Cliffside Park Public Schools   Kindergarten

Mathematics

Topic Name: Topic 7: Understand Subtraction

Topic 8: More Addition and Subtraction

Resource: enVision Math 2.0, Pearson, 2016

Duration: January

Topic 7 (11 days)

Topic 8 (12 days)

Enduring Understandings

Topic 7

- Subtraction can be show in different ways, such as with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, and equations.
- Separating a part from a whole is one interpretation of subtraction.
- Taking parts from a whole is one interpretation of subtraction.
- Take apart and take from subtraction situations can be shown in a subtraction expression that uses the minus sign (-).
- Subtraction equations using - and = can be used to show subtraction situations.
- Objects, words, drawing, counting, and equations can be used to help solve subtraction problems involving take from.
- Patterns can be used to solve subtraction problems.
- Good math thinkers know how to pick the right tools to solve math problems.

Topic 8

- Numbers can be taken apart in many ways. An addition equation can show how a number is broken into two parts.

- Addition and subtraction facts have an inverse relationship. Equations using +, - and + can be used to show parts of a whole.
- Good math thinkers know how to think about words and numbers to solve a problem.
- Addition and subtraction facts can be solved using different strategies.
- Numbers can be broken apart in many ways. An addition equation can show how a number is broken into two parts.
- Objects, drawing, counting, and equations can be used to help solve addition problems involving unknown addends.

Essential Questions

Topic 7

- How can you show the numbers in a problem?
- What happens when you take apart a number?
- What happens when you take a part from a whole?
- How can you represent subtraction?
- How can you solve subtraction problems?
- How can patterns help you solve subtraction problems?
- How can you solve a word problem?

Topic 8

- How does knowing addition help you subtract?
- How does telling a story help to prove that an equation is correct?
- What are some ways you can solve addition and subtraction equations?
- How can an addition equation help show how you can break apart a number like 6?
- We broke apart 9 beets into a group of 5 beets and a group of 4 beets. Could we have broken apart the 9 beets into different groups? How can an addition equation show what we did?
- Jada broke apart 10 into 7 and 3. Are there other ways to break about 10 into two parts? Explain.
- How can you solve an addition problem with counter, a drawing, or an equation?
- How can you find which number goes with a number like 4 to make 10?
- What are different numbers that when added together equal 10?

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	Focus of Standards		
Student Outcomes **Topic 7** ● I can show numbers in many ways. ● I can take apart a number and tell the parts. ● I can represent subtraction as taking away from a whole. ● I can separate numbers. ● I can separate more numbers. ● I can use the minus sign in an equation. ● I can find the difference of two numbers. ● I can find patterns in subtraction equations. ● I can use tools to subtract numbers. **Topic 8** ● I can write equations to show the parts of numbers up to 5. ● I can solve related addition and subtraction equations. ● I can reason about numbers and operations. ● I can write addition and subtraction equations within 5 and remember them. ● I can write equations to show the parts of ● 6 and 7. ● I can write equations to show the parts of ● 8 and 9. ● I can write equations to show the parts of 10. ● I can write an equation to solve a word problem. ● I can find number partners for 10.	**Skills** ● Solving problems ● Understanding concepts ● Reasoning	**Assessments** **Formative** ● Diagnostic assessment ● Exit tickets ● Round robin group work ● Analysis of homework ● Class polls ○ Show of hands: 1 for all set, 2 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	**Resources** **Envision Math 2.0** **Digital** ● *Student and Teacher eTexts* ● *Interactive Math story* ● *Home-School Connection* **Classroom Math Materials** ● Counters ● Connecting cubes ● Index cards ● Number cards 1 - 9 ● Ten-frame

● I can find a missing part to find 10.		**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

Vocabulary
Topic 7
Left, separate, subtraction sentence, take away, minus sign, subtract, difference
Topic 8
Break apart, operation

NJ Student Learning Standards: Math

Topic 7
Operations and Algebraic Thinking
K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
K.OA.A.5 Fluently add and subtract within 5.

Topic 8

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Operations and Algebraic Thinking

K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).

K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation

K.OA.A.5 Fluently add and subtract within 5.

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.K.3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
- NJSLSA.SL2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- L.K.6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

Science

- K-PS2-1 Scientists use different ways to study the world.
- K-LS1-1 Scientists look for patterns and order when making observations about the world.

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:

• Relate the following standards to careers that involve mathematics

9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals
9.2.4.A.4 Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes.

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/k.pdf
New Jersey Science and Engineering Practices - https://www.state.nj.us/education/aps/cccs/science/resources/QRk2.pdf
New Jersey Career Awareness, Exploration, and Preparation -https://www.state.nj.us/education/cccs/2014/career/92.pdf
Pearson enVision 2.0 (2016) https://www.pearsonrealize.com/index.html#/