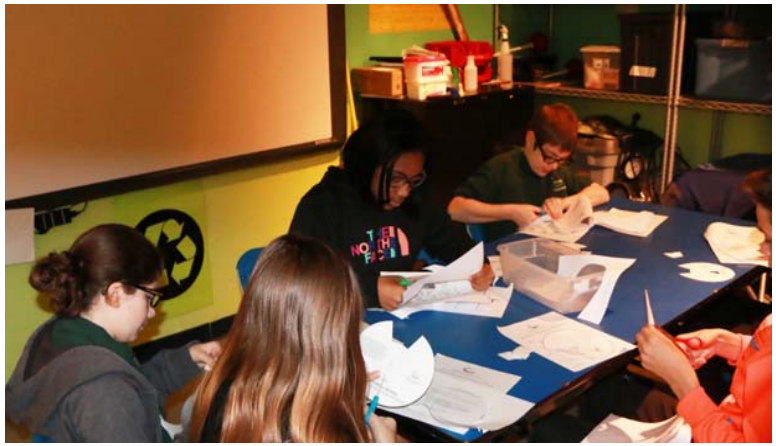
Norfolk Public Schools
The cornerstone of a proudly diverse community

PARENT AND STUDENT GUIDE

Eighth Grade Concepts and Skills



Prepared by:
Department of Curriculum and Instruction

A MESSAGE FROM THE SUPERINTENDENT

Dear Parents,

Welcome to another wonderful year of teaching and learning in Norfolk Public Schools! We are excited about joining with you to educate all students to be successful, productive contributors to society. We strive for all students to become powerfully literate. We have developed this parent guide to serve as a tool for you to stay involved in the learning process, and to assist you at home in strengthening your child's knowledge and skills in the core academic content.

This guide contains the state and local standards of learning in English, mathematics, science and history/social science. At the end of the guide, helpful hints for home are provided for you to use to enrich, enhance and strengthen on the NPS website to your child's knowledge and skills in the various contents. Additionally, a calendar of important school dates is provided help you keep track of holidays, early release days, parent conference day, and other important information.

Please use this guide at home as you partner with us in delivering a rigorous academic program to enable all students to become powerfully literate. If you need any assistance or additional ideas on how to use this guide or if you need other assistance with your child's education please contact your school. Finally, I look forward to working with you and the staff of Norfolk Public Schools to provide powerful teaching and learning opportunities to ensure the academic success of all of our students.

Sincerely,

Dr. Melinda J. Boone
Superintendent of Schools

What We Believe

The mission of Norfolk Public Schools, the cornerstone of a proudly diverse community, is to ensure that all students maximize their academic potential, develop skills for lifelong learning and are successful contributors to a global society, as distinguished by:

- Courageous advocacy for all students
- Family and community investment
- Data-driven personalized learning
- Strong and effective leadership teams
- Shared responsibility for teaching and learning
- Access to rigorous and rewarding college and career readiness opportunities

Board & Division Priorities

- Ensure full accreditation
- Increase academic achievement of all students
- Improve climate, safety & attendance
- Become a School Board of Distinction
- Promote Norfolk Public Schools to reflect outstanding accomplishments of staff, teachers and students
- Develop and coordinate a capital improvement plan for facilities and technology to enhance teaching and learning
- Attract, retain, and help to develop strong academic families and highly qualified teachers and staff

ENGLISH

In <u>Speaking, Listening and Media Literacy,</u> your child will:

- Use interviewing techniques to gain information.
- Prepare and ask relevant questions for the interview.
- Make notes of responses.
- Compile, accurately report, and publish responses.
- Evaluate the effectiveness of the interview.
- Deliver oral presentations individually and in groups.
- Use media skills.
- Develop and deliver oral presentations in groups and individually.
- Choose topic and purpose appropriate to the audience.
- Choose vocabulary and tone appropriate to the audience, topic, and purpose.
- Use appropriate verbal and nonverbal presentation skills.
- Respond to audience questions and comments.
- Differentiate between Standard English and informal language.
- Critique oral presentations.
- Assume shared responsibility for collaborative work.
- Use a variety of strategies to listen actively.
- Analyze, develop, and produce creative or informational media messages.
- Evaluate the persuasive/informational technique being used in non-print media including television, radio, video, and Internet.
- Examine how values and viewpoints are included or excluded and how the media can influence beliefs, behaviors, and interpretations.
- Use media and visual literacy skills to create products that express new understandings.
- Evaluate sources for relationships between intent and factual content.

