

Second Grade History

Second graders continue their investigation (spanning grades 1–4) into history from the Stone Age to the Space Age.

COURSE OVERVIEW

Through lively stories and activities, second graders will:

- Explore ancient Rome and meet Julius Caesar
- Learn about the beginnings of Christianity during the Roman Empire
- Hear stories of the raiding and trading Vikings
- Appreciate the achievements of early Islamic civilization
- During the early Middle Ages in Europe, meet knights in armor, and hear stories of St. George, Robin Hood, and Joan of Arc
- Visit the medieval African kingdoms of Ghana, Mali, and Songhai
- Travel the Silk Road across China, and meet the powerful emperor, Kublai Khan
- Learn about the fighting samurai and the growth of Buddhism and Shintoism in feudal Japan

COURSE OBJECTIVES

Getting Around This Great Big World

- Practice with simple maps and globes to reinforce geographic awareness
- Begin to understand the work of historians and archaeologists

Ancient Rome

- Locate Rome on a map
- Learn about Rome's mythical and historic origins
- Explore life in Rome and Roman gods, goddesses, and myths

From Caesar to Augustus

- Understand the significance of the Roman republic
- Become familiar with the rise, rule, fall, and legacy of Julius Caesar

From the Roman Empire to Constantine

- Learn about Rome under the rule of Augustus Caesar and subsequent emperors
- Understand the historical beginnings of Christianity
- Learn about the relocation of the Empire's capital to Byzantium

Rome Falls and Byzantium Rises

- Recognize the significance of Attila the Hun
- Understand how Rome fell to invading warrior tribes
- Discover Rome's lasting contributions to society
- Explore Constantinople

The Early Middle Ages in Western Europe

- Explore the early settling of England and France
- Discover the legendary saga of King Arthur and his court at Camelot
- Learn about the role of monasteries in preserving knowledge

The Rise of Islam

- Become familiar with the origins of Islam
- Learn about major figures, events, and cultural achievements of the Islamic Empire

A World in Turmoil

- Learn about Charlemagne's struggle to unify European tribes
- Explore the Vikings' lives, beliefs, and heroes
- Learn that Vikings raided, conquered, and settled lands on both sides of the Atlantic

The Feudal World

- Become familiar with the concept of feudalism
- Learn about the knight's code of chivalry and about real and legendary acts of honor, courage, and courtliness

Crusades Abroad and Changes in Europe

- Become familiar with real and legendary heroes from the Crusades and the Hundred Years War
- Understand the significance of the terrible plague that swept Europe

Medieval African Empires

- Explore the rich, varied lands and people of medieval Africa

- Follow the travels of Ibn Battuta through Asia, Africa, and the Mediterranean

Medieval China

- Learn about life during the Sui, Tang, Sung, and Yuan dynasties
- Become familiar with the major figures and architectural feats in Chinese history
- Learn about the discoveries of the compass and porcelain, and the development of Chinese trade with Europe

Feudal Japan

- Learn about the history and governance of feudal Japan and about the samurai's code
 - Become familiar with the Shinto religion, haiku, and a popular Japanese folktale
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Second Grade Language Arts

COURSE OVERVIEW

PHONICS

Composition—Students practice writing as a process: prewriting, writing a draft, revising, proofreading, and publishing (sharing finished work with others)

Grammar, Usage, and Mechanics—Students learn basic rules of usage (such as “may” vs. “can,” or “lie” vs. “lay”), synonyms, antonyms, and homonyms, parts of speech, punctuation, and more

Vocabulary—*Wordly Wise* provides practice in word study skills, reading comprehension, and word analysis

Primary Analogies—Students develop test-taking and critical-thinking skills as they connect words and ideas

Handwriting—Handwriting Without Tears helps students develop printing skills and, if appropriate, begin cursive handwriting

Public Speaking—Reciting a poem or reading a literary passage helps students address a group confidently

Spelling—Students learn to understand sound-symbol relationships and patterns

LITERATURE

Guided reading lessons offer new challenges: greater length, more complex content, and new vocabulary. The emphasis

is on classic literature that embodies exemplary virtues, including Aesop's fables, “The Steadfast Tin Soldier,” and “The

Pied Piper of Hamelin.” Readings also include nonfiction works, as well as selections from Junior Great Books.

