
Ninth Grade

Math

Power Verbs

Number, Number Sense and Operations Standard

Compare	Estimate	Identify	Order
Demonstrate	Explain	Justify	

Measurement Standard

Calculate	Convert	Solve	Use
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Geometry and Spatial Sense Standard

Analyze	Define	Solve	
Apply	Show		

Patterns, Functions and Algebra Standard

Compare	Describe	Interpret	Solve
Define	Find	Model	Use
Demonstrate	Generalize	Simplify	Write

Data Analysis and Probability Standard

Analyze	Create	Identify	Make
Classify	Describe	Interpret	Use
Compare			

Ninth Grade

Math

Key Terms and Concepts

Number, Number Sense and Operations Standard

associative properties	even integers	rational numbers
closure properties	fluency	real numbers
commutative properties	given set	roots
computations	identity properties	solutions
cube roots	inverse properties	square roots
effects of operations	irrational numbers	
equivalent forms	magnitude of quantities	

Measurement Standard

areas	rates	three-dimensional objects
distances	ratio	two-dimensional figures
feet per second	right triangle	unit analysis
kilometers per hour	trigonometry	unit conversion
measurement system	scale drawings	volumes
meters per second	similar	
miles per hour		

Geometry and Spatial Sense Standard

basic trigonometric ratios	parallelogram	sine
coordinate plane	proportions	slope
cosine	quadrilateral	tangent
distance formulas	right triangle	two-dimensional figures
missing lengths	trigonometric ratios	
	right triangles	

Ninth Grade

Math

Key Terms and Concepts

Patterns, Functions and Algebra Standard

2 by 2 systems of linear equations	integer exponents	range
common factors	inverse variation	range element
constant	linear equations	rate of change
direct variation	linear functions	rational expressions
domain	maximum	real roots
domain element	minimum	relationship
elimination	monomials	relationships (linear, quadratic and exponential)
equivalent forms of equations	number of roots	roots of equations
exponential decay	ordered pairs	slope
exponential functions	parallel	slope-intercept form
exponential growth	patterns	solutions of equations
factoring	perpendicular	substitution
function	polynomials	symbolic representations
general shape	problem situations (linear, quadratic and exponential)	tabular representations
graphical representations	proportional reasoning	value
graphically	quadratic equations	zeros
graphing	quadratic formula	
inequalities	quadratic functions	

Ninth Grade

Math

Key Terms and Concepts

Data Analysis and Probability Standard

best fit	Fundamental Counting principle	representative sample
biased sampling	independent events	sample space
bivariate data	inferences	scatterplot
bivariate	limitations of sampling methods	simple dependent events
causation	misconceptions	simulations
characteristics of sampling methods	misuses of statistical data	sketch
clusters	outliers	skewness
compound events	population	spread
correlation	probabilities	symmetry
counting techniques	qualitative	theoretical probability
data	quantitative	types of studies (survey, observation, experiment)
dependent events	random numbers	uncertainty
experimental probability	random sampling	univariate
frequency distributions		

Ninth Grade

Reading/Writing

Power Verbs

Phonemic Awareness, Word Recognition, and Fluency

Fluency continues to develop past the primary grades.

Acquisition of Vocabulary

Analyze	Determine	Infer
Define	Examine	

Reading Process:

Concepts of Print, Comprehension Strategies and Self-Monitoring Strategies

Students should read purposefully and automatically, using the comprehension and self-monitoring strategies outlined in previous grades.

Reading Applications: Informational, Technical and Persuasive Text

Analyze	Compare	Critique	Identify
Assess	Contrast	Explain	

Reading Applications: Literary Text

Analyze	Evaluate	Identify
Define	Explain	Interpret

Writing Processes

Apply	Establish	Proofread
Determine	Generate	Reread
Develop	Organize	Rearrange

Ninth Grade

Reading/Writing

Power Verbs

Writing Applications

Produce Write

Writing Conventions

Maintain Use

Research

Analyze	Compose	Identify	Organize
Compile	Determine	Integrate	

Communication: Oral and Visual

Adjust	Deliver	Identify
Apply	Demonstrate	Interpret
Analyze	Draw	Vary

Ninth Grade

Reading/Writing

Key Terms and Concepts

Phonemic Awareness, Word Recognition, and Fluency

Fluency continues to develop past the primary grades.

