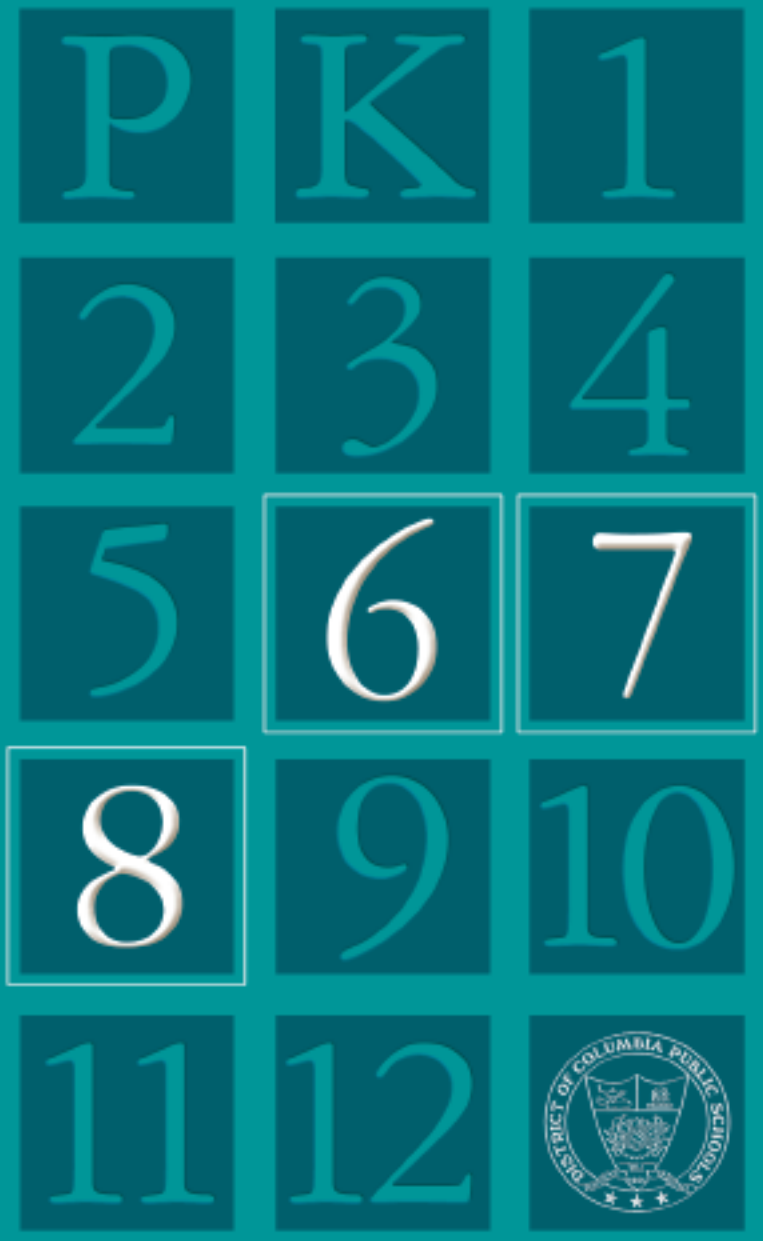
Expect *the Best* for Your Child



How to use the ***new learning standards*** in reading/English language arts, mathematics, science, and social studies to help your child do well in ***grades 6 through 8.***

DISTRICT OF COLUMBIA PUBLIC SCHOOLS

Contents

New Standards = Better Goals for Learning

DC Public Schools has adopted new learning standards for core subjects, including reading/English language arts, mathematics, science, and social studies. The new standards show what students should know and be able to do:

- in each subject,
- at each grade level, and
- in every school.

Standards tell **all** students that we expect them to succeed in school. This is a powerful message: When children know we expect them to do well, they will believe in themselves more and work harder.

Our new learning standards are among the best in the nation. They are the first step toward creating a world-class school system in the District of Columbia.

Standards in the Classroom

Lessons and activities should reflect the standards for that grade. Textbooks and year-end tests also should match the standards. Parent-teacher conferences should focus on how well your child is meeting the standards.

If your child is having trouble meeting the standards, frequent informal tests will help teachers and you find out early so your child can get extra help.

Talk to Your Child's Teacher

Talk to your child's teacher about the standards and how your child is doing in school. Here are some questions you may want to ask.

To learn more about a standard:

- What does this standard mean? Can you show me examples of work that meet this standard?
- When will my child work on this during the school year?
- What activities, materials, and lessons are you using in school to help my child meet the standard? What are the class work and homework for this standard?
- How is my child tested on this standard? How do you know if my child has mastered it?
- May I look at some of my child's work on this standard?

To learn how your child is doing in school:

- Is my child reading at grade level? Can you show me some books that my child can read?
- How did you decide the grades on my child's report card?
- How much time each day does my child spend reading in class? Writing? Doing mathematics?
- In what subjects is my child ahead or behind?
- What do the end-of-year tests tell about how my child is doing?

