PTA

# Overview

April 2010

## Common Core State Standards Initiative:

Assuring that All Students Graduate From High School Ready for College and Career

## WHAT IS THE COMMON CORE STATE STANDARDS INITIATIVE (CCSSI):

The CCSSI is a state-led effort designed to improve educational outcomes for students by developing a set of consistent, clear K-12 academic standards in English language arts and mathematics. In 2009 the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO), the coordinators of the initiative, convened a group of leading experts to develop K-12 standards for math and English language arts in 2010. These standards are relevant to the real world, reflecting the knowledge and skills young people need to be prepared for both college and work in a global economy.

# WHY PTA BELIEVES STATES SHOULD ADOPT AND IMPLEMENT THE COMMON CORE STATE STANDARDS

The Problem: American students are graduating unprepared for college and career.

- American students are poorly prepared for college and career. Today, most good jobs require some type of postsecondary education or training. Yet, our education system is falling short in preparing students to succeed in higher education. It is estimated that each year, \$1.4 billion is spent on remedial education for college students who have recently completed high school, a burden often borne by parents, students, and states.<sup>1</sup> Additionally, ACT found that less than a quarter of high school graduates are able to pass their classes (earn a C average) in their first year of college.<sup>2</sup>
- In 1995, the U.S. was tied for first in the proportion of young adults with a college degree, but by 2004 it had fallen to 14th.<sup>3</sup>
- Out of 30 industrialized countries, the U.S. ranked 25th in math and 21st in science in 2006.<sup>4</sup>

The Solution: Clear and consistent standards across the country and support for schools to help students achieve their full potential.

## CLEAR AND CONSISTENT STANDARDS ACROSS THE COUNTRY

Standards will be consistent from state to state. CCSSI is based on the principle that arithmetic should be the same in Missouri or Michigan, and reading skills should be the same in California or Florida. Today there are different academic standards in every state, and too many states have standards that do not prepare students for college and career. Consistent standards will provide appropriate benchmarks for all students regardless of where they live and allow states to more effectively help all students succeed.

In addition, families who must move from one state to another because of job changes will particularly benefit from consistent standards across states. They will no longer face the problem of their children moving to a new school and finding that they are underprepared, because the standards of the state from which they are moving are lower than those of the state to which they are relocating.

Standards will be relevant to the real world. The Common Core State Standards will reflect the knowledge and skills that young people need to succeed in college and career. They will focus on problem solving and critical thinking skills, not solely on knowledge of particular facts that have little relationship to success later in life.

Standards will be clear. In many states, standards have been updated over the years by adding additional requirements onto existing standards. The result has been standards that are often so long and confusing that they do not function as clear guides for instruction. CCSSI will address this problem by increasing clarity among educators and parents about what students



should be able to know and do at each grade level. States agreeing to adopt the standards may add a limited amount (no more than 15% of their overall standards) above and beyond what is in the core standards.

**CCSSI** aims to avoid additional testing. Because there are limits on how much states can add above and beyond the common core, these standards and the assessments that will be developed for them are expected to replace existing tests, not add to them.

Clearer standards will benefit parents, teachers and students. One of the benefits of adopting clearer standards is that parents, teachers and students will have a shared understanding of what is expected in school. Studies have shown that when parents are actively engaged in their children's education, student achievement outcomes are improved.<sup>5</sup>

Standards will incorporate the best and highest of the current state standards. This effort will build on what many states are already doing right. States with high standards will not be required to lower their standards in order to "meet in the middle" with states that now have lower standards.

## SUPPORT FOR SCHOOLS TO HELP STUDENTS ACHIEVE THEIR FULL POTENTIAL

Higher standards combined with curriculum in our schools that emphasizes the skills needed to succeed in college and career will raise student achievement. Creating better standards is clearly just the first step in raising the level of achievement of all students. The next and more important step is creating schools that give students the support they need to realize their full potential. This will mean creating curricula that is aligned to the new standards and professional development for teachers to assure that they have the knowledge and skills to improve student achievement.

Common Core State Standards will make it easier for states to create first class education systems.

Consistent standards across the states will create new efficiencies. States that previously used only multiple choice tests, because they were inexpensive to develop, will be able to share the cost of developing better assessments of students' abilities to perform in the real world. They will also be able to share the cost of developing curriculum and professional development for teachers aligned to the new standards.

#### Curriculum and assessment tied to clearer standards

will increase student achievement. Studies have shown that when curriculum allows teachers to cover select topics in greater depth, rather than numerous topics superficially, student achievement is improved.<sup>6</sup> In addition, teachers will be able to better respond to students' educational needs using assessments that are aligned to the new standards.

#### RESOURCES AND CONTACT INFORMATION

For further information on National PTA's recommendations on CCSSI see PTA's annual Public Policy Agenda. Available online at: http://www.pta.org/public\_policy\_agenda.asp

If you should have any questions about National PTA and the CCSSI, please contact:

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#### (Endnotes)

- 1. Alliance for Excellent Education, *Paying Double: Inadequate High Schools and Community College Remediation* (Washington, D.C., 2006).
- 2. ACT, 2009 ACT National and State Scores (Iowa City, 2009). http://www.act.org/news/data/09/index.html.
- 3. National Governors Association, Council of Chief State School Officers and Achieve Inc., *Benchmarking for Success* (Washington, D.C., 2008), http://www.nga.org/Files/pdf/0812BENCHMARKING.PDF, 4.
- 4. Ibid., 12.
- 5. National PTA and Harvard Family Research Project, Seeing is Believing: Promising Practices for How School Districts Promote Family Engagement (Cambridge, 2009).
- 6. Benchmarking for Success, 25.

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This guide provides an overview of what your child will learn by the end of kindergarten in mathematics and English language arts/literacy. It focuses on the key skills your child

## **KINDERGARTEN**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 1st grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in kindergarten
- Ideas for activities to help your child learn at
- Topics of discussion for talking to your child's teacher about his or her academic progress

Learning new language skills is a hallmark of kindergarten. Your child will learn about the alphabet and its role in reading. Your child will practice rhyming, matching words with beginning sounds, and blending sounds into words. Practice with these types of activities is a powerful step toward learning to read and spell correctly. The size of your child's vocabulary is another key factor in his or her ability to read and comprehend books and stories. Your child also will begin to experiment with writing and will be encouraged to use a combination of drawing, dictating, and writing letters to share information, ideas, and feelings.

### A Sample of What Your Child Will Be Working on in Kindergarten

- Naming upper- and lower-case letters, matching those letters with their sounds, and printing them
- Comparing the adventures and experiences of characters in familiar stories, such as fairy tales and folktales
- Retelling familiar stories and talking about stories read to them using details from the text
- Using a combination of drawing, dictating, and writing to describe an event, including his or her reaction to what happened
- Stating an opinion or preference about a topic or book in writing (e.g., "My favorite book is . . .")

