

**Course:** Math 3 & 4 SC  
**Unit 1:** Advanced Number Sense

**Year of Implementation:** 2024-2025

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## Stage One - Desired Results

**Link(s) to New Jersey Student Learning Standards for this course:**

<https://www.state.nj.us/education/cccs/2020/>

- **Unit Standards:**

- **Content Standards**

- N-RN.B. Use properties of rational and irrational numbers.
  - 3: Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.
- N-Q.A. Reason quantitatively and use units to solve problems.
  - 1: Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
  - 2: Define appropriate quantities for the purpose of descriptive modeling.

- **21st Century Life & Career Standards**

- 9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities
- 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice.
- 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving.
- 9.4.12.IML.1: Compare search browsers and recognize features that allow for filtering of information.
- 9.4.12.TL.2: Generate data using formula-based calculations in a spreadsheet and draw conclusions about the data.

- **Interdisciplinary Content Standards**

- 6.1.12.EconNE.6.a: Analyze the impact of money, investment, credit, savings, debt, and financial institutions on the development of the nation and the lives of individuals
- HSN-Q.A.1: Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays
- **NJ Statutes:** NJ State law mandates the inclusion of the following topics in lesson design and instruction as aligned to elementary and secondary curriculum.

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocides in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

LGBT and Disabilities Law: N.J.S.A. 18A:35-4.35 A board of education shall include instruction on the political, economic, and social contributions of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum of middle school and high school students as part of the district's implementation of the New Jersey Student Learning Standards (N.J.S.A. 18A:35-4.36) A board of education shall have policies and procedures in place pertaining to the selection of instructional materials to implement the requirements of N.J.S.A. 18A:35-4.35.

Diversity and Inclusion (N.J.S.A. 18A:35-4.36a) A board of education shall incorporate instruction on diversity and inclusion in an appropriate place in the curriculum of students in grades kindergarten through 12 as part of the district's implementation of the New Jersey Student Learning Standards.

Asian American and Pacific Islanders (AAPI) P.L.2021, c.410 Ensures that the contributions, history, and heritage of Asian Americans and Pacific Islanders (AAPI) are included in the New Jersey Student Learning Standards (NJSLs) for Social Studies in kindergarten through Grade 12 (P.L.2021, c.416)

For additional information, see

**NJ Amistad Curriculum:** <https://www.nj.gov/education/amistad/about/>

**Diversity and Inclusion:** <https://www.nj.gov/education/standards/dei/index.shtml>

- (Sample Activities/ Lessons): <https://www.nj.gov/education/standards/dei/samples/index.shtml>

**Asian American and Pacific Islanders:**

- [Asian American and Pacific Islander Heritage and History in the U.S.](#)

*A Teacher's Guide from EDSITEment offering a collection of lessons and resources for K-12 social studies, literature and arts classrooms that center around the experiences, achievements and perspectives of Asian Americans and Pacific Islanders across U.S. history.*

**Transfer Goal:** Students will be able to independently use their learning to utilize different types of basic math skills in employment opportunities.

As aligned with LRHSD Long Term Learning Goal(s): <https://www.lrhsd.org/Page/6163>

- Problem-Solving: apply and transfer autonomously and collaboratively mathematical concepts and problem-solving techniques to unfamiliar, varied and real-world situations
- Reasoning: reason abstractly and quantitatively by applying mathematical representations, symbols and estimation techniques when engaging in problem-solving
- Modeling: demonstrate mastery of concepts by evaluating models that others have constructed or by creating appropriate models of their own
- Tools: identify the correct tools to solve problems, if applicable
- Structure: use multiple representations, critical thinking skills, and prior knowledge to solve problems in new situations

Enduring Understandings

Students will understand that. . .

*EU 1*

- real-life situations use different forms of real numbers

*EU 2*

Essential Questions

- How are whole numbers, decimals, and fractions used in real-life situations?
- Why are numbers important?

<ul style="list-style-type: none"> <li>• there is a specific method to simplifying numerical expressions.</li> </ul>	
<p><u>Knowledge</u> Students will know . . .</p> <p>EU 1</p> <ul style="list-style-type: none"> <li>• that whole numbers are used in real-life situations. (N-RN.B.3)</li> </ul> <p>EU 2</p> <ul style="list-style-type: none"> <li>• the appropriate use of the rules of order of operations when calculating a numerical expression. (N-Q.A.1)</li> </ul>	<p><u>Skills</u> Students will be able to . . .</p> <p>EU 1</p> <ul style="list-style-type: none"> <li>• identify and compare whole numbers. (N-RN.B.3)</li> <li>• identify the place value of a digit in a number (whole numbers). (N-RN.B.3)</li> </ul> <p>EU 2</p> <ul style="list-style-type: none"> <li>• apply the order of operations (PEMDAS) to numerical expressions involving multiple operations with whole numbers. (N-Q.A.1)</li> </ul>
<b>Stage Two - Assessment</b>	
<b>Stage Three - Instruction</b>	

Learning Plan: **Suggested Learning Activities to Include Differentiated Instruction and Interdisciplinary Connections:** Each learning activity listed must be accompanied by a learning goal of A= Acquiring basic knowledge and skills, M= Making meaning and/or a T= Transfer. All knowledge and skills must be addressed in this section with a corresponding lesson/activity which teaches each concept. The following color codes are used to notate activities that correspond with interdisciplinary connections and 21st Century Life & Career Connections (which involves Technology Literacy): *Red = Interdisciplinary Connection; Purple = 21st Century Life & Career Connection*

- Adding manipulatives (A,M,EU1)
- Subtract Manipulatives (A,M,EU1)
- Multiplying Manipulatives (A,M,EU1)
- Dividing Manipulatives (A,M,EU1)
- Count by 2s (A,M, EU1)
- Count by 5s (A,M, EU1)
- Count by 10s (A,M, EU1)
- Adding fractions (A,M,EU1)
- Subtracting fractions (A,M,EU1)
- Converting decimals to fractions (A,M,EU1)
- Converting percentages to decimals (A,M,EU1)
- Charting Manipulatives (T, EU1)
- Putting Manipulatives in sequential order (T, EU1)
- Adding numerical expressions (T, EU2)
- Subtracting numerical expressions (T,EU2)
- Multiply numerical expressions (T,EU2)
- Divide numerical expressions (T,EU2)
- Identify fractions (T,EU2)
- Identifying percentages (T,EU2)

## Pacing Guide

{This chart will be identical in all of the units for this course.}

<b>Unit #</b>	<b>Title of Unit</b>	<b>Approximate # of teaching days</b>
1	Advanced Number Sense	30-45
2	Finances	30-45
3	Budgeting	30-45
4	Advanced Graphing and Equations	30-45

### **Instructional Materials**

- Calculator
- Manipulatives

### **Accommodations**

*Special Education:* The curriculum will be modified as per the Individualized Education Plan (IEP). Students will be accommodated based on specific accommodations listed in the IEP.

*Students with 504 Plans:* Students will be accommodated based on specific accommodations listed in the 504 Plan.

*English Language Learners:* Students will be accommodated based on individual need and in consultation with the ELL teacher.

*Students at Risk of School Failure:* Students will be accommodated based on individual need and provided various structural supports through their school.

*Gifted and Talented Students:* Students will be challenged to enhance their knowledge and skills through acceleration and additional independent research on the subject matter.