

**BUCKINGHAM BROWNE & NICHOLS
LOWER SCHOOL**



**CURRICULUM OVERVIEW
GRADE FOUR
2020-2021**

Grade Four Teachers

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*** Includes Language Arts, Mathematics and Social Studies instruction**

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GRADE FOUR CURRICULUM OVERVIEW

Language Arts

Language Arts activities and lessons are taught daily and focus on developing skills in the areas of listening, speaking, reading and writing. Lessons are often integrated with other curricular areas. In fourth grade:

- Reading instruction focuses on comprehension and analysis of a variety of fiction and non-fiction texts.
- Read alouds and independent reading occurs on a regular basis in class, and children are expected to read at home daily.
- Children participate in literature circles to build meta-cognitive skills and practice peer discussions.
- Students develop the process of writing, which includes drafting, conferencing with peers or teachers, improvements through revising and editing.
- Students also use pre-writing strategies such as graphic organizers to plan their writing on some assignments.
- Grammar and mechanics are taught as group lessons and may be reviewed individually during teacher or peer conferences.
- Students experiment with writing various genres
- Spelling rules and patterns are reviewed and taught. Additional spelling words and vocabulary come from reading material and word frequency lists.
- Handwriting instruction builds fluency in cursive and extends usage with the goal of using cursive for some assignments.
- Formal and informal assessments and evaluations occur throughout the year.
- Reading specialists work with the homeroom teachers to plan consistent, interconnected lessons and to provide additional support for children who are in need of further help in developing language arts skills.

Social Studies

The social studies curriculum aligns with the science program, and begins with an in-depth study on electricity and different forms of renewable energies. Through readings, cooperative projects, research and discussion, students develop and practice skills while becoming more aware of environmental issues. Students examine their relationship with nature, and explore the ideas of conservation and stewardship. Students also investigate the natural resources that exist across the fifty states and abroad.

Students learn valuable research skills as they explore four sources of renewable energy (fuel cell, wind, solar, and hydro), and interact with experts both on and off campus to further their understanding of how these energy sources work. Students use various platforms to educate others on sustainability, and the importance of renewable energies for the future of the planet. Through exhibits and publications, students develop their communication and presentation skills.

In the later part of the year, the curriculum shifts to focus on how change is created through systems of government, and how, in a democracy, people can bring about

Social Studies (continued)

change through advocacy. Students look at the American Constitution and the structure of government, examining the roles of the different leaders, and are able to describe the responsibilities of government at the federal, state, and local levels. The students address the larger question of what it means to be an American, and look at different systems of government around the world.

Mathematics

At BB&N we believe that math should be joyful and engaging. Our program grows children's fluency with numbers and is rich in numbers-based experiences. We provide opportunities at every level for students to engage in mathematical explorations, to reason mathematically, and to express their ideas. We strive to strike a balance between larger conceptual understandings and specific skills and procedural fluency. We believe that all of our students can and will learn math.

Fourth graders solidify the foundation of whole number operations, building their proficiency with multiplication and division. Students extend their knowledge of the number system to both larger whole numbers (millions and beyond) and with decimals. In fourth grade students build a conceptual understanding of fractions with simple operations and applications. Angles in triangles are used to extend the students' ability to classify shapes.

Fourth grade uses high quality, research based resources including the *Bridges in Mathematics* curriculum. Classes are co-taught by the homeroom teacher and a math specialist with an interactive approach in whole group investigations, small group activities, and individual practice. Students continue having math homework a few times a week.