- Taking part in classroom conversations and following rules for discussions (e.g., learning to listen to others and taking turns when speaking)
- Speaking clearly to express thoughts, feelings, and ideas, including descriptions of familiar people, places, things, and events
- Asking and answering questions about key details in stories or other information read aloud
- Understanding and using question words (e.g., who, what, where, when, why, how) in discussions
- Learning to recognize, spell, and properly use those little grammatical words that hold the language together (e.g., *a, the, to, of, from, I, is, are*)

Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In kindergarten, these include:

- Using knowledge of letters and letter-sound correspondences to figure out how to spell words as they sound
- Reading and understanding a story designed for early readers

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

Young children arrive in kindergarten with widely varying knowledge in math. By the end of the year, your child must have some important foundations in place. One of the most important skills your child should develop is the ability to add and subtract small numbers and use addition and subtraction to solve word problems. This will rely on gaining some fundamentals early in the year, such as counting objects to tell how many there are. Addition and subtraction will continue to be a very strong focus in math through 2nd grade.

## A Sample of What Your Child Will Be Working on in Kindergarten

- Counting objects to tell how many there are
- Comparing two groups of objects to tell which group, if either, has more; comparing two written numbers to tell which is greater
- Acting out addition and subtraction word problems and drawing diagrams to represent them
- Adding with a sum of 10 or less; subtracting from a number 10 or less; and solving addition and subtraction word problems
- Adding and subtracting very small numbers quickly and accurately (e.g., 3 + 1)
- Correctly naming shapes regardless of orientation or size (e.g., a square oriented as a "diamond" is still a square)

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In kindergarten, these include:

- Counting to tell the number of objects (this will not be written work; ask the teacher for his or her observations of your child's progress in this area)
- Solving addition and subtraction word problems

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Read with your child every day, books like Are You My Mother by P.D. Eastman or Green Eggs and Ham by Dr. Seuss. Ask your child to explain his or her favorite parts of the story. Share your own ideas. To find more books for your child to read, visit www.corestandards.org/assets/Appendix\_B.pdf.
- Encourage your child to tell you about his or her day at school. Keep paper, markers, or crayons around the house for your child to write letters or words or draw a picture about his or her day. Have your child describe the picture to you.
- Play word games like *I Spy*, sing songs like *Itsy Bitsy Spider*, and make silly rhymes together.

#### **Mathematics**

Look for "word problems" in real life. Some kindergarten examples might include:

- Play "Write the next number." You write a number, and your child writes the next number.
- Ask your child questions that require counting as many as 20 things. For example, ask, "How many books do you have about wild animals?"
- Ask your child questions that require comparing numbers. "Who is wearing more bracelets, you or your sister?" (Your child might use matching or counting to find the answer.)

For more information, the full standards are available at www.corestandards.org.



National PTA

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This guide provides an overview of what your child will learn by the end of 1st grade in mathematics and English language arts/literacy. It focuses on the key skills your child

## **1ST GRADE**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 2nd grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 1st grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

In 1st grade, your child will become a more independent reader and writer. Your child will continue to learn and practice rules for recognizing the sounds that make up words and will be able to sound out more complex words. Such foundational skills are necessary and important components of developing proficient readers with the capacity to comprehend a wide range of materials. Students will learn to think about what they read and talk about the main ideas of simple stories. As they write and speak, 1st graders will learn to use language appropriately; this includes using complete sentences and spelling words with increasing accuracy.

### A Sample of What Your Child Will Be Working on in 1st Grade

- Using phonics (matching letters and sounds) and word analysis skills to figure out unfamiliar words when reading and writing
- Describing characters, settings, and major events in a story, using key details
- Getting facts and information from different writings
- Writing about a topic, supplying some facts, and providing some sense of opening and closing
- Participating in shared research and writing projects (e.g., exploring a number of "how-to" books and using them to write a sequence of instructions)
- Taking part in conversations about topics and texts being studied by responding to the comments of others and asking questions to clear up any confusion

- Describing people, places, things, and events with relevant details, expressing ideas and feelings clearly and with complete sentences
- Producing and expanding complete simple and compound statements, questions, commands, and exclamations
- Identifying the correct meaning for a word with multiple meanings, based on the sentence or paragraph in which the word is used (e.g., deciding whether the word bat means a flying mammal or a club used in baseball)
- Learning to think about finer distinctions in the meanings of near-synonyms (e.g., marching, prancing, strutting, strolling, walking)

Talking to Your Child's Teacher

#### Keeping the conversation focused.

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 1st grade, these include:

- Reading grade-level text with understanding and fluency
- Learning from, enjoying, and getting facts from books he or she reads and listens to

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

In 1st grade, your child will build on last year's work and gain important new skills. One of the most important outcomes for the year is to improve speed and accuracy adding with a sum of 20 or less and subtracting from a number 20 or less (e.g., 17-8). Another important goal in 1st grade is adding with a sum of 100 or less; this will rely on understanding what the digits mean in a number such as 63 (namely, 63 is six tens and three ones). Working with multi-digit addition this year will set the stage for 2nd grade, when your child will be working with three-digit numbers and adding and subtracting with larger numbers.

### A Sample of What Your Child Will Be Working on in 1st Grade

- Solving addition and subtraction word problems in situations of adding to, taking from, putting together, taking apart, and comparing (e.g., a taking from situation would be: "Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat?")
- Adding with a sum of 20 or less, and subtracting from a number 20 or less, for example by using strategies based around the number 10 (e.g., to solve 13 4, one can start with 13, subtract 3 to reach 10, and then subtract 1 more to reach 9)
- Quickly and accurately adding with a sum of 10 or less, and quickly and accurately subtracting from a number 10 or less (e.g., 2 + 5, 7 - 5)

- Understanding what the digits mean in two-digit numbers (place value)
- Using understanding of place value to add and subtract (e.g., 38 + 5, 29 + 20, 64 + 27, 80 50)
- Measuring lengths of objects by using a shorter object as a unit of length
- Making composite shapes by joining shapes together, and dividing circles and rectangles into halves or fourths

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 1st grade, these include:

- Adding with a sum of 20 or less and subtracting from a number 20 or less (this will not be written work; ask the teacher for his or her observations of your child's progress in this area)
- Using understanding of place value to add and subtract
- Solving addition and subtraction word problems

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Encourage your child to read to you books such as Little Bear by Else Holmelund Minarik. Help him or her sound out difficult words. To find more books for your child to read, visit www.corestandards.org/assets/Appendix\_B.pdf.
- Act out stories together from books, television, or your child's imagination.
- Pick a "word of the day" each day starting with a different letter. Have your child write the word and look for other things beginning with the same letter.
- Visit the library with your child every week. Have your child sign up for a library card.

