



Mathematics

Topic 5: Use Strategies and Properties to Divide by 1-Digit Numbers

Resource: enVision Math 2.0, Pearson, 2016

Duration: November (12 Days)

Enduring Understandings

Topic 5

- Basic facts and place-value patterns can be used to divide multiples of 10 and 100 by 1-digit numbers.
- There is more than one way to estimate a quotient. Substituting compatible numbers is an efficient technique for estimating quotients.
- There is more than one way to estimate a quotient. Using place-value patterns and compatible numbers are efficient techniques for estimating quotients.
- When dividing, the remainder must be less than the divisor. When solving a real-world problem, the kind of questions asked determines how to interpret the remainder.
- Sharing is one way to think about division.
- Division with partial quotients involves breaking apart the dividend, dividing the parts, and adding the partial quotients.
- Division with partial quotients involves breaking apart the dividend, dividing the parts, and adding the partial quotients.
- The standard division algorithm breaks the calculation into simpler calculations using basic facts, place value, the relationship between multiplication and division, and estimation.
- Good math thinkers choose and apply the math they know to show and solve problems from everyday life.

Essential Questions

Topic 5

- How can mental math be used to divide?
- How can questions be estimated?
- How can the steps for dividing be explained?

Focus of Standards



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Student Outcomes	Skills	Assessments	Resources
<p>Topic 5</p> <ul style="list-style-type: none"> ● I can make sense of quantities and use mental math and place-value strategies to divide. ● I can use compatible numbers to estimate quotients when dividing with 3-digit dividends. ● I can estimate quotients for 4-digit dividends. ● I can apply what I know about dividing items into equal groups to solve problems. ● I can sort objects into equal-sized groups to divide. ● I can divide by thinking about multiplication, estimation and place value. ● I can use place value and sharing to divide. ● I can follow a series of steps that breaks the division into simpler calculations. ● I can use a drawing, diagram, or table to model a problem. 	<ul style="list-style-type: none"> ● Solving problems ● Understanding concepts ● Reasoning 	<p>Formative</p> <ul style="list-style-type: none"> ● Diagnostic assessment ● Study Island ● Xtra Math ● Exit tickets ● Round Robin group work <ul style="list-style-type: none"> ○ Open ended questions ○ May/may not be game activity ● Analysis of student homework ● Class polls <ul style="list-style-type: none"> ○ Show of hands: 1 finger ok, 2 fingers need help, 3 fingers lost ● One thing I learned/One thing I need work on <p>Summative</p> <ul style="list-style-type: none"> ● End topic tests ● Group topic assessment ● EOY test ● SGO tests 	<p>Envision Math 2.0</p> <p>Digital:</p> <ul style="list-style-type: none"> ● Student and Teacher eTexts ● Interactive Math story ● Home-School Connection <p>Classroom Math Materials</p> <ul style="list-style-type: none"> ● 2-color counters ● Crayons ● Empty milk cartons ● Place value blocks



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		<p>Benchmark</p> <ul style="list-style-type: none"> • Diagnostic assessment • Pearson benchmark tests • PARCC test <p>Alternative</p> <ul style="list-style-type: none"> • Work paper from tests will also be graded for additional points if reasoning is clear and correct, even if answer is wrong • One on one conferencing • Oral presentation on math strand • Weekly time capsule:summary of what was learned • Topic Pattern search: find the thread in topic • Crosswords with math vocab 	
<p>Vocabulary Topic 5: remainder, partial quotients</p>			
<p>NJ Student Learning Standards: Math Topic 5 Number and Operations in Base Ten</p>			



4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Operations and Algebraic Thinking

4.OA.A.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Standards for Mathematical Practice

MP1. Make sense of problems and persevere in solving them.

MP2. Reason abstractly and quantitatively.

MP3. Construct viable arguments and critique the reasoning of others.

MP4. Model with mathematics.

MP5. Use appropriate tools strategically.

MP6. Attend to precision.

MP7. Look for and make use of structure.

MP8. Look for and express regularity in repeated reasoning.

