| Marking<br>Period | Unit<br>Title | Recommended<br>Instructional Days |
|:---:|:---:|:---:|
| 2 | **Factors, Multiples, and Patterns** | **8 - 10 Days** |

| Domain |
|:---:|

*Strand:*

☐ **4.OA.B.4** Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

◎ **4.OA.C.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

**Key:**

■ **Major Cluster**        ☐ **Supporting Cluster**        ◎ **Additional Cluster**

*Progress Indicator:*  ◊ Tests ◊ Homework / Classwork ◊ Projects ◊ Formative assessments ◊Summative assessments

| Mathematical Practices: |
|:---:|

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reason of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

| Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-CLKS within Unit |
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**Essential Questions:**
**Lesson 5.1** How can you use models to find factors?
**Lesson 5.2** How can you tell whether one number is a factor of another number?
**Lesson 5.3** How can you use the make a list strategy to solve problems with common factors?
**Lesson 5.4** How are factors and multiples related?
**Lesson 5.5** How can you tell whether a number is prime or composite?
**Lesson 5.6** How can you make and describe patterns?

**Essential Understandings:**
**Lesson 5.1** Find all the factors of a number by using models .
**Lesson 5.2** Determine whether a number is a factor of a given number.
**Lesson 5.3** Solve problems with common factors by using the strategy to make a list.
**Lesson 5.4** Understand the relationship between factors and multiples, and determine whether a number is a multiple of a given number.
**Lesson 5.5** Determine whether a number is prime or composite.
**Lesson 5.6** Generate a number pattern and describe features of the pattern.

**Vocabulary:**
- Common Factor
- Common Multiple
- Composite Number
- Divisible
- Factor
- Prime Number
- Pattern
- Term

**Suggested Activity Description(s):**
Show what you know, Problem of the Day, Fluency Builders, Personal Math Trainer, Math on the Spot Videos, Real World Videos, Vocabulary Preview Activity, Reteach and Enrichment Activities, Interactive Student Edition Textbook, RtI Activities, Grab and Go Differentiated Centers, Journal Writing, Advanced Learners Activities, Assessments, Standards Focus Packets for the related NJSLS, Success for English Learners Activities, Performance Task

◊ <u>Suggested Sample Tasks</u>:

**Interdisciplinary Connections:**

**STEM Activity:** In Chapter 5, students develop their understanding of factors, multiples and patterns, by using the concept of factors and multiples to solve word problems.  These same topics are used often in the development of various science concepts and process skills.  Help students make the connection between math and science through the S.T.E.M. activities and activity worksheets found at Think Central.

In Chapter 5, students connect math and science with the S.T.E.M. Activity Flash and Boom! and the accompanying worksheets (pages 111 and 112).  Through this S.T.E.M. Activity, students will connect to the GO Math! Chapter 5 concepts and skills with various ideas showing the relationship between lightning and thunder, including patterns.  Students will also discover the overall role that math plays in science.  It is recommended that this S.T.E.M. Activity be used after Lesson 5.6

**Science:**
**Materials:** Photos of Fibonacci patterns in nature (pinecone, artichoke) **.**
Display photos of a pinecone and an artichoke.  Share with students that these are examples of patterns in nature.  For example, the arrangement of the leaves in an artichoke forms a pattern called the Fibonacci sequence.  The Fibonacci sequence is as follows: 0, 1, 1, 2, 3, 5, 8, 13, 21, . . . The first two terms are 0, 1.  The next term is the sum of the previous two numbers.  Have students find and list the next three numbers in the Fibonacci sequence.

**Social Studies:**
**Materials:** Photos of quilt patterns; cut-out shapes, paste.
Quilts have been made since ancient times in Egypt.  In the United States, quilts were made to raise funds during the abolitionist movement in the 1830s and to keep soldiers warm during the Civil War in the 1860s.  Quilts are made by using a pattern of cloth shapes.  Shapes, such as squares and triangles, are arranged in a pattern and sewn.  The pattern of shapes is repeated in sections.  Have students use cut-out shapes to create and paste a quilt pattern. Have them repeat shapes using a pattern rule.