#### **Mathematics**

Look for "word problems" in real life. Some 1st grade examples might include:

- If you open a new carton of a dozen eggs, and you use four eggs to cook dinner, close the carton and ask your child how many eggs are left.
- While putting away toys into bins, count the number of toys in two bins and ask your child how many more are in one bin compared to the other.
- Play the "I'm thinking of a number" game. For example, "I'm thinking of a number that makes 11 when added to 8. What is my number?"

For more information, the full standards are available at www.corestandards.org.



National PTA

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This guide provides an overview of what your child will learn by the end of 2nd grade in mathematics and English language arts/literacy. It focuses on the key skills your child

## **2ND GRADE**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 3rd grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 2nd grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

Students in 2nd grade will gain more skills in reading, writing, speaking, and listening. They continue to learn and practice rules for matching sounds to letters that make up words, and they learn new concepts — such as words that share the same root (e.g., add and additional) — that help them figure out the meanings of new words. Writing will become an exciting way for your child to use newly learned words and phrases to express ideas. As they write and speak, 2nd graders will be more attentive to the formal and informal uses of English and will spell most words correctly in their writing.

### A Sample of What Your Child Will Be Working on in 2nd Grade

- Paying close attention to details, including illustrations and graphics, in stories and books to answer who, what, where, when, why, and how questions
- Determining the lesson or moral of stories, fables, and folktales
- Using text features (e.g., captions, bold print, indexes) to locate key facts or information efficiently
- Writing an opinion about a book he or she has read, using important details from the materials to support that opinion
- Writing stories that include a short sequence of events and include a clear beginning, middle, and end

- Participating in shared research projects (e.g., read books on a single topic to produce a report)
- Taking part in conversations by linking his or her comments to the remarks of others and asking and answering questions to gather additional information or deepen understanding of the topic
- Retelling key information or ideas from media or books read aloud
- Producing, expanding, and rearranging sentences (e.g., "The boy watched the movie"; "The little boy watched the movie"; "The action movie was watched by the little boy")
- Determining the meaning of the new word formed when a known prefix or suffix is added to a known word (happy/<u>un</u>happy; pain/pain<u>ful</u>/pain<u>less</u>)

#### Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 2nd grade, these include:

- Reading grade-level books and stories with understanding and fluency
- Building a foundation of knowledge through reading and listening to books in history/social studies, science, and other subjects

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

In 2nd grade, your child will build on last year's work and gain important new skills. One of the most important outcomes for the year is to add and subtract two-digit numbers quickly and accurately (e.g., 77-28). Another important goal in 2nd grade is to understand what the digits mean in a three-digit number such as 463 (namely, 463 is four hundreds, six tens, and three ones). Your child also will build expertise with solving addition and subtraction word problems. Mastering addition and subtraction at the 2nd grade level is important so that your child will not have to review and repeat this material in 3rd grade, when the study of multiplication, division, and fractions will start.

## A Sample of What Your Child Will Be Working on in 2nd Grade

- Solving challenging addition and subtraction word problems with one or two steps (e.g., a "one-step" problem would be: "Lucy has 23 fewer apples than Julie. Julie has 47 apples. How many apples does Lucy have?")
- Quickly and accurately adding with a sum of 20 or less (e.g., 11 + 8); quickly and accurately subtracting from a number 20 or less (e.g., 16 9); and knowing all sums of one-digit numbers from memory by the end of the year
- Understanding what the digits mean in three-digit numbers (place value)

- Using understanding of place value to add and subtract three-digit numbers (e.g., 811 367); adding and subtracting two-digit numbers quickly and accurately (e.g., 77 28)
- Measuring and estimating length in standard units
- Solving addition and subtraction word problems involving length (e.g., "The pen is 2 cm longer than the pencil. If the pencil is 7 cm long, how long is the pen?")
- Building, drawing, and analyzing 2-D and 3-D shapes to develop foundations for area, volume, and geometry in later grades

#### Keeping the conversation focused.

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 2nd grade, these include:

- Using understanding of place value to add and subtract
- Solving more challenging addition and subtraction word problems
- Measuring lengths, and solving word problems involving addition and subtraction of lengths

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Read at home every day and assist your child by reading every other paragraph. Encourage your child to read to younger siblings, cousins, or other children you know. To find recommendations of books for your child to read, visit www.corestandards.org/assets/Appendix\_B.pdf.
- Have your child write a thank you note or letter to family members or friends.
- Ask your librarian to suggest books about people or places that are important to your child or family that you can read together. Encourage your child to explain what he or she has just read.

#### **Mathematics**

Look for "word problems" in real life. Some 2nd grade examples might include:

- When saving for a purchase, compare the cost of the item to the amount of money you have; then ask your child to determine how much more money he or she needs to buy the item.
- When measuring your child's height, ask how many inches he or she has grown since the very first measurement.
- Play "draw the shape." For example, ask your child to draw a hexagon with one side longer than the others, or ask him or her to shade in a quarter of a rectangle.

For more information, the full standards are available at www.corestandards.org.



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This guide provides an overview of what your child will learn by the end of 3rd grade in mathematics and English language arts/literacy. It focuses on the key skills your child

## **3RD GRADE**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 4th grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 3rd grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

Third grade is a pivotal year for your child. Learning to read with fluency and confidence will serve as a foundation for the reading demands in later grades. By practicing with learning-to-read strategies, your child will reliably be able to make sense of multisyllable words in books. He or she will come to appreciate that words have meanings that are not literal (e.g., a piece of cake) and have relationships to other words (e.g., company and companion). Recognizing and understanding words will help your child read increasingly challenging stories and books and build knowledge about the world around him or her. By the end of the year, your child also will be writing clear sentences and paragraphs on a range of topics, drawing on an expanding vocabulary.

## A Sample of What Your Child Will Be Working on in 3rd Grade

- Reading closely to find main ideas and supporting details in a story
- Describing the logical connection between particular sentences and paragraphs in stories (e.g., first, second, third; cause and effect)
- Comparing the most important points and key details presented in two books on the same topic
- Writing opinions or explanations that group related information and develop topics with facts and details
- Writing stories that establish a situation and include details and clear sequences of events that describe the actions, thoughts, and feelings of characters

- Independently conducting short research projects that build knowledge about various topics
- Asking and answering questions about information he or she hears from a speaker or while participating in classroom discussions, offering appropriate elaboration and detail that build on what others have said
- Reading stories and poems aloud fluently, without pausing to figure out what each word means
- Distinguishing the literal and nonliteral meanings of words, such as something's fishy and cold shoulder
- Spelling correctly and consulting dictionaries to clarify meanings of words

#### Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 3rd grade, these include:

- Reading grade-level books, stories, poems, and articles fluently
- Writing and speaking well, following rules of punctuation and grammar

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

In 3rd grade, your child will learn important new ideas and gain important new skills. One of the most important topics this year is multiplication and division. Another is fractions. Multiplication, division, and fractions are the building blocks for many life skills that students will learn in later grades, such as percentages. Students also need to master these topics to be ready for algebra and advanced math, so it is essential to get a good start with these topics in 3rd grade.