Acquisition of Vocabulary

analogical statement	dictionary	prefix
Anglo-Saxon root	effect	pun
antonym	figurative language	simile
cause	figurative meaning	suffix
comparison	glossary	synonym
connotation	Greek root	technology
context clue	historical event	textual feature
contrast	idiom	thesaurus
definitional footnote	Latin root	
definitional sidebar	literal meaning	
denotation	metaphor	

Reading Process:

Concepts of Print, Comprehension Strategies and Self-Monitoring Strategies

comparing	note taking	reading to gain information
conclusion	prediction	reading to perform a task
contrasting	purpose	recalling
criteria	reading comprehension strategy	scanning
evaluative questions	reading for enjoyment	skimming
inference	reading for literary experience	summarizing
inferential questions	reading on	synthesizing questions
literal questions		
looking back		

Ninth Grade

Reading/Writing

Key Terms and Concepts

Reading Applications: Informational, Technical and Persuasive Text

accuracy	functional documents	product information
appropriateness	glittering generalities	propaganda
audience	graphs	public documents
bait and switch	headers	purpose
bandwagon	implicit argument	repetition of ideas
bias	instructional materials	rhetorical devices
cause-effect	instructions	sequence
charts	job-related materials	speeches
consumer documents	maps	stereotyping
cutaways	memoranda	syntax
details	multiple	tables
diagrams	newspaper editorials	testimonial
effectiveness	organizational patterns	transfer
emotional word repetition	overlays	viewpoint
explicit argument	perspective	warranties
features	persuasive techniques	workplace documents
format	point of view	
	problem-solution	

Reading Applications: Literary Text

alliteration	foreshadowing	soliloquies
assonance	genre	sound devices
characters	indirect characterization	subplots
conflicts	irony	symbols
consonance	mood	syntax
dialect	onomatopoeia	tone
direct characterization	parallel plots	traits
dramatic irony	point of view	universal themes
dramatic monologues	setting	verbal irony
flashback	situational irony	

Ninth Grade

Reading/Writing

Key Terms and Concepts

Writing Processes

action verbs	graphics	purpose
adapting focus	graphs	reference materials
audience	inappropriate slang	repetitive sentence structure
background reading	informal language	resources
body	informational writing	rubric
capitalization	interview	run-on
charts	introduction	sensory detail
checklist	logical sequence	sentence length
clarity	margins	sentence structure
closing sentence	narrative writing	simple sentence
coherence	notes	spacing
colorful modifiers	organizational strategies	spelling
columns	organizational structure	strategy
complex sentence	outlines	style
compound sentence	paragraph	survey
conclusion	parallel sentence structure	tabs
content structure	personal style	thesaurus
conventions	point of view	thesis statement
dictionaries	precise language	tool
drawings	precise vocabulary	transition
edit	pre-writing task	voice
feedback	principles of design	
fragments	punctuation	
grammar		

Ninth Grade

Reading/Writing

Key Terms and Concepts

Writing Applications

action	inconsistencies	perspective
audience	informal writings	persuasive compositions
bibliographies	(journals, notes and poems)	premises
business letters	informational essays	prior knowledge
context	irrelevant information	purpose
controlling idea	job applications	sense of closure
document sources	letters to the editor	sources of information
engaging plot	narratives	suspense
extraneous details		tension

Writing Conventions

appropriate verb tenses	infinitive phrase	participial phrase
capitalization	main clause	punctuation
correct spelling	modifiers	subordinate clause
gerund phrase	parallel structure	

Research

accuracy	Internet-based resources	school library catalogs
authority	multimedia report	source
citations	objectivity	acknowledgement
communication	online databases	sources
techniques	open-ended questions	style guides
coverage	oral report	validity
credibility	publication date	visual report
electronic resources	quotations	written report

