



NAMC Upper Elementary (9-12) Curriculum Support Material



6-12 CLASSROOM GUIDE

- 6-12 Classroom Guide Glossary
- NAMC Classroom Guide Forms 6-12



BOTANY ACTIVITIES

Botany CSM

Plant Review

- Parts of a flowering plant
- Parts of a tree
- Summary of organisms that are plants
- Self-testing review sheet

Classification

- Relationships between different plant groups
- Characteristics of monocotyledons and dicotyledons
- Characteristics of monocotyledons and dicotyledons
- Summary of the distinguishing features of plant groups
- The traditional Linnaean classification chart showing major plant groups
- Blank Worksheet: Traditional Linnaean classification

Roots

- Science Experiment template
- Structure of a root tip
- Summary of root types
- Summary of root functions

Stems

- Summary of stem types
- Parts of a stem
- Cross-section of a dicotyledon stem
- Cross-section of a tree trunk

Leaves

- Parts of the leaf
- Leaf shapes
- Types of leaf blades
- Leaf margins
- Leaf arrangements

Flowers

- Parts of the flower
- Stamen parts
- Pistil parts
- Clues for deciding how a flower is pollinated

Fruits and Seeds

- Fruit structure
- Types of fruit
- Types of dry dehiscent fruits
- Types of dry indehiscent fruits
- Summary of fleshy fruits
- Summary of dry fruits
- Mature bean seed

Identification

- Plant identification worksheet

Basic Needs of Plants

- Template, Observations of seed germination and seedling growth

Humans and Plants

- Examples of fruits, vegetables, and grains
- The plant parts from which spices are extracted

Microscopic Study

- Labeled and unlabeled Animal cell
- Labeled and unlabeled Plant cell

Microorganisms and Food Spoilage

- Five generations of cells reproducing by fission

Self-Testing Review Sheets

- Distinguishing Features of Main Plant Groups
- Plant Classification
- Reviewing Cells
- Reviewing Fleshy and Dry Fruits
- Reviewing Flower Structure and Function
- Reviewing Food Preservation
- Reviewing Food Spoilage
- Reviewing Fruit Structure
- Reviewing Leaf Functions
- Reviewing Leaf Structure
- Reviewing Medicinal Plants
- Reviewing Modified Roots

- Reviewing Plant Adaptations
- Reviewing Plant Groups
- Reviewing Plant Growth Patterns
- Reviewing Plant Needs and Soil Composition
- Reviewing Plant Uses
- Reviewing Plants
- Reviewing Pollination
- Reviewing Roots
- Reviewing Seeds
- Reviewing Stem Types, Functions, and External Structure
- Reviewing the Internal Structure of Stems
- Reviewing the Parts of Plants
 - Traditional Linnaean Classification

Cell Crossword Puzzle and Key

Photosynthesis and Respiration Cards

Science Experiment Template

Botany Glossary

Mastery Checklists

- Botany and Microscopic Study Year 4
- Botany and Microscopic Study Year 5
- Botany and Microscopic Study Year 6



CULTURAL GEOGRAPHY ACTIVITIES

Cultural Geography CSM

Longitude and Latitude

- A great circle
- The shortest route between two points on a sphere
- Meridians of longitude
- Parallels of latitude
- Torrid, Temperate, and Frigid Zones
- How to read a topographic map
- How plane-table surveying works
- Measuring height with a plane table
- Determining height with a transit
- Aerial surveying

Map and Compass

- Earth's magnetic field
- Geographic North Pole and north magnetic pole
- True, magnetic and grid north
- Baseplate compass
- Planning a route on a topographic map
- Chart, Stages in a route
- Determining a bearing from a map
- Simple compass route
- Chart, Measuring a compass route
- Using a compass

Overview of Cartography

- Locating an object in three-dimensional space
- Cartography - timeline

The Continents

- Major geographic regions of North America
- Major geographic regions of South America
- Major geographic regions of Europe
- Major geographic regions of East Asia
- Major geographic regions of the Middle Eastern desert

- Major geographic regions of Africa
- Major geographic regions of Australia
- Major geographic regions of Antarctica

The US

- Major geographic regions of the US

Environment and Culture

- Cultural celebrations around the world

Cultural Geography Glossary**Mastery Checklists**

- Cultural Geography Year 4
- Cultural Geography Year 5
- Cultural Geography Year 6

**LANGUAGE ARTS ACTIVITIES****LANGUAGE ARTS VOLUME 1****Language Arts 1 CSM****Review Sheets****Speaking and Listening Skills**