If your child is behind:

- How are you helping him/her catch up?
- What extra help do you suggest for my child?
- What can I do at home to help my child do better in school?

Reading/English Language Arts in *Grade 6*

In grade 6, students apply skills they learned in earlier grades to make sense of longer, challenging texts. They identify ways in which authors try to influence readers and find facts in the text to support their ideas.

Grade 6 students learn more complex vocabulary words, which they use to write stories, reports, and essays and make well-organized speeches. They know and use English language conventions, including more complex sentences. Students also apply their skills to research projects. They locate and evaluate information from a variety of sources, such as books and the Internet.

TOPICS COVERED

Reading/English language arts standards cover the following eight topics, or strands. Expectations for what a child should be able to do increase from one grade to the next.

- Using and understanding spoken words *(Language Development)*
- Moving from spoken language to print *(Beginning Reading)*
- Getting facts from books and other writing *(Informational Text)*
- Learning from and enjoying stories, poems, and plays *(Literary Text)*
- Using materials to find out information *(Research)*
- Using written words to share information, ideas, and feelings *(Writing)*
- Getting information from television, film, Internet, or videos *(Media)*
- Knowing how to spell and use grammar correctly *(English Language Conventions)*

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 6, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Identify and use organizational structures in text. These structures include chronological order, cause and effect, logical order, and classification schemes.

Describe incidents that advance the plot in a story or novel. Explain how each incident leads to the next or suggests a future event.

Determine the meaning of figurative language, including similes (e.g., "hard as a rock"), metaphors (e.g., "it's a dog's life"), personification (e.g., "old man winter"), and grade-appropriate idioms (e.g., "the test was a piece of cake").

Identify and use simple sentences (e.g., "He finally read the book.") and compound sentences (e.g., "He finally read the book, or so I thought.").

Give oral presentations, such as speeches, that are focused and organized and that have a point of view. Presentations should match purpose, message, and occasion to the audience.

Write stories that demonstrate careful placement of details describing setting, characters, and events.

Write essays that support a position with organized and relevant evidence.

Get information from a variety of sources. Organize information, document sources, and present research in individual and group projects.

HOME ACTIVITIES

Encourage your child to read books that explore new interests.

Grade 6 students enjoy *A Hero Ain't Nothin but a Sandwich,* by Alice Childress; *The Friends,* by Rosa Guy; and *A Wrinkle in Time,* by Madeleine L'Engle.

Watch the news together.

Ask your child to summarize a story and explain why it was important.

Ask your child to write a story on what life was like in your hometown 100 years ago.

Invite your child to explore several sources, such as the public library, newspapers, and the Internet.

Listen to a political speech together.

Talk about the ways the speaker tried to win approval.

Reading/English Language Arts in *Grade 7*

Grade 7 students gain advanced skills in reading and writing. Students focus on how authors make their points and support their arguments in different forms, such as fiction, articles, and essays. Students analyze works of fiction to see how events advance the plot and how the authors reveal their characters' thoughts, words, and actions.

Seventh grade students know how to organize and focus their own writing. They can find facts to support their statements and show that the facts are reliable.

TOPICS COVERED

Reading/English language arts standards cover the following eight topics, or strands. Expectations for what a child should be able to do increase from one grade to the next.

- Using and understanding spoken words *(Language Development)*
- Moving from spoken language to print *(Beginning Reading)*
- Getting facts from books and other writing *(Informational Text)*
- Learning from and enjoying stories, poems, and plays *(Literary Text)*
- Using materials to find out information *(Research)*
- Using written words to share information, ideas, and feelings *(Writing)*
- Getting information from television, film, Internet, or videos *(Media)*
- Knowing how to spell and use grammar correctly *(English Language Conventions)*

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 7, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Ask probing questions. Use evidence to support claims and conclusions.

Present critiques of literary works, films, or plays using various techniques for effective oral presentations.

Describe the facts and evidence used to support an argument.

Identify ways to detect bias in persuasive text.

Describe a character based on the following:

- thoughts, words, and actions of the character;
- the narrator's description; and
- what other characters say and do.

Recognize multiple themes in a text, and supply evidence of the themes from the selection.

Analyze the characteristics and structural elements of a variety of poetic forms, such as epic, sonnet, ode, ballad, lyric, narrative poem, free verse, and haiku.

Write persuasive essays that state a clear position in support of a proposition or proposal, and use clear evidence to support the proposition or proposal.

Write summaries of passages that

- group related ideas and place them in logical order,
- contain main ideas and significant details of the passage, and
- reflect the underlying meaning of the source.

Identify all parts of speech and types and structures of sentences.

HOME ACTIVITIES

Encourage your child to read daily for pleasure.

Young teens enjoy books such as *I Am the Cheese,* by Robert Cormier; *The Contender,* by Robert Lipsyte; and *The Invisible Thread,* by Yoshiko Uchida.

Discuss how your child uses clothing, hairstyle, and other items of dress to express himself or herself without using words.

