA and ribonucleic acid (RNA).
- Identify and illustrate how changes in DNA cause mutations and evaluate the significance of these changes.
- Compare genetic variations observed in plants and animals.
- Compare the processes of mitosis and meiosis and their significance to sexual and asexual reproduction.
- Identify and analyze karyotypes.
- Collect and classify organisms at several taxonomic levels such as species, phylum, and kingdom using dichotomous keys.
- Analyze relationships among organisms and develop a model of a classification system based on similarities and differences using taxonomic nomenclature.
- Identify characteristics of kingdoms including monerans, protists, fungi, plants, and animals.
- Interpret the functions of systems in organisms including the circulatory, digestive, nervous, endocrine, reproductive, integumentary, skeletal, respiratory, muscular, excretory, and immune systems.
- Compare the interrelationships of organ systems to each other and to the body as a whole.
- Analyze and identify characteristics of plant systems and subsystems.
- Identify and describe the relationships between internal feedback mechanisms in the maintenance of homeostasis.
- Investigate and identify how organisms, including humans, respond to external stimuli.
- Analyze the importance of nutrition, environmental conditions, and physical exercise on health.
- Summarize the role of microorganisms in maintaining and disrupting equilibrium including diseases in plants and animals and decay in an ecosystem.
- Compare the structures and functions of different types of biomolecules such as carbohydrates, lipids, proteins, and nucleic acids.
- Compare the energy flow in photosynthesis to the energy flow in cellular respiration.
- Investigate and identify the effects of enzymes on food molecules.
- Analyze the flow of matter and energy through different trophic levels, as well as between organisms and the physical environment.
- Analyze the flow of energy through various cycles including the carbon, oxygen, nitrogen, and water cycles.
- Interpret interactions among organisms exhibiting predation, parasitism, commensalism, and mutualism.
- Compare variations, tolerances, and adaptations of plants and animals in different biomes.
- Identify and illustrate that long term survival of species is dependent on a resource base that may be limited.
- Investigate and explain the interactions in an ecosystem including food chains, food webs, and food pyramids.
- Identify evidence of change in species using fossils, DNA sequences, anatomical similarities, physiological similarities, and embryology.
- Illustrate the results of natural selection in speciation, diversity, phylogeny, adaptation, behavior, and extinction.

## **Supporting Your Student At Home—Biology**

You support the educational process by providing your student opportunities to...

- Maintain a positive attitude about science.
- Encourage regular school attendance.
- Help the student to develop a time management schedule that allows for extra-curricular activities and homework.
- Attend tutorials as needed.
- Develop an awareness of biology in everyday situations.
- Encourage reading and discussion of current events that involve biology.

# WORLD HISTORY STUDIES

## Social Studies

The World History student studies important people, ideas, and events in world history with particular emphasis on causes, effects, significance, and relevance. The student traces the major eras and important turning points in World History summarizing political, economic, geographic, and cultural trends. Early civilizations are compared in regard to technology and complexity with contemporary civilizations.

### During World History Studies, students will...

- Identify and explain the major eras and important turning points in world history.
- Compare early civilizations with medieval European political, economic, and religious systems.
- Identify the causes, characteristics, and consequences of the European Renaissance and Reformation eras.
- Identify the causes and explain the influences of European expansion and imperialism beginning in the 16<sup>th</sup> century.
- Summarize major political, economic, and cultural developments of sub-Saharan Africa, MesoAmerica, Andean South America, China, India, and Japan.
- Identify causes, effects, and ideas from the English, American, French, and Russian revolutions.
- Analyze the goals and structures of totalitarian regimes and communist economic systems.
- Identify the causes and effects of WW I and WW II.
- Analyze the influences of 20<sup>th</sup> century political, social, and religious leaders.
- Identify and compare ways contemporary situations parallel past developments.
- Create, analyze, and integrate maps, graphs, charts, models, and databases representing geographic distributions and patterns in world history.
- Locate places and regions of historical significance.
- Analyze the effects of physical and human geographic factors on major historical events.
- Interpret historical and contemporary maps.
- Explain the importance of the Neolithic agricultural revolution and explain the economic, social, and geographic factors leading to early civilizations.
- Understand the factors leading to economic revolutions (Industrial, transportation, and Technology revolutions) and their increasing impact on the global economy.
- Identify the origins of capitalism, socialism, and communism and compare the relationships of contemporary economic systems.
- Evaluate the economic causes and effects of historic events.
- Define and give examples of political systems and relate to contemporary issues.
- Trace the evolution of the democratic-republican form of government from its beginning to the Enlightenment.
- Explain ways parliamentary and constitutional systems of government have influenced political ideas.
- Explain the significance of landmark historical, political, and legal documents.
- Describe how citizens and non-citizens affected historical cultures and the dynamic tension that occurred as groups sought greater civic participation in government; evaluate how the choices of the past affect decisions today.
- Trace the historical development of the rule of law, rights, and responsibilities.
- Summarize the worldwide influence of ideas originating from Greco-Roman and Judeo-Christian societies to modern constitutional governments.
- Identify political, religious, and economic oppression and examples of violations of human rights.
- Assess the effectiveness of democratic ideals on current issues.
- Identify and compare the historical central ideas and the spread and influence of major religious and philosophical traditions on world events.
- Analyze examples of the arts that either reflect the history of the culture in which they were produced or transcend those cultures and convey universal themes.
- Analyze the political, economic, and cultural influence of women, children, and families in different cultures.
- Summarize the fundamental ideas of Eastern and Western civilizations and how these civilizations have influenced institutions and societies.