- Chart, Techniques that can be used in a focused discussion
- Summary of techniques for attracting and maintaining an audience's attention
- Checklist when preparing to interview

Handwriting

- Guidelines for calligraphic script
- Special words and phrases in calligraphy

Grammar

- Teacher's sample review sheet for parts of speech
- Nouns
- Pronouns
- Articles
- Adjectives
- Conjunctions
- Prepositions
- Verbs
- Adverbs
- Sentence Analysis

Montessori Grammar Symbols**Sentence Analysis Box****Blank Review Sheets Language Arts 1****LANGUAGE ARTS VOLUME 2****Language Arts 2 CSM****Review Sheets****Reading and Literature**

- Some Notes on Reading
- Novels

Mechanics of Writing

- Punctuation

Word Study

- Word Families, Graphemes, and Homonyms
- Acronyms, Abbreviations, and Contractions
- Hyphenation
- Dictionaries

Writing Essays and Research Reports

- Choosing a Topic and an Approach
- Gathering Information
- Organizing Information
- Brainstorming, Mapping, and Making an Outline
- Writing, Revising, and Presenting

Practice Sheet Common Acronyms and Abbreviations**Practice Sheet Punctuation Marks****Blank Review Sheets Language Arts 2**

LANGUAGE ARTS GLOSSARY**MASTERY CHECKLISTS**

- Language Arts Year 4
- Language Arts Year 5
- Language Arts Year 6

LANGUAGE ARTS COMMON CORE**Year 4**

- Grade 4 Language
- Grade 4 Reading, Foundational Skills
- Grade 4 Reading, Informational Texts
- Grade 4 Reading, Literature
- Grade 4 Speaking and Listening
- Grade 4 Writing

**MATH ACTIVITIES****MATH VOLUME 1****Math 1 CSM****Numerical Place Value in Decimal System**

- Terms used in the hierarchy of numbers
- Place-value chart: Units, 10s and 100s
- Working place-value
- Notation paper
- Notation paper 2

Operations with Whole Numbers

- Examples of addition equation slips
- Examples of subtraction equation slips
- Examples of multiplication equation slips
- Examples of division equation slips
- Visualizing category multiplication for a 4-digit by 1-digit equation
- Visualizing category multiplication for a 2-digit by 2-digit equation
- Visualizing category multiplication for a 4-digit by 2-digit equation

Multiples, Factors, and Divisibility

- Description of bead chains
- Multiples Table A
- Control chart for Multiples Table A
- Multiples Table B
- Control chart for Multiples Table B
- Multiples Table C
- Control chart for Multiples Table C

Year 5

- Grade 5 Language
- Grade 5 Reading, Foundational Skills
- Grade 5 Reading, Informational Texts
- Grade 5 Reading, Literature
- Grade 5 Speaking and Listening
- Grade 5 Writing

Year 6

- Grade 6 Language
- Grade 6 Reading, Informational Texts
- Grade 6 Reading, Literature
- Grade 6 Speaking and Listening
- Grade 6 Writing

Montessori and Common Core Standards**Fractions**

- Units number line
- Textbox: About the charts of prepared equations for fractions
- Examples of prepared equations

Decimal Fractions

- Table of terms, notation, and colors for the first two classes of decimal fractions
- Place-value chart with decimal fractions.
- Demonstrating that decimal numbers revolve around the number 1

Percents, Ratios, and Proportions (Bonus Resources)

- Illustration, A percent is a fraction with a denominator of 100
- Illustration, 15 percent means 15 parts out of a hundred
- Illustration, Percents in relation to tenths and hundredths
- Illustration, In proportional figures, the ratio of one side to another is the same for both figures
- Table, Three basic types of percent problem can be solved with proportions
- Illustration, 25 percent of 16 equals 4

Rounding Off Numbers (Bonus Resources)

- Tenths number line
- Rounding off whole numbers
- Rounding off decimal fractions
- Examples of fractions number lines
- Rounding off mixed numbers
- Estimating total distance
- Rod-shaped bacteria

Math 1 Practice Sheets

- Math 1 Practice Sheets Working Copy
- Math 1 Practice Sheets Control Copy

Math 1 Bonus Material

- Writing Equivalent Fractions

MATH VOLUME 2

Math 2 CSM

Negative Numbers

- Number line of integers from -20 to $+20$
- An equivalent form of $+2$ is $+5 + (-3)$
- An equivalent form of -4 is $-2 + (-2)$
- Additive inverses sum to 0
- Signed numbers
- Minus signs for dividing by negative numbers
- Order of operations
- Subtracting a positive number from a negative number
- Subtracting a negative number from a negative positive number
- A negative number times a positive number
- Order of operations example