## A Sample of What Your Child Will Be Working on in 3rd Grade

- Multiplying and dividing up to 10 × 10 quickly and accurately, including knowing the times tables from memory
- Solving word problems using addition, subtraction, multiplication, and division
- Beginning to multiply numbers with more than one digit (e.g., multiplying 9 x 80)
- Understanding fractions and relating them to the familiar system of whole numbers (e.g., recognizing that ¾ and 3 are the same number)
- Measuring and estimating weights and liquid volumes, and solving word problems involving these quantities
- Reasoning about shapes (e.g., all squares are rectangles but not all rectangles are squares)
- Finding areas of shapes, and relating area to multiplication (e.g., why is the number of square feet for a 9-foot by 7-foot room given by the product 9 × 7?)

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 3rd grade, these include:

- Multiplication and division
- Fractions

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Make reading for fun a part of your child's daily routine. Set aside quiet time, with no phones, computers, or other distractions, when your child can read for pleasure, books such as Amos & Boris by William Steig or The Fire Cat by Esther Averill. To find more books for your child to read, visit www.corestandards.org/assets/Appendix\_B.pdf.
- Encourage your child to find a picture from a newspaper or magazine, cut it out, paste it on paper, and write a story about it.
- Start a family vocabulary box or jar. Have everyone write down new words they discover, add them to the box, and use the words in conversation.

#### **Mathematics**

Look for "word problems" in real life. Some 3rd grade examples might include:

- Notice those everyday occasions when you find yourself using your times tables — such as to determine how many days there are in four weeks. Ask your child for the answer.
- Involve your child when you notice yourself using division to "work backward" in the times tables such as determining how many candies each child will get if 36 candies are shared equally among nine children at a party, or determining how many six-inch lengths can be cut from a string 18 inches long.

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This guide provides an overview of what your child will learn by the end of 4th grade in mathematics and English language arts/literacy. It focuses on the key skills your child

## **4TH GRADE**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 5th grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 4th grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

Building the stamina and skills to read challenging fiction, nonfiction, and other materials is fundamental in 4th grade. Your child will continue to learn about the world as well as build vocabulary skills by reading more complicated stories and poems from different cultures and a range of books on history, science, art, and music. Fourth grade students also will make important strides in their ability to explain plainly and in detail what a book says — both explicitly and what is implied from its details. By 4th grade, your child will be writing effective summaries, book reports, and descriptions of characters or events that use correct grammar and punctuation.

### A Sample of What Your Child Will Be Working on in 4th Grade

- Describing the basic elements of stories such as characters, events, and settings — by drawing on specific details in the text
- Paying close attention to key features of informational books and articles: these include understanding the main and supporting ideas; being able to compare and contrast information; and explaining how the author uses facts, details, and evidence to support particular points
- Comparing ideas, characters, events, and settings in stories and myths from different cultures
- Writing summaries or opinions about topics supported with a set of well-organized facts, details, and examples

- Independently conducting short research projects on different aspects of a topic using evidence from books and the Internet
- Paraphrasing and responding to information presented in discussions, such as comparing and contrasting ideas and analyzing evidence that speakers use to support particular points
- Reporting orally on a topic or telling a story with enough facts and details
- Writing complete sentences with correct capitalization and spelling
- Relating words that are common in reading to words with similar meanings (synonyms) and to their opposites (antonyms)

Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 4th grade, these include:

- Comprehending a range of grade-level stories, poems, and informational texts such as biographies, articles, or guidebooks about history, science, or the arts
- Building understanding of relationships between words and nuances in word meanings — synonyms, antonyms, idioms — and using this knowledge to convey ideas precisely

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

In 4th grade, your child will gain important new skills while continuing to build on what he or she learned the previous year. One of the main areas studied in 4th grade is arithmetic and applying it to solve problems. This is an important life skill, and your child should make significant strides in this area during the year. Your child will also build knowledge and skills with fractions to prepare for mastering this topic in 5th and 6th grades. These skills will help ensure your child is ready for algebra and advanced math.

## A Sample of What Your Child Will Be Working on in 4th Grade

- Using whole-number arithmetic to solve word problems, including problems with remainders and problems with measurements
- Adding and subtracting whole numbers quickly and accurately (numbers up to 1 million)
- Multiplying and dividing multi-digit numbers in simple cases (e.g., multiplying 1,638 × 7 or 24 × 17, and dividing 6,966 by 6)
- Understanding and applying equivalent fractions (e.g., recognizing that ¼ is less than ¾ because ¾ is less than ¾)

- Adding, subtracting, and multiplying fractions in simple cases (such as 2 % 1 % or  $3 \times \%$ ), and solving related word problems
- Understanding simple decimals in terms of fractions (e.g., rewriting 0.62 as ‱)
- Measuring angles and finding unknown angles in a diagram

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 4th grade, these include:

- Doing arithmetic and solving word problems with multi-digit numbers
- Doing arithmetic and solving word problems with fractions

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Urge your child to use logical arguments to defend his or her opinion. If your child wants a raise in allowance, ask him or her to research commonsense allowance systems and, based on that research, explain reasons why, supported by facts and details.
- Talk about the news together. Pick one story in the news, read it together, and discuss with your child what it means.
- Keep books, magazines, and newspapers at home. Make sure your child sees you reading.

#### **Mathematics**

Look for "word problems" in real life. Some 4th grade examples might include:

- Ask your child to compare numbers using phrases like "times as much." For example, if the family cat weighs 8 lbs. and the family dog weighs 56 lbs., how many times as much does the dog weigh?
- Ask your child to help you compare fractional amounts — for example, if one recipe calls for ¾ of a cup of oil, but another recipe calls for ¾ of a cup of oil, which recipe calls for more oil? (In 5th grade, your child will learn ways to determine just how much more oil.)

For more information, the full standards are available at www.corestandards.org.



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This guide provides an overview of what your child will learn by the end of 5th grade in mathematics and English language arts/literacy. It focuses on the key skills your child

## **5TH GRADE**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 6th grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 5th grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

In 5th grade, your child will read widely and deeply from a range of high-quality, increasingly challenging fiction and nonfiction from diverse cultures and time periods. Building knowledge about subjects through research projects and responding analytically to literary and informational sources will be key to your child's continuing success. Your child will write stories or essays that are several paragraphs long. By devoting significant time and effort to producing numerous written pieces over short and extended timeframes throughout the year, he or she also will gain control over many conventions of grammar, usage, and punctuation as well as learn ways to make himself or herself understood.

