

Kindergarten

Number Sense

Math
Grade Level:
Kindergarten
Strand:
Numbers and Numerical Operations

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as indicated in the left-hand column.

NJCCCS

- The learner will understand that whole numbers and fractions represent equivalent forms of the same number.
- The learner will understand the one-to-one relationship between an object, a set of objectives, or a part of a whole object and its numeric symbol.
- The learner will understand the various uses of numbers-labeling, locating, and ordering.

ESSENTIAL QUESTIONS:

1. How are whole numbers and fractions alike and different?
2. How do numbers and numerals tell us about a set?
3. How do numbers help us everyday?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

The learner will be able to compare whole (cardinal and ordinal) numbers.
The learner will be able to identify and write place value to the 10's.
The learner will be able to count money and make change up to \$0.25.
The learner will be able to solve word problems using addition and subtraction.
The learner will be able to estimate values more or less.
The learner will be able to identify fractions.

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulatives

CORE ACTIVITIES:

- For each achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:**Student Resources:**

Everyday Math, Everyday Learning
Manipulatives

Technology Integrations:**Literature/Cross Curricular Connections:**

APPLICABLE ASSESSMENT:

Practice pages
Teacher observation
Completion of classroom activities
Written tests

RECOMMENDED ACTIVITIES:

SUGGESTED TIME RANGE:

4 weeks dispersed among applicable units

VOCABULARY:

fractions
halves
thirds
fourths
estimate
set
number
cent(s)
penny
nickel

dime
quarter
altogether
left
place value
ones
tens
more
less

Numerical Operations

Math
Grade Level:
Kindergarten
Strand:
Numbers and Numerical Operations

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as aligned in the left-hand column.

NJCCCS

- The learner will understand and develop proficiencies with the basic addition and subtraction facts using a variety of strategies.
- The learner will understand how to construct, use, select and explain procedures for performing addition and subtraction calculations with:
 - Pencil and paper
 - Mental math
 - Calculator
- The learner will understand how to use estimation and computation to check that answers make sense.

ESSENTIAL QUESTIONS:

1. How do we know when to add or subtract?
2. What different ways can we use to add and subtract? (Strategies or tools)
3. How and when do you estimate?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

The learner will be able to identify sums and differences to 6 in vertical and horizontal form using concrete manipulatives.

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion

Hands-on activities and use of manipulative

CORE ACTIVITIES:

- For each student achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:

Student Resources:

Everyday Math, Everyday Learning
Manipulatives

Technology Integrations:

Literature/Cross Curricular Connections:

APPLICABLE ASSESSMENT:

Teacher made test
Teacher observation
Completion of classroom activities

RECOMMENDED ACTIVITIES:

SUGGESTED TIME RANGE:

4 weeks dispersed as applicable to units of study

VOCABULARY:

estimate
calculator
doubles
add
subtract

plus
minus
equals
number sentence
number problem

Units of Measurement

Math
Grade Level:
Kindergarten
Strand:
Geometry & Measurement

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as indicated in the left-hand column.

NJCCCS

- The learner will understand that measurable attributes allow us to compare and order objects.
- The learner will understand the need for a uniform unit of measurement.
- The learner will understand the importance of selecting and using appropriate standard and non-standard units of measure and standard measurement tools to solve real-life problems.

ESSENTIAL QUESTIONS:

1. How do you compare and order objects?
2. Why do you need a standard unit of measure?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

- The learner will be able to order the months of the year and days of the week.
- The learner will be able to identify digital and analog time to the hour.
- The learner will be able to measure and compare objects using standard and non-standard units of length: shorter, longer, taller, same.
- The learner will be able to measure and compare objects using standard and non-standard units of weight: heavier, lighter, same.
- The learner will be able to measure and compare objects using standard and non-standard units of capacity: more, less, the

same.