When your child wants a change in your house rules — like a later bedtime — ask him or her to build a case like a lawyer would, using supporting evidence and other tactics.

Ask your teen to write a poem that rhymes and one that doesn't.

Discuss how the poems are different and how they are the same.

Reading/English Language Arts in *Grade 8*

Just as grade 8 students look forward to high school, grade 8 standards get them ready for bigger challenges to come. Students use thinking skills to analyze, define, explain, and critique. They continue to explore themes in fiction and nonfiction.

In grade 8, students build their writing around strong central ideas or points of view and support their ideas with details and other evidence. Their writing is more polished, with careful word choices, smooth transitions, and variety in sentence structure. Eighth grade students plan and conduct research projects that include several steps, and they focus on documenting sources.

TOPICS COVERED

Reading/English language arts standards cover the following eight topics, or strands. Expectations for what a child should be able to do increase from one grade to the next.

- Using and understanding spoken words *(Language Development)*
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- Learning from and enjoying stories, poems, and plays *(Literary Text)*
- Using materials to find out information *(Research)*
- Using written words to share information, ideas, and feelings *(Writing)*
- Getting information from television, film, Internet, or videos *(Media)*
- Knowing how to spell and use grammar correctly *(English Language Conventions)*

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 8, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Understand and explain differences in the meanings of related words (such as *annoyed, aggravated, angry,* and *enraged).*

State in his or her own words the speaker's purpose and point of view. Ask relevant questions concerning content, delivery, and purpose.

Compare and contrast readings on the same topic. Explain how authors reach different conclusions.

Evaluate whether the details and facts in a text are enough to achieve the author's purpose.

Analyze the influence of setting (such as the time of day, place, or historical period) on the problem and its resolution.

Draw conclusions about style, mood, tone, and meaning of prose, poetry, and drama based on the author's word choice and use of images.

Identify conventions in epic tales (e.g., the quest, the hero's tasks, special weapons, or clothing).

Write coherent compositions (including compare-and-contrast essays) that are several paragraphs long and that have

- a thesis statement;
- logical organization;
- effective use of detail and rhetorical devices; and
- variety in sentence structure, including transition sentences to link paragraphs.

Use varied sentence types and sentence openings to reinforce ideas.

HOME ACTIVITIES

Ask the teacher for recommended books.

Popular eighth grade titles include *Nothing but the Truth,* by Avi; *That Was Then, This Is Now,* by S.E. Hinton; and *The Chemo Kid,* by Robert Lipsyte.

Encourage your teen to do other activities that can help him/her meet the standards:

a) Interview family members and write a family history. Use details to describe how people looked, dressed, and lived.

b) Run for office in a class or club. Compose a statement about what you will do in that office, including changes you would like to make. Include reasons why you would make the changes, using supporting facts.

c) Pick a word for the day. Listen for other words that have almost the same meanings and write them with your main word. Discuss with your family how the words are alike and how they are different.

Mathematics in *Grade 6*

In grade 6, students compute with different kinds of numbers, including whole numbers, positive fractions, and positive decimals. They also work with negative whole numbers, such as –1 or –8.

Grade 6 students apply their skills to abstract and practical problems. They analyze data and decide if something is likely to happen. They understand basic statistical concepts, such as mean, median, mode, and range. They compute percentages and calculate sales discounts, tips, and interest.

Exploring algebra, students solve simple equations using models, graphs, and paper and pencil methods. In geometry, they learn about π and formulas for finding the circumference and area of a circle.

TOPICS COVERED

Mathematics standards for prekindergarten through grade 8 are presented in the following five strands. Expectations for what a child should be able to do increase from one grade to the next.

- Understanding numbers and how they work, such as adding, subtracting, multiplying, and dividing *(Number Sense and Operations)*
- Investigating patterns and using symbols (such as $x + y = z$) to analyze mathematical situations and change *(Patterns, Relations, and Algebra)*
- Identifying shapes, sizes, and relationships *(Geometry)*
- Using number relationships to find out size and volume *(Measurement)*
- Doing experiments, collecting data, and using the information to decide what will happen *(Data Analysis, Statistics, and Probability)*

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 6, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Know that numbers and their negatives (such as 2 and –2, 450 and –450) add up to 0 and are on opposite sides and at equal distance from 0 on a number line. Know that 0 is an integer (whole number) that is neither negative nor positive.

Calculate percentages. Solve problems involving discounts at sales, interest earned, and tips. For example, what is a 20% tip if the check is $40?

Use the properties of equality to solve problems using letters for variables. For example, what number does x represent if $1/4 + x = 7/12$?

Write and solve one-step linear equations and check the answers. (One-step linear equations are equations in the form $x + a = b$, $ax = b$, or $ax + b = c$. Values are given for *a, b,* and *c.* Students solve for x.)

Understand that adding or subtracting the same number on both sides of an equation creates a new equation that has the same truth values.

Find the distance between two points on horizontal or vertical number lines.

Understand the concept of the constant π (pronounced *pie*). Know the formulas for the circumference and area of a circle. Use the concepts to solve problems.