Non-Terminating Decimals and Irrational Numbers

- Pi is an irrational number
- Inequalities may be thought of in terms of a number line

Pre-Algebra

- Approaching a word problem
- Solving a word problem step by step
- Table of squares
- Place values and their colors
- Table of cubes

- Three steps for finding the square root of a two-period number on the Algebraic Pegboard
- Six steps for finding the square root of a three-period number on the Algebraic Pegboard
- Four steps for finding the cube root of a number with two periods
- Six steps for finding the cube root of a number with three periods
- The powers of 2
- Counting to 20 in various bases

Math 2 Practice Sheets

- Math 2 Practice Sheets Working Copy
- Math 2 Practice Sheets Control Copy

Math 2 Bonus Material

- Binomial Cube Labels
- Equalities and Inequalities

Base Charts

- Base Charts for numbers 2–10

MATH VOLUME 3

Math 3 CSM

Lines and Angles

- Nomenclature cards for relationships between lines
- Nomenclature cards for angles
- Nomenclature cards for relationships between angles
- Interior and exterior angles
- Angles formed by two straight lines cut by a transversal

Triangles

- Nomenclature cards for the triangle and its parts
- Nomenclature cards for types of triangles
- Using parallel lines to see why interior angles sum to 180 degrees

Quadrilaterals

- Nomenclature cards for types of quadrilaterals

Many-Sided Polygons

- Nomenclature cards for the many-sided polygons
- Nomenclature cards for parts of the polygon
- Finding a polygon's interior angles by dividing the polygon into triangles
- Working table, Interior angles of polygons
- Control table, Interior angles of polygons

Parts of the Circle

- Nomenclature cards for parts of a circle
- Nomenclature cards for relationships between lines and circumferences
- Nomenclature cards for relationships between two circumferences
- Nomenclature cards for concentric circles

Geometric Solid Shapes

- Nomenclature cards for the geometric solids
- Solids of rotation
- The parts of a geometric solid shape
- The height of a geometric solid is measured perpendicular to its base
- Cross-sections through a rectangular prism and a cone
- Illustration, Geometric solids

Line Symmetry

- Illustration, butterfly
- Symmetrical and asymmetrical figures

Constructing Geometric Figures: Circles, Ellipses, and Squares

- $EP + E'P$ is constant, no matter where on the ellipse P is located

Constructing the Regular Polyhedra

- Template for constructing a tetrahedron
- Template for constructing a cube
- Template for constructing an octahedron
- Template for constructing a dodecahedron
- Template for constructing an icosahedron

- Template for constructing an icosahedron

Similar, Congruent, & Equivalent Shapes

- Similar, congruent and equivalent shapes

Calculating Area of Polygons and Circles

- Area is measured in square units
- The area of a square equals width x width
- A parallelogram is like a rearranged rectangle
- A triangle is equivalent to one-half of a square or rectangle with the same base and height
- The height of an obtuse triangle falls outside the triangle
- The obtuse triangle equals one-half of a parallelogram
- A trapezoid has a major base and a minor base
- Trapezoid rearranged as a rectangle
- Pentagon and circumscribed circle showing radii
- Pentagon and inscribed circle showing apothems
- Relationships between the triangle and the polygon
- Irregular polygons divide into triangles
- A many-sided regular polygon approximates a circle
- Summary of areas of geometric figures
- Nomenclature cards for finding the area of regular polygons
- Irregular polygons
- Irregular polygons divided into triangles
- Finding the area of irregular polygons

Calculating Volume of Geometric Solids

- A cubic unit of volume
- The volume of a rectangular prism
- The volume of a pyramid
- The volume of a cylinder
- The volume of a cone
- The volume of a sphere
- Volumes of geometric solids

Pythagorean Theorem

- Illustration, Pythagoras
- The Pythagorean theorem
- Square a^2 is equivalent to rectangle xc
- Square b^2 is equivalent to rectangle yc

Nomenclature Cards

- Angles

Math 3 Practice Sheets

- Math 3 Practice Sheets Working Copy
- Math 3 Practice Sheets Control Copy

MATH 4

Math 4 CSM

Word Problems

- Diagram, Sketching a word problem often makes it easier to solve
- Solving a word problem step by step
- Some helpful strategies for solving word problems
- Approaching a word problem

Money

- Examples of foreign exchange rates

Measurement

- Imperial and US customary units of length
- Metric units of length
- Converting length from imperial or US customary units to metric units
- Converting length from metric units to imperial or US customary units