- Summarize ideas and discoveries in math, science, technology, astronomy, and architectural engineering and trace how they spread through past civilizations to the present.
- Describe the origins and impact of the 16<sup>th</sup> century scientific revolution.
- Describe the causes and the connections between major developments in science and technology and the growth of industry in the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> centuries.
- Identify the contributions of scientists and inventors.
- Identify ways archaeologists, anthropologists, historians, and geographers analyze limited evidence.
- Expand note-taking skills, develop outlines, and practice formulating a thesis.
- Research, analyze, and organize information using technology, the Internet, newspapers, and periodicals.
- Increase vocabulary and grammar usage skills.
- Apply point of view, frame of reference, historical context, and historical inquiry to research.
- Transfer information from one media form to another.
- Create and interpret data, present findings orally, and prepare visuals and bibliographies to support presentation.

### **Supporting Your Student At Home—World History Studies**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies.
- Take advantage of Houston area museums, ethnic festivals, theaters, and literature.
- Read historical biographies and novels, periodicals, and newspapers.
- Travel and/or host an international student.

## **ENGLISH III**

### **Language Arts**

An English III student increases and refines communication skills. Students practice all forms of writing, with an emphasis on business forms, and regularly produce error-free drafts. They read extensively in multiple genres from American and world literature. Students analyze literary works and research self-selected and assigned topics. They produce, analyze, appreciate, and evaluate oral performances and visual representations.

#### **During English III, students will...**

- Read extensively in multiple genres from American and other world literature to connect the selections to historical context, current events, and their own experience.
- Acquire an extensive vocabulary through wide reading and systematic word study by researching word origins and derivations, as well as cultural influences on American English.
- Identify main idea and supporting ideas, draw inferences and conclusions, and make generalizations and predictions.
- Analyze text structures such as compare and contrast, cause and effect, and chronological order for their effect on meaning.
- Monitor own reading strategies and make modifications such as re-reading, using resources, and questioning when understanding breaks down.
- Analyze the patterns of text organization, sentence structures, and word choices as they affect meaning.
- Read critically to evaluate the credibility of information sources, including how the writer's motivation may affect that credibility.
- Use technology as well as other resources for information acquisition to research self-selected and assigned topics to produce reports and projects for various audiences.
- Use self-generated and assigned topics to write in a variety of forms, including business, personal, literary, and persuasive texts for various audiences.
- Write in various forms with particular emphasis on business forms such as a report, memo, summary/abstract, and résumé.
- Include a clearly expressed thesis as well as supporting evidence in writing.

- Write in a voice and style appropriate to audience and purpose with increased complexity.
- Use writing as a tool for formulating questions, compiling information from primary and secondary sources, and creating reports, summaries, and other formats to draw conclusions.
- Use writing process, including prewriting strategies, developing drafts, proofreading, revising, and publishing.
- Evaluate own writing and respond productively to peer review.
- Develop fluency through a variety of writing processes.
- Accumulate and review one's own written work to determine its strengths and weaknesses and to set own goals as a writer.
- Analyze and discuss published pieces as writing models and apply criteria developed by self and others to evaluate writing.
- Rely increasingly on the conventions and mechanics of written English, including the rules of grammar and usage, to write clearly and effectively.
- Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization such as italics and ellipses.
- Demonstrate control over grammatical elements such as subject-verb agreement, pronoun-antecedent agreement, verb forms, and parallelism.
- Compose increasingly more complex sentences that contain gerunds, participles, and infinitives in their various functions.
- Use technology to create, revise, edit, and publish writing.
- Produce error-free final drafts.
- Use a manual of style such as Modern Language Association (MLA), American Psychological Association (APA), or The Chicago Manual of Style (CMS) for consistency in writing.
- Distinguish purposes of various media forms such as texts that inform, entertain, or persuade.
- Recognize how visual, sound, and design techniques convey messages in media.
- Evaluate and critique the persuasive techniques of media messages.
- Compare, contrast, and critique various media coverage of the same event.
- Create, test, and revise a project using available technology when appropriate.
- Engage in critical, empathic, appreciative, and reflective listening.
- Make relevant contributions in conversations and discussions while problem solving.
- Prepare, organize, and present a variety of accurate informative and persuasive messages using available technology.
- Plan and present literary interpretations.
- Respond appropriately to presentations and performances of peers and artists.
- Create and apply valid criteria to analyze, evaluate, and critique literary performances as well as informative and persuasive messages.

### **Supporting Your Student At Home—English III**

You support the educational process by providing your student opportunities to...

- Establish a schedule in which a job does not interfere with study and homework.
- Set long-term literacy goals.
- Read independently in areas of personal interest.
- Talk to you about reading and writing assignments.
- Read aloud rough and final drafts of writing.
- Reflect in a personal journal or diary.
- Share important dates with you such as PSAT, SAT, ACT, or TASP.

# ALGEBRA II

## Mathematics

An Algebra II student builds on prior knowledge gained in Algebra I and Geometry. Symbolic reasoning plays a critical role and provides a way to represent mathematical situations. A student continues to explore the relationship between functions and equations as a means for analyzing and understanding real-world problems. Algebra II emphasizes the use of the graphing calculator and its capabilities as a problem solving tool. Problem solving, language and communications, connections within and outside mathematics, and reasoning are fundamental processes of Algebra II.