Describe and compare data sets using the concepts of median (middle value), mean (average), mode (most common value), maximum (highest value), minimum (smallest value), and range (largest value in the set minus the smallest value in the set).

Construct circle graphs using ratios, proportions, and percentages.

HOME ACTIVITIES

Invite your child to use math to present an argument.

For example, use a chart that shows the rising costs of lunches or clothes to make the case for a bigger allowance.

When shopping, ask your child to look for savings in percentages, such as 20% or 30% off.

What is the amount saved? What is the new price?

Encourage your child to take up a hobby that involves math.

Hobbies such as building models or sewing let students use math to solve real problems.

Ask your child to research how early civilizations used mathematics in their daily lives.

Mathematics in *Grade 7*

Grade 7 students know and use different forms of fractional numbers, such as fractions, decimals, and percentages. They understand relationships between two or more numbers as expressed by ratios (for example, if there are 30 students and one teacher in a classroom, the ratio of students to teachers is 30:1) and proportions (for example, 3/4 = 6/8). They also understand the properties of exponents (for example, 5^2 is 5 times 5).

Seventh grade students can use the Pythagorean theorem to find the length of a side of a triangle when they know the lengths of the other two sides. Students know how to compute the surface area and volume of basic three-dimensional objects, such as spheres and cubes. They understand how area and volume change when objects get bigger or smaller.

TOPICS COVERED

Mathematics standards for prekindergarten through grade 8 are presented in the following five strands. Expectations for what a child should be able to do increase from one grade to the next.

- Understanding numbers and how they work, such as adding, subtracting, multiplying, and dividing *(Number Sense and Operations)*
- Investigating patterns and using symbols (such as $x + y = z$) to analyze mathematical situations and change *(Patterns, Relations, and Algebra)*
- Identifying shapes, sizes, and relationships *(Geometry)*
- Using number relationships to find out size and volume *(Measurement)*
- Doing experiments, collecting data, and using the information to decide what will happen *(Data Analysis, Statistics, and Probability)*

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 7, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Use ratio and proportion, including scale factors (the ratio of any two corresponding lengths in two similar geometric figures), to solve problems. For example, the ratio of areas of two similar figures is the square of the scale factor. The ratio of the volumes of two similar figures is the cube of the scale factor.

Calculate given percentages of quantities. Solve problems involving tips, interest earned, and discounts at sales. For example, if a $100 pair of shoes now costs $80, what is the percentage of savings?

Write and solve two-step linear equations (for example, $y = 2x + 6$) and check the answers.

Use algebraic terminology including — but not limited to — *variable*, *equation*, *term, coefficient*, *inequality, expression,* and *constant.*

Plot the values of quantities whose ratios are always the same (e.g., inches to feet, circumference to diameter of a circle).

Given the formulas, determine the surface area and volume of rectangular prisms and cylinders.

Describe the characteristics and limitations of a data sample. Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling).

Use tree diagrams, tables, organized lists, and area models to compute probabilities for simple compound events (e.g., multiple coin tosses or rolls of dice).

HOME ACTIVITIES

Choose a stock and follow it on the stock market.

Calculate the percentage of increase or decrease in the value of the stock from day to day.

Follow the batting or scoring average of a favorite ball player.

Use mathematical tools to predict how well the player will perform.

Work together on a remodeling project in your home.

Use mathematics to calculate how much paint or wood you'll need.

Keep a log of ways mathematics is used in the real world: in the home, in business, in sports.

Ask your child to explain to you how the standards they learn relate to real-world demands.

Mathematics in *Grade 8*

By grade 8, students are comfortable using numbers, and they understand the general principles behind what they do. They recognize that mathematics is important to their everyday life — especially solving problems that involve discounts, profits, and interest, as well as other skills they need to manage their money well. They also understand advanced concepts such as ratio and proportion, linear functions, and slope and its relationship to ratio.

Eighth grade students use abstract thinking to solve algebraic expressions, including linear equations. They become skilled at statistical operations, such as analyzing data and sampling processes for possible bias and misleading conclusions.

TOPICS COVERED

Mathematics standards for prekindergarten through grade 8 are presented in the following five strands. Expectations for what a child should be able to do increase from one grade to the next.

- Understanding numbers and how they work, such as adding, subtracting, multiplying, and dividing *(Number Sense and Operations)*
- Investigating patterns and using symbols (such as $x + y = z$) to analyze mathematical situations and change *(Patterns, Relations, and Algebra)*
- Identifying shapes, sizes, and relationships *(Geometry)*
- Using number relationships to find out size and volume *(Measurement)*
- Doing experiments, collecting data, and using the information to decide what will happen *(Data Analysis, Statistics, and Probability)*

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 8, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Explain the properties of and compute with real numbers expressed in a variety of forms.

Read, write, and compare rational numbers in scientific notation (for example, 10^2 or 10^{-1}). Use them in calculations and problem situations.