In <u>READING/LITERATURE</u>, your child will:

- Apply knowledge of word origins, analogies, and figurative language to extend vocabulary development within authentic texts.
- Identify and analyze an author's use of figurative language.
- Use context, structure, and connotations to determine meaning and differentiate among multiple meanings of words and phrases.
- Use roots, affixes, cognates, synonyms, and antonyms to

determine the meaning of unfamiliar words and technical vocabulary.

- Use dictionaries, thesauruses, and glossaries to determine definition, pronunciation, etymology, spelling, and usage of words.
- Discriminate between connotative and denotative meanings and interpret the connotation.
- Extend general and specialized vocabulary through speaking, listening, reading, and writing.
- Read and analyze a variety of fictional texts, narrative nonfiction, and poetry.
- Explain the use of symbols and figurative language.
- Make inferences and draw conclusions based on explicit and implied information using evidence from text as support.
- Explain how authors use characters, conflict, point of view, voice, and tone to create meaning.
- Understand the author's use of conventional elements and characteristics within a variety of genres.
- Compare and contrast the author's use of word choice, dialogue, form, rhyme, rhythm, and voice in different texts.
- Compare and contrast authors' styles.
- Identify and ask questions that clarify various viewpoints.
- Identify the main idea.
- Summarize text relating supporting details.
- Identify an author's organizational pattern using textual clues, such as transitional words and phrases.
- Identify cause and effect relationships.
- Use prior and background knowledge as a context for new learning.
- Use reading strategies to monitor comprehension throughout the reading process.
- Read, comprehend, and analyze a variety of nonfiction texts.
- Draw on background knowledge and knowledge of text structure to understand selections.
- Make inferences and draw conclusions based on explicit and implied information using evidence from text as support.
- Analyze the author's qualifications, viewpoint, and impact.
- Analyze the author's use of text structure and word choice.
- Analyze details for relevance and accuracy.
- Differentiate between fact and opinion.

- Identify the main idea in both fiction and non-fiction selections.
- Summarize the text identifying supporting details.
- Identify an author's organizational pattern using textual clues, such as transitional words and phrases.
- Identify cause and effect relationships.
- Evaluate, organize, and synthesize information for use in written and oral formats.
- Use reading strategies to monitor comprehension throughout the reading process.

In <u>WRITING,</u> your child will:

- Write in a variety of forms, including narration, exposition, persuasion, and informational.
- Identify intended audience.
- Use prewriting strategies to generate and organize ideas.
- Distinguish between a thesis statement and a topic sentence.
- Organize details to elaborate the central idea and provide unity.
- Select specific vocabulary and information for audience and purpose.
- Use interview quotations as evidence.
- Revise writing for clarity of content, word choice, sentence variety, and transitions among paragraphs.
- Edit writing for correct grammar, capitalization, punctuation, spelling, sentence structure, and paragraphing.
- Use a variety of graphic organizers, including sentence diagrams, to analyze and improve sentence formation and paragraph structure.
- Use and punctuate correctly varied sentence structures to include conjunctions and transition words.
- Choose the correct case and number for pronouns in prepositional phrases with compound objects.
- Maintain consistent verb tense across paragraphs.
- Use comparative and superlative degrees in adverbs and adjectives.
- Use quotation marks with dialogue and direct quotations.
- Use correct spelling for frequently used words.
- Use computer technology to plan, draft, revise, edit, and publish writing.