In fourth grade students will:

- Work with the number system in whole numbers and decimals
- Estimate using a variety of approaches including rounding numbers
- Fluently recall multiplication combinations to 12x12 and related division facts
- Find factor pairs for a number and find common multiples
- Multiply multi-digit numbers
- Divide whole numbers with a single digit divisor with and without remainders
- Find equivalent fractions, compare and order fractions
- Add and subtract fractions with common denominators
- Read, write, and order decimals
- Classify regular and irregular polygons using attributes such as angles and lines
- Use efficient strategies to model and solve multi-operation problems
- Represent problems using equations

Science

The fourth grade curriculum emphasizes exploration, collaboration, and innovation. Our highly integrated curriculum combines science, social studies, reading and writing to create a year long study on the environment, renewable energies, and how to create change in today's world. Connections are drawn between the different subject areas, and students are able to view all these topics through different perspectives, whether it be through the lens of a scientist, a poet, or a critical thinker. Woven throughout the curriculum are discussions on values, respect, and the responsibility our students have as members of our community, and of the world. The curriculum is aligned with BB&N's Global Competencies Framework and highlights many of the UN Sustainability Goals. In doing so, the curriculum allows fourth graders to develop a global mindedness that can carry them beyond our classroom as they become lifelong learners and effective activists for change. Below are some of the topics and skills that fourth graders employ.

Microscopes and Lenses: Practicing Observation and Experimentation Skills

- Investigate the properties of a lens while observing common household items like salt, fabrics and drops of water. Designing an effective lens to magnify items.
- Learn the parts of a microscope and its correct use.
- Exemplary work project based on the microscope observations of natural objects collected during their nature appreciation explorations.

Fossil Fuels, Alternative Energy Sources and the Environment

- Acquire note taking and research skills to understand what Energy is.
- Plan and design electric generators that can power an LED bulb using copper wire, cardboard and magnets.
- Discuss common environmental and relevant environmental problems occurring in the world such as climate change, acid rain, pollution and how those problems arose.
- Experiment with acids and bases using cabbage juice and pH paper to determine the acidity or alkalinity of common household items like lemonade, soda, Alka-Seltzer, and milk to understand how acid rain affects the environment.
- Compare and contrast different means of producing electricity from fossil fuel burning to clean technologies
- Investigate solar, wind, hydropower and fuel cell technologies while assembling science kits.
- Perform an Energy audit of the Lower School Campus using watt meters to determine the amounts of electricity that is consumed by electronics.
- Sort and analyze data to use as evidence of a need for change.
- Become Energy Activists. Plan and design large scale and long term project that allows them to act on the knowledge gained in science during the year (for example, bicycle generators, or to scale models that represent their ideas for a sustainable project on the Lower School campus).

If time allows, fourth graders will also be exposed to some human biology and anatomy in a study of bones as preparation for their work in sixth grade:

- Memorize scientific names of the major bones in the human body.
- Identify "mystery bones" by observing the form and function of several types of animal bones and x-rays.
- Construct a cat skeleton.

Lower School World Languages

The World Language Department has been working with an exciting new approach to teaching languages over the past two years that focuses on proficiency and communication in a fun and low stress environment. This approach, Teaching with Comprehensible Input, is based on the theories of language acquisition by Dr. Stephen Krashen, and prioritizes the delivery of understandable messages that are personalized, meaningful, interesting and relevant to our students. The goal of our classes is for students to acquire Spanish or French through communication. Acquiring a language happens organically through active participation, as opposed to learning a language through explicit instruction. This is akin to the way that babies learn to speak a language, by listening to it rather than formally studying it. Therefore, we aim to spend at least 90% of our classes in the target language focusing on listening and reading (when age appropriate).

Our classes are lively, engaging, and personalized to the students' interests. Lessons are based on unique and engaging stories that capture the interests of students. As part of these lessons we play games, read stories, act, create books, and cook to fully immerse ourselves in the language. Through these stories we introduce basic grammar concepts, including but not limited to verb conjugation and adjective-noun agreement. A variety of brain breaks are incorporated into class in order maximize attention, focus, and optimal energy levels. Below you will find some examples of our students' work and get a peek inside what happens every day in the BB&N World Language Program.

World Languages in Grades 4-6:

Our Spanish and French classes in Grades 4-6 use the same approach started with our B-3 students. Through the Comprehensible Input approach, we engage the students in language-based projects that allow the students have experiences with a foreign language in a fun, relaxed environment. In order to prepare the students for the challenges of the Middle School, we introduce grammar through reading and writing. We value the importance of students understanding how the language works grammatically, but also have the confidence to speak it.