Solve problems involving ratio units, such as miles per hour, dollars per pound, or persons per square mile.

Solve problems that involve markups, commissions, profits, and simple and compound interest.

Set up and solve linear equations with one or two variables using algebraic methods, models, and graphs. For example, as a salesperson you make $50 per week plus $3 per sale. You want to earn $100 per week. Write an inequality for the number of sales you need.

Demonstrate an understanding of the identity $(-x)(-y) = xy$. Use this identity to simplify algebraic expressions — for example, $(-2)(-x+2) = 2x - 4$.

Graph a linear equation using ordered pairs. For example, survey students at each grade level at your school, asking them how much time they spend on homework. Plot the grade level and time for each student as a point on a scatter diagram. Identify and represent the graphs of linear functions.

Use proportions to express relationships between corresponding parts of similar figures.

Recognize practices of collecting and displaying data that may bias the presentation or analysis.

HOME ACTIVITIES

Encourage your teen to learn and use correct mathematical terms.

If these words are new to you or others in your family, learn them together.

When you see an opinion poll reported in your newspaper, ask your young teen to find out some details of how the poll was taken.

What makes a poll more accurate?

When you go out to eat as a family, ask your teen to calculate the tip.

How much would the tip increase if everyone ordered dessert?

Have your teen make a project of drawing a scale model of a sports field or other landmark near your home.

Science in *Grade 6*

Students in grade 6 explore how Earth was formed, how it changed in the past, and how it changes today. They identify Earth's four major systems: geosphere (rocks, soil, and other parts of Earth's crust), hydrosphere (water systems, including oceans and rivers, glaciers, icecaps, clouds, and water vapor), atmosphere (air around Earth), and biosphere (living things and their environments). They learn how these systems work together and how living things support each other. Grade 6 students also recognize that new technologies and observations change our understandings of how things in the natural world behave.

TOPICS COVERED

Science in grade 6 focuses on earth science, the branch of science that studies the origins of Earth and things that are part of it, such as rocks, soil, water, and air. Major topics covered by grade 6 standards include:

- *Scientific Thinking and Inquiry* — A way that scientists ask questions, form theories about the natural world, and collect accurate information to find the answers.
- *Science and Technology* — Using what we know of the natural world to solve problems or meet our needs. For example, we use natural laws to build tools that help us do work.
- *The Solar System* — The sun, the planets, and other bodies that orbit the sun.
- *Heat (Thermal Energy)* — The flow of energy from one object to another that is transferred by changes in temperature.
- *Weather and Climate* — The state of the atmosphere (for example, its temperature, cloudiness, rainfall, and wind) and how these affect Earth's environment.
- *Resources* — Freshwater, soils, plants, trees, mineral deposits, and other natural materials that living things need to survive or can use to improve their lives.
- *The Rock Cycle* — How rocks cycle from one form to another through forces, such as wind and rain, or through changes in pressure or temperature.
- *Plate Tectonics* — The formation, movement, destruction, and interaction of large pieces (plates) of the Earth's crust.
- *Earth and Life History* — How life began on Earth and how living things and Earth itself have changed over time.

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 6, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Write a report of an investigation that includes the problem to be solved, the methods and tests used, the data or evidence, and the conclusion or results.

Make and explain a simple map.

Describe the many ways computers help scientists — for example, by helping to collect, store, sort, and analyze data.

Describe how planets move around the sun, and explain how the solar system was formed.

Describe that the sun's gravitational attraction holds Earth and the other planets in their orbits.

Explain that humans and other living things depend on freshwater and other natural resources — and that supplies of these resources are limited.

Use plate tectonics to explain important features of Earth's surface. For example, describe how earthquakes and volcanoes often occur on the boundaries between plates.

Seek and use evidence from rocks to explain how life developed on Earth. For example, study fossils to see evidence of earlier life forms.

HOME ACTIVITIES

Ask your child to make a map of your neighborhood.

Change the map as things in the neighborhood change.

Pick a favorite appliance — for example, your TV, sewing machine, or iPod.

As a family, discuss how the technology of the day made the appliance possible. How will the appliance change in 10 years?

Challenge your child to think of your home as an ecosystem.

Make a list of the resources needed to keep your family safe and healthy in your home — for example, food, water, light, and heat. Where does each resource come from? Where does each resource go?

Make a family plan to conserve water in your home.

Keep a record of how long each person spends taking a shower or doing tasks, such as washing dishes.

Science in *Grade 7*

Students in grade 7 see living things as part of a system with many connections. They learn that in human beings and other organisms with more than one cell, the cells work together but look different and have different jobs — for example, skin cells look and do different things than the cells of the eye.

Grade 7 students use their study of life science to make wise decisions about their own health and behavior. They learn that organs in their own bodies work together in systems. In the same way, they see that plants and other living things form systems that draw on the sun for the energy they need to live.