In <u>RESEARCH,</u> your child will:

- Apply knowledge of appropriate reference materials to produce a research product.
- Collect and synthesize information from multiple sources including online, print and media.
- Evaluate the validity and authenticity of texts.
- Use technology as a tool to research, organize, evaluate, and communicate information.
- Make sense of information gathered from diverse sources by identifying misconceptions, main and supporting ideas, conflicting information, point of view or bias.
- Cite primary and secondary sources using Modern Language Association (MLA) or American Psychological Association (APA) style.
- Publish findings and respond to feedback.
- Define the meaning and consequences of plagiarism and follow ethical and legal guidelines for gathering and using information.

Math

In <u>NUMBER SENSE,</u> your child will:

- Apply the orders of operations to simplify numerical and exponential expressions involving fractions, decimals, and integers.
- Use grouping symbols to create a numerical expression equal to a pre-determined value.
- Identify, describe examples and illustrate subsets of the real number system.
- Use positive and negative exponents to express numbers in scientific notation.
- Compare and order a set of fractions, decimals, percent, and numbers written in scientific notation.

In <u>COMPUTATION AND ESTIMATION,</u> your child will:

- Solve practical (contextual) problems involving consumer applications and financial management using whole numbers, fractions, decimals, percents, integers, ratios, and proportions
  - Compute simple interest and new balances earned in an investment or on a loan.

- Apply proportions to solve practical problems involving scale drawings and similar figures
- Maintain a checkbook and check registry.
- Compute the rate of discount given the original price and the sale price.

- Apply the orders of operations to evaluate algebraic expressions for given replacement values.
- Translate between algebraic expressions and word phrases.

In <u>MEASUREMENT</u>, your child will:

- Sketch and describe, orally and in writing, the relationship between vertical, adjacent, supplementary, and complementary angles.
- Investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids.
  - Describe how changing one measured attribute of a figure affects the volume and surface area.
  - Describe the two-dimensional figures that result from slicing three-dimensional figures parallel to the base.

In <u>GEOMETRY</u>, your child will:

- Create drawings involving multiple transformations.
  - Determine the coordinates of a figure resulting from a transformation in the x- and y-axis.
  - Determine the dilation of a figure from a fixed point on a coordinate grid.
- Construct a three-dimensional model using cubes, given its top, side, and/or bottom views.
- Verify and apply the Pythagorean Theorem.
- Describe the relationship between the sides of a right triangle.
- Solve practical area and perimeter problems involving composite plane figures.

In <u>PROBABILITY AND STATISTICS,</u> your child will:

- Predict outcomes using a statistical sampling.
- Predict the outcome of an event by analyzing its probability.
- Differentiate and model examples of independent and dependent events.
- Make comparisons, predictions, and inferences using information displayed in various graphs.

- Construct, analyze, and, make inferences from data displayed in scatterplots.
  - Estimate the line of best fit.
  - Describe the relationship or trend represented in a scatterplot.

In <u>PATTERNS, FUNCTIONS, AND ALGEBRA,</u> your child will:

- Describe and represent relations and functions using tables, graphs, words, and rules to include real world situations.
- Relate and compare different representations for the same relation.
- Describe how a change in one quantity results in a change in another quantity.
- Solve multi-step linear equations and inequalities using the concept of balancing (including variables on both sides).
- Translate from a verbal phrase to an algebraic expression, equation, and inequality.
- Identify properties of operations used to solve an equation.
- Graph a linear equation in two variables.
- Represent data from a table graphically, and describe the relationship.
- Interpret the unit rate of the proportional relationship graphed as the slope of the graph, and compare two different proportional relationships represented in different ways.
- Appropriately use algebraic terms: domain, range, independent, and dependent variables.

Science

In <u>PHYSICAL SCIENCE.1</u>, your child will:

- Demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations.
- Use chemicals and equipment safely.
- Plan and write an experimental design to include accurate measurement, independent and dependent variables, constants, controls, repeated trials, data collection, and analysis.
- Use appropriate equipment and metric units to gather data.
- Use research methods to investigate practical problems and questions.

- Collect data from experiments and display the data in appropriate graphical representation.
- Analyze data in an effort to make formulate valid conclusions.
- Construct models and simulations to illustrate and explain phenomena.
- Use current applications of physical science concepts.

