



FOURTH-GRADE CURRICULUM

The fourth grade theme is an examination of culture. Through their study of ancient Greece and different cultures of Africa, with an emphasis on the Yoruba of Nigeria, students learn the categories which make up culture and see how it impacts daily life. This work integrates most of the elements of the fourth grade curriculum: social studies, language arts, science, art and music. The theme provides a meaningful context in which students develop their fourth grade skills/concepts while learning about the elements of culture, what culture is, how cultures change, and the importance of understanding other cultures.

LANGUAGE ARTS

Language Arts is integrated into all areas of the curriculum. Students develop their communication skills in reading, writing, speaking and listening, so they can receive information and express themselves clearly.

READING

We help children to become involved readers of high-interest materials wherever and whenever they read. Material in the reading program is typically high interest trade/chapter books for direct reading instruction supplemented by various materials related to theme.

Skills

- Choose and read books independently
- Develop rich, descriptive vocabulary
- Learn new vocabulary
- Apply decoding skills
- Read with oral fluency and expression
- Literal comprehension:
 - Find the main idea
 - Read for detail
 - Sequence events in a story
 - Summarize
- Inferential comprehension:
 - Predict outcomes

- Understand character and motivation
- Identify cause and effect
- Find supporting material in text to verify conclusions
- Perceive patterns in literature
- Use the dictionary effectively; use guidewords to locate words
- Scan for information
- Critical thinking skills
- Formulate literal, inferential, and critical thinking questions
- Practice active reading strategies
- Identify writing techniques used by the author

Teachers make selections from the following books:

The Adventures of the Greek Heroes

D'Aulaire's Greek Mythology

Theras and his Town

Shiloh

The African Mask

Aesop's Fables

Yoruba folktales

West African folktales

Save Me a Seat

Front Desk

Wishtree

Because of Winn-Dixie

How to Steal a Dog

The Red Pencil

Fish in a Tree

WRITING

Personal experiences, poetry, expository paragraphs, formal letters, research reports, and general fiction make up a fourth grader's writing experiences. Students use the writing process (including brainstorming, planning, drafting, revising, editing, and publishing) throughout the year.

Skills

Composition

- Plan a story; show basic understanding of story structure
- Edit for capital letters, punctuation, spelling, and organization
- Revise
- Research
- Understand sentence structure
- Write to a given form

- Organize into paragraphs with a topic sentence, supporting details, and concluding sentence
- Draft
- Proofread
- Analyze writing and provide constructive feedback
- Paraphrase

Conventions (grammar and mechanics)

- Recognize elements of phonetic patterns
- Memorize non-phonetic words and spelling rules
- Apply skills of capitalization and punctuation
- Identify parts of speech: Nouns, verbs, adjectives, adverbs, pronouns, prepositions, conjunctions, interjections
- Understand prefix, suffix, synonyms, antonyms, and homophones
- Master high-frequency words
- Keyboarding
- Identify poetic devices: Simile, metaphor, onomatopoeia, alliteration, hyperbole, personification, assonance
- Basic cursive (read and write)

MATHEMATICS

Fourth grade students expand their understanding of the field of mathematics to include both computational and non-computational skills/concepts. The focus is on helping students develop a firmer foundation of place value, number sense, and strategies to help solve a variety of problems, rather than on rote memorization and procedure. We explore the concepts of multiplication, division, real-life problems, measurement, data interpretation, logical reasoning, area, perimeter, as well as the visual-spatial aspects of mathematics. Math lessons revolve around real data, number patterns, and discovery through exploration. Students are encouraged to solve increasingly challenging problems using what they know, as well as to appreciate that there are differing methods of approaching and solving problems. They also are given opportunities to share and discuss their mathematical thinking through different modalities. Through these experiences, students begin to develop an appreciation of mathematics as encompassing far more than mathematical computations.

Skills

Number

- Estimation and rounding numbers
- Read and write numbers to one million
- Identify place value to one billion
- Count by 100s, 1000s, 10,000s, 100,000s
- Sequence numbers using +, <, and >

- Add and subtract whole numbers and fractions
- Two-digit multiplication
- Factors
- Multiplication by multiples and powers of 10
- Division facts and division by multiples and powers of 10
- Solve mental math problems
- Solve for missing elements in an equation
- Prepare and solve word problems
- Recognize prime and composite numbers

Relationships

- Understand and extend number patterns
- Collect data and prepare graphs
- Use equalities and inequalities
- Understand fractional equivalents
- Understand fraction and decimal notation
- Square numbers

