Grade-Level Typing Course Standards | Grade 10

Typing

CCSS.ELA-LITERACY.W.9-10.6
Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.9-10.4
Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.9-10.4.A
Use context as a clue to the meaning of a word or phrase.
CCSS.ELA-LITERACY.L.9-10.4.B
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech.

CCSS.ELA-Literacy.L.9-10.5
Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-Literacy.L.9-10.5.A
Interpret figures of speech in context and analyze their role in the text.

Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.9-10.6
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Conventions of Standard English

CCSS.ELA-LITERACY.L.9-10.1
Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.9-10.1.A
Use parallel structure.
CCSS.ELA-LITERACY.L.9-10.1.B
Use various types of phrases and clauses to convey specific meanings and add variety and interest to writing or presentations.

CCSS.ELA-LITERACY.L.9-10.2
Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.9-10.2.A
Use a semicolon to link two or more closely related independent clauses.
CCSS.ELA-LITERACY.L.9-10.2.B
Use a colon to introduce a list or quotation.

Key Ideas & Details

CCSS.ELA-LITERACY.RL.9-10.1
Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

CCSS.ELA-LITERACY.RL.9-10.2
Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

Integration of Knowledge & Ideas

CCSS.ELA-LITERACY.RI.9-10.9
Analyze seminal U.S. documents of historical and literary significance, including how they address related themes and concepts.

Congruence

CCSS.HSG-CO.A
Experiment with transformations in the plane.

CCSS.HSG-CO.A.1
Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

CCSS.HSG-CO.4
Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.

Congruence

CCSS.HSG-CO.9
Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

CCSS.HSG-CO.10
Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

CCSS.HSG-CO.11
Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

Similarity, Right Triangles, and Trigonometry

CCSS.HSG-SRT.B
Prove theorems involving similarity.

CCSS.HSG-SRT.B.4
Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.

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Empowered Learner

ISTE 1.1
Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d
Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2
Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a
Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b
Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

Digital Citizen

ISTE 1.2.d
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Engineering Design

NGSS HS-ETS1-1
Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

NGSS HS-ETS1-2
Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

NGSS HS-ETS1-3
Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

NGSS HS-ETS1-4
Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-1
Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

NGSS MS-LS1-2
Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.

NGSS MS-LS1-3
Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

NGSS HS-LS1-4
Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

NGSS HS-LS1-5
Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

NGSS HS-LS1-6
Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

NGSS HS-LS1-7
Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-1
Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

NGSS HS-LS2-2
Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

NGSS HS-LS2-3
Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

NGSS HS-LS2-4
Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

NGSS HS-LS2-5
Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

NGSS HS-LS2-6
Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

NGSS HS-LS2-7
Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-8
Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Heredity: Inheritance & Variation of Traits

NGSS HS-LS3-1
Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

NGSS HS-LS3-2
Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

NGSS HS-LS3-3
Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

Biological Evolution: Unity & Diversity

NGSS HS-LS4-1
Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.

Biological Evolution: Unity & Diversity

NGSS HS-LS4-2
Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

NGSS HS-LS4-3
Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

NGSS HS-LS4-4
Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

NGSS HS-LS4-5
Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

NGSS HS-LS4-6
Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

Earth's Place in the Universe

NGSS HS-ESS1-1
Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.

Earth's Place in the Universe

NGSS HS-ESS1-2
Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.

NGSS HS-ESS1-3
Communicate scientific ideas about the way stars, over their life cycle, produce elements.

NGSS HS-ESS1-4
Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

NGSS HS-ESS1-5
Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

NGSS HS-ESS1-6
Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

Earth's Systems

NGSS HS-ESS2-1
Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

NGSS HS-ESS2-2
Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

Earth's Systems

NGSS HS-ESS2-3
Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.

NGSS HS-ESS2-4
Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

NGSS HS-ESS2-5
Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

NGSS HS-ESS2-6
Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.

NGSS HS-ESS2-7
Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.

Earth & Human Activity

NGSS HS-ESS3-1
Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

NGSS HS-ESS3-2
Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

Earth & Human Activity

NGSS HS-ESS3-3
Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.

NGSS HS-ESS3-4
Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

NGSS HS-ESS3-5
Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems.

NGSS HS-ESS3-6
Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

Matter & its Interactions

NGSS S-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

NGSS HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

Matter & its Interactions

NGSS HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

NGSS HS-PS1-4
Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

NGSS HS-PS1-5
Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

NGSS HS-PS1-6
Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

NGSS HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

NGSS HS-PS1-8
Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Motion & Stability: Forces & Interactions

NGSS HS-PS2-1
Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

NGSS HS-PS2-2
Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

NGSS HS-PS2-3
Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

NGSS HS-PS2-4
Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.

NGSS HS-PS2-5
Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.

NGSS HS-PS2-6
Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Energy

NGSS HS-PS3-1
Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

NGSS HS-PS3-2
Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects).

NGSS HS-PS3-3
Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

NGSS HS-PS3-4
Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

HS-PS3-5
Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.

Waves & their Applications in Technologies for Information Transfer

NGSS HS-PS4-1
Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

NGSS HS-PS4-2
Evaluate questions about the advantages of using digital transmission and storage of information.

NGSS HS-PS4-3
Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

NGSS HS-PS4-4
Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

NGSS HS-PS4-5
Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

Economics

Florida SS.912.E.3
Understand the fundamental concepts and interrelationships of the United States economy in the international marketplace.

Ohio E.FE.3
People cannot have all the goods and services they want and, as a result, must choose some things and give up others.

Economics

Ohio E.FE.3
People cannot have all the goods and services they want and, as a result, must choose some things and give up others.