In <u>PHYSICAL SCIENCE.2,</u> your child will:

- Gain an understanding of the basic nature of matter.
- Investigate-
  - The particle theory of matter;
  - Elements, compounds, mixtures, acids, bases, and salts
  - Solids, liquids, and gases.
  - Physical and Chemical properties

In <u>PHYSICAL SCIENCE.3,</u> your child will:

- Describe the historical development of the concept of the atom
- Research the contributions of Dalton, Thomson, Rutherford, and Bohr in understanding the structure of an atom
- Differentiate between the three basic particles in the atom
- Compare the Bohr atomic model to the electron cloud model

In <u>PHYSICAL SCIENCE.4,</u> your child will:

- Investigate the organization and use of the periodic table of elements to obtain information.
- Differentiate among symbols, atomic number, atomic mass, and chemical families.
- Classify elements as metals, nonmetals, and metalloids,
- Investigate formation of compounds through ionic and covalent bonding.

In <u>PHYSICAL SCIENCE.5,</u> your child will:

- Compare and contrast physical, chemical, and nuclear change.
- Identify reactants and products in a chemical equation
- Write and balance simple chemical equations
- Differentiate among chemical reactions that require continuous input of energy (endothermic) and those that release energy (exothermic).
- Describe and diagram the processes that release nuclear energy (nuclear fission and nuclear fusion).
- Evaluate the positive and negative effects of nuclear energy use.

In <u>PHYSICAL SCIENCE.6,</u> your child will:

- Investigate the forms of energy and how energy is transferred and transformed.
- Differentiate between potential and kinetic energy.

- Describe and give examples of mechanical, chemical, electrical, thermal, radiant, and nuclear energy.
- Illustrate energy transformations

In <u>PHYSICAL SCIENCE.7,</u> your child will:

- Investigate temperature scales, heat, and heat transfer.
- Distinguish among –
  - Celsius and. Kelvin temperature scales and absolute zero
  - Phase changes
  - Conduction, convection, and radiation
  - Applications of heat transfer

In <u>PHYSICAL SCIENCE.8,</u> your child will:

- Investigate the nature and technological applications of sound waves.
  - Determine the relationship between frequency and wavelength
  - Investigate the speed of sound through various materials
  - Model a compression wave and label the basic components (wavelength, compression, rarefaction, and frequency)
  - Identify examples illustrating resonance

In <u>PHYSICAL SCIENCE.9,</u> your child will:

- Investigate the nature and technological applications of light.
- Model a transverse wave and label its component parts (wavelength, amplitude, frequency, crest, and trough)
- Describe the wave behavior of visible light using the terms refraction, reflection, diffraction, and interference.
- Compare types of electromagnetic waves in terms of wavelength, frequency, and energy.

In <u>PHYSICAL SCIENCE.10,</u> your child will:

- Investigate the scientific principles and technological applications of work, force, and motion.
- Calculate the speed of a moving object
- Describe motion using the concepts of speed, velocity, and acceleration.
- Differentiate between mass and weight.
- Illustrate examples of each of Newton's Laws of Motion
- Explain the relationship among force, mass, and acceleration

In <u>PHYSICAL SCIENCE.11,</u> your child will:

- Investigate the principles of electricity and magnetism.
  - Illustrate the effects of static electricity
  - Construct and compare series and parallel circuits
  - Create an electromagnet and explain the relationship between a magnetic field and an electric current.

- Investigate the relationship between voltage resistance and current
- Compare and contrast generators and motors
- Provide examples of materials that are good conductors, semiconductors, and insulators

HISTORY/ SOCIAL SCIENCE

In <u>HISTORICAL CONNECTIONS,</u> your child will:

- Analyze the Declaration of Independence, the Constitution and other key documents that influence, explain, and guarantee the rights and freedoms of U.S. citizens.
- Identify people and agencies that influence America's decision-making process.
- Understand that each nation has a government structure as established by historical documents, a constitution, and/or traditions.
- Explain the significance of the charters of the Virginia Company of London, the Virginia Declaration of Rights, the Declaration of Independence, the Articles of Confederation, the Virginia Statute of Religious Freedom, the Constitution of the United States, and the Bill of Rights.