### During Algebra II, students will...

- Collect, record, and organize data; make scatter plots and model with a function, interpret results, and make predications to solve real-world problems.
- Identify, describe, and graph functions or relations by applying and predicting the effects of parameter changes.
- Determine the domain and range of a function or relation and their reasonableness in a real-world situation.
- Formulate, solve, and evaluate reasonableness of solutions for equations, inequalities, and systems using numerous methods (graphs, tables, matrices, algebraic methods).
- Use functions (quadratic, square root, absolute value, polynomial, rational, exponential, logarithmic) to model and solve real-world problems.
- Solve linear and quadratic inequalities and systems.
- Analyze the attributes of functions (quadratic, square root, absolute value, polynomial, rational, exponential, logarithmic, conic).
- Determine the equation of functions or relations given various descriptors.
- Recognize and find the inverse of a function.
- Use the discriminant to interpret and analyze solutions.
- Simplify rational expressions.
- Identify and sketch conics and describe the attributes from the graphs.
- Identify, use, and apply direct and inverse variation.
- Extend the number system to include complex numbers.

### Supporting Your Student At Home—Algebra II

You support the educational process by providing your student opportunities to...

- Make connections to algebra through real life situations.
- Have a positive attitude about mathematics and observe your positive attitude about mathematics.
- Establish a schedule in which extra-curricular activities or a job does not interfere with completing studies.
- Ask for extra help and attend tutorials as necessary.
- Make daily attendance a priority.
- Have a teacher-recommended graphing calculator.

# CHEMISTRY

## Science

A Chemistry I student continues to develop critical-thinking and problem-solving skills. The student conducts field and laboratory investigations using scientific methods. Topics include characteristics of matter, energy transformations, atomic structure, periodic table, gases, bonding, nuclear chemistry, oxidation-reduction, chemical equations, solutions, acids and bases, and chemical reactions. The student investigates how chemistry is an integral part of everyday life.

## **During Chemistry, students will...**

- Demonstrate safe practices during field and laboratory investigations.
- Make wise choices in the use and conservation of resources and disposal, reduction, or recycling of materials.
- Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.
- Collect data and make measurements with precision.
- Express and manipulate chemical quantities using scientific conventions and mathematical procedures such as dimensional analysis, scientific notation, and significant figures.
- Organize, analyze, evaluate, make inferences, and predict trends from data.
- Communicate valid conclusions.
- Analyze, review, and critique scientific explanations as to their strengths and weaknesses using scientific evidence and information.
- Use scientific information to make responsible choices.
- Evaluate the impact of research on scientific thought, society, and the environment.
- Describe the connection between chemistry and future careers.
- Research and describe the history of chemistry and contributions of scientists.
- Differentiate between physical and chemical properties of matter.
- Analyze examples of solids, liquids, and gases to determine their compressibility, structure, motion of particles, shape, and volume.
- Investigate and identify properties of mixtures and pure substances.
- Describe the physical and chemical characteristics of an element using the periodic table and make inferences about its chemical behavior.
- Describe the existence and properties of subatomic particles.
- Analyze stable and unstable isotopes of an element to determine the relationship between the isotope's stability and its application.
- Summarize the historical development of the periodic table to understand the concept of periodicity.
- Identify common elements and compounds using scientific nomenclature (symbols and formulas).
- Demonstrate the use of symbols, formulas, and equations in describing interactions of matter such as chemical and nuclear reactions.
- Explain and balance chemical and nuclear equations using number of atoms, masses, and charge.
- Compare fission and fusion reactions in terms of the masses of the reactants and products and in terms of the amount of energy released.
- Investigate radioactive elements to determine half-life.
- Evaluate the commercial uses of nuclear energy and medical uses of radioisotopes.
- Evaluate environmental issues associated with the storage, containment, and disposal of nuclear wastes.
- Use electronic arrangement to predict bond type between atoms.
- Investigate and compare the physical and chemical properties of ionic and covalent compounds.
- Compare the arrangement of atoms in molecules, ionic crystals, polymers, and metallic substances.
- Describe the influence of intermolecular forces on the physical and chemical properties of covalent compounds.
- Demonstrate and explain effects of temperature and the nature of solid solutes on solubility.
- Develop general rules for solubility through investigations with aqueous solutions.
- Evaluate the significance of water as a solvent in living organisms and in the environment.
- Compare unsaturated, saturated, and supersaturated solutions.
- Interpret relationships among ionic and covalent compounds, electrical conductivity, and colligative properties of water (freezing point and boiling point).
- Measure and compare the rates of reaction of a solid reactant in solutions of varying concentration.
- Identify changes in matter, determine the nature of the change, and examine the forms of energy involved.
- Identify and measure energy transformations and exchanges involved in chemical and physical changes.
- Measure the effects of the gain or loss of heat energy on the properties of solids, liquids, and gases.
- Describe interrelationships among temperature, particle number, pressure, and volume of gases contained within a closed system.
- Illustrate the data obtained from investigations with gases in a closed system and determine if the data are consistent with the Ideal Gas Law.

