

Essential Skills for 7th & 8th Grade



7th & 8th Grade Reading

The student will:

1. Read fluently at independent and instructional levels.
2. Read a variety of genre:
 - Fiction
 - Poetry
 - Nonfiction
 - Technical
 - Drama
3. Use pre-reading strategies:
 - KWL
 - Scanning/skimming
 - Prediction
 - Chapter Titles
 - Organization of book.
4. Use comprehension strategies:
 - Inferences
 - Self-correcting
 - Vocabulary enrichment
 - Re-reading
 - Main Idea
 - Literary devices.
5. Use post-reading strategies:
 - Checking predictions
 - Retelling main points of the story, including time line, story map
 - Character development
 - Making connections with other pieces of literature and real life events.
 - Reflection
6. Understand plot, character, setting, theme, author's intent or message, and point of view.
7. Use and understand figurative language:
 - Similes
 - Metaphors
 - Personification.
8. Use Question, Answer, Relationship (QAR): right there, think and search, author and me, and on my own.
9. Participate in literature circles.
10. Participate in reading workshop.

7th & 8th Grade Writing

The student will:

1. Use the writing process from brainstorming through final copy.
2. Recognize and use the 6 trait analytical model:
 - Conventions
 - Word choice
 - Organization
 - Ideas and content
 - Sentence fluency
 - Voice
3. Use paraphrasing, summarizing, and note-taking.
4. Write for a variety of purposes:
 - Expository
 - Narrative
 - Technical
 - Persuasive
5. Participate in writing workshop.

6. Cite sources from various research sources:

- Text
- CD Rom
- Internet
- Interview

7th & 8th Grade Technology

The student will:

1. Increase technology vocabulary.
2. Use touch typing strategies to keyboard multiple paragraphs.
3. Integrate technological skills into content curriculum activities.
4. Work cooperatively and collaboratively with peers.
5. Follow rules of the computer lab.
6. Demonstrate safety precautions on sharing personal information.
7. Use technology resources for directed and independent learning activities.
8. Use a variety of software, including multimedia software.
9. Use basic word processing programs.
10. Use basic draw tools.
11. Use age-appropriate search engines to find information.
12. Demonstrate understanding of district Internet Policy.
13. Create spreadsheet and graph.
14. Solve basic technical problems encountered during regular use of the computer.
15. Navigate between two or more applications.
16. Manage, access, save, and retrieve web pages.

Social Studies

7th Grade Social Studies

Students will:

1. Understand the various systems of governments and how national and international organizations interact.
2. Understand how the market economy works in the United States and the world.
3. Understand how different economic systems, institutions, and incentives affect people.
4. Understand the role of the government in the economy.
5. Use maps, graphic representations, tools and technologies to locate, use, and present information about people, places, and environments.
6. Analyze the spatial organization of people, places, and environments that form regions on Earth's surface.

Social Studies

7th Grade Social Studies (continued)

7. Understand how economic, political, and cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation and conflict.
 8. Understand the effects of interactions between human and physical systems.
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8th Grade Social Studies

Students will:

1. Compare the U.S. and Kansas Constitutions to identify the major responsibilities of the federal, state, and local governments.
 2. Understand the important individual, groups, ideas, events, and developments in Kansas history during these eras:
 - Early Settlement
 - Territorial Period
 - Civil War
 - Immigration
 - Industrial development
 - 20th century
 3. Understand the diversity of American society including individual rights, responsibilities, and respect for the law.
 4. Develop an understanding of constitutional law including the systems of government and how national and international organizations interact.
 5. Develop an understanding of individuals, groups, ideas, developments and turning points in United States history from 1800-1850 including expansionism, the Industrial Revolution, inventions, immigration, politics, nationalism, sectionalism and reform.
 6. Develop an understanding of individuals, groups, ideas, developments and turning points in United States history from 1850-1900 including the development of business and industry, treatment of Native Americans, and westward expansion.
 7. Research, analyze, investigate, compare and contrast United States history during the 1800's.
 8. Learn how the economic concepts of market economy, economics systems, institutions and the role of government which will help citizens make effective decisions about economics.
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Math