Fourth Grade: Spanish and French

Fourth grade represents an exciting change for all World Language students at BB&N as they are presented with the choice to begin the study of French or to continue their study of Spanish with a new teacher and new materials. Fourth graders explore Spanish or French twice a week for 45 minutes.

Speaking/listening warm-ups, role-playing and closing activities create routine, support confidence and put in practice themes and vocabulary learned in class. Technology tools such as iPad apps and multimedia projects give students confidence to move beyond memorization to creative and original language production. Fourth graders will be immersed in the language through the use of authentic materials in a variety of creative techniques.

Lower School World Languages (continued)

Student explore Spanish or French culture through music, art, literature, and film. They learn about cultural festivals and artistic traditions through food and craft experiences and with opportunities to engage with authentic cultural materials.

Information Science/Library

Fourth grade students visit the library once a week in half groups for book selection, book talks, search skills and stories. Topics covered include:

- Practice using sites like FEMAKids, NASAkids, Google Earth, World Book Student Online and World Atlas online to find information.
- Using the school library catalog to locate books by author, title, keyword and subject.
- Using and comparing print nonfiction and electronic materials such as National Geographic Kids and articles they find using 'Kiddle'.
- Using websites posted on the school library homepage to explore different kinds of information.
- Practice choosing appropriate sources to gain confidence with using different reference tools.
- Discussing literature in small and whole group settings; using terms of character, setting, plot, themes and point of view, as well as personal response.
- Writing short book reviews to post on the school library website.

Technology

At the BB&N Lower School, it is our intention to integrate technology into the classroom in meaningful ways, and our goal is to teach students the skills necessary to be successful throughout the school year as well as to prepare them for future years.

Coding:

In the technology lab students are taught coding using the Scratch programming language. In a safe and inclusive lab setting students are given the freedom to create and work on projects that are engaging to them. They are free to work autonomously or (when appropriate) they can collaborate on projects.

Responding to students' individual learning style, lab learning goals are set (as needed) that allow students to work at their own pace. Engaging project ideas and observational learning are used to deliver a rigorous learning experience for the students.

Robotics:

Students are presented with engaging open-ended real-world problems. They work in teams to develop solutions. Students **begin** to formally learn about critical thinking and

Technology (continued)

apply it to lab challenges. Students take turns playing a leadership role as they build knowledge and develop ideas thru research and observation.

Students continue to:

- Develop their executive function skills
- Define their own personal learning goals
- Develop the skills required to collaborate on joint project
- Develop their communications skills by sharing project ideas and expressing them non-verbally (storyboarding)

Music

Curriculum Statement: Fourth grade students will engage in practicing, performing, improvising, and creating music using their voice, various types of drums, and other percussion instruments. All concepts listed below will be explored through a diverse repertoire of songs while highlighting various indigenous and oral tradition based music genres. Students will engage in listening exercises to expand their knowledge of different styles of music and will also explore the historical background and contextual aspects of the repertoire.

Key Musical Concepts:

- Rhythm
 - Explore rhythmic concepts of: syncopation, polyrhythm, ostinato, call and response, and improvisation
 - Listen to, perform, and identify time signatures and rhythms building on concepts covered in grade 3.
 - Time signatures: 12/8
 - Sixteenth notes, eighth and sixteenth note variations
- Melody and Harmony
 - Utilize solfege to identify treble clef notes, major/minor/major pentatonic scales
 - Learn 2- or 3-part split vocal pieces and multi-instrumental accompaniments
 - Demonstrate artistic melodic phrasing on voice and various classrooms instruments utilizing proper technique
 - Identify and read treble clef keys and melodic passages using solfege
 - Learn various songs
- Form and Composition
 - Listen to, identify, learn, and perform multi-part vocal and instrumental pieces
 - Compose and improvise multi-instrumental arrangements
- Articulation, Dynamics, and Tempo
 - Continue work from grade 3 to identify proper forms of musical articulation, dynamics, and tempo as appropriate to the musical literature explored
 - Students will focus on deep listening skills, rote instruction, intuiting the music, and the improvisatory aspects of the genres explored.