- Verify the Law of Conservation of Energy by evaluating the energy exchange that results from a chemical reaction.
- Relate the rate of a chemical reaction to temperature, concentration, surface area, and presence of a catalyst.
- Analyze and measure common household products using a variety of indicators to classify the products as acids and bases.
- Demonstrate the electrical conductivity of acids and bases.
- Identify the characteristics of a neutralization reaction.
- Describe effects of acids and bases on an ecological system.
- Identify oxidation-reduction processes.
- Demonstrate and document the effects of a corrosion process and evaluate the importance of electroplating metals.

### **Supporting Your Student At Home—Chemistry**

You support the educational process by providing your student opportunities to...

- Make connections to chemistry through real life situations.
- Maintain a positive attitude about science.
- Make daily attendance a priority.
- Attend tutorials when necessary.
- Establish a schedule in which extra-curricular activities or a job does not interfere with studies.
- Encourage reading and discussion of chemistry related current events.

# **UNITED STATES HISTORY SINCE RECONSTRUCTION**

## **Social Studies**

The student of United States History reviews the foundations of early U.S. history while applying those principles to the continuing study of U.S. history. The student uses refined social studies skills to analyze U.S. history from 1877 to the present. The student uses various sources to research and understand the impact of geographic, economic, political, international, and technological events on U.S. society. Students evaluate the effect that leaders and participants in the democratic process have had on the lives of U.S. citizens. They realize the role that the U.S. has played and continues to play in world leadership.

### **During United States History, students will...**

- Review the foundations of early United States history including significant individuals, important events, basic documents, individual rights, and significant dates.
- Apply the following geographic concepts to the study of U.S. history: migration patterns, diffusion, satisfaction of basic needs, patterns of urban growth, technology, demographics, and use of the physical environment.
- Identify, sequence, and describe major eras, events, and individuals in U.S. history from 1877 to the present.
- Analyze political, economic, and social issues in the United States from 1877 to 1898.
- Identify and explain significant events, individuals, and reasons for U.S. emergence as a world power between 1898 and 1920.
- Evaluate the leaders and important political, social, and economic reforms of the Progressive Era.
- Analyze and evaluate issues, events, and accomplishments of individuals during the 1920s and 1930s.
- Identify the reasons for and explain the impact of U.S. involvement in World War I and World War II.
- Analyze the postwar period and U.S. participation in the Cold War including major events like the Marshall Plan, the Korean War, and the Vietnam War.
- Evaluate selected international events and their influences on U.S. domestic and foreign policy.
- Describe and evaluate the goals and strategies of the U.S. civil rights movement.
- Use and create maps, graphs, charts, and models to interpret U.S. development.
- Evaluate the reasons for and effects of geographic patterns on U.S. history.
- Analyze the ways migration and immigration affect U.S. demographic patterns.

- Identify how population growth and distribution affect the environment.
- Trace the development of the conservation and environmental movements.
- Analyze the ways property rights, federal policies, industrialization, and military conflicts affected U.S. economic growth 1870-1920.
- Evaluate economic cycles between WW I and WW II and the impact of New Deal programs.
- Describe how WW II, the Cold War, and private sector expansion affected American society.
- Analyze the relationship between international trade policies and the free enterprise system.
- Evaluate and explain the changes in government as a result of leadership, legislation, international events, and political incidents.
- Predict effects of contemporary legislation on the future.
- Evaluate the ways events influence relationships between the legislative, judicial, and executive branches of the federal government.
- Analyze the impact of selected 19<sup>th</sup> and 20<sup>th</sup> century landmark U.S. Supreme Court decisions and amendments to the U.S. Constitution.
- Explain how participation in the democratic process reflects our national identity.
- Describe methods and means used to protect the democratic process and to achieve political equality.
- Describe qualities of effective leadership and evaluate contributions of U.S. political and social leaders.
- Describe cultural activities that reflect the times in which they were created or convey universal themes.
- Describe the influence of cultural movements on United States society and its economy and on the world.
- Explain how the diverse population of the United States shares, adopts, and adapts native customs and ideologies to form a unique society.
- Explain and analyze the impact of scientific discoveries and technological innovations on U.S. development and how they have affected the nature of work and the workplace.
- Explain and analyze how scientific discoveries and technological innovations are interrelated and continue to change the U.S. standard of living.
- Locate and use primary and secondary sources.
- Analyze, interpret, and organize information.
- Explain point of view, frame of reference, and historical context.
- Apply historical inquiry to research, using multiple primary and secondary sources of evidence.
- Identify bias and evaluate the validity of a source.
- Use appropriate math skills to interpret social studies data.
- Use standard grammar and social studies terms correctly.
- Transfer information from one medium to another and communicate social studies information in oral, written, and visual forms.
- Use problem-solving and decision-making skills.

### **Supporting Your Student At Home—United States History**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies.
- Discuss current events using television, newspapers, and magazines as sources.
- Vacation at national parks and historical sites.
- Relate your family history to the different eras of U.S. history.
- Observe participation in the democratic process.
- Make choices and problem solve daily.
- Appreciate pluralism in the community.
- Read books, newspapers, and magazines for information.
- Complete homework and other projects.
- Provide a quiet study area and monitored access to computer and library.
- Discuss the importance of history and its interpretation.
- Watch the History Channel on occasion.