Weight

- Imperial and US customary units of weight
- Metric units of weight
- Converting weight from imperial or US customary units to metric units
- Converting weight from metric units to imperial or US customary units

Temperature

- The Celsius and Fahrenheit temperature scales
- Celsius and Fahrenheit temperature conversion table
- Diagram, Comparing the Fahrenheit and Celsius scales

Graphs

- Picture graph for books read in one week by four classes
- Bar Graphs and Circle Graphs
- Line Graphs and Scatter Plots
- Graphing with Ordered Pairs

Statistics

- Number of dogs per person at Rover Park
- Frequency table, for the number of dogs per person at Rover Park
- Miles run by 30 students in the Duck Lake School running club
- Frequency table, Number of pets in students' families

UE Math 4 Bonus Material

- Sample Word Problems
- Locating Ordered Pairs
- Means and Medians

Graphing Word Problems

Math 4 Practice Sheets

- Math 4 Practice Sheets Working Copy
- Math 4 Practice Sheets Control Copy

MATH TEMPLATES

- Algebraic Pegboard
- Binomial Square – Full
- Binomial Square – Simple
- Checkerboard
- Decimal Fraction Board
- Monomial Square
- Trinomial Square – Full
- Trinomial Square – Simple

UE MATH GLOSSARY

MASTERY CHECKLISTS

Math Mastery Checklists

- Mathematics Year 4
- Mathematics Year 5
- Mathematics Year 6

Geometry Mastery Checklists

- Geometry Year 4
- Geometry Year 5
- Geometry Year 6

MATH COMMON CORE**Year 4**

- Grade 4 Geometry
- Grade 4 Measurement and Data
- Grade 4 Numbers and Operations Fractions
- Grade 4 Numbers and Operations in Base Ten
- Grade 4 Operations and Algebraic Thinking

Year 5

- Grade 5 Geometry
- Grade 5 Measurement and Data
- Grade 5 Numbers and Operations Fractions
- Grade 5 Numbers and Operations in Base Ten
- Grade 5 Operations and Algebraic Thinking

Year 6

- Grade 6 Expressions and Equations
- Grade 6 Geometry
- Grade 6 Ratios and Proportions
- Grade 6 Statistics and Probability
- Grade 6 The Number System

Montessori and Common Core Standards**MATTER AND ENERGY ACTIVITIES****MATTER AND ENERGY CSM****Matter****Atoms**

- Planetary model of the atom
- Cloud model of the atom
- Argon atom
- Carbon atom
- Elements and their atomic numbers

Molecules

- Oxygen molecule
- Water molecule
- Glucose molecule

Chemical Elements

- Chemical symbols for some common elements
- The Periodic Table of the Elements

The States of Matter

- The basic physical properties of solids, liquids and gases
- The three common states of matter: solid, liquid, gas
- Normal gas and plasma

Water Pressure and Air Pressure

- Water pressure is greater in deep water than in shallow water

Combinations of Matter

- Chemical formulas for some common compounds
- Molecules of some common compounds

Density

- Densities of some familiar substances compared to water

Energy**Energy Sources**

- Some common energy transformations
- A fossil fuel power plant
- A hydroelectric power plant
- Fission of a uranium atom
- A nuclear power plant

Sound

- Vibrations traveling away from a source are called sound waves
- An echo

Light

- Light travels in a straight line
- Looking along a sight line at an object
- How light reflects off a mirror
- Water reflects like a mirror
- A simple face is a good way to learn about reflection
- Words are reversed in a mirror

Electricity and Magnetism

- Electrons inside a magnet
- Electric current in a wire
- Electromagnetic fields for a magnet and a wire
- Electric current passes through a filament
- A battery in a simple electric circuit
- A homemade electromagnet

- Electrical power transmission and distribution
- Electromagnetic waves
- The seven groups of electromagnetic waves and their characteristics
- The electromagnetic spectrum

Gravity, Friction, and Inertia

- Calculating simple forces
- Velocity relative to the earth and a train

Science Experiment Template**Matter and Energy Glossary****Mastery Checklists**

- Matter and Energy Year 4
- Matter and Energy Year 5
- Matter and Energy Year 6

**PHYSICAL GEOGRAPHY ACTIVITIES****Physical Geography CSM****Climate and the Atmosphere**

- Layers of the atmosphere
- Layers of the atmosphere
- Climatic Zones
- Summary sheet: Biomes

Global Weather Patterns

- Circulation of high-and low-pressure air
- Global convection cells
- Prevailing winds and the Coriolis effect