- The learner will be able to measure and compare objects using standard units of length: inch, foot, yard.
- The learner will be able to identify and compare temperatures on a thermometer using non-standard units (an analog Fahrenheit thermometer) of measure: low, medium, and high.

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulatives

CORE ACTIVITIES:

- For each student achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:

Student Resources:

Everyday Mathematics, *Everyday Learning*
Manipulatives

Technology Integration:

Literature/Cross Curricular Connections:

APPLICABLE ASSESSMENT:

Practice pages in workbook
Teacher observation
Completion of classroom activities
Written tests

RECOMMENDED ACTIVITIES:

- Allow children to participate and select objects of the same length and height. Use math book pages that allow children to practice these skills and demonstrate their comprehension and understanding of skills taught.

SUGGESTED TIME RANGE:-

VOCABULARY:-

week	longer
Sunday	shorter
Monday	taller
Tuesday	same
Wednesday	inch
Thursday	foot
Friday	heavier
Saturday	lighter
Sunday	high
months	medium
year	low
January	thermometer temperature
February	hot
March	warm
April	cool
May	cold
June	length
July	height
August	weight
September	more
October	less
November	same
December	
digital	
analog	
hour	

Geometry

Math
Grade Level:
Kindergarten
Strand:
Geometry and Measurement

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as indicated in the left-hand column.

NJCCCS

- The learner will understand how to identify and describe objects in space and the relationships among their shapes and sizes.
- The learner will understand how to use concrete objects, drawings, and computer graphics to identify, classify and describe standard three-dimensional and two-dimensional shapes.
- The learner will understand how to describe, identify and create instances of line symmetry.
- The learner will understand how to recognize, describe, extend and create designs and patterns with geometric objects of different shapes and colors.
- The learner will understand how to combine and subdivide simple shapes to make other shapes.
- The learner will understand how to give and follow directions for using a graph.

ESSENTIAL QUESTIONS:

1. How are the shapes the same and different?
2. How can you draw or build a standard 2-D/plane shape or 3-D/solid shapes?
3. How can you create a line of symmetry?
4. How will you use geometric objects of different shapes and colors to create and extend familiar designs or patterns?
5. How will you use simple shapes to make designs, patterns, pictures, and other shapes?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

- The learner will be able to identify, describe, and sort objects by color, same size, shape and spatial relationships.
- The learner will be able to identify, describe, sort, and classify plane figures
- The learner will be able to identify, describe, sort, and classify solid shapes.
- The learner will be able to recognize and create symmetry.
- The learner will be able to open and closed shapes.
- The learner will be able to identify congruent and similar shapes.
- The learner will be able to make a tessellation.
- The learner will be able to compose and decompose tangrams.
- The learner will be able to problem solve using shapes.
- The learner will be able to recognize, describe, extend and create designs and patterns.
- The learner will be able to find area of a shape.

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulatives

CORE ACTIVITIES:

- For each student achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:**Student Resources:**

Everyday Mathematics, Everyday Learning
Manipulatives

Technology Integrations:

Literature/Cross Curricular Connections:

APPLICABLE ASSESSMENT:

Teacher made test
Teacher observation
Completion of classroom activities

RECOMMENDED ACTIVITIES:

SUGGESTED TIME RANGE:

4 weeks

VOCABULARY:

plane shapes/two dimensional:

circle
square
rectangle
triangle
oval
trapezoid
parallelogram
ellipse
octagon
hexagon
rhombus

solid shapes/three dimensional:

cube
sphere
cylinder
cone
Ellipsoid
ovoid

open shape
closed shape

symmetry
tangram
tessellation
shape
grid
geoboard
area
compose
decompose
design
pattern

spatial relationships:

inside/outside
left/right
above/below
between
smaller/larger/same size
wider/narrower
longer/shorter
congruent/similar

Patterns and Algebra

Math
Grade Level:
K
Strand:
Patterns and Algebra

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as indicated in the left-hand column.