# ENGLISH IV

## Language Arts

An English IV student increases and refines communication skills. Students practice all forms of writing, with an emphasis on literary, personal, and persuasive forms, and regularly produce error-free drafts. They read extensively and intensively in multiple genres from British and world literature. Students read critically to evaluate and use research skills to develop self-selected and assigned topics. They produce, analyze, appreciate, and evaluate oral performances and visual representations.

### During English IV, students will...

- Read extensively and intensively in increasingly demanding texts from British and world literature to recognize themes and connections across cultures.
- Acquire an extensive vocabulary through wide reading and systematic word study by researching word origins and derivations and by recognizing cultural influences on the English language.
- Identify main idea and supporting ideas, draw inferences and conclusions, and make generalizations and predictions.
- Analyze text structures such as compare and contrast, cause and effect, and chronological order for their effect on meaning.
- Monitor own reading strategies and make modifications such as re-reading, using resources, and questioning when understanding breaks down.
- Analyze the patterns of text organization, sentence structures, and word choices as they affect meaning.
- Evaluate the effect of a writer's motivation, stance, or position on the text's credibility, structure, and tone.
- Use technology as well as other resources for information acquisition to research self-selected and assigned topics to produce reports and projects for various audiences.
- Draw relevant questions for further study from research findings or conclusions.
- Write in a variety of styles with an emphasis on literary forms such as fiction, poetry, drama, and media scripts.
- Include a clearly expressed thesis sentence as well as supporting evidence in appropriate writing formats.
- Draw upon the distinguishing characteristics of written forms such as essays, scientific reports, speeches, and memos to write effectively in each form.
- Employ literary devices and rhetorical strategies such as imagery to enhance style and voice appropriate to audience and purpose.
- Employ precise language, varied sentence structure, and transition to communicate ideas clearly and concisely.
- Use writing as a tool for formulating questions, compiling information from primary and secondary sources, and creating reports, summaries, and other formats to see patterns that result in conclusions.
- Use writing process, including prewriting strategies, developing drafts, proofreading, revising, and publishing.
- Evaluate one's own writing and respond productively to peer review.
- Develop fluency through a variety of writing processes.
- Accumulate and review one's own written work to determine its strengths and weaknesses and to set own goals as a writer.
- Analyze and discuss published pieces as writing models and apply criteria developed by self and others to evaluate writing.
- Rely increasingly on the conventions and mechanics of written English, including the rules of grammar and usage, to write clearly and effectively.
- Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization such as italics and ellipses.
- Demonstrate control over grammatical elements such as subject-verb agreement, pronoun-antecedent agreement, verb forms, and parallelism.
- Compose increasingly more complex sentences that contain gerunds, participles, and infinitives in their various functions.
- Use technology to create, revise, edit, and publish writing.
- Produce error-free final drafts.

- Use a manual of style such as Modern Language Association (MLA), American Psychological Association (APA), or The Chicago Manual of Style (CMS) for consistency in writing.
- Distinguish purposes of various media forms such as texts that inform, entertain, or persuade.
- Recognize how visual, sound, and design techniques convey messages in media.
- Evaluate and critique the persuasive techniques of media messages.
- Compare, contrast, and critique various media coverage of the same event.
- Create, test, and revise a project using available technology when appropriate.
- Engage in critical, empathic, appreciative, and reflective listening.
- Make relevant contributions in conversations and discussions while problem solving.
- Prepare, organize, and present a variety of accurate informative and persuasive messages using available technology.
- Plan and present literary interpretations.
- Respond appropriately to presentations and performances of peers and artists.
- Create and apply valid criteria to analyze, evaluate, and critique literary performances as well as informative and persuasive messages.

### **Supporting Your Student At Home—English IV**

You support the educational process by providing your student opportunities to...

- Value success as a reader and a writer.
- Set work hours so that a job does not interfere with study and homework.
- Share important dates with you such as SAT, ACT, or TASP.
- Set long-term literacy goals.
- Read independently in areas of personal interest.
- Talk to you about reading and writing assignments.
- Read aloud rough and final drafts of writing.
- Reflect in a personal journal or diary.

# **PHYSICS I**

## **Science**

A Physics I student actively participates in building a conceptual framework in the areas of motion, forces, conservation of energy and momentum, thermodynamics, wave properties, and quantum physics. The student also sees that physics is a vast and ever changing body of knowledge that has evolved over many lifetimes. The student recognizes the conservation of energy in its many forms and applies them to new applications. The student also understands that no one concept in physics stands alone, but interconnects to many other concepts.

### **During Physics I, students will...**

- Demonstrate safe practices during field and laboratory investigations.
- Make wise choices in the use and conservation of resources and disposal, reduction, or recycling of materials.
- Plan and implement investigative procedures which include asking questions, formulating testable hypotheses, and selecting equipment and technology.
- Collect data and make measurements with precision.
- Organize, analyze, evaluate, make inferences, and predict trends from data.
- Communicate valid conclusions.
- Graph data to observe and identify relationships between variables.
- Read scales on scientific instruments with precision.
- Analyze, review, and critique scientific explanations as to their strengths and weaknesses using scientific evidence and information.
- Express laws symbolically and employ mathematical procedures such as vector addition and right triangle geometry to solve problems.
- Evaluate the impact of research on scientific thought, society, and the environment.
- Describe the connection between physics and future careers.

