

West Deptford Township School District  
FOURTH GRADE Parent Guide and  
Resources for



## General Guidelines

1. K-6 math instruction now focuses more on **problem solving, reasoning, and understanding** in addition to efficient computation.
2. Learning tasks are designed to develop concepts, not just promote efficient computation therefore a young child will build **deep understanding** that leads to **better skills and fluency**.
3. **Struggle means your child is learning.** When a student is putting in effort to think, the brain is creating new pathways and connections. We call this “cognitive sweat.” In fact, the very first math standard for all K-12 students is *Make sense of problems* and **persevere** in solving them. Help your child build that perseverance by allowing him or her to work through a difficult problem solving task without first memorizing the shortcuts.



## Homework Tips

- Communicate with the teacher directly:
  - Write notes on the homework.
  - Note questions that were challenging.
- **Parents should not be re-teaching** during every assignment. See the next section for suggestions about ways you can help when you don't understand all the math.
- Use the **many online tools** from the program to support student work at home.



## Instead of Reteaching, Try Questioning

Instead of attempting to reteach a skill, try asking questions that help your child think through the solution on his or her own:

- What do you think might work to solve this? Why do you think that might work?
- What about this problem seems familiar?
- What is easy about this problem? Why do you think that part is easy?
- What seems difficult about this? Why is it confusing or complicated?
- What is the question you are trying to answer? What do you need to know in order to answer it? Are you missing some important information?
- What might happen if you try the opposite of what you're doing now? It might not work, but it could give you some interesting ideas about how to solve it.
- If you gave this problem to your teacher, what do you think he or she would do next?



After your child finds an answer, instead of telling him or her whether it is correct, try asking these kinds of questions:

- Why do you think that's a good answer? How do you know?
- Tell me how you got that answer. Why does that work?
- Why did you solve it that way?
- Is there another way you could solve it?

## Online Resources

All of the following are available through the student online portal:

- Visual Learning Video (Grades K-5)
- Math Tools (Grades K-5)
- Games (Grades K-5)
- Glossary ( All Grades)
- Student Edition (All Grades)
- Virtual Nerd Video (Grades 6-8)







- **Major Cluster:** Most important and greater emphasis
- **Supporting Cluster:** Strongly connects to major work
- **Additional Cluster:** Completes grade-level content

## GRADE FOUR CLUSTERS

- **4.NBT.A Number and Operations in Base Ten**  
Generalize place value understanding for multi-digit numbers.
- **4.NBT.B Number and Operations in Base Ten**  
Use place value understanding and properties of operations to perform multi-digit arithmetic.
- **4.OA.A Operations and Algebraic Thinking**  
Use the four operations with whole numbers to solve problems.
- **4.OA.B Operations and Algebraic Thinking**  
Gain familiarity with factors and multiples.
- **4.NF.A Number and Operations-Fractions**  
Extend understanding of fraction equivalence and ordering.
- **4.NF.B Number and Operations-Fractions**  
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- **4.MD.B Measurement and Data**  
Represent and interpret data.
- **4.NF.C Number and Operations-Fractions**  
Understand decimal notation for fractions, and compare decimal fractions.
- **4.MD.A Measurement and Data**  
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- **4.OA.C Operations and Algebraic Thinking**  
Generate and analyze patterns.
- **4.MD.C Measurement and Data**  
Geometric measurement: Understand concepts of angle and measure angles.
- **4.G.A Geometry**  
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

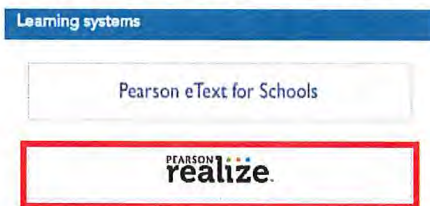
# Supporting Your Child At Home

- Have your child log in to their Power Student/Parent Account
- Select “Pearson Courses” underneath the Navigation tab

## Navigation

- Grades and Attendance
- Grade History
- Attendance History
- Teacher Comments
- School Bulletin
- Class Registration
- My Calendars
- My Schedule
- School Information
- Pearson Courses**
- Contact Manager