COURSE OUTLINE

Read Aloud

- Listen to and discuss literature from a variety of genres
- Recall details of a story read aloud
- Sequence events from a story read aloud
- Ask and respond to questions about the text
- Predict what will happen next in stories

Junior Great Books

- Listen attentively for different ideas and details
- Support an opinion with reasoning and evidence, citing specific passages from the text
- Develop habits of analytical thinking: identify problems, use inference, ask pertinent questions, draw conclusions
- Build vocabulary through exposure to rich literary language
- Understand and appreciate literature through writing and dramatization

Poetry

- Listen to, memorize, and recite poetry from classical and contemporary authors
- Identify the use of rhyme, rhythm, and alliteration in poetry
- Write original poems

Grammar/Usage/Mechanics

- Demonstrate knowledge of the mechanics of language in written work
- Identify and use effective sentence construction in speech and writing
- Identify the parts of a sentence and parts of speech

Analogies

- Solve and create analogies
- Make connections and use information and skills to identify relationships

Composition

- Compose paragraphs that follow the conventions of mechanics and usage
- Follow the steps of the writing process: prewrite, write a draft, revise and edit, and publish
- Write for a variety of purposes and audiences, for example, friendly letters, invitations, personal narratives, riddles, thank you notes, and reports

Guided Reading

- Discuss literature from a variety of genres
- Discuss main idea, plot, cause and effect, setting, and characters
- Relate stories to personal experience
- Make predictions about stories and characters
- Compare two books by the same author

Vocabulary

- Identify the meanings of words in context
- Recognize relationships between groups of words
- Apply the meanings of words and write them in sentences

Spelling and Word Study

- Recognize word patterns
- Identify and use affixes
- Write sentences and paragraphs from dictation

Handwriting

- Legibly write uppercase and lowercase letters on standard-ruled paper
- Legibly write and properly space words and sentences
- Copy sentences neatly and accurately

Reading Comprehension

- Recall main idea and details
- Sequence events
- Match vocabulary words and their meanings

Second Grade Math

COURSE OBJECTIVES

Second graders develop an understanding of mathematical operations, and use their understanding to solve problems and apply mathematical concepts to the world around them.

Students will:

- Work with patterns and sequences
- Add and subtract two-digit numbers using place value blocks
- Solve word problems (including problems involving money and time)
- Study measurements of length, weight, and capacity in both metric and standard units
- Begin to learn about fractions, geometry, and probability
- Understand basic multiplication and division concepts

COURSE OUTLINE

Number and Operation Sense

- Read, write, compare, and order whole numbers to 20
- Compare numbers using the symbols $<$ or $>$
- Recognize addition and subtraction as inverse operations
- Add numbers with sums of 12 or less using related facts and other strategies
- Subtract from 12 or less using related facts and other strategies

Place Value to 100

- Read, count, write, and expand whole numbers to 99
- Compare and order whole numbers to 99
- Identify the place and value of each digit in numbers to 99
- Round numbers to the nearest 10
- Count by 1s, 2s, 3s, 4s, 5s, and 10s
- Identify and extend number patterns
- Organize, display, and interpret data of pictographs and bar graphs

Addition and Subtraction: Facts to 18

- Recognize addition and subtraction as inverse operations
- Add numbers with sums of 18 or less
- Subtract from 18 or less
- Find the sum of three or more addends

Money and Time

- Identify the value of coins and bills
- Find the value of groups of coins and bills
- Tell time to five-minute intervals
- Estimate the duration of an event
- Read and interpret a calendar

