Cliffside Park Public Schools   Grade 2

Mathematics

Topic Name: Topic 10: Add Within 1,000 Using Models and Strategies, Topic 11: Subtract Within 1,000 Using Models and Strategies   **Resource:** enVision Math 2.0, Pearson, 2016   **Duration:** February (16 days)

Enduring Understanding

Topic 10

- Place-value patterns and basic facts can be used to help you mentally add 10 or 100 to any given three-digit number.
- Three-digit numbers can be broken apart using hundreds, tens, and ones, and added in different ways. You can represent how you break apart and add numbers with hops or jumps on an open number line.
- Three-digit numbers can be broken apart using hundreds, tens, and ones, and added in different ways. You can change the numbers to make it easier to add mentally, without changing the sum.
- When adding three-digit numbers, you can add the hundreds, the tens, and the ones separately, and then add the partial sums to find the total sum. Partial sums addition provides a bridge between mental addition and the standard algorithm.
- The standard addition algorithm for three-digit numbers breaks the calculation into simpler calculations using place value, starting with the ones, then the tens, and then the hundreds. Answers to the simpler calculations are used to find the final sum.
- Addition algorithms and addition strategies can be used to add two (or more) three-digit numbers, the sum is the same no matter which strategy you use. You can use place value and properties of operations to explain why the strategies work.
- Good math thinkers look for things that repeat in a problem. They use what they learn from one problem to help them solve other problems.

Topic 11

- Place-value patterns and basic facts can be used to help you mentally subtract 10 or 100, from any given three-digit number.
- Three-digit numbers can be broken apart using hundreds, tens, and ones to subtract in different ways. You can represent how you break apart and subtract numbers with hops or jumps on an open number line.

- Three-digit numbers can be broken apart using hundreds, tens, and ones to subtract in different ways. You can represent how you break apart and subtract numbers with hops or jumps on an open number line. You can count back or add up to subtract.
- Three-digit numbers can be broken apart using hundreds, tens, and ones, and subtracted in different ways. You can change the numbers to make it easier to subtract mentally, without changing the difference.
- The standard subtraction algorithm for three-digit numbers breaks the calculation into simpler calculations using place value, starting with the ones, then the tens, and then the hundreds. Answers to the simpler calculations are used to find the final difference.
- The standard subtraction algorithm and subtraction strategies can be used to subtract with 3-digit numbers, the difference is the same no matter which strategy you use. You can use place value and properties of operations to explain why the strategies work.
- Good math thinkers know what the problem is about. They have a plan to solve it. They keep trying if they get stuck.

Essential Questions

Topic 10
- What are strategies for adding numbers to 1,000

Topic 11
- What are strategies for subtracting numbers to 1,000?

Focus of Standards:

Student Outcomes	Skills	Assessments	Resources
Topic 10 - I can add 10 or 100 mentally using what I know about place value. - I can use an open number line to add 3-digit numbers. - I can add 3-digit numbers using mental math strategies. - I can add 3-digit numbers using partial sums. - I can use models to add 3-digit numbers. - I can use different addition strategies and explain why they work.	- Solving problems - Understanding concepts - Reasoning	**Formative** - Diagnostic assessment - Exit tickets - Round robin group work - Analysis of homework - Class polls - Show of hands: 1 for all set, 2	**Envision Math 2.0** **Digital:** - *Student and Teacher eTexts* - *Interactive Math story* - *Home-School Connection*

● I can think about and check my work as I solve a problem. **Topic 11** ● I can subtract 10 or 100 mentally using what I know about place value. ● I can use an open number line to count back to subtract 3-digit numbers. ● I can use a open number line to add up to subtract 3-digit numbers. ● I can use mental math to subtract. ● I can use models to subtract 3-digit numbers. ● I can explain why subtraction strategies work using models, place value, and mental math. ● I can solve problems that take more than one step.		for just ok, 3 for help ● One thing I learned/One thing I need work on **Summative** ● End topic tests ● Post group topic ● EOY tests ● SGO tests **Benchmark** ● Diagnostic Assessment ● Pearson benchmark tests **Alternative** ● Math diagnosis and intervention system 2.0 ● Reteaching Set ● Online Learning ○ Games ● Higher Order Thinking Problems ● Leveled homework and practice ● Center games ● One on one conferencing	**Classroom Math Materials** ● Place-value blocks ● Open Number Lines ● Partial Sums Charts ● Place-Value Mat B ● Hundreds, Tens, and Ones Charts ● 3-Digit Addition Guide ● 3-Digit Subtraction Guide ● Index cards

Vocabulary
No new vocabulary

NJSLS Math Standards
Number and Operations in Base Ten
2.NBT.B.7- Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
2.NBT.B.8-Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
2.NBT.B.9-Explain why addition and subtraction strategies work, using place value and the properties of operations.

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

E: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.

8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.

8.2 Technology Education, Engineering, Design, and Computational Thinking

E. Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.

8.2.2.E.1 List and demonstrate the steps to an everyday task.

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

- RI.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- RI.2.3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- RI.2.4. Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
- RI.2.5. Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.

Science

- 2-LS4-1 Scientists look for patterns and order when making observations about the world.
- 2-ESS2-1 Compare multiple solutions to a problem.

NJ: 2014 SLS: 21st Century Life and Careers

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

| | | 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/g02.pdf
New Jersey Science and Engineering Practices - https://www.state.nj.us/education/aps/cccs/science/resources/QRk2.pdf
Pearson enVision 2.0 (2016) https://www.pearsonrealize.com/index.html#/