BOE Approved 8/18

Cliffside Park Public Schools Grade 2

Mathematics:

Topic Name: Topic 2: Work With Equal Groups, **Topic 3:** Add Within 100 Using Strategies, **Topic 4:** Fluently Add Within 100

Resource: enVision Math 2.0, Pearson, 2016

Duration: October

Topic 2 - (7 days)

Topic 3- (11 days)

Topic 4- (10 days)

Enduring Understanding

Topic 2

- Numbers can be classified as even or odd by showing numbers as two equal parts.
- A group of objects (or number) can also be classified as even or odd by analyzing skip-counting patterns. An even number can be written as a sum of equal addends.
- An array shows equal groups, so you can write equations, using repeated addition, to find the total number of objects in an array.
- You can make arrays and write equations, using repeated addition, to help you solve problems.
- Good math thinkers use math they know to show and solve problems.

Topic 3

- Patterns on a hundred chart can be used to add numbers and to develop mental math strategies and number sense.
- Two-digit numbers can be broken apart and added in different ways. You can represent how you break apart and add numbers with hops or jumps on an open number line.
- Two-digit numbers can be broken apart using 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.
- Two-digit numbers can be broken apart using tens and ones and added in different ways.

- When adding two-digit numbers, you can add an amount to one addend and subtract the same amount from another addend, to make addition easier.
- There are different ways to add two-digit numbers. Certain strategies may be better to use for a problem than others.
- Some problems can be solved in one step. Other problems can be solved in two-steps --first, by solving a sub-problem or by answering a hidden question, and then, by using that answer to solve the original problem.
- Good math thinkers know how to pick the right tools to solve math problems.

Topic 4

- When adding two-digit numbers, you can add the ones and tens separately and then add these partial sums to find the total sum. Partial sums addition provides a bridge between mental addition and the standard algorithm.
- When adding two-digit numbers, you can add the ones and tens separately and then add these 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 two-digit numbers breaks the calculation into simpler calculations using place value, starting with ones and then tens. Answers to simpler calculations are used to find the final sum.
- Addition algorithms and addition strategies can be used to add more than two 2-digit numbers; and numbers can be added in any order.
- Addition algorithms and addition strategies can be used to add more than two numbers; and numbers can be added in any order.
- Some problems can be solved in one step. Other problems can be solved in two steps-- first, by solving a sub-problem or by answering a hidden question, and then, by using that answer to solve the original problem.
- Good math thinkers use math they know to show and solve problems.

Essential Questions

Topic 2

- How can you show even and odd numbers?
- How do arrays relate to repeated addition?

Topic 3 and Topic 4

- What are strategies for adding numbers to 100?

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Focus of Standards			
Student Outcomes	**Skills**	**Assessments**	**Resources**
Topic 2 ● I can tell if a group of objects is even or odd. ● I can use different ways to tell if a group of objects shows and even or odd number. ● I can find the total number of objects in a set of rows and columns. ● I can make arrays with equal rows or equal columns. ● I can model problems using equations, drawings, arrays, and bar diagrams. **Topic 3** ● I can add within 10 using place-value strategies. ● I can add tns on an open number line. ● I can use an open number line to add tens and ones within 100. ● I can add 100 using place value strategies. ● I can break apart numbers into tens and ones to find their sum. ● I can break apart addends and combine them in different ways to make numbers that are easy to add mentally. ● I can choose a strategy to help me add two-digit numbers. ● I can use drawings and equations to solve one-step and two-step problems. ● I can choose a tool and use it to solve a problem.	● 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 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	**Envision Math 2.0** **Digital** ● *Student and Teacher eTexts* ● *Interactive Math story* ● *Home-School Connection* **Classroom Math Materials** ● Connecting cubes ● ¾ inch squares ● ¾ inch grid paper ● Counters ● Hundred Chart ● Open Number Lines ● Index cards ● Place-value blocks ● Break-apart Strategies ● Compensation Strategies ● Mini Double

Topic 4 ● I can add using place value and partial sums. ● I can add numbers using partial sums. ● I can use models to add 2-digit numbers and then explain my work. ● I can add three or four 2-digit numbers. ● I can use mental math strategies and models to add more than two numbers. ● I can use drawings, models, and equations to solve one-and two-step problems. ● I can make models to help solve math problems. ● I can add within 20.		**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	Ten-Frames ● Bar Diagrams ● Partial Sum Charts ● Place- Value Mat A ● Tens and Ones Chart ● 2-Digit Addition Guide ● Number Cubes ● Number Cards 0-20 ● Partial Sums Chart

Vocabulary
Topic 2
even, odd, array, rows, columns,, bar diagram
Topic 3
tens, ones, open number line, break apart, mental math, compensation
Topic 4
partial sum, regroup, compatible numbers

NJSLS Math Standards
Operations and Algebraic Thinking
2.OA.A.1- Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
2.OA.B.2- Fluently add and subtract within 20 using mental strategies.[2] By end of Grade 2, know from memory all sums of two one-digit numbers.
2.OA.C.3 - Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
2.OA.C.4- Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation

to express the total as a sum of equal addends.

Number and Operations in Base Ten

2.NBT.B.5- Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.B.6- Add up to four two-digit numbers using strategies based on place value and properties of operations.

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.

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 *(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	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 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	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#/