Addition and Two-digit Numbers

- Add two and three 2-digit whole numbers, regrouping when necessary
- Add amounts of money, regrouping when necessary
- Use the order property to check addition

Subtraction of Two-digit Numbers

- Find the difference of 2-digit whole numbers, regrouping when necessary
- Subtract money amount less than a dollar with regrouping
- Use rounding to estimate sums and differences
- Choose the best method of computation: paper and pencil or mental math

Geometry, Fractions, and Probability

- Identify and classify plane figures
- Identify and classify solid figures
- Describe the attributes of plane and solid figures
- Recognize, name, compare, and write fractions to twelfths
- Identify and predict outcomes in probability

Measurement

- Measure, compare, and estimate length, capacity, and weight/mass in customary and metric units
- Distinguish between perimeter and area using linear and square units
- Read a thermometer to find temperature in degrees Fahrenheit
- Choose the appropriate unit of measurement or measuring tool

Place Value to 1,000 and Addition

- Read, count, expand, and write whole numbers to 999
- Recognize the place and value of numbers to 999
- Add 3-digit whole numbers or money amounts by regrouping twice

Multiplication and Division

- Explore the concept of multiplication as repeated addition
- Explore the concept of division as separating
- Multiply groups of 2, 3, 4, and 5
- Divide by 2, 3, 4, and 5
- Recognize multiplication and division as inverse operations

Place Value to 1,000 and Subtraction

- Order and compare whole numbers to 999
- Find the difference of 3-digit numbers, regrouping when necessary
- Find the difference of 3-digit money amounts, regrouping when necessary
- Estimate by rounding to the nearest hundred or dollar to find sums or differences

Moving On in Math

- Read, count, and write whole numbers to 9,999
 - Find sums and differences of 4-digit whole numbers without regrouping
 - Use the order of operations to find the value of expressions
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Second Grade Science

COURSE OVERVIEW

Students perform experiments to develop skills of observation and analysis, and learn how scientists understand our world. They demonstrate how pulleys lift heavy objects, make a temporary magnet and test its strength, and analyze the parts of a flower.

Force—motion and simple machines; physicist Isaac Newton

Magnetism—magnetic poles and fields; how a compass works

Sound—how sounds are made; inventor Alexander Graham Bell

Human Body—cells; the digestive system

Geology—layers of the Earth; kinds of rocks; weathering; geologist Florence Bascom

Life Cycles—plants and animals

COURSE OBJECTIVES

Metrics and Measurements

- Measure length, mass, weight, temperature, and liquid volume using a metric ruler, a balance, a spring scale, a thermometer, and a graduated cylinder, and then express those measurements in standard metric units of centimeters, grams, newtons, degrees Celsius, and milliliters
- Distinguish the difference between mass and weight
- Recognize some common equivalencies within the metric system such as 1,000 milliliters in 1 liter, 100 centimeters in 1 meter, and 1,000 grams in 1 kilogram
- Identify the boiling and freezing points of water and the average body temperature in degrees Celsius and compare them to points on the Fahrenheit scale
- Use the scientific method to ask questions, make hypotheses, collect data, analyze results, and formulate conclusions

Forces and Motion

- Demonstrate that a force is a push or a pull that can make an object move, that an object changes position when moved, and that the size of the change is related to the strength, or the amount of force, of the push or pull
- Determine that moving heavy objects requires more force than moving light objects
- Observe how the force of friction affects the movement of objects; know that friction works in the direction opposite the motion to slow down or stop sliding objects; and know that friction occurs whenever two types of matter move against each other
- Identify gravity as the force that causes all things to fall toward the Earth
- Observe that gravity makes objects fall at the same rate
- Observe that when an object falls, the force of friction pushes the object upward as the force of gravity pulls it downward; that all objects experience friction when they fall; and that shapes with large surfaces are most affected by friction