- Research and describe the history of physics and contributions of scientists.
- Define, identify, compare, and contrast vectors and scalars.
- Add and subtract vectors through a graphical and/or geometrical process.
- Make and interpret graphs describing the motion of various objects.
- Use real time technology to generate position versus time graphs, velocity versus time graphs, and acceleration versus time graphs.
- Use vectors to describe the motion of an object as viewed from different frames of reference.
- Analyze the motion of an object moving with a constant velocity.
- Analyze the motion of an accelerating object (linear motion, circular motion, and projectile motion).
- Describe and give examples of Newton's three laws.
- Demonstrate the effects of forces on an object's motion such as accelerated linear motion, circular motion, and/or projectile motion.
- Use Newton's Second Law to calculate acceleration or the mass of an object.
- Draw a free body diagram to calculate the net force on an object.
- Identify, research, and describe the four fundamental forces of the universe, their characteristics, and their historical development.
- Demonstrate and explain the inverse square law for gravitational, electrical, and magnetic forces.
- Identify and analyze the influence of mass and distance on gravitational forces.
- Identify and analyze the influence of charge and distance on electrical forces.
- Demonstrate the relationship between electricity and magnetism.
- Define and calculate momentum and impulse.
- Demonstrate the conservation laws of energy and momentum.
- Use vectors to represent the momentum of an object.
- Interpret evidence that the work done on an object is the change in its energy.
- Observe and describe examples of potential and kinetic energy and the transformations between potential and kinetic energy.
- Calculate the potential energy, kinetic energy, and total mechanical energy of various objects.
- Identify and explain the laws of thermodynamics.
- Apply and illustrate the laws of thermodynamics to real-world systems.
- Evaluate different methods of heat transfer that result in the increased amount of disorder in a given system.
- Examine and describe various types of waves such as water waves, electromagnetic waves, sound waves, and waves in a string.
- Examine and describe wave characteristics (frequency, period, wavelength, velocity, and amplitude).
- Demonstrate and explain the relationships between frequency, period, wavelength, and velocity in a given medium.
- Calculate a wave's velocity, wavelength, frequency, and period.
- Examine and describe a variety of waves propagated in various types of media.
- Identify, describe, and apply reflection, refraction, and interference.
- Identify the characteristics and behavior of sound and electromagnetic waves such as visible light waves and radio waves.
- Examine and explain the uses of waves and their properties in medicine and industry.
- Define a photon and quanta.
- Describe the photoelectric effect.
- Explain the line spectra from different excited gases.
- Identify and analyze the effects of charge and distance on the electrical forces between two objects.
- Represent electrical forces, magnetic forces, electric fields, and magnetic fields as vectors.
- Identify examples and uses of electrical forces and fields in everyday life.
- State and explain Ohm's Law.
- Design and analyze series, parallel, and mesh electrical circuits.
- Research and describe the historical development of the concept of electric and magnetic forces.
- Demonstrate the relationship between electricity and magnetism.
- Identify magnetic forces in everyday life.

## Supporting Your Student At Home—Physics I

You support the educational process by providing your student opportunities to...

- Make observations of objects in motion while you are in a moving car.
- Teach you what is learned in class.
- Visit science museums and planetariums.
- Establish a schedule in which a job or extra-curricular activity does not interfere with study and homework.
- Make connections to physics and everyday life as applied to sports, cars, technology, industry, and cooking.
- Encourage pursuit of personal interests related to physics.
- Maintain a positive attitude about science.

# GOVERNMENT

## Social Studies

A U.S. Government student applies refined social studies skills to analysis of the foundation, principles, structure, and functions of government at the national, state, and local levels. A significant focus of the course is on the U.S. Constitution. The student analyzes the impact of individuals, political parties, interest groups, and the media on the U.S. political system. The student evaluates the importance of individual participation in a democratic society and the relationship between governmental policies and the culture of the United States.

### During Government, students will...

- Analyze the underlying principles and contributions of specific individuals in shaping the Declaration of Independence and the U.S. Constitution.
- Explain the importance of a written constitution and evaluate the effectiveness of the provisions, processes, and purposes set forth in the U.S. Constitution.
- Analyze how beliefs and principles in the U.S. Constitution contribute to our national identity.
- Analyze and explain the concepts, structure, and roles of the national and state governments in the U.S. federal system.
- Analyze the two-party system including its role in the electoral process and citizen participation. Evaluate the role of third parties.
- Compare the U.S. system of government with other systems from a historical and contemporary perspective.
- Analyze the advantages and disadvantages of various systems of government.
- Explain the differences between personal and civic responsibility.
- Analyze the factors and the effectiveness of individual and group political attitudes toward participation in the political process.
- Understand how the following protect individual rights: limited government, rule of law, the Bill of Rights, Supreme Court decisions, functions and relationships of the three branches of government, and the concept of due process.
- Analyze viewpoints of political parties and interest groups.
- Explain the importance of First Amendment rights such as freedom of speech and press and defend a point of view on a given issue.
- Evaluate style and effectiveness of state and national leaders, past and present.
- Evaluate how change in U.S. culture affects politics.
- Analyze how government policies affect U.S. culture.
- State examples of how racial, ethnic, or religious groups are affected by government policy.
- Give examples of how individuals, political parties, interest groups, and the media affect public policy.
- Evaluate the consequences of government policies that affect the physical and human characteristics of a place or region.
- Analyze the significance of political and economic aspects of selected places or regions in terms of geographic characteristics.
- Analyze ways government policies influence the economy and identify sources of revenue and expenditures.
- Compare the role of government in the free enterprise system and in other economic systems.
- Explain the effects of international trade on U.S. economic and political policies.