NJCCCS

- The learner will understand how to recognize, describe, extend, and create patterns.
- The learner will understand how to solve simple equations.

ESSENTIAL QUESTIONS:

1. How will you create patterns?
2. How will you shrink or grow a pattern?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

- The learner will be able to use concrete and pictorial materials (manipulatives), pictures, rhythms, and whole numbers to extend and create patterns.
- The learner will be able to describe patterns using words and symbols
- The learner will be able to repeat patterns.
- The learner will be able to construct and solve simple open sentences involving addition and subtraction with results or parts unknown.

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulatives

CORE ACTIVITIES:

- For each student achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent, hands-on activities.

INSTRUCTIONAL RESOURCES:**Student Resources:**

Everyday Mathematics, *Everyday Learning*
Manipulatives

Technology Integrations:**Literature/Cross Curricular Connections:**

APPLICABLE ASSESSMENT:

Teacher made test
Teacher observation
Completion of classroom activities

RECOMMENDED ACTIVITIES:

SUGGESTED TIME RANGE:

4 weeks

VOCABULARY:

patterns

**Data Analysis, Probability,
and Discrete Mathematics**

Math
Grade Level:
Kindergarten
Strand:
Data Analysis, Probability, and Discrete Mathematics

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as indicated in the left-hand column.

NJCCCS

- The learner will understand how to collect, generate, record, and organize data in response to questions, claims, or curiosity.
- The learner will understand how to read, interpret, construct, and analyze displays of data.
- The learner will understand how to use devices like spinners to explore concepts of probability.
- The learner will understand how to sort and classify objects according to attributes.
- The learner will understand how to follow simple sets of directions.

ESSENTIAL QUESTIONS:

1. How will you show information in a picture?
2. What will the graph tell you?
3. What answer do you think you will get?
4. How will you sort the objects?
5. How can you carry out a simple set of directions?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

1.
 - The learner will be able to collect data from everyday experiences in class.
 - The learner will be able to generate data from chance devices (spinners and dice).
 - The learner will be able to read, interpret, record and analyze

data using picture graphs, tally chart, pictograph, bar graph, Venn diagram, smallest to largest, mode.

- The learner will be able to explore the probability of getting specific outcomes using chance devices.
- The learner will be able to sort and classify objects according to attributes.

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulative

CORE ACTIVITIES:

- For each student achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:

Student Resources:

Everyday Mathematics, *Everyday Learning*
Manipulatives

Technology Integrations:

Literature/Cross Curricular Connections:

APPLICABLE ASSESSMENT:

Teacher made test
Teacher observation
Completion of classroom activities

RECOMMENDED ACTIVITIES:

SUGGESTED TIME RANGE:

4 weeks dispersed as applicable to units of study

VOCABULARY:

graphs
tally chart
pictograph
bar graph

spinners
dot/number cubes
data

Number Sense

Math
Grade Level:
First
Strand:
Numbers and Numerical Operations

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- The learner will understand that whole numbers and fractions represent equivalent forms of the same number.
- The learner will understand the one-to-one relationship between an object, a set of objectives, or a part of a whole object and its numeric symbol.
- The learner will understand the various uses of numbers-labeling, locating, and ordering.

ESSENTIAL QUESTIONS:

1. How are whole numbers and fractions alike and different?
2. How do numbers and numerals tell us about a set?
3. How do numbers help us everyday?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

- The learner will be able to compare whole (cardinal and ordinal) numbers.
- The learner will be able to identify and write place value to 100.
- The learner will be able to count money and make change up to \$1.00.
- The learner will be able to solve word problems using addition and subtraction.
- The learner will be able to estimate sums and differences to the nearest tens.
- The learner will be able to identify fractions.