### A Sample of What Your Child Will Be Working on in 5th Grade

- Summarizing the key details of stories, dramas, poems, and nonfiction materials, including their themes or main ideas
- Identifying and judging evidence that supports particular ideas in an author's argument to change a reader's point of view
- Integrating information from several print and digital sources to answer questions and solve problems
- Writing opinions that offer reasoned arguments and provide facts and examples that are logically grouped to support the writer's point of view
- Writing stories, real or imaginary, that unfold naturally and developing the plot with dialogue, description, and effective pacing of the action

- Coming to classroom discussions prepared, then engaging fully and thoughtfully with others (e.g., contributing accurate, relevant information; elaborating on the remarks of others; synthesizing ideas)
- Reporting on a topic or presenting an opinion with his or her own words, a logical sequence of ideas, sufficient facts and details, and formal English when appropriate
- Expanding, combining, and reducing sentences to improve meaning, interest, and style of writing
- Building knowledge of academic words with an emphasis on those that signal a contrast in ideas or logical relationships, such as on the other hand, similarly, and therefore
- Producing writing on the computer

Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 5th grade, these include:

- Reading closely and drawing evidence from grade-level fiction and nonfiction materials, including the ability to quote accurately from them when answering questions
- Adjusting communications to accomplish a particular purpose (e.g., providing more background information for audiences who do not know the topic well)

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

Fifth grade is a milestone and a pivot point for students. The classroom focus on arithmetic during the elementary grades will develop into a more formal study of algebra in middle school. To be ready for algebra, students must have an understanding of fractional arithmetic, in part because even simple equations cannot be solved without fractions. Because of this, whole-number arithmetic comes mostly to a close in 5th grade, while multiplying and dividing fractions becomes a major focus.

### A Sample of What Your Child Will Be Working on in 5th Grade

- Adding and subtracting fractions with unlike denominators (e.g., 2¼ 1⅓), and solving word problems of this kind
- Multiplying fractions; dividing fractions in simple cases; and solving related word problems (e.g., finding the area of a rectangle with fractional side lengths; determining how many ⅓-cup servings are in 2 cups of raisins; determining the size of a share if 9 people share a 50-pound sack of rice equally or if 3 people share ½ pound of chocolate equally)
- Generalizing the place-value system to include decimals, and calculating with decimals to the hundredths place (two places after the decimal)
- Multiplying whole numbers quickly and accurately, for example 1,638 × 753, and dividing whole numbers in simple cases, such as dividing 6,971 by 63
- Understanding the concept of volume, and solving word problems that involve volume
- Graphing points in the coordinate plane (two dimensions) to solve problems
- Analyzing mathematical patterns and relationships

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 5th grade, these include:

- Multiplying and dividing fractions, and solving related word problems
- Decimals (concepts and arithmetic)
- Volume (concepts and problem-solving)

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Invite your child to read his or her writing out loud to other family members. Ask questions about your child's word choices and ideas.
- Discuss your family stories and history. Encourage your child to ask relatives questions about their lives. Put the information together in an album or brainstorm different ways to tell family tales, such as poems or short stories.
- Go to a play or musical with your child. Discuss the way the actors bring the words to life.

#### **Mathematics**

Look for "word problems" in real life. Some 5th grade examples might include:

- Doing arithmetic with decimals, for example when balancing a checkbook.
- Multiplying with fractions for example, if you used about % of a ¾-cup measure of vegetable stock, then how much stock did you use? About how much is left?
- Using the length, width, and depth of a garden plot to determine how many bags of garden soil to buy.

For more information, the full standards are available at www.corestandards.org.



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This guide provides an overview of what your child will learn by the end of 6th grade in mathematics and English language arts/literacy. It focuses on the key skills your child

## **6TH GRADE**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 7th grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 6th grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

In 6th grade, students apply skills they learned in earlier grades to make sense of longer, more challenging books and articles. That includes learning about how authors try to influence readers and find reasons to support their ideas. Focusing on how authors make their points and support their arguments with evidence and reasoning helps 6th grade students sharpen their ability to write and speak with more clarity and coherence. Students also will expand their vocabularies and use new words in their stories, reports, and essays. To meet these literacy goals, students must devote significant attention to precise details in their reading and when writing.

### A Sample of What Your Child Will Be Working on in 6th Grade

- Analyzing how chapters of a book, scenes of a play, or stanzas of a poem fit into the overall structure of the piece and contribute to the development of ideas or themes
- Gaining knowledge from materials that make extensive use of elaborate diagrams and data to convey information and illustrate concepts
- Evaluating the argument and specific claims in written materials or a speech, and distinguishing claims that are supported by reasons and evidence from claims that are not
- Presenting claims and findings to others orally, sequencing ideas logically, and accentuating main ideas or themes
- Writing arguments that provide clear reasons and relevant evidence, using credible sources

- Writing brief reports that examine a topic, have a clear focus, and include relevant facts, details, and quotations
- Conducting short research projects to answer a question, drawing on several sources and sharpening the focus based on the research findings
- Reviewing and paraphrasing key ideas and multiple perspectives of a speaker
- Recognizing variations from standard English in his or her own and others' writing and speaking, and using this knowledge to improve language use
- Determining the correct meaning of a word based on the context in which it is used (e.g., the rest of the sentence or paragraph; a word's position or function in a sentence)

Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 6th grade, these include:

- Reading closely and citing evidence from grade-level fiction and nonfiction to support an analysis of what the materials say
- Developing a rich vocabulary of complex and sophisticated words and using them to speak and write more precisely and coherently

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

The skills and understanding that your child will gain during 6th grade are among the most important foundations for college and career readiness. These include working with ratios and rates and working with variables and variable expressions — the building blocks of algebra. Many of this year's topics will remain a major emphasis throughout the middle school years and into high school.

### A Sample of What Your Child Will Be Working on in 6th Grade

- Understanding ratios and rates, and solving problems involving proportional relationships (e.g., if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?)
- Dividing fractions and solving related word problems (e.g., how wide is a rectangular strip of land with length ¾ mile and area ½ square mile?)
- Using positive and negative numbers together to describe quantities; understanding the ordering and absolute values of positive and negative numbers
- Working with variables and expressions by generalizing the way numbers work (e.g., when adding numbers, the order doesn't matter, so x + y = y + x, likewise, properties of addition and multiplication can be used to rewrite 24x + 18y as 6(4x + 3y), or y + y + y as 3y)
- Understanding the process of solving simple equations
- Writing equations to solve word problems and describe relationships between quantities (e.g., the distance *D* traveled by a train in time *T* might be expressed by an equation *D* = 85*T*, where *D* is in miles and *T* is in hours)
- Reasoning about relationships between shapes to determine area, surface area, and volume

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 6th grade, these include:

- Analyzing and solving problems using concepts of ratio and rate
- Working with variables and expressions
- Analyzing and solving word problems using equations

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

# ■ Listen with your child to a television reporter, politician, or other speaker. Ask your child to tell you the speaker's main points. Was the speaker trying to convince the audience of something? How?