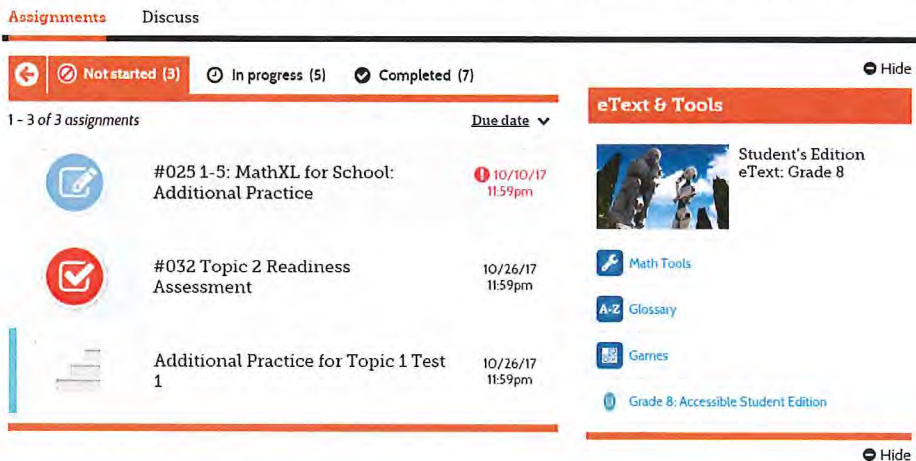
- Select “Pearson Realize”



- Select “Classes” to view your work



- Access assignments and additional math resources



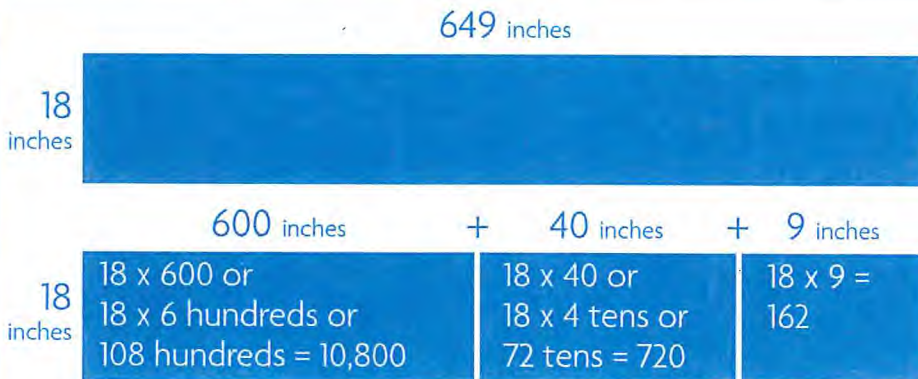


Here are just a few examples of how students will develop and use their understanding of place value in grade four.

Grade Three Mathematics	Grade Four Mathematics	Grade Five Mathematics
<ul style="list-style-type: none"> <li>• Use place value understanding to round whole numbers to the nearest 10 or 100</li> <li>• Quickly and accurately add and subtract numbers through 1000 using knowledge of place value</li> <li>• Use place value understanding to multiply and divide numbers up through 100</li> <li>• Multiply one-digit whole numbers by multiples of 10 between 10 and 90. For example, <math>9 \times 80</math> or <math>5 \times 60</math></li> </ul>	<ul style="list-style-type: none"> <li>• Use place value understanding to round multi-digit whole numbers to any place</li> <li>• Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right</li> <li>• Use place value understanding to find the product of two multi-digit numbers</li> <li>• Compare two multi-digit numbers based on meanings of the digits in each place, using the symbols <math>&gt;</math> (more than), <math>=</math> (equal to), and <math>&lt;</math> (less than)</li> </ul>	<ul style="list-style-type: none"> <li>• Use place value understanding to round decimals to any place</li> <li>• Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and <math>\frac{1}{10}</math> of what it represents in the place to its left</li> <li>• Read, write, and compare decimals based on the meanings of the digits in the tenths, hundredths, and thousandths place, using the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math></li> </ul>

To find the area of this rectangle, students can first break it down into three parts. The length of each part can then be multiplied by the width of 18.

$$18(600 + 40 + 9) = 18 \times 600 + 18 \times 40 + 18 \times 9.$$



Students use the concepts of area and place value as strategies to multiply multi-digit numbers. Students will explore a variety of strategies to deepen their understanding of multiplication.