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulatives

CORE ACTIVITIES:

- For each achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:**Student Resources:**

Everyday Math, *Everyday Learning*
Manipulatives

Technology Integrations:**Literature/Cross Curricular Connections:**

APPLICABLE ASSESSMENT:

Teacher made test
Teacher observation
Completion of classroom activities

RECOMMENDED ACTIVITIES:

SUGGESTED TIME RANGE:

4 weeks dispersed among applicable units

VOCABULARY:

sixth

tenths

compare
place value
hundreds
dollar
equal fraction
unequal fraction

columns
greater than ($>$)
less than ($<$)
amount
value

Numerical Operations

Math
Grade Level:
First
Strand:
Numbers and Numerical Operations

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as indicated in the left-hand column.

NJCCCS

-
- The learner will understand and develop proficiencies with the basic addition and subtraction facts using a variety of strategies.
- The learner will understand how to construct, use, select and explain procedures for performing addition and subtraction calculations with:
 - Pencil and paper
 - Mental math
 - Calculator
- The learner will understand how to use estimation and computation to check that answers make sense.

ESSENTIAL QUESTIONS:

1. How do we know when to add or subtract?
2. What different ways can we use to add and subtract? (Strategies or tools)
3. How can you use estimation and calculation to check your work?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

- The learner will be able to identify sums and differences to 18 in vertical and horizontal form using fact strategies.
- The learner will be able to estimate and solve addition and subtraction problems including two digits without trades.
- The learner will be able to solve word problems:
 - Using money amounts up to \$1.00.
 - Including those with too little or too much information

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulative

CORE ACTIVITIES:

- For each student achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:**Student Resources:**

Everyday Math, Everyday Learning
Manipulatives

Technology Integrations:**Literature/Cross Curricular Connections:**

APPLICABLE ASSESSMENT:

Teacher made test
Teacher observation
Completion of classroom activities

RECOMMENDED ACTIVITIES:

SUGGESTED TIME RANGE:

4 weeks dispersed as applicable to units of study

VOCABULARY:

counting on
counting back
fact families
differences
addends
sums
making ten

operation
ten frame
strategy
tools
digit

Units of Measurement

Math
Grade Level:
First
Strand:
Geometry and Measurement

ESSENTIAL UNDERSTANDINGS:

The following understandings are aligned with the New Jersey Core Curriculum Content Standards as indicated in the left-hand column.

NJCCCS

- The learner will understand measurable attributes allow us to compare and order objects.
- The learner will understand the need for a uniform unit of measurement.
- The learner will understand the importance of selecting and using appropriate standard and non-standard units of measure and standard measurement tools to solve real-life problems.
- The learner will understand when to estimate measures.

ESSENTIAL QUESTIONS:

1. How do you compare and order objects?
2. Why do you need a standard unit of measure?
3. When will you estimate measures?

STUDENT ACHIEVEMENT STANDARDS:

NJCCS

- The learner will be able to order months of the year and days of the week.
- The learner will be able to identify digital and analog time to the hour, half hour, five minute, and elapsed time to the half-hour and hour.
- The learner will be able to estimate and measure objects by

direct and indirect comparisons and non-standard units

- The learner will be able to estimate and measure objects by standard units of length:
 - Inch
 - Foot
 - Yard
 - Centimeter
 - Decimeter
 - Meter
- The learner will be able to estimate and measure objects by standard units of volume/capacity:
 - Cup
 - Pint
 - Quart
 - Gallon
 - Liter
- The learner will be able to estimate and measure by standard units of weight/mass:
 - Pounds
 - Ounces
 - Grams
 - Kilograms
- The learner will be able to estimate and measure temperature:
 - Fahrenheit to the nearest 10

SUGGESTED METHOD OF INSTRUCTION:

Teacher directed small and large group instruction
Whole group discussion
Hands-on activities and use of manipulatives

CORE ACTIVITIES:

- For each student achievement standard, the teacher will introduce and demonstrate the concept. Then each student will participate in a guided practice before independent hands-on activities.

INSTRUCTIONAL RESOURCES:

Student Resources:

Everyday Math, Everyday Learning
Manipulatives