Career Ready Practices

CRP1. Act as a responsible and contributing citizen and employee.

CRP2. Apply appropriate academic and technical skills.

CRP3. Attend to personal health and financial well-being.

CRP4. Communicate clearly and effectively and with reason.

CRP5. Consider the environmental, social and economic impacts of decisions.

CRP6. Demonstrate creativity and innovation.

CRP7. Employ valid and reliable research strategies.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP9. Model integrity, ethical leadership and effective management.

CRP10. Plan education and career paths aligned to personal goals.

CRP11. Use technology to enhance productivity.

CRP12. Work productively in teams while using cultural global competence.



NJSLS Technology Standards

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

8.1.5.A.3 Use a graphic organizer to organize information about a problem or issue.

Interdisciplinary Connections

NJSLS for ELA and Science are introduced, developed, and practiced in the context of learning math content and engaging in mathematical practices.

ELA Standards

- RL.4.1. Refer to details and examples in a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
- RI.4.1. Refer to details and examples in a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
- RI.4.3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
- RI.4.4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

Science

- 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents
- **DCI:** PS3.B: Conservation of Energy and Energy Transfer: Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion. In such collisions, some energy is typically also transferred to the surrounding air; as a result, the air gets heated and sound is produced. (4-PS3-2),(4-PS3-3)



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NJSLS: 21st Century Life and Careers

Key Subjects and 21st Century: Themes Mastery of key subjects and 21st century themes is essential to student success. Key subjects include English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics. In addition, schools must promote an understanding of academic content at much higher levels by weaving 21st century interdisciplinary themes into key subjects:

- Global Awareness
- Financial, Economic, Business and Entrepreneurial Literacy

9.1.4.A.2 Identify potential sources of income

9.1.4.C.5 Determine the relationship among income, expense and interest

9.1.4.D.2 Explain what it means to “invest”.



Integrated Differentiation/Accommodations/Modifications <i>(Alternate Modes of Instruction and Support)</i>		
Modifications to Support Gifted and Talented Students	Modifications to Support English Language Learners	Modifications to Support Our Learners (Students with IEPs/504s and At-Risk Learners)
<p>Provide appropriate challenge for wide ranging skills and development areas.</p> <p>Participate in inquiry and project-based learning units of study</p> <p>Assigning roles within partnerships</p> <p>Differentiated supports: content, process, product, environment</p>	<p>Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)</p> <p>Pair visual prompts with verbal presentations</p> <p>Front load and immerse students in literacy and language experiences related to content</p> <p>Provide students with visual models, sentence stems, concrete objects, and hands-on materials.</p> <p>Model procedures for life skills.</p> <p>Collaboration between ELL and general education teacher to maximize learning</p>	<p>Review student individual educational plan and/or 504 plan.</p> <p>Establish procedures for accommodations and modifications for assessments as per IEP/504.</p> <p>Establish procedures for modification of classwork and homework as per IEP/504.</p> <p>Modify classroom environment to support academic and physical needs of the students as per IEP/504.</p> <p>Provide appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.</p> <p>Differentiation through content, process, product, environment</p> <p>Provide Title I services to students not meeting academic standards in ELA and/or Math.</p> <p>Provide instructional adaptations and interventions in the general education classroom.</p> <p>Modify classroom environment to support student needs.</p> <p>Differentiated instruction</p>



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		Basic Skills Intensive individual intervention
Sources New Jersey Student Learning Standards (2016) http://www.state.nj.us/education/cccs/2016/math/standards.pdf New Jersey Student Learning Standards: Technology (2014) - http://www.state.nj.us/education/cccs/2014/tech/8.pdf New Jersey Student Learning Standards: ELA (2014) - https://www.state.nj.us/education/cccs/2016/ela/g04.pdf New Jersey 21st Century Life and Careers 9.1 - https://www.state.nj.us/education/cccs/2014/career/91.pdf New Jersey Science and Engineering Practices - https://www.state.nj.us/education/aps/cccs/science/resources/QR35.pdf Pearson enVision 2.0 (2016) https://www.pearsonrealize.com/index.html#/		