Ninth Grade

Reading/Writing

Key Terms and Concepts

Communication: Oral and Visual

active listening strategies	formal descriptive presentations	selecting essential information
analogies	hidden agendas	slanted material
anecdotes	illustrations	speaker's choice of delivery styles
appeals to authority	inflection	speaker's choice of language
appeals to emotion	informal descriptive presentations	speaking techniques
appeals to reason	informational presentations	statistics
arguments	listener bias	thesis
authority	logical argument	voice modulation
biased material	logical sequence	
case studies	media messages	
cause-effect	monitoring message for clarity	
changes in pace	noting cues	
charts	organizing essential information	
common organizational structures	persuasive presentations	
compare-contrast	persuasive strategies	
consistent organizational structure	position	
controlled argument	primary source	
controlling idea	problem-solution	
counter-arguments	quotations	
credibility of the speaker	reasoning	
diagrams	relevant evidence	
emotional appeal	repetition	
enunciation	research	
expository	rhetorical devices	
eye contact	secondary source	
fallacies of reasoning		

Ninth Grade

Science

Power Verbs

Earth and Space Sciences

Describe	Explain	Use
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Life Sciences

No indicators present for this standard.

Physical Sciences

Compare	Illustrate	Show	Use
Describe	Investigate	Summarize	
Explain	Recognize	Trace	

Science and Technology

Describe	Explain	Identify
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Scientific Inquiry

Apply	Decide	Distinguish	Interpret
Construct	Develop	Draw conclusions	Research

Scientific Ways of Knowing

Comprehend	Describe	Illustrate	Justify
Demonstrate	Explain	Investigate	Recognize

Ninth Grade

Science

Key Terms and Concepts

Earth and Space Sciences

asteroids	faulting	nuclear reactions
atmosphere	folding	ocean currents
Big Bang	formation	planets
characteristics	fossil distributions	plate tectonic activity
comets	gravitational forces	Plate Tectonics Theory
conceived	Heliocentric Theory	radiometric dating
conduction	helium	sea-floor spreading
context	historical examples	stars
continental drift	hydrogen	thermal energy transfer
convection	igneous intrusion	transfer of energy
deep interior	landforms	unexpected findings
density	lithosphere	volcanic action
earthquakes	magma generation	
elements	magnetic reversals	
explosive expansion of the universe	metamorphism	
	movement patterns	

Life Sciences

No indicators present for this standard.

Ninth Grade

Science

Key Terms and Concepts

Physical Sciences

absorb	constrain	height
acceleration	convection	high energy wavelike radiation
acidic	density	hot packs
acidity	electric force	infrared
air masses	electrical	ions
alloys	electrically neutral	isotopes
atomic number	electricity	$KE = \frac{1}{2} mv^2$
atomic theory	electromagnetic radiation	kinetic energy
atoms	electromagnetic spectrum	light
average atomic or molecular motion	electromagnetic waves	liquid materials
basic	electrons	mass
bonded	element	measurable quantity
burning of fossil fuels	endothermic	mechanical
ceramics	exert	medium
change in motion	exothermic	microwaves
chemical	$F = ma$	mixtures
chemical equations	families of elements	molecules
chemical formulas	fission	motion
chemical reactions	frame of reference	nanotechnology
cold packs	frictional force	negatively charged electrons
collision of particles	fusion	net force
communications technology	gamma rays	neutral
conduction	gravity	Newtonian mechanics
conductivity	gravitational potential energy	nuclear energy
conserved	hardness	nuclear reactions
constant		nucleus

Ninth Grade

Science

Key Terms and Concepts

Physical Sciences (continued)

particles	random motion	thermal energy
$PE = mgh$	random spontaneous nuclear decay	time
periodic table	reaction	total mass
pH scale	reference surface	transformation of energy
physical and chemical properties	reflect	ultraviolet
physical science	repeating pattern of electron configuration	unbalanced (net) force
plastics	repeating patterns	unbalanced charge
position	role of electrons	unexpected findings
positively charged protons	salt crystals	unstable nuclei
propagated	scientific establishment	velocity
proportional	semiconductors	vibrations of atoms and molecules
protons	solid materials	visible light
pure substances	speed	water
quantum theory	superconductors	wave
radiation	superimpose	weight
radio waves	temperature	X-rays
radioactive substances		

Science and Technology

adapted	designs	science
alternative solutions	public policy	technology
benefit	refined	tested
continually assessed	risk	

Ninth Grade

Science

Key Terms and Concepts

Scientific Inquiry

accurate data	graphs	OSHA
calculator operations	inferences	physical model
concepts	investigations	safety precautions
conceptual model	logical conclusions	scientific knowledge
degree of precision	maps	scientific situation
events	Material Safety	systems
evidence	Data Sheets	tables
eyewash	objects	ventilation
goggles	observations	