Weather Systems and Weather Maps

- Cold front
- Warm front
- Sea breezes and land breezes

The Water Cycle, Clouds and Rainbows

- The water cycle
- Summary sheet: Cloud classification by type and altitude

Oceans and Seas

- Oceans
- The Grand Banks
- The Persian Gulf
- Surface ocean currents
- North Atlantic Deep-Water Current
- Thermohaline currents

- North Atlantic Deep-Water Current
- Thermohaline currents
- An aquifer

The Earth's Layers

- The interior of the earth
- Summary sheet: The layers of the earth
- Plate tectonics
- Map of the tectonic plates
- A convergent boundary
- A divergent boundary
- A transform boundary

Volcanoes

- A volcano
- Volcanic regions of the earth
- How mid-plate volcanoes form
- A cinder cone
- A composite volcano
- A shield volcano
- Four types of volcanoes

Earthquakes

- Three main types of faults
- The San Andreas Fault System
- Earthquake locations
- The hypocenter and epicenter of an earthquake

- P Wave, S Wave, Love Wave, Rayleigh Wave
- Earthquake scales

Continents, Islands, and Coastlines

- Continental and oceanic crust
- The stages of continental drift
- The continental shelf
- The world's ten largest islands
- Summary sheet: Coastline features
- Coastline features

Mountains, Valleys and Plains

- Major mountain ranges of the world
- Oceanic-continental convergence
- Fault-block mountains in Nevada
- An underwater valley
- An oceanic trench

Rocks and Minerals

- The most common elements in the earth's crust
- How atoms form the earth's crust

- Summary sheet: Mineral segregation
- How different types of rock form
- The rock cycle
- Stratigraphy
- Verve analysis of sedimentary
- Radiometric dating
- Fossil succession
- Paleomagnetism
- The Mohs scale of mineral hardness
- Template: Mineral classification table

Weathering and Erosion

- A storm surge
- Six main erosion processes
- Erosion and deposition on a meander

Physical Geography Glossary

Mastery Checklists

- Physical Geography Year 4
- Physical Geography Year 5
- Physical Geography Year 6



WORLD HISTORY ACTIVITIES

World History CSM

Time and Rotation of the Earth

- Solar System Diagram

The 12-Hour and 24-Hour Clock Systems

- Times in the 12-Hour and 24-Hour Clock System

Common Needs of Early People

- Common Needs of Early People
- Clock of Eras (b/w)
- Timeline of Life (b/w)
- Timeline of People (b/w)

The Maya

- The Maya Number System

Early European Explorers

- Eight Early European Explorers

Research Questions

- Big-Picture Research Questions
- Basic Research Questions

Research

- Sample Research Notes Sheet

Research Report

- Summary of steps involved in writing a final research report
- Checklist for a research report
- Example of a simple sentence outline
- Example of a simple topic outline
- Example of a simple research report
- Example of a table of contents for a research report

Blank Research Notes Sheet

Clock of Eras (color)

Timeline of Life (color)

Timeline of People (color)

World History Glossary

Mastery Checklists

- World History Year 4
- World History Year 5
- World History Year 6



ZOOLOGY ACTIVITIES

Zoology CSM

Local Animals

- Summary of the factors that influence animal routines
- Herbivores, omnivores, and carnivores and the type of foods they eat
- Animals and their homes
- Self-testing review sheet
- Worksheet: The Routines of Local Animals

External Anatomy and Classification

- The Linnaean classification of the humpback whale
- Animal classification chart
- Activity: Reviewing Classification Vocabulary
- Diagram: butterfly
- Diagram: spider
- Diagram: crab
- Diagram: snail
- Comparison of the features of arthropods and a mollusk
- The distinguishing features of four invertebrates
- Diagram: fish
- Diagram: frog
- Diagram: of tortoise
- Diagram: bird
- Diagram: guinea pig
- Comparison of the main features of five vertebrate classes

Identification

- Types of bird bills

Internal Anatomy and Physiology

- Diagram: biceps/triceps
- Diagram: Digestive system of an earthworm
- Organ systems and the life activities they perform
- Activity: Learning About the Organ Systems of Animals
- Sexual reproduction in animals
- Life cycle of a jellyfish
- Activity: Reviewing Animal Reproduction

Adapting to Different Habitats

- Examples of hot and cold deserts
- Interesting non-mammalian animals of the African grasslands
- Linnaean classification of some African grassland animals
- A general guide to the eating habits of some coral reef animals

Relationship of Humans with Animals

- Summary of animal byproducts

Science Experiment Template

Zoology Glossary

Mastery Checklists

- Zoology Year 4
- Zoology Year 5
- Zoology Year 6