Simple Machines

- Explain how machines make work easier
- Explain that wheels help reduce friction by allowing surfaces to roll instead of slide
- Categorize common objects such as a lever, inclined plane, wedge, wheel and axle, pulley, and screw
- Demonstrate how force is transferred between a wheel and an axle

- Use moveable and fixed pulleys to lift loads
- Demonstrate that it takes less force to pull a load up an inclined plane than it does to lift the load to the same height, but the load must travel a longer distance

Magnetism

- Observe that you can use magnets to make some objects move without touching them
- State that magnets have two poles (north and south) and that similar poles repel each other and opposite poles attract each other
- Observe that magnets are strongest at the poles, and compare relative strengths of magnets
- Construct a temporary magnet and observe its magnetic properties
- Recognize that the Earth is a large magnet, with magnetic poles and fields
- Observe that the north-seeking pole of a bar magnet points to the north
- Recognize that the true north (the geographic North Pole) and the magnetic north pole are close to, but not exactly at, the same location
- Construct and use a compass to locate directions

Sounds Around Us

- Describe the sounds that a variety of objects make
- Identify the sources of natural and man-made sounds
- Explain how sound vibrations and sound waves travel
- Differentiate between pitch and volume
- Explain how pitch and volume change on a stringed instrument
- Explain the nature of vocal cords
- Tell about the life and accomplishments of Alexander Graham Bell

The Human Body

- Explain that all living things are made of cells
- Identify the three main parts of an animal cell as the cell membrane, cytoplasm, and nucleus
- Identify cells and their functions
- Recognize that the digestive system breaks down the food you eat to provide your body with energy to live and grow
- Describe the process of digestion and the functions of the mouth, esophagus, stomach, small intestine, and large intestine
- Identify the functions of the parts of the excretory system
- Identify proper nutrient requirements using a food pyramid

Rock Hounds

- Name the three layers of the Earth (crust, mantle, and core) and describe their characteristics
- Recognize that rocks are made of minerals, and that minerals form in certain shapes called crystals
- Use Moh's Scale of Hardness to test and identify minerals
- Identify igneous rock as cooled lava from a volcanic eruption
- Explain that sedimentary rock forms over a long period of time from layers of sediment
- State that metamorphic rock is sedimentary or igneous rock that has been changed by heat and pressure
- Demonstrate that a fossil is a plant, an animal, or an imprint of a plant or animal that has turned to stone
- Recognize that fossils give us information about plants and animals that lived long ago

Weathering, Erosion, and Soil

- State that soil is a mixture of minerals, humus, air, and water
- Identify humus as part of soil that is composed of things that were once living
- Recognize that clay, silt, and sand are names for different sizes of mineral particles
- Explain that soils vary in texture, color, and ability to hold water
- Describe weathering as the process by which rocks break down into smaller pieces
- Describe erosion as the carrying away of soil and weathered rock
- Recognize that plant roots help reduce erosion by trapping soil
- Evaluate soils by observing, measuring, and graphing the height of bean plants grown in different soils

Circle of Life, Plants

- Explain that the series of changes through which a living thing passes during its lifetime is called its life cycle
- Put the various stages in the life cycle of a plant into proper order
- Recognize that plants can grow from parts other than seeds, such as bulbs, tubers, and runners
- Identify various parts of a flower, including sepals, petals, stamens, and pistil
- Recognize that the force of gravity causes roots to grow downward

- Demonstrate that plants grow toward light
- Give examples of how seeds are dispersed (for example, by hitchhiking, by blowing in the wind, by gravity, and by being eaten by animals)

Circle of Life, Animals

- Put into proper order the stages of life cycles of insects, fish, frogs, reptiles, birds, and mammals (including humans)
- State that the changes insects and frogs go through during their lives is called metamorphosis
- Recognize that as adults, both plants and animals reproduce to make more of their kind
- Tell how plant and animal life cycles differ (for example, plants grow from seeds, while animals hatch from eggs or are born live)