Scientific Ways of Knowing

accurate predictions	internal workings of	scientific disciplines
bias	science	scientific investigations
data	nature of science	scientific knowledge
ethical practices	observation	scientific theories
experimentation	peer review	standards of evidence
inquiry	reliable scientific	
	evidence	

Ninth Grade

Social Studies

Power Verbs

History

Analyze	Describe	Explain
Assess	Examine	

People in Societies

Analyze	Explain
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Geography

Analyze	Explain	Interpret
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Economics

Analyze	Explain
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Government

Analyze	Explain
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Citizenship Rights and Responsibilities

Analyze	Describe
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Social Studies Skills and Methods

Analyze	Detect	Develop	Evaluate
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Ninth Grade

Social Studies

Key Terms and Concepts

History

absolutism	emigration	industrial cities
airplanes	Enlightenment	industrialization
alliances	ethnic conflict	Israel
American Revolution	ethnic strife in Europe, Africa, and Asia	labor
appeasement	ethnic unrest in the Soviet Union	Latin American wars for independence
arms build-up	Europe	League of Nations
Asia	exploitation of African resources	Lenin
atomic weapons	French Revolution	machine guns
Axis expansion	global decline of communism	militarism
Bolsheviks	global impact of imperialism	militarist states
Chinese Communist Revolution	global scope of war	military losses
civilian losses	Holocaust	modernization of Japan
Cold War	human costs of war	monarchy
colonial rebellion	impact of World War I	nationalism
colonialism	imperialism	NATO
colonized	independence movement in Africa	natural resources
colonizers	independence movement in India	outcomes of war
communism	independence movement in Indochina	poison gas
conflict in the Middle East	independence	political and social reform in China
consequences of World War II	movements in former Soviet satellites	political ideology
dictatorships	indigenous language	political reforms
disarmament		political systems
division of Germany		poverty
Eastern Europe		refugees
economic ideology		religion
economic reforms		religious authority
emergence		role of the Allies

Ninth Grade

Social Studies

Key Terms and Concepts

History (continued)

rural-to-urban migrations	Soviet Union	turmoil
Russia	Stalin	union movement
Russian Revolution	submarines	United Nations
social reforms	tanks	Warsaw Pact
social roots of imperialism	totalitarian states	World War II
Soviet expansion	Treaty of Versailles	worldwide depression
	trench warfare	
	tsars	

People in Societies

Armenia	environment	perspectives
Bosnia	exploitation of indigenous peoples	political systems
collective security	genocide	popular culture
conflict	globalization	religion
cooperation	Iraq	reunification of Germany
creation of the state of Israel	oppression	Rwanda
end of apartheid in South Africa	partition of India and Pakistan	violation of human rights

Geography

birth rates	environmental change	population growth
conflicts	Gross Domestic Product	regions
countries	human migration	territory
death rates	infant mortality rates	urbanization
economic development	per capita	
education levels	points of view	

Ninth Grade

Social Studies

Key Terms and Concepts

Economics

blockades	infrastructure	quotas
command economy	international trade	role of government
competition	market economy	standard of living
consumer choice	mixed economy	tariffs
economic benefits	private property	traditional economy
economic costs	productive capacity	usage of productive resources
freedom of enterprise	protectionism	

Government

absolute monarchies	function	presidential democracies
constitutional monarchies	parliamentary democracies	structure
dictatorships	power	systems of government
		theocracies

Citizenship Rights and Responsibilities

abolish	fall of communism in Europe	propaganda
absolute monarchies	French Revolution	public opinion
citizen action	independence movement in India	public policy
citizen participation	international movement	Russian Revolution
constitutional monarchies	parliamentary democracies	slave trade
dictatorships	presidential democracies	slavery
end of apartheid		systems of government
		theocracies

Ninth Grade

Social Studies

Key Terms and Concepts

Social Studies Skills and Methods

accurate use of facts

adequate support of
statements

bias

collection of data

consistency of
arguments

construction of a thesis

credibility

date of publication

logical fallacies

narrowing a topic

primary sources

propaganda

refining a topic

reliability

secondary sources

support of a thesis

unstated assumptions