- Explain the U.S. government's role in setting trade policies.
- Identify examples of government involvement in research related to consumer products, communication technologies, competition, and innovation.
- Analyze the impact on society and the response of government to scientific and technological discoveries.
- Problem solve by analyzing information using organizational techniques.
- Analyze and evaluate the validity of government and social studies data by using appropriate math skills.
- Use critical methods of inquiry that demonstrate an informed point of view.
- Use standard grammar and government terms correctly; transfer information from one medium to another.
- Create visual, written, and oral presentations.
- Use problem-solving and decision-making processes.

### **Supporting Your Student At Home—Government**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies.
- Have newspapers and news magazines available.
- Observe good citizenship and civic participation.
- Value participation in school and community activities.
- Talk about government issues.
- Set work hours so that a job does not interfere with study and homework.
- Visit a local court in session.

# **ECONOMICS**

## **Social Studies**

The Economics student studies the language and basic concepts of economics with an emphasis on the free enterprise system and its benefits. The student examines supply, demand, and markets; the role of government; financial institutions; and the dynamics of international and domestic trade. The goal of economics is to help the student acquire the knowledge and skills needed to become a competent decision-maker, responsible citizen, prudent investor, and effective participant in the work force and in the global community.

### **During Economics, students will...**

- Analyze how a country or society answers basic economic questions.
- Describe how societal values influence traditional, command, and market economies.
- Describe the level and influence of societal values on economic development.
- Explain scarcity and choice as problems of economics.
- Explain concepts of opportunity costs and scarcity.
- Explain the circular flow model and explain the effect of government actions upon it.
- Identify the determinants of supply, demand, and price including an interpretation of a supply-and-demand graph.
- Explain the functions of financial institutions and analyze how they affect households and businesses.
- Explain characteristics (advantages and disadvantages) of sole proprietorships, partnerships, and corporations; describe pure and monopolistic competition, oligopoly, and monopoly.
- Explain characteristics of traditional, command, and market economic systems, including a comparison of other economic systems with the U.S. free enterprise system.
- Analyze the factors in acquiring consumer goods and services, credit, interest, and insurance.
- Analyze and compare strategies and the economic impact of investing savings in stocks and bonds.
- Describe the role of the U.S. government in the U.S. free enterprise system and evaluate its rules and regulations.
- Describe the goals and measurement of U.S. economic growth, stability, and full employment.
- Discuss types of taxes, revenue, and expenditures in the U.S. federal budget.
- Analyze the impact of fiscal policy decisions.

- Explain the structure of the Federal Reserve System.
- Analyze the tools used to implement U.S. monetary policy.
- Analyze the economic rights and responsibilities of consumers and businesses with regard to the consequences of economic decisions.
- Identify governmental ordinances, regulations, and ethics in economic decisions.
- Analyze an example of responsible purchase, use, or disposal of property; evaluate examples of government restrictions on business and individual property.
- Analyze ways government policies influence the economy.
- Identify sources of revenue and expenditures.
- Compare the role of government in the free enterprise system and other economic systems.
- Explain the effects of international trade on U.S. economic, political, and trade policies.
- Describe how the unequal distribution of economic factors affects production.
- Explain the concepts of absolute and comparative advantages and how these relate to international trade.
- Analyze influences of U.S. imports and exports on the national and international economy.
- Analyze exchange rates and effects on trade.
- Compare and evaluate the effects of free trade and trade barriers on economic activities.
- Explain the principles and benefits of the U.S. free enterprise system.
- Analyze the effect of technological innovations on productivity, manufacturing, and distribution.
- Analyze the economic effects of U.S. communication and transportation systems and the economic impact of obsolescence.
- Give examples of economic information available as a result of technological innovations and explain how innovations create the need for rules.
- Analyze and evaluate information to understand point of view.
- Create an economic model based on a contemporary economic issue using critical methods of inquiry.
- Evaluate economic activity patterns using appropriate math skills to interpret economic data.
- Use standard grammar and economic terms correctly.
- Use written, oral, and visual forms for presentations and transfer information from one medium to another.
- Use problem-solving and decision-making processes as related to economic issues.

### **Supporting Your Student At Home—Economics**

You support the educational process by providing your student opportunities to...

- Budget for needs, wants, and future goals.
- Observe the importance of long-term saving.
- Practice the proper use of credit and understand the consequences of debt.
- Calculate interest, percent “off” for a sale item, and other examples of wise shopping.
- Explore a variety of career options in the world of work.

# **PSYCHOLOGY**

## **Social Studies**

Psychology is an elective course in which the student examines the development of the individual and the formation of personality. The study of psychology includes biological aspects of behavior and theories of emotion, motivation, perception, learning, memory, human development, social psychology, personality, and abnormal behavior.

### **During Psychology, students will...**

- Describe the relationship between biology and behavior.
- Define and relate how bias, sensation, and perception are highly personal and impact points of view.
- Discuss reinforcement and punishment in motivation and decision-making.
- Examine theories of modeling/imitating behavior.
- Define the basic principles of tests and measurements (score validity, reliability, various types of tests, and application of assessments).