- Visit a library or book store together and ask the librarian or bookseller to recommend young adult books, such as *Roll of Thunder, Hear My Cry* by Mildred D. Taylor. To find more books for your child to read, visit www.corestandards.org/assets/Appendix\_B.pdf.
- Invite your child to participate in an adult gathering, such as a meal with friends, to practice listening skills and making conversation.
- Encourage your child to learn at the library or on the Internet what life in your community was like 100 years ago. Have your child write a story, poem, or play about that time.

#### **Mathematics**

Look for "word problems" in real life. Some 6th grade examples might include:

- Determining the average speed of a family trip, based on the distance traveled and the time taken; or estimating the time that a trip will take, given the distance and an estimate of the average speed. (Examples can also come from the news for example, a swimmer crossing the English Channel or a space probe traveling to another planet.)
- Finding the surface area of the walls and ceiling in a room to determine the cost of painting the room.

For more information, the full standards are available at www.corestandards.org.



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This guide provides an overview of what your child will learn by the end of 7th grade in mathematics and English language arts/literacy. It focuses on the key skills your child

## **7TH GRADE**

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for 8th grade.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

#### **HOW CAN I HELP MY CHILD?**

You should use this guide to help build a relationship with your child's teacher. You can do this by talking to his or her teacher regularly about how your child is doing — beyond parent-teacher conferences.

At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 7th grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

In 7th grade, your child will analyze, define, compare, and evaluate ideas when reading, writing, speaking, and listening. He or she will continue to analyze how themes in fiction and nonfiction develop over the course of a book or article. Readings will include classic and contemporary pieces that represent diverse perspectives. In particular, 7th grade students' ability to cite specific evidence when offering an interpretation of a text matures. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to readers or listeners or constructively evaluating others' use of evidence. This ability will help your child in every facet of his or her studies.

### A Sample of What Your Child Will Be Working on in 7th Grade

- Citing several sources of specific evidence from a piece when offering an oral or written analysis of a book, essay, article, or play
- Analyzing works of fiction to see how events advance the plot and how setting shapes the characters
- Determining an author's point of view or purpose in a nonfiction work and analyzing how the author takes a position different from other authors
- Organizing and focusing his or her own writing, including supporting statements and conclusions with evidence and showing that the evidence is accurate and reliable
- Conducting research in response to a specific question by drawing on evidence from several

- credible literary or informational sources to support an analysis or reflection
- Avoiding plagiarism and following a standard format for citations (e.g., footnotes, bibliography)
- Evaluating a speaker's key points and reasoning, asking questions, and stating his or her own wellsupported ideas in discussions
- Presenting claims and findings to others emphasizing main points, making eye contact, speaking loudly enough, pronouncing words clearly, and using formal English when the situation calls for it
- Using common, grade-appropriate Greek or Latin affixes and roots as clues to defining the meaning of a word (e.g., semi-, semiannual, semicircle)

Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 7th grade, these include:

- Reading closely and citing several sources of evidence from grade-level fiction and nonfiction works to support an analysis of what the material says
- Developing a rich vocabulary of complex and sophisticated words and using them to speak and write more precisely and coherently

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

In 7th grade, your child will grow in skill and understanding as he or she continues the previous grade's work in proportional relationships, equations, and positive and negative numbers. These topics will remain a major emphasis throughout the middle school years and into high school. A good command of rates and proportional relationships, including percentages, is also an important life skill.

## A Sample of What Your Child Will Be Working on in 7th Grade

- Analyzing proportional relationships (e.g., by graphing in the coordinate plane), and distinguishing proportional relationships from other kinds of mathematical relationships (e.g., buying 10 times as many items will cost you 10 times as much, but taking 10 times as many aspirin will not lower your fever 10 times as much)
- Solving percent problems (e.g., tax, tips, and markups and markdowns)
- Adding, subtracting, multiplying, and dividing positive and negative numbers, and solving related word problems
- Solving word problems that have a combination of whole numbers, fractions, and decimals (e.g., a woman making \$25 per hour receives a 10% raise;

- she will make an additional  $\frac{1}{10}$  of her salary an hour, or \$2.50, for a new salary of \$27.50)
- Solving equations such as  $\frac{1}{2}(x-3) = \frac{3}{4}$  quickly and accurately, and writing equations of this kind to solve word problems (e.g., "I knocked over a carton of milk, and 3 cups were spilled before I set the carton upright again. When I poured out the remaining milk equally into two measuring cups, there was  $\frac{3}{4}$  of a cup of milk in each one. How much milk was originally in the carton?")
- Solving problems involving scale drawings
- Using statistics to draw inferences and make comparisons (e.g., deciding which candidate is likely to win an election based on a survey)

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 7th grade, these include:

- Analyzing proportional relationships
- Arithmetic with positive and negative numbers
- Solving equations quickly and accurately, and writing equations to solve word problems

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# **Help Your Child Learn at Home**

Learning does not end in the classroom. Children need help and support at home to succeed in their studies. Try to create a quiet place for your child to study, and carve out time *every day* when your child can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Visit a local art museum together. Take time to closely observe the details of the paintings or other art objects and talk about what you see there.
- Have your child help plan a family outing, using the Internet or library to research a place he or she is interested in.
- Ask your child who his or her favorite authors are. Why does your child like their books? What ideas does the author write about? Who are his or her favorite characters? Why? To find recommendations of books for your child to read, visit www.corestandards.org/assets/Appendix\_B.pdf.

#### **Mathematics**

Look for "word problems" in real life. Some 7th grade examples might include:

- Figuring the amount of a 15% tip or determining what percentage of weekly income goes to pay taxes.
- Using a scale diagram in a manual or a newspaper article to determine lengths, areas, distances, or other measures.
- For a long-term project, help your child choose a stock and follow its value on the stock market using the newspaper or the Internet. Have your child calculate the stock's percent increase or decrease each month.

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## 8TH GRADE

will learn in these subjects, which will build a strong foundation for success in the other subjects he or she studies throughout the school year. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for high school.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

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At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in English/literacy and math in 8th grade
- Ideas for activities to help your child learn at home
- Topics of discussion for talking to your child's teacher about his or her academic progress

To prepare for bigger challenges in high school, 8th grade students must grapple with major works of fiction and nonfiction that extend across cultures and centuries. As they work diligently to understand precisely what an author or speaker is saying, students also must learn to question an author's or speaker's assumptions and assess the accuracy of his or her claims. They also must be able to report findings from their own research and analysis of sources in a clear manner.