TOPICS COVERED

Science in grade 7 focuses on biology, the branch of science that studies living things. Major topics covered by grade 7 standards include:

- *Scientific Thinking and Inquiry* — A way that scientists ask questions, form theories about the natural world, and collect accurate information to find the answers.
- *Science and Technology* — Using what we know of the natural world to solve problems or meet our needs. For example, we use natural laws to build tools that help us do work.
- *Biological Classification* — How scientists group living things according to shared physical characteristics.
- *Cell Biology* — The structures, functions, processes, and cycles of the activities of cells.
- *Genetics* — The study of traits and variations, such as hair or eye color, and how these are passed from one generation to another.
- *Biological Evolution* — How living things develop from earlier forms of life — and how different organisms develop from changes in genetic material.
- *The Human Body* — The study of the body and its parts, how they develop, and how they work together.
- *Ecology* — The relationships between living things and between living things and their environment.

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 7, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Explain why scientists need to keep clear and accurate records.

Display data in reports using charts, graphs, diagrams, symbols, and other kinds of visual aids.

Explain how technology is used in common activities, such as farming, warfare, medicine, transportation, information processing, and communication.

Explain that living things are made of cells, which are usually visible only under a microscope. An organism may have one cell or many.

Explain that cells function in a similar way in all living things.

Recognize that many living things, such as bacteria and yeasts, have only one cell. Explain how this one cell must carry out all the basic functions of life.

Explain how every living thing carries a set of instructions that identifies traits, such as hair color or number of fingers. Traits may be changed by things in the environment.

Know that changes can occur from one generation to another. After many generations, the changes can result in new species.

Recognize that living things in the same ecosystem exchange energy and food with each other and with their environment.

HOME ACTIVITIES

Together, compare science news or feature articles from different sources (newspaper, TV, Internet, etc.).

Discuss which articles do the best job of presenting data and separating fact from opinion.

Ask your child to make a family tree for a pet or favorite animal, using the biological classification system: species, genus, family, order, class, phylum, and kingdom.

Find photos of other related animals that fit each level and paste them onto the chart.

Create drawings, collages, or other works of art based on biological structures — for example, the shapes of plant or animal cells seen under a microscope, or the structure of DNA.

As a family, research safe food handling in your school library or on the Internet.

Make a plan for reducing the spread of food bacteria in your own kitchen.

Science in *Grade 8*

In grade 8, students explore how force and energy are related and how energy and matter are related (laws of conservation), how matter is made of atoms and molecules (atomic theory), and how gases are made of small particles that move in random motion (kinetic theory).

Grade 8 students also learn the basics of chemistry, including the periodic table of elements, chemical reactions, and the chemistry that occurs in biological processes (such as converting food to energy). As they learn to use different tools to make accurate measurements, they are able to use more data in their experiments and get more precise results.

TOPICS COVERED

Science in grade 8 focuses on the physical sciences, the branches of science that explore nonliving materials (such as water and air), energy (such as electricity), and forces (such as gravity and magnetism), and examines how they interact. Major topics covered by grade 8 standards include:

- *Scientific Thinking and Inquiry* — A way that scientists ask questions, form theories about the natural world, and collect accurate information to find the answers.
- *Properties of Matter* — They study of structures, densities, temperatures, and other descriptions of gases, liquids, and solids.
- *Elements* — The study of substances made only from atoms that cannot be broken down into a simpler substance by a chemical reaction.
- *Compounds and Mixtures* — Combining two or more substances in different ways.
- *Motion of Objects* — How force and energy cause objects to move.
- *Forms of Energy* — Different ways to do work — for example, mechanical energy (energy of objects in motion), thermal energy (heat energy), electrical energy, magnetism, and energy from light.

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 8, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Describe how scientific knowledge may be changed based on new data or observations.

Explain that each element has its own properties (such as color and density) and its own atomic structure.

Explain that chemical reactions are processes in which atoms are combined or rearranged to form products with different properties.

Recognize that matter and energy have many different forms and can change from one form to another.

Explain that electricity and magnetism are related forms of energy that have many applications in daily life. Understand the role that magnets play in electric doorbells, earphones, motors, and generators.

Explain that when two or more forces are applied to an object at the same time, the effect is the total of the forces.

Recognize that a force has both magnitude (amount) and direction.

Know that waves can be described by many of the same qualities, such as amplitude (strength or volume), wavelength, period (frequency), and wave speed.

HOME ACTIVITIES

Build a home library of books about scientists who made discoveries in the physical sciences — for example, George Washington Carver, Marie Curie, Benjamin Banneker, Albert Einstein, and Earl Shaw.

Discuss how their work has changed how you live today.

Together, make a list of the different kinds of energy used in your home — for example, electrical energy, magnetic energy, and heat (thermal) energy.

How many more kinds can you find?

Talk with your child about how science can help him or her play games, such as tennis or basketball.

For example, knowing how hard a ball is bounced can help predict how far and fast it will travel. What are some more useful facts?

As a family, make a plan for conserving energy in your home. How can each family member reduce the amount of energy you use?

Discuss what happens to the energy you don't use.