Students learn that  $649 \times 18$  is also equal to  $(649 \times 10) + (649 \times 8)$ .

$$\begin{array}{r} 37 \\ 649 \\ \times 18 \\ \hline 5192 \\ 6490 \\ \hline 11,682 \end{array}$$



Here are just a few examples of how students will learn about and work with fractions in grade four.

### Grade Three Mathematics

- Determine a fraction's place on a number line by defining the length from 0 to 1 as the whole and "cutting it" into equal parts
- Understand two fractions as equal if they are the same size or at the same point on a number line
- Compare the size of two different fractions of the same size object. For example, which is bigger,  $\frac{1}{8}$  of a pizza or  $\frac{1}{6}$  of that same pizza?

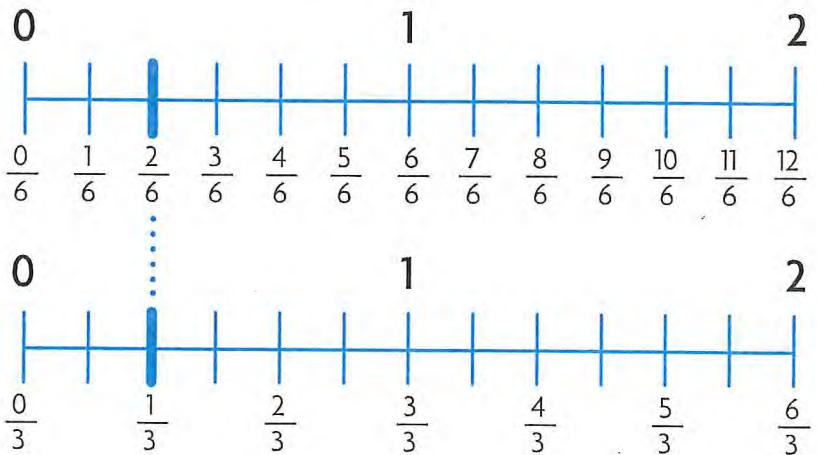
### Grade four Mathematics

- Break down a fraction into smaller fractions with the same denominator, or bottom number, in more than one way ( $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{2}{8} + \frac{1}{8}$ )
- Explain why a fraction is equal to another fraction
- Add and subtract mixed numbers (whole numbers mixed with fractions, such as  $1\frac{1}{5}$ ) with the same denominators
- Multiply a fraction by a whole number

### Grade Five Mathematics

- Interpret a fraction as division of the numerator (the top number) by the denominator (the bottom number)
- Add and subtract fractions with different denominators
- Multiply a fraction by a whole number or another fraction
- Divide fractions by whole numbers and whole numbers by fractions

Students will use the number line to break fractions into smaller fractions and to show that  $\frac{2}{6} = \frac{1}{3}$ .



Understanding and creating equal fractions will prepare students for the next step: adding and subtracting fractions with different denominators.