Ohio E.FE.4
Different economic systems (traditional, market, command, and mixed) utilize different methods to allocate limited resources.

Texas E.3
The student understands the reasons for international trade and its importance to the United States and the global economy.

Texas E.4
The student understands free enterprise, socialist, and communist economic systems.

Texas E.5
The student understands the basic characteristics and benefits of the U.S. free enterprise system.

California HSS-PoE.12.3
Students analyze the influence of the federal government on the American economy.

California HSS-PoE.12.4
Students analyze the elements of the U.S. labor market in a global setting.

California HSS-PoE.12.5
Students analyze the aggregate economic behavior of the U.S. economy.

Economics

California HSS-PoE.12.6

Students analyze issues of international trade and explain how the U.S. economy affects, and is affected by, economic forces beyond the United States's borders.

Geography

Florida SS.912.G.3.2

Use geographic terms and tools to explain how weather and climate influence the natural character of a place.

Florida SS.912.G.3.4

Use geographic terms and tools to explain how the Earth's internal changes and external changes influence the character of places.

Florida SS.912.G.3.5

Use geographic terms and tools to explain how hydrology influences the physical character of a place.

Florida SS.912.G.5.6

Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.

Texas G.3

The student understands how physical processes shape patterns in the physical environment.

Texas G.3.A

Explain weather conditions and climate in relation to annual changes in Earth-Sun relationships.

Government & Civics

Florida SS.912.CG.1
Demonstrate an understanding of the origins and purposes of government, law and the American political system.

Florida SS.912.CG.1.3
Explain arguments presented in the Federalist Papers in support of ratifying the U.S. Constitution and a republican form of government.

Florida SS.912.CG.1.4
Analyze how the ideals and principles expressed in the founding documents shape America as a constitutional republic.

Florida SS.912.CG.1.5
Explain how the U.S. Constitution and its amendments uphold the following political principles: checks and balances, consent of the governed, democracy, due process of law, federalism, individual rights, limited government, representative government, republicanism, rule of law and separation of powers.

Florida SS.912.CG.3
Demonstrate an understanding of the principles, functions and organization of government.

Florida SS.912.CG.3.6
Explain expressed, implied, concurrent and reserved powers in the U.S. Constitution.

Florida SS.912.CG.3.12
Analyze the concept of federalism in the United States and its role in establishing the relationship between the state and national governments.

Government & Civics

Ohio GOV.BP.5
As the supreme law of the land, the U.S. Constitution incorporates basic principles that help define the government of the United States as a federal republic including its structure, powers and relationship with the governed.

Ohio GOV.BP.6
The Federalist Papers and the Anti-Federalist Papers framed the national debate over the basic principles of government encompassed by the Constitution of the United States.

Ohio GOV.BP.7
Constitutional government in the United States has changed over time as a result of amendments to the U.S. Constitution, Supreme Court decisions, legislation and informal practices.

Ohio GOV.BP.8
The Bill of Rights was drafted in response to the national debate over the ratification of the Constitution of the United States.

Ohio GOV.SF.12
Law and public policy are created and implemented by three branches of government; each functions with its own set of powers and responsibilities.

Ohio GOV.SF.13
The political process creates a dynamic interaction among the three branches of government in addressing current issues.

Texas G.7
The student understands the structure and functions of the government created by the U.S. Constitution.

Texas G.8
The student understands the concept of federalism.

American History

Florida SS.912.A.3
Analyze the transformation of the American economy and the changing social and political conditions in response to the Industrial Revolution.

Ohio AH.IP.8
The rise of corporations, heavy industry, mechanized farming and technological innovations transformed the American economy from an agrarian to an increasingly urban industrial society.

Ohio AH.IP.9
The rise of industrialization led to a rapidly expanding workforce. Labor organizations grew amidst unregulated working conditions, laissez-faire policies toward big business, and violence toward supporters of organized labor.

Ohio AH.IP.10
Immigration, internal migration and urbanization transformed American life.

Ohio AH.IP.13
The Progressive era was an effort to address the ills of American society stemming from industrial capitalism, urbanization and political corruption.

Texas AH.3
The student understands the political, economic, and social changes in the United States from 1877 to 1898.

Texas AH.4
The student understands the emergence of the United States as a world power between 1898 and 1920.

American History

Texas AH.5
The student understands the effects of reform and third-party movements in the early 20th century.

California HSS-11.2
Students analyze the relationship among the rise of industrialization, larges cale rural-to-urban migration, and massive immigration from Southern and Eastern Europe.

California HSS-11.4
Students trace the rise of the United States to its role as a world power in the twentieth century.

World History

Florida SS.912.W.2
Recognize significant events, figures, and contributions of medieval civilizations (Byzantine Empire, Western Europe, Japan).

Florida SS.912.W.3
Recognize significant events, figures, and contributions of Islamic, Meso and South American, and Sub-Saharan African civilizations.

Florida SS.912.W.4
Analyze the causes, events, and effects of the Renaissance, Reformation, Scientific Revolution, and Age of Exploration.

Texas WH.5
The student understands the causes, characteristics, and impact of the European Renaissance and the Reformation from 1450 to 1750.

World History

Texas WH.6
The student understands the characteristics and impact of the Maya, Inca, and Aztec civilizations.

California HSS-10.1
Students relate the moral and ethical principles in ancient Greek and Roman philosophy, in Judaism, and in Christianity to the development of Western political thought.