Social Studies in *Grade 6*

In grade 6, students use maps, globes, graphs, and information technologies, such as global positioning systems, to study geography and patterns of land use and culture around the world. They learn to think geographically, and they become aware of the locations and special features of different places.

Grade 6 students learn how people and their activities affect the Earth's surface. They identify how living in cities or rural areas affects people's social relationships and the kinds of jobs they have. They study important physical relationships — for example Earth's relationship to the sun, and the relationship of the Earth's climate and ecosystems.

TOPICS COVERED

Social studies standards cover four major areas:

- *History* — the study of past events that have important effects on our country and our world
- *Geography* — the study of the Earth's physical features, as well as the effects of human life and activity on Earth
- *Economics* — the study of how people and societies produce, buy, sell, and use goods and services
- *Civics* — the study of politics, government, and the rights and duties of citizens

In each grade, students focus on different ideas within the main areas. In grade 6, standards include the following topics: the world in spatial terms, places and regions, human systems, economic systems and urbanization, physical systems, and environment and society.

Standards for 6th grade social studies will be fully implemented in September 2007.

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 6, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Locate major countries of the Eastern and Western hemispheres and principal regions, mountains, and bodies of water.

Identify a region, such as the islands of Indonesia in the South Pacific or some regions of Africa, where natural disasters occur often. Give examples of world efforts to bring aid to these places.

Show on a map the places where each of the world's major religions is practiced. Describe main features of buildings, such as churches or temples, associated with each religion.

Name the main global organizations — for example, the United Nations and the European Union. Form committees to report on the power and limitations of each.

Make a graph that shows the global trend toward living in cities (urbanization).

Explain the difference between weather and climate.

Explain safety measures people can take in case of an earthquake, tornado, or hurricane. Make a map to show where these have occurred in the United States during certain years.

Identify ways humans threaten their environment — for example, by polluting air and water, or by cutting down too much of a forest (deforestation). Make a world map showing where each of these occurs.

HOME ACTIVITIES

Start a water conservation project in your home. As a family, identify ways you can save water — for example, take shorter showers.

Ask your child to make a chart to track how well each person is doing.

Use the Internet (www.sister-cities.org/) to learn the names of DC's sister cities around the world.

Ask your child to learn some facts about each city. How is each city like our city? How are the cities different?

As a family, raise funds for an organization, such as the International Red Cross or Doctors Without Borders, that provides aid for disasters around the world.

Ask your child to research the group in the library or on the Internet.

Together, visit a local museum that has art and other objects from some of the world's religions, such as the Smithsonian's Arthur M. Sackler and Freer Galleries of Art (Asian and Islamic) or the National Museum of African Art.

Social Studies in *Grade 7*

In grade 7, students explore the world outside the United States and North America. They study the origins of human beings in Africa and learn how early societies formed in the Middle East (Mesopotamia), India, and China.

Grade 7 students consider how geography affects the human story: how societies in different places developed in different ways. Students gain a sense of how people lived long ago — their problems, accomplishments, tools, technology, work, and homes. Grade 7 students also explore the religions, governments, trade, philosophies, and art of these first civilizations, as well as their ideas, which shaped the history of the world.

TOPICS COVERED

Social studies standards cover four major areas:

- *History* — the study of past events that have important effects on our country and our world
- *Geography* — the study of the Earth's physical features, as well as the effects of human life and activity on Earth
- *Economics* — the study of how people and societies produce, buy, sell, and use goods and services
- *Civics* — the study of politics, government, and the rights and duties of citizens

In each grade, students focus on different ideas within the main areas. In grade 7, standards include the world history and geography of three eras: early humankind and the development of human societies; early river civilizations to 1,000 B.C./B.C.E.; and ancient and classical civilizations to 700 A.D./C.E.

Standards for 7th grade social studies will be fully implemented in September 2008.

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 7, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Trace the changes in climate and environment that shaped the Earth and permitted human life to develop.

Analyze the geography, politics, religion, and economy of the Indus Valley civilization.

Discuss the Olmec culture of Mesoamerica (Central America), including its farming system, religion, writing, and other important contributions.

Analyze the geography, politics, religion, economy, and social structure of the ancient Hebrews, including their movement into and exodus from Egypt.

Analyze the civilization of ancient Greece, including the relationship between its seacoast geography and the development of city-states.

Explore the civilization of ancient Rome, including the rise of the Roman Empire and the government of the Roman Republic.

Explain early religious and cultural developments on the subcontinent of India, including the rivalries among Indian states and the story and teachings of the Buddha.

Summarize China's influence on other developing civilizations, including trade with other countries on the Silk Road and the seas.

HOME ACTIVITIES

Invite your child to think of your neighborhood as a village.

Discuss how the parts work together: Where are the centers of government, religion, culture, and education? How would your neighborhood survive if it were cut off from the rest of the city?

Research food and tools used by the ancient Greek, Hebrew, and Olmec civilizations.

Ask your child to find similar items in your home today.

Encourage your child to explore careers in archaeology (the study of past human cultures from material remains), paleobotany (the study of ancient plants using fossils and other evidence), or other sciences that study early civilizations.