# Standards for Mathematical Practice: A Guide for Parents

Practice Standard	What it Looks Like: <i>Your child might...</i>	Questions to Ask
<b>1. Make sense of problems and persevere in solving them.</b>	<ul style="list-style-type: none"> <li>● puzzle over the meaning of a problem.</li> <li>● plan an outline of a solution path instead of just jumping in.</li> <li>● start and stop and start again a different way.</li> <li>● look at other problems she did to look for ideas.</li> <li>● use concrete objects or pictures.</li> </ul>	<ul style="list-style-type: none"> <li>● What are you asked to figure out?</li> <li>● Can you think of a problem you solved before that is like this one?</li> <li>● What information is here that might be useful?</li> <li>● What is your plan for solving this?</li> <li>● Does your solution make sense?</li> </ul>
<b>2. Reason abstractly and quantitatively.</b>	<ul style="list-style-type: none"> <li>● break a problem apart and represent the parts with objects, pictures, words, or symbols.</li> <li>● organize information in different ways.</li> <li>● write number sentences to represent meaning.</li> <li>● explain the meaning of symbols.</li> </ul>	<ul style="list-style-type: none"> <li>● Can you write an equation (number sentence) or expression to match the problem situation?</li> <li>● What do the numbers or variables refer to?</li> <li>● Can you explain that equation in words?</li> <li>● How did you decide to use this operation?</li> </ul>
<b>3. Construct viable arguments and critique the reasoning of others.</b>	<ul style="list-style-type: none"> <li>● talk confidently about math using mathematical language fluently.</li> <li>● practice math vocabulary.</li> <li>● justify a solution by explaining its logic.</li> <li>● give a counterexample to disprove a statement.</li> <li>● recognize when logic is flawed and suggest ways to improve it.</li> </ul>	<ul style="list-style-type: none"> <li>● What does your answer mean?</li> <li>● How do you know your answer is correct?</li> <li>● Are there other correct answers to this question? How do you know?</li> <li>● If I told you the answer should be _____ (give a wrong answer), how would you convince me I'm wrong?</li> </ul>
<b>4. Model with mathematics.</b>	<ul style="list-style-type: none"> <li>● use math to solve real world problems and problems with more than one solution.</li> <li>● organize data to understand something happening in the real world.</li> <li>● use "found" information to create and solve his own problems.</li> <li>● interpret mathematical answers in context.</li> </ul>	<ul style="list-style-type: none"> <li>● Can you make a model of this with objects, pictures, or symbols?</li> <li>● Is there an equation or expression that would represent part of this situation?</li> <li>● What does that answer represent in real life?</li> <li>● Is there something interesting we can find out from this collection of data?</li> </ul>



## Practice Standard

## What it Looks Like: Your child might...

## Questions to Ask

<p><b>5. Use appropriate tools strategically.</b></p>	<ul style="list-style-type: none"> <li>● choose for herself when to use a tool such as a ruler, protractor, or calculator to help solve a problem.</li> <li>● decide for herself when to use mental math, paper and pencil, a calculator, or computer program.</li> <li>● use estimation appropriately.</li> <li>● use a table, graph, or spreadsheet to organize complex data.</li> </ul>	<ul style="list-style-type: none"> <li>● What tools can you use to help you solve this problem?</li> <li>● How can this tool help you? Is there a better tool?</li> <li>● How can you organize this information to help you solve the problem?</li> <li>● Is there a different way to organize it that might be better?</li> </ul>
<p><b>6. Attend to precision.</b></p>	<ul style="list-style-type: none"> <li>● use clear and precise math language and accurate terminology (<i>sum</i> or <i>product</i> instead of “answer”).</li> <li>● use precise numbers and labels.</li> <li>● explain exactly what she is confused about.</li> </ul>	<ul style="list-style-type: none"> <li>● How do you know this is an accurate answer?</li> <li>● What do you mean when you say ___?</li> <li>● Is there a more precise word you could use?</li> <li>● What units does that represent?</li> </ul>
<p><b>7. Look for and make use of structure.</b></p>	<ul style="list-style-type: none"> <li>● recognize patterns and look for them when they aren't obvious.</li> <li>● sort objects, pictures, or numbers into groups.</li> <li>● use the structure of math to help solve problems (e.g. fact families or the distributive property).</li> <li>● try ways to break numbers apart and put them together in different ways to make a problem easier.</li> </ul>	<ul style="list-style-type: none"> <li>● Do you see any patterns?</li> <li>● Can you group these things in a way that makes sense? Is there another way of grouping them?</li> <li>● Can you take the numbers apart and put them together in a different way to make more sense?</li> <li>● What do you notice about the answers to the exercises on this page?</li> </ul>
<p><b>8. Look for and express regularity in repeated reasoning.</b></p>	<ul style="list-style-type: none"> <li>● find his own shortcuts that work to solve problems.</li> <li>● create strategies from repetitions that show up in his work.</li> <li>● generalize about a strategy to apply it to other kinds of problems.</li> <li>● create a rule out of a pattern of exercises and solutions.</li> </ul>	<ul style="list-style-type: none"> <li>● Do you notice anything interesting about these problems? Is there a pattern to what you notice?</li> <li>● Is there a shortcut that will always work for this kind of problem? How do you know it will always work?</li> <li>● Is there a rule that seems to be true about this pattern of numbers? Can you prove the rule is true?</li> <li>● What are the connections between this and other kinds of problems with similar numbers?</li> </ul>