### A Sample of What Your Child Will Be Working on in 8th Grade

- Citing the evidence that most strongly supports an analysis of what is explicitly stated and/or implied from a book, article, poem, or play
- Analyzing where materials on the same topic disagree on matters of fact, interpretation, or point of view
- Learning how authors support their ideas through word choice, sentence and paragraph structure, and other methods
- Building writing around strong central ideas or points of view; supporting the ideas with sound reasoning and evidence, precise word choices, smooth transitions, and different sentence structures
- Planning and conducting research projects that include several steps and use many credible and documented print and digital sources

- Analyzing the purpose of information presented in diverse media (e.g., print, TV, web) and evaluating its social, political, or commercial motives
- Presenting findings and claims to others, emphasizing key points with relevant evidence and sound reasoning, adapting speech to the audience and the formality of the setting, and responding to questions and comments with relevant observations and ideas
- Using strong, active verbs to create a clear picture for the reader (e.g., walk, skip, meander, lurch, limp)
- Interpreting figures of speech (e.g., irony, puns) and developing a large vocabulary of general academic words and phrases

Talking to Your Child's Teacher

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 8th grade, these include:

- Reading closely and drawing evidence from grade-level fiction and nonfiction works that most strongly supports an analysis of the material
- Developing a rich vocabulary of complex and sophisticated words and using them to speak and write more precisely and coherently

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

In 8th grade, your child will learn a number of skills and ideas that he or she must know and understand to be ready for college and career. Your child will continue to learn how to write and reason with algebraic expressions. Your child also will make a thorough study of linear equations with one and two variables. Building on previous work with relationships between quantities, your child will be introduced to the idea of a mathematical function. And your child will prepare for high school geometry by understanding congruence (same shape and size) and similarity of geometric figures.

### A Sample of What Your Child Will Be Working on in 8th Grade

- Understanding slope, and relating linear equations in two variables to lines in the coordinate plane
- Solving linear equations (e.g.,  $-x + 5(x + \frac{1}{3}) = 2x 8$ ); solving pairs of linear equations (e.g., x + 6y = -1 and 2x 2y = 12); and writing equations to solve related word problems
- Understanding functions as rules that assign a unique output number to each input number; using linear functions to model relationships
- Analyzing statistical relationships by using a bestfit line (a straight line that models an association between two quantities)

- Working with positive and negative exponents, square root and cube root symbols, and scientific notation (e.g., evaluating  $\sqrt{36 + 64}$ ; estimating world population as  $7 \times 10^9$ )
- Understanding congruence and similarity using physical models, transparencies, or geometry software (e.g., given two congruent figures, show how to obtain one from the other by a sequence of rotations, translations, and/or reflections)
- Understanding and applying the Pythagorean Theorem  $(a^2 + b^2 = c^2)$  to solve problems

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 8th grade, these include:

- Linear equations with one and two variables
- Functions
- Congruence and similarity of geometric figures

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

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You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics. By taking these small steps, you will be helping your child become successful both in and outside the classroom.

Additionally, here are some activities you can do with your child to support learning at home:

#### **English Language Arts & Literacy**

- Make time in everyone's busy schedule for family discussions about things going on around the world.
   Weekends can be a chance for everyone to catch up.
- Visit the campus of a local college with your teen. Begin talking about college early. What does he or she expect from college? What high school courses will your child need to pass to prepare for college?
- Make sure to keep books and magazines around the house that your child will enjoy reading and learning from. For a list of book recommendations, visit www.corestandards.org/assets/Appendix B.pdf.

#### **Mathematics**

Ask your child to share with you any work he or she is doing in math class that strikes him or her as interesting. Some possibilities might include:

- Solving interesting problems involving cylinders and spheres, such as figuring out how much water fits inside a garden hose, or how many earths would fit inside the sun.
- Analyzing data with a scatterplot, for example to decide whether exercise and obesity are related.
- Solving "just for fun" algebra puzzles, such as: "I'm thinking of two numbers. The difference between the numbers is 40. Twice the smaller number is 20 more than the larger number. What are my numbers?"

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This guide provides an overview of what your child will learn during high school in English language arts. It focuses on the key skills your child will learn in

### **HIGH SCHOOL ENGLISH**

English, which will build a strong foundation for success in the other subjects he or she studies throughout high school. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for success after graduation.

#### WHY ARE ACADEMIC STANDARDS IMPORTANT?

Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build your child's knowledge and skills; and help set high goals for all students.

Of course, high standards are not the only thing needed for our children's success. But standards provide an important first step — a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more. They also will help your child develop critical thinking skills that will prepare him or her for college and career.

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- An overview of some of the key things your child will learn in English language arts in high school
- Topics of discussion for talking to your child's teacher about his or her academic progress
- Tips to help your child plan for college and career

To become ready for college and career, high school students learn to evaluate intricate arguments and surmount the challenges posed by complex written materials independently and confidently. Through wide and deep reading of literature and literary nonfiction of steadily increasing sophistication, students expand their literary and cultural knowledge and better understand references and images. They also develop the flexibility, concentration, and fluency to produce high-quality, first drafts of writing under tight deadlines. And they are able to revisit and make improvements to a piece of writing over multiple drafts if needed. High school students master the essential "rules" of standard written and spoken English and resolve usage issues by consulting style and usage guides. By writing and participating in a variety of conversations, they assert and defend claims and show what they know about a subject using appropriate examples and evidence.

# A Sample of the Work Your Child Will Be Doing To Become Ready for College and Career

#### **READING**

- Understanding more from and making fuller use of written materials, including using a wider range of evidence to support an analysis
- Making more connections about how complex ideas interact and develop within a book, essay, or article
- Evaluating arguments and specific claims; assessing whether the reasoning is valid and the evidence is sufficient; and as appropriate, detecting inconsistencies and ambiguities
- Analyzing the meaning of foundational U.S. documents (the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights)

#### WRITING

- Making an argument that is logical, well-reasoned, and supported by evidence
- Writing a literary analysis, report, or summary that develops a central idea and a coherent focus and is well supported with relevant examples, facts, and details
- Conducting several research projects that address different aspects of the same topic, using more complex books, articles, and other sources

#### **SPEAKING AND LISTENING**

- Responding thoughtfully to diverse perspectives; synthesizing comments, claims, and evidence made on all sides of an issue; and resolving contradictions when possible
- Sharing research, findings, and evidence clearly and concisely
- Making strategic use of digital media (e.g., animations, video, websites, podcasts) to enhance understanding of findings and to add interest

#### LANGUAGE

- Determining or clarifying the meaning of words and phrases, choosing flexibly from multiple strategies, such as using context, Greek and Latin roots (e.g., bene as in benefactor or benevolent), patterns of words (conceive, conception, conceivable), and consulting specialized reference materials (e.g., dictionaries, glossaries, thesauruses)
- Interpreting figures of speech (e.g., hyperbole, paradox) in context and analyzing their role in the written materials

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In high school, these include:

- Focusing, reading deliberately and slowly, and rereading (when necessary) complex fiction and nonfiction materials
- Becoming skilled at gathering information, evaluating sources, and citing material accurately
- Asserting and defending claims, conveying what he or she understands about what he or she has read and researched
- Speaking clearly and appropriately, listening attentively when discussing findings and evidence, and building on others' good ideas while expressing his or her own ideas persuasively
- Learning to see individual words as part of a network of other words e.g., words that have similar literal meanings but different connotations (e.g., bullheaded, willful, firm, persistent, resolute)

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

# PARENT TIPS Planning for College and Career

At the beginning of high school, sit down with your child's teachers, counselor, or other advisor to discuss what it will take for your child to graduate, your child's goals, and his or her plans after high school. Create a plan together to help your child reach these goals, and review it every year to make sure he or she is on track.