Use the Internet or other resources to explore the National Geographic Society's Genographic Project (www3.nationalgeographic.com) or other efforts to trace modern families back to their ancient origins.

Social Studies in *Grade 8*

In grade 8, students learn about our country during the colonial period, and they explore major events and ideas that led to the Revolutionary War. They explore the effect that the war for independence had on other nations. And they examine the basic concepts of American government, such as individual rights and the rule of law.

Grade 8 students also learn how America expanded into the West, formed political parties, and experienced other economic and social changes. They learn how conflict between the Northern and Southern states led to the Civil War and how the Civil War led to other changes, including the economic and political punishment of the South during Reconstruction.

TOPICS COVERED

Social studies standards cover four major areas:

- *History* — the study of past events that have important effects on our country and our world
- *Geography* — the study of the Earth's physical features, as well as the effects of human life and activity on Earth
- *Economics* — the study of how people and societies produce, buy, sell, and use goods and services
- *Civics* — the study of politics, government, and the rights and duties of citizens

In each grade, students focus on different ideas within the main areas. In grade 8, standards include the following topics: our colonial heritage (1600–1720), a new nation (1720–1787), the Constitution of the United States (1777–1789), launching the young nation (1789–1849), divergent and unifying paths of the American people (1800–1850), Civil War and Reconstruction (1830–1877), and the rise of industrial America (1877–1914).

WHAT YOUR CHILD SHOULD KNOW

BY THE END OF GRADE 8, YOUR CHILD SHOULD KNOW AND BE ABLE TO PERFORM THESE SKILLS:

Explain the religious, political, and other reasons why the first European explorers and settlers came to America. Describe the impact they had on Native Americans.

Identify the political and economic causes and effects of the Revolutionary War.

Describe the powers of government set forth in the U.S. Constitution and the liberties guaranteed by the first 10 amendments (the Bill of Rights).

Use the works of early writers, such as Washington Irving and James Fenimore Cooper, to describe daily life in the early decades of the United States — including the art, music, and literature of the time.

Outline the major treaties with Native American nations signed under the first four U.S. presidents. Describe the different results of those treaties.

Discuss the lives of black Americans who found freedom in the Northern states. Discuss those who founded schools and churches to build communities and advance their rights.

Describe the role of pioneer women and how western expansion changed their status.

Explain how the Civil War affected people — those who fought in it, families, and other citizens — the environment, and the way wars would be fought in the future.

HOME ACTIVITIES

Encourage your child to use genealogical resources to research your family's history to learn when and how your ancestors first came to the United States.

He or she can begin at the National Archives or the Daughters of the American Revolution Library.

Suggest that your child view the original Declaration of Independence, U.S. Constitution, and Bill of Rights at the U.S. National Archives (www.archives.gov/exhibits/featured_documents.)

Encourage your child to volunteer in a local or national election or join a student group affiliated with the political party that he or she supports.

Build a home library of the biographies of leaders in an era of U.S. history that interests your child, such as the Civil War or the settlement of the western states.

How Is *Your Child* Doing?

New tests will let you and the teacher know how well your child is meeting the standards.

Standardized reading/English language arts and mathematics tests are given to students in grades 3–8 and 10 every spring. A composition test to measure students' writing skills is given in grades 4, 7, and 9. Different tests also monitor reading progress for children in grades kindergarten–2.

Beginning in spring 2008, a new end-of-year science test will be given to at least one grade each in elementary, middle, and high schools. Other tests are being developed to measure students' progress in Algebra I and Geometry, high school English, and the sciences.

In addition to these districtwide tests, your child's teacher will be giving informal tests and quizzes throughout the year.

Checklist

As a parent, you are your child's most important teacher — and best advocate. Let your child know you care about his/her school performance. Make sure your child's teacher knows that you are engaged as well.

Here are some ways you can help your child meet the new standards. ***Don't feel you must do everything on this list. Just letting your child know that you expect him/her to do well in school is very important.***

- ☐ Talk to your child about what he/she learned and did in school that day.
- ☐ Praise your child when he/she does well or makes a good effort.
- ☐ Ask to see and sign homework every day.
- ☐ Attend parent-teacher conferences. Ask the teacher how you can help your child succeed.
- ☐ If you think your child could use extra help, ask the teacher to help you find a tutor, a reading specialist, or other resources.
- ☐ Visit your child's classroom, and volunteer for school activities.
- ☐ Read the material your child brings home from school. If your child has not brought home any material, find out why.
- ☐ Learn your rights and options for tutoring help and transferring schools under the No Child Left Behind Act. On the Web, visit www.NCLB.gov.

Learn More

You can view the complete standards for reading/English language arts, mathematics, science, and social studies on the DCPS Web site, www.k12.dc.us.

For a printed copy of this standards guide for parents, call (202) 724-4222. The parent guides are available in six languages: English, Amharic, French, Mandarin Chinese, Spanish, and Vietnamese.

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