In <u>ECONOMIC UNDERSTANDING,</u> your child will:

- Understand that how a society answers the three basic economic questions (What should be produced? For whom? How?) determines the type of economy it has.
- Compare the structure and operation of the United States economy with other economies.
- Recognize that resources, goods and services, and money flow continuously between households, businesses and markets in the U.S. economy.
- Determine that government provides public goods and services that would not be available if individuals had to provide for them.
- Identify a problem, weigh the expected costs and benefits and possible consequences of proposed solutions, and recommend solutions, using a decision-making model;

In <u>GOVERNMENT AND THE CITIZEN,</u> your child will:

- Compare national, state, and local governments and the lawmaking process of each.
- Describe the election process with emphasis on voter turnout, the

major political parties, and the evaluation of campaign advertising.
- Examine the major ideas of why government is necessary.
- Analyze the viewpoints of various groups regarding local, state, and national issues.
- Formulate an informed, carefully reasoned position on a community issue;
- Demonstrate knowledge of personal character traits that facilitate thoughtful and effective participation in civic life.
- Describe the process by which an individual becomes a citizen of the United States.

In <u>PEOPLE, PLACES, AND THE ENVIRONMENT,</u> your child will:

- Interpret and use physical, political, and special purpose maps.
- Recognize how different points-of-view have been influenced by nationalism, race, religion, and ethnicity.
- Create and explain maps, diagrams, tables, charts, graphs, and spreadsheets

In <u>HISTORY/SOCIAL SCIENCE SKILLS</u>, your child will:

- Evaluate information for accuracy and separate fact from opinion.
- Develop skills of persuasive writing, discussion, and debate.
- Interpret and use timelines, graphs, charts, pictures, and political cartoons.
- Explain cause and effect relationships.
- Interpret and use physical, political, and special purpose maps.
- Examine and interpret primary and secondary source documents.
- Analyze political cartoons, political advertisements, pictures, and other graphic media.

Helpful Hints for Home

English

- Set aside a time and place for your child to read for at least 20-30 minutes per day.
- Make sure your child has a large supply of fiction and non-fiction materials he or she can read.
- Discuss materials your child is reading.
- Use the library as frequently as possible and make time to read together.
- Enhance your child's vocabulary with a family "word of the day."
- Encourage your child to keep a journal and discuss and enjoy their writing.

Math

- Invite your child to figure out solutions to everyday situations. You can do this by talking about the problem, asking your child for ways to solve it, and then asking how he came up with the solution.
- Help your child be a risk taker; see the value of examining a wrong answer and realize that the right answers will come with proper understanding.
- Ask your child questions and give him time to think about the answer.
- Ask your child to figure out why something is the way it is and then check out his ideas. Let him think for himself rather than try to figure out what answer you want to hear.

Science

- Have your child read and interpret charts, graphs, and diagrams found in magazines, newspapers, and various other forms of print media.
- Identify physical and chemical properties of household items.
- Identify physical and chemical changes that occur around the house (cooking, breaking of objects, etc.).
- Explain the general make-up of the periodic table and its usefulness.
- Explain the transfer of energy in household items such as heat pumps, refrigerators, and thermostats.
- Identify the freezing point, boiling point, and melting point on a Celsius scale thermometer.
- Identify the technological applications of light and sound existing in household appliances.
- Describe examples of Newton's Laws of Motion.
- Describe or illustrate examples of static and current electricity.
- Describe how motors and generators function.

History/Social Science

- Take your child with you when you vote.
- Encourage your child to keep up with current events by reading the newspaper and watching newscasts with you and discussing these events.
- Help your child plan a budget for an allowance, a vacation, or holiday shopping.
- Make globes, maps, and the Internet available to your child and use every opportunity to refer to them.
- Ask your child to plan a trip to a place in Virginia that has a historical, governmental, or cultural background.

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