#### This plan should include:

- An appropriate course sequence to meet your child's goals. For example, if your child wants to study biosciences in college, he or she will likely need additional or advanced math and science courses in high school to be prepared for college-level coursework.
- The most appropriate extracurricular activities for your child to participate in. For example, if your child is interested in journalism or photography, encourage him or her to sign up for the school newspaper or yearbook. These activities will help your child expand his or her learning outside of school and may help foster new hobbies or interests.
- Ways you can help your child prepare for college or career. For example, if your child is interested in a particular field, look to see if internships exist to build his or her work experience in that subject area. Look for college fairs to attend, and encourage your child to visit colleges he or she might be interested in.
- Finding ways to pay for college or advanced training. College can be expensive, but there are lots of ways to get financial help, such as scholarships, grants, work study programs, and student loans. You just need to make the time for you and your child to do the research. You can start by helping your child fill out the FAFSA (Free Application for Federal Student Aid) during his or her senior year. Visit www.fafsa.ed.gov for help and more information on FAFSA and financial aid.

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This guide provides an overview of what your child will learn during high school in mathematics. It focuses on the key skills your child will learn in math, which will build

### **HIGH SCHOOL MATH**

a strong foundation for success in many of the other subjects he or she studies throughout high school. This guide is based on the new Common Core State Standards, which have been adopted by more than 40 states. These K–12 standards are informed by the highest state standards from across the country. If your child is meeting the expectations outlined in these standards, he or she will be well prepared for success after graduation.

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#### **HOW CAN I HELP MY CHILD?**

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At home, you can play an important role in setting high expectations and supporting your child in meeting them. If your child needs a little extra help or wants to learn more about a subject, work with his or her teacher to identify opportunities for tutoring, to get involved in clubs after school, or to find other resources.

- An overview of some of the key things your child will learn in math in high school
- Topics of discussion for talking to your child's teacher about his or her academic progress
- Tips to help your child plan for college and career

To prepare for college and career, your child will study mathematics across a broad spectrum, from pure mathematics to real-world applications. Numerical skill and quantitative reasoning remain crucial even as students move forward with algebra. Algebra, functions, and geometry are important not only as mathematical subjects in themselves but also because they are the language of technical subjects and the sciences. And in a data-rich world, statistics and probability offer powerful ways of drawing conclusions from data and dealing with uncertainty. The high school standards also emphasize using mathematics creatively to analyze real-world situations — an activity sometimes called "mathematical modeling."

The high school standards are organized into six major content areas: Number and Quantity; Algebra; Functions; Modeling; Geometry; and Statistics and Probability.

# A Sample of the Work Your Child Will Be Doing To Become Ready for College and Career

#### **NUMBER AND QUANTITY**

- Working with rational and irrational numbers, including working with rational exponents (e.g., rewriting (5³)¹² as 5√5)
- Solving problems with a wide range of units and solving problems by thinking about units (e.g., "The Trans Alaska Pipeline System is 800 miles long and cost \$8 billion to build. Divide one of these numbers by the other. What is the meaning of the answer?"; "Greenland has a population of 56,700 and a land area of 2,175,600 square kilometers. By what factor is the population density of the United States, 80 persons per square mile, larger than the population density of Greenland?")

#### **ALGEBRA**

- Solving real-world and mathematical problems by writing and solving nonlinear equations, such as quadratic equations (ax² + bx + c = 0)
- Interpreting algebraic expressions and transforming them purposefully to solve problems (e.g., in solving a problem about a loan with interest rate r and principal P, seeing the expression  $P(1+r)^n$  as a product of P with a factor not depending on P)

#### **FUNCTIONS**

- Analyzing functions algebraically and graphically, and working with functions presented in different forms (e.g., given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum)
- Working with function families and understanding their behavior (such as linear, quadratic, and exponential functions)

#### **MODELING**

Analyzing real-world situations using mathematics to understand the situation better and optimize, troubleshoot, or make an informed decision (e.g., estimating water and food needs in a disaster area, or using volume formulas and graphs to find an optimal size for an industrial package)

**GEOMETRY** 

- Proving theorems about triangles and other figures (e.g., that the angles in a triangle add to 180°)
- Solving applied problems involving trigonometry of right triangles

 Using coordinates and equations to describe geometric properties algebraically (e.g., writing the equation for a circle in the plane with specified center and radius)

#### STATISTICS AND PROBABILITY

- Making inferences and justifying conclusions from sample surveys, experiments, and observational studies
- Working with probability and using ideas from probability in everyday situations (e.g., comparing the chance that a person who smokes will develop lung cancer to the chance that a person who develops lung cancer smokes)

#### **Keeping the conversation focused.**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In high school, these include:

- Does my child have a strong grounding in arithmetic, including operations on fractions, decimals, and negative numbers?
- Does my child take a thinking approach to algebra and work with algebraic symbols fluently?
- Is my child comfortable using coordinates in algebra and geometry?
- Can my child break a complex problem down into parts and apply the math he or she knows to problems outside of mathematics?
- Does my child use terms precisely and make logical arguments?
- Does my child have the knowledge to learn advanced mathematics after high school if he or she so chooses?

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

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At the beginning of high school, sit down with your child's teachers, counselor, or other advisor to discuss what it will take for your child to graduate, your child's goals, and his or her plans after high school. Create a plan together to help your child reach these goals, and review it every year to make sure he or she is on track.

#### This plan should include:

- An appropriate course sequence to meet your child's goals. For example, if your child wants to study biosciences in college, he or she will likely need additional or advanced math and science courses in high school to be prepared for college-level coursework.
- The most appropriate extracurricular activities for your child to participate in. For example, if your child is interested in journalism or photography, encourage him or her to sign up for the school newspaper or yearbook. These activities will help your child expand his or her learning outside of school and may help foster new hobbies or interests.
- Ways you can help your child prepare for college or career. For example, if your child is interested in a particular field, look to see if internships exist to build his or her work experience in that subject area. Look for college fairs to attend, and encourage your child to visit colleges he or she might be interested in.
- Finding ways to pay for college or advanced training. College can be expensive, but there are lots of ways to get financial help, such as scholarships, grants, work study programs, and student loans. You just need to make the time for you and your child to do the research. You can start by helping your child fill out the FAFSA (Free Application for Federal Student Aid) during his or her senior year of high school. Visit www.fafsa.ed.gov for help and more information on FAFSA and financial aid.

For more information, the full standards are available at www.corestandards.org.



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