Measurement

- Length, area with formula, money
- Standard and Metric system

Geometry

- Understand two- and three-dimensional geometric shapes
- Study triangles and other polygons
- Study types of angles (right, acute, obtuse)
- Explore perimeters and areas of figures
- Coordinate graphing of collected data

SOCIAL STUDIES

To increase awareness of both the diversity and the commonality of human experience, fourth graders consider and compare different cultures with an emphasis on classical Greek and Yoruba. Before delving into these cultures, students learn how culture develops through exploring the fundamental needs of all humans and how they solve these needs by using the natural resources around them. Next, they reflect on their own family's culture. Our study of ancient Greece focuses on mythology and culture. Students dive deeper into the concept of religion and learn the components of structured religions by investigating either ancient Greek, ancient Mayan, Zoroastrianism or Buddhism. Our study of Africa explores geography and cultures throughout the continent, with an in-depth focus on West Africa and the Yoruba culture. We examine how values are taught, the role of oral tradition, artistic expression, and forms of worship.

Units

- Multiple Intelligence Theory
- Exploration of culture
- Aspects of Greek culture
- Ancient Olympics
- Greek Gods & Goddesses
- Religion project
- Geography of Africa
- Yoruba traditions
- Map study of continents, Greece and the Mediterranean, and Africa

Skills:

- Geography (focus on Greece and Africa)
- Landforms and biomes
- Reading various types of maps
- Interpreting information on maps
- Latitude and Longitude
- Research skills- note taking, summarizing
- Presentation skills

Field trips

- Museum of Fine Arts

SCIENCE

Our science program enables students to learn about the scientific process through a hands-on program. Students learn how to collaborate, communicate, and develop critical thinking skills through age-appropriate experiments and activities that allow them to work together, discuss and predict, and make connections.

Units

- The human brain - structure & function, how culture has affected/shaped cognition, how emotions affect learning
- Electricity - form of energy, circuits, conductors & insulators, how current electricity is generated and transmitted to homes & other devices
- Solar system - planets, moon phases, tides, scale & relative size, life cycle of stars, structure of the sun
- Renewable Energy
- Wetland study: wetland role in water filtration

Skills

- Ask questions & define problems
- Hypothesize

- Develop and use models to describe, represent or simulate a phenomena
- Plan & carry out investigations
- Compare/contrast
- Collect Data
- Categorize
- Analyze and interpret data
- Use mathematical and computational thinking
- Construct explanations and design solutions to a problem
- Communicate information orally/in writing

WORLD LANGUAGE

We recognize that the grammar of Romance Languages uses a binary gender system. While we strive to maintain the integrity of the history and culture of these languages, we also seek to create inclusive learning environments for all students.

Fourth graders continue to experience French language and Francophone geography and culture. The focus at this level is on performance, with pronunciation and oral expression being the primary goals for the year. Vocabulary, music, games, and projects are closely tied to the fourth grade themes. During the first part of the year, students study the geography, climate and sports of the French-speaking world, in advance of choosing a Francophone country to represent during a modern-day simulation of an Olympic Opening Ceremony. During the second half of the year, work focuses on French-speaking Africa. Students study political and physical maps of Africa and learn the names and locations of its French-speaking countries and animals native to its three main geographical regions. While the majority of experiences in both units are with listening and speaking French, students gain some familiarity with written language and conventions during the culminating project on an African animal of their choice.

ART

The fourth grade art program integrates studio projects with classroom themes while focusing on the exploration of materials and the development of individual crafting technique and confidence. Their artistic investigation of world culture takes many forms, utilizes a broad variety of media, and encourages visual research. In addition to their creative work with theme, fourth grade students enjoy a variety of independent projects that inspire and challenge their conceptual and technical abilities.

Examples of fourth grade art projects include but are not limited to:

- Building large and small recreations of Ancient Greek architecture
- Block prints inspired by Adire textile design
- Design/create masks based on Yoruba mythology

- Architectural and figurative sculptures using cardboard construction and/or papier mache

MUSIC

In fourth grade classes, students use critical thinking skills to compare and contrast the music of the cultures examined in thematic studies, as well as to learn the initial skills of creative, interactive musical participation. They learn music appreciation through singing, movement, composition and playing instruments. They study West African drumming and dance with a guest artist. Students will study the recorder, and will also play and compose music on xylophones and glockenspiels.