Music (continued)

- Timbre
 - Watch, listen to, discuss, and identify musical instruments using the Western European Classical model (brass, woodwind, percussion, and strings) and the [Hornbostel-Sachs](#) classification system.

Integrated Arts

The goal of fourth grade integrated arts is for students to develop critical thinking skills, practice collaboration, perseverance, reflection, conceptualization and a host of other skills that are key to understanding their inner world and the world around them. As they embark on a study of the natural world and resources, and the ability to convert that into power, we look at those same themes, exploring and understanding them through the lens of art. Additionally, fourth grade integrated arts support students' fine motor skill development and, more broadly, their creative, social, emotional and global understanding.

Students are exposed to indigenous arts from around the world, a history of art through the lens of available resources, as well as contemporary artists emphasizing a global perspective and the idea of using art as means to share our voices.

Students continue to use acrylic paint, watercolor paint, printmaking materials, ink, colored pencils, markers, clay as well as exploring non-traditional art materials such as natural materials and found objects. Students will create paper and paints as they learn about art materials.

In both drawing and printmaking projects students look at the elements for creating strong imagery: Composition, Color, Perspective, Point of View and how these combined, affect the mood and story being shared.

The fourth grade curriculum is designed to build community by providing an opportunity to celebrate one another's work, build deeper connections, engage with a diversity of learning and cultural styles, and gain exposure to a wide range of cultural resources. In short, students are encouraged to have an open, creative mind.

Physical Education

The fourth grade physical education curriculum will focus on the introduction of team sports, individual skill development, and mindfulness with a focus on relaxation breathing that will help students to prepare themselves for a healthy lifestyle. The goal of the fourth grade program is to properly prepare the students to not only play team sports, but to understand the concepts of each sport. The individual student will be introduced to new terminology such as cardiovascular, aerobic, and anaerobic activity. The students will also focus on individual physical fitness, while working on the individual

Physical Education (continued)

skill development of each student needed for team sports. The fourth grade curriculum will use assessments based on individual skill growth for each unit. Sportsmanship and teamwork will be the cornerstone of each unit.

Fall

- Physical Fitness: Concepts and components of fitness are covered throughout the year through various activities and exercises that can help to improve fitness level.
- Soccer: Develop skills, strategies, and knowledge of the rules.
- Football: Review of throwing, catching and kicking skills.
- Kickball: Develop throwing, catching and kicking skills.

Winter

- Basketball: Develop basic skills, learn rules, positions and strategies.
- Volleyball: Review the skills of the bump, set, serve and positional play.
- Floor Hockey: Review of skills and used in lead-up and full court games.
- Fitness and Yoga: Introduce students to yoga stretching and fun fitness exercises.
- Gymnastics: Practice and review tumbling skills, routines on the balance beam and mats, as well as climbing activities to increase upper body strength.

Spring

- Frisbee: Concentrate on throwing and catching techniques in preparation to play ultimate frisbee.
- Track and Field: Identify skills and strategies for track and field events.
- Wiffle ball: Introduce basic throwing, fielding, base running and batting skills.
- Group Games: Cooperative games and skills in large group games such as Capture the Flag.

Responsive Classroom

The Lower School uses the social curricular practices of *The Responsive Classroom*. Fourth graders build up their repertoire of greetings, as well as practice a good firm handshake and eye contact. These skills are used when they approach or greet adults and new students, as they are encouraged to explore new friendships and working partnerships. Students learn to resolve differences in a non-confrontational, open forum with mediation as needed. Students practice self-control and continue to develop the ability to focus during morning meeting or class discussions and speaking clearly and respectfully in morning meetings. Finally, students work on ways to include peers of both genders in group games and to play fairly; then they try to accept losses or setbacks without causing conflict.

Homework

Please refer to the BB&N Website: www.bbns.org/handbook, Lower School Policies and Procedures. Another resource, HOMework - A Guide for Lower School Parents, was first published and distributed to all LS parents in 1999, and is available for parents at Back-to-School Nights.

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