- Describe self-esteem, self-efficacy, and expectancy from aspects of psychological theory.
- Participate and adjust behavior as a leader and a follower.
- Predict and evaluate the results of courses of action.
- Define the characteristics of psychology that separate it from related social sciences.
- Define and differentiate the concepts of theory and principle.
- Describe psychological theories in relationship to practical application.
- Trace the impact of the founding theories of psychology and their impact on current application.
- Connect basic aspects of social science research to the field of psychology.
- Explain how group dynamics are impacted by culture and determine cultural influences in social behavior.
- Identify behavior in terms of causal factors and consequences in a behavioral situation.
- Explain factors involved in cognitive and psychosocial development.
- Evaluate how humans learn.
- Identify the significance of social learning in contemporary advertising.
- Describe major theories of psychological disorders.
- Evaluate and give examples of personality development theories.
- Acquire information through electronic sources.
- Analyze attitudes, beliefs, and behaviors related to changes in technology.
- Explain the implications and ethics of technology in collection, use, and storage of psychological data.
- Use psychological terms correctly and apply skills to transfer information.
- Communicate information in written, oral, and visual forms.
- Use decision-making processes in problem solving and conflict resolution.
- Use organizational skills to determine goal setting and monitor self-directed inquiry.
- Create a product incorporating methods of analysis, inquiry, drawing conclusions, and interpreting statistics accurately.

### **Supporting Your Student At Home—Psychology**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies.
- Discuss consequences of individual actions and their impact on group behavior as observed in the media.
- Apply aspects of psychology by making connections to real life situations.
- Establish a schedule in which a job does not interfere with study and homework.

# **SOCIOLOGY**

## **Social Studies**

In Sociology, an elective course, the student studies the dynamics and models of group relationships. The student studies the history, methodology, and core ideas of the field. Major topics include the elements of culture, deviance, social structure, social institutions, socialization of the individual, mass communication, and current social problems. The student uses social studies skills to analyze the U.S. society and compare it to other societies.

### **During Sociology, students will...**

- Trace the development of sociology as a field of study and identify contributions of major sociologists.
- Evaluate changes in U.S. institutions resulting from industrialization, urbanization, and immigrant assimilation.
- Recognize the impact of various immigrant groups and Native Americans on the majority American culture.
- Use theories about social change to explain social movements, public policy decisions, and their resulting social problems.
- Create and evaluate thematic maps, graphs, charts, models, and databases that represent geographic, demographic, and cultural patterns.
- Compare how socialization, values, and norms vary in different geographic places and regions.
- Analyze the impact of human motivation on socioeconomic stratification and economic decisions.

- Compare cultural values associated with socioeconomic stratification.
- Analyze the influence of values on economic behavior.
- Describe types of governmental and social controls.
- Identify forms of leadership and their use of group-motivation techniques.
- Analyze power relationships among social classes and among racial, ethnic, and other cultural groups.
- Evaluate communication techniques.
- Describe group systems and the roles of individuals, groups, and the community.
- Evaluate role conflict and methods of resolution.
- Compare the roles that members perform in various groups.
- Understand the theories, processes, and results of socialization.
- Analyze the importance of values, norms, symbols, motivation, and communication among various U.S. subcultures such as ethnic, national origin, age, socioeconomic, and gender groups.
- Describe stereotypes and social problems of various U.S. subcultures.
- Summarize the functions and evaluate the importance of U.S. social institutions.
- Analyze how behavior and values of the majority culture and subcultures have changed as a result of scientific and technological innovation in the past and predict future change.
- Evaluate a current ethical issue which resulted from scientific and technological innovation.
- Demonstrate use of the scientific method to analyze a social issue.
- Use appropriate mathematics skills to interpret sociological information.
- Sequence, categorize, identify cause-and-effect relationships, compare, contrast, find the main idea, summarize, make generalizations and predictions, and draw inferences and conclusions regarding sociology.
- Use sociology terms correctly.
- Transfer information from one medium to another.
- Create a variety of presentations regarding sociological information.

### **Supporting Your Student At Home—Sociology**

You support the educational process by providing your student opportunities to...

- Visit the SBISD web site at [www.springbranchisd.com](http://www.springbranchisd.com) for more activities that support social studies.
- Discuss current events and social problems from various points of view.
- Analyze the structure of your family regarding status and roles.
- Appreciate pluralism in the community.
- Complete homework and other projects.
- Have access to current literature, a library, and a quiet place to study; and monitored access to a computer.



## **SPRING BRANCH INDEPENDENT SCHOOL DISTRICT**

*Dedicated to providing every student a quality education in a safe environment.*

### **Board of Trustees 2007-2008**

Mike Falick, President  
Susan Kellner, Vice President  
Wayne Schaper, Sr., Secretary  
David Converse, Ph.D.  
Theresa Kosmoski  
Mary Grace Landrum  
Susan Mathews

### **Superintendent of Schools**

Duncan Klussmann, Ed.D.

### **Associate Superintendent, Curriculum and Instruction**

Jennifer Blaine, Ed.D.

### **Directors**

Judy Wallis, Ed.D.  
Language Arts

Ann Worley  
Mathematics

Joyce Olson  
Science

Amy Thibaut  
Social Studies

Vivian Pratts  
Bilingual / ESL

Sharee Cantrell  
Early Childhood Education

Deb Darmer  
Special Education