**Language Arts:**
1. Vocabulary Preview Activity, Go Math pg. 278
2. Vocabulary Game, Go Math pg.278 A
3. The Write Way, Go Math pg. 278 B

**Spot Light On:** *Seek multiple perspectives and different answers to questions.*

| Social and Emotional Learning:<br>*Competencies* | Social and Emotional Learning:<br>*Sub-Competencies* |
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| SEL Competencies:<br>• Self- awareness<br>• Social Awareness<br>• Self- Management<br>• Relationship Skills<br>• Responsible Decision-Making | • Recognizing the importance of self-confidence in handling daily tasks and challenges.<br>• Demonstrate an awareness of the expectations for social interactions in a variety of ways.<br>• Demonstrate an understanding of the need for mutual respect when viewpoints differ.<br>• Identify and apply ways to persevere through alternative methods to achieve goals.<br>• Utilize positive communication and social skills to interact effectively with others.<br>•Develop, implement, and model effective problem solving and critical thinking skills. |
| **Assessments (Formative)**<br>*To show evidence of meeting the standard/s, students will successfully engage within:* | **Assessments (Summative)**<br>*To show evidence of meeting the standard/s, students will successfully complete:* |
| <u>**Formative Assessments:**</u><br>• Teacher Observations • Exit Tickets • Quizzes • Self Assessments • Math Journals • Homework/Classwork • Teacher created assessments | <u>**Benchmarks & Summative Assessments:**</u><br>Chapter/Unit Assessments • Standardized Tests • District Assessments • Project-based Assessments |

| Differentiated Student Access to Content:<br>Teaching and Learning *Resources/Materials* | | | |
|---|---|---|---|
| **Core<br>Resources** | **Alternate<br>Core Resources**<br>***IEP/504/At-Risk/ESL*** | **ELL<br>Core Resources** | **Gifted & Talented<br>Core Resources** |
| Go Math Workbook, IXL, Personal Math Trainer, Math on the Spot Videos, My HRW, Khan Academy, Illustrative Mathematics, Learn360, TeacherTube, BrainPOP, Freckle, LearnZillion, MobyMax, 60 minutes of weekly ST Math, Edulastic, Achieve the Core, Desmos | Reteaching worksheets, Skill building workbook, Math manipulatives, Leveled practice worksheets | Dictionary for native language, Video tutorial in native language, Success for English Learners worksheets, Go Math Leveled Strategies for English Learners, Go Math Linguistic Support | ST Math Challenge Objectives, G&T tasks, Enrichment worksheets, Art of Problem Solving, Leveled assessments, Go Math Teaching for Depth |

| Supplemental Resources |
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**Technology:**
• Chromebooks  • Online math manipulatives
**Other:**
• Google Classroom, Google Meets, Schoology, Interactive Workbooks • Illustrative Mathematics • insidemathematics.org • National Library of Virtual Manipulatives

| Differentiated Student Access to Content: Recommended _Strategies & Techniques_ | | | |
|---|---|---|---|
| **Core Resources** | **Alternate Core Resources** _IEP/504/At-Risk/ESL_ | **ELL Core Resources** | **Gifted & Talented Core** |
| Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic, provide individual instruction as needed, modify assessments and/or rubrics. | Utilize a multi-sensory (VAKT) approach during instruction, provide alternate presentations of skills by varying the method (repetition, simple explanations, additional examples, modeling, etc.), modify test content and/or format, allow students to retake test for additional credit, provide additional times and preferential seating as needed, review, restate and repeat directions, provide study guides, and/or break assignments into segments of shorter tasks. | Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental materials including use of an online bilingual dictionary, and modified assessment and/or rubric. | Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose interest-based extension activities, and connect students to related content. |

| **NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS** | **Disciplinary Concept(s):** Technology, Collaboration and Communication | |
|---|---|---|
| | _Core Ideas:_ | The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills. |
| | _Performance Expectation/s:_ | **9.4.5.CT.3**: Describe how digital tools and technology may be used to solve problems. |

| | Career Readiness, Life Literacies, & Key Skills Practices |
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| | Act as a responsible and contributing community member and employee.<br>Attend to financial well-being.<br>Consider the environmental, social and economic impacts of decisions.<br>Demonstrate creativity and innovation.<br>Utilize critical thinking to make sense of problems and persevere in solving them.<br>Model integrity, ethical leadership and effective management.<br>Plan education and career paths aligned to personal goals.<br>Use technology to enhance productivity, increase collaboration and communicate effectively.<br>Work productively in teams while using cultural/global competence. |

**New Jersey Legislative Statutes and Administrative Code**
(place an "X" before each law/statute if/when present within the curriculum map)

| | Amistad Law:<br>*N.J.S.A. 18A 52:16A-88* | | Holocaust Law:<br>*N.J.S.A. 18A:35-28* | | LGBT and Disabilities Law:<br>*N.J.S.A. 18A:35-4.35* | X | Diversity & Inclusion:<br>*N.J.S.A. 18A:35-4.36a* | | Standards in Action:<br>*Climate Change* |
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