Singing

- Develop a full, relaxed vocal quality
- Develop blended class sound
- Maintain individual part during singing of partner songs and rounds
- Build a repertoire of songs

Instrumental

- Play xylophones and glockenspiels in two and three parts from notation and by ear
- Play percussion instruments
- Learn hand drum techniques and rhythms for West African Music
- Play recorder

Movement

- Learn folk dances with stylistic awareness
- Participate in Eurhythmics and expressive movement activities
- Move to and demonstrate understanding of rhythm and tempo
- Learn West African dance

Composition/Improvisation

- Compose and perform rhythm pieces
- Compose and perform melodic pieces
- Improvise melodies on xylophones, exploring different ways to put melodies together

Listening

- Listen to and discuss components of selected compositions: Pitch, duration, volume, timbre, texture, form, style

Music Theory

- Rhythmic theory to include quarter, eighth, sixteenth, half and whole note values and rests

- Reading and writing beginning music notation in treble clef
- Improvising patterns up to 16 beats using discussed rhythmic and melodic elements

TECHNOLOGY

The technology program at CRS starts with the why – why should we teach technology at all? The answer is we don't teach "technology;" we teach self-reflection, empathy, and problem solving (know themselves, understand others, and shape the future). The medium we work within to accomplish this is digital tools, and we teach students both existing skills and how to learn new technology on their own. While the process of learning new tools is inherently valuable (growth mindset, exploration, logic, sequential thinking, curiosity), ultimately we teach technology because of the opportunities it can provide for students to improve themselves and make a positive impact on the world.

We approach this through focusing on four main curricular categories that spiral throughout all grades (PreK - 8):

- Engineering & Design Thinking
- Multimedia Production
- Programming & Robotics
- Digital Citizenship

In the fourth grade, we focus on introducing online collaboration &, digital citizenship, improving touch typing skills, programming robots to interact with the environment, 3D modeling both existing and original objects, formal design thinking process, programming for user interactivity, digital photography, soldering electrical components, and green-screen movie editing.

Possible Field Trips include:

- M.I.T. Edgerton Center

PHYSICAL EDUCATION

The Physical Education program is developmental and skill-based. The program includes cooperative games, standard games, such as capture the flag and ultimate Frisbee, and team sports including field hockey, soccer, and basketball. Students practice motor and sports skills throughout these activities. Students develop sports skills through movement exploration, specific skill work and playing games.

Developmental Focus

- Develop cooperation, teamwork, and sportsmanship
- Develop body and spatial awareness
- Develop social skills and positive self-image
- Develop the following physical skills

Skills

- Locomotor Movements: Walk, run, hop, slide, jump, crawl, roll
- Non-locomotor movements: Swing, bend, stretch, twist, turn, dodge, push, pull
- Sports skills: Throw, dribble, kick, bat, batch, shoot (basketball), volley

Activities

Soccer, softball / baseball, field hockey, Frisbee, kickball, basketball, volleyball, lacrosse, team handball, track and field, tennis, flag football, fitness exercises, relays, cooperative games, group challenges, obstacle courses, lifetime fitness activities

LIBRARY

In fourth grade, the library curriculum furthers students' appreciation and enjoyment of literature and focuses on an in-depth study of the various fiction genres (e.g. fantasy, mystery, realistic fiction and historical fiction). The curriculum also provides students with opportunities to plan a search strategy for information, using print and online reference sources, and to synthesize information to organize and produce new meaning. Students are introduced to digital "Breakout" puzzles, where they work collaboratively to solve puzzles requiring critical thinking, problem solving, and information gathering.

Literature Appreciation Skills

- Evaluate new books for content and appeal
- Active listening
- Demonstrate awareness of literature from various cultures and genres
- Locate fiction by genre
- Use online Library catalog to locate books of interest

Information Literacy Skills

- Identify keywords to find information on a topic
- Continue to analyze fiction versus non-fiction
- Explore and develop understanding of how to gather information, including the use of table of contents, index, and glossary
- Demonstrate the use of print and online dictionaries, encyclopedias, almanacs, and atlases in finding relative information
- Solve digital "Breakout" challenges collaboratively by gathering and synthesizing necessary information and resources
- News Literacy: identify news credibility and reliability, and demonstrate reading closely for information and analysis

AFTER-SCHOOL SPORTS/ACTIVITIES

Students in Grade 4 have the choice of participating in instructional field hockey and cross country in the fall. They may also participate in an instructional track or girls'

lacrosse program during the spring season. Children work with others in their age group under the supervision of a coach. They learn strategies, positions on the field, skills specific to the sport, and skills to develop effective teamwork. The Charles River School Sports Program encourages group cooperation in a competitive setting, as each team plays games with neighboring teams of similar age and ability.