7th Grade Math Checklist

Students will:

1. Add, subtract, multiply and divide fractions.
2. Find percents and percent of numbers.
3. Find perimeter and area of polygons.
4. Find circumference and area of circles.
5. Write and solve simple algebraic expressions in one variable.
6. Write inequalities.
7. Graph on a coordinate grid ordered pairs and linear equations.
8. Name and use basic properties.
9. Identify and continue patterns.
10. Use ratios and proportions to solve problems.
11. Describe probability of events using fractions, decimals and percents.

8th Grade Math Checklist

Students will:

1. Explain irrational numbers.
 2. Know, explain and use the inverse relationship between whole number exponents and their roots.
 3. Add, subtract, multiply and divide integers.
 4. Explain and perform computations involving percent of increase and decrease.
 5. Explain linear fractions and write equations for linear fractions using slope and y-intercept.
 6. Solve linear equations and inequalities in one variable.
 7. Evaluate formulas and using subtractions.
 8. Know and explain the difference between linear and non-linear relationships.
 9. Know angle relationships formed by parallel lines cut by a transversal.
 10. Find surface area and volume of prisms and cylinders.
 11. Recognize, explain and perform single and multiple transformations.
 12. Know and explain the difference between independent and dependent events.
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Grade 5-7 Science

The student will:

1. Identify questions that can be answered through scientific investigations.
2. Design and conduct scientific investigations safely using appropriate tools, mathematics, technology, and techniques to gather, analyze, and interpret data.
3. Identify the relationship between evidence and logical conclusions.
4. Communicate scientific procedures, results and explanations.
5. Evaluate the work of others to determine evidence which scientifically supports or contradicts the results, identifying faulty reasoning or conclusions that go beyond evidence and/or are not supported by data.
6. Compare and classify the states of matter; solids, liquids, gases, and plasma.
7. Understands the relationship of atoms to elements and elements to compounds.
8. Measure and graph the effects of temperature on matter.
9. Describe, measure, and represent data on a graph showing the motion of an object (position, direction of motion, speed).
10. Recognize and describe examples of Newton's Laws of Motion.
11. Investigate and explain how simple machines multiply force at the expense of distance.
12. Understand that when work is done energy transforms from one form to another, including mechanical, heat, light, sounds, electrical, chemical, and nuclear energy, yet is conserved.
13. Observe and communicate how light (electromagnetic) energy interacts with matter: transmitted, reflected, refracted, and absorbed.
14. Understands that heat energy can be transferred from hot to cold by radiation, convection, and conduction.
15. Will understand the cell theory: that all organisms are composed of one or more cells, cells are the basic unit of life, and that cells come from other cells.
16. Relate the structure of cells, organs, tissues, organ systems, and whole organisms to their functions.
17. Differentiate between asexual and sexual reproduction of organisms.

Grade 5-7 Science (continued)

18. Understand that internal and/or environmental conditions affect an organism's behavior and/or response in order to maintain and regulate stable internal conditions to survive in a continually changing environment.
19. Recognize that all populations living together (biotic resources) and the physical factors (abiotic resources) with which they interact compose an ecosystem.
20. Trace the energy flow from the sun (source of radiant energy) to producers (via photosynthesis – chemical energy) to consumers and decomposers in food webs.
21. Understands that adaptations of organisms (changes in structure, function, or behavior that accumulate over successive generations) contribute to biological diversity.
22. Associate extinction of a species with environmental changes in insufficient adaptive characteristics.
23. Identify properties of the solid earth, the oceans and fresh water, and the atmosphere.
24. Models earth's cycles, constructive and destructive processes, and weather systems.
25. Understand that earth processes observed today (including movement of lithospheric plates and changes in atmospheric conditions) are similar to those that occurred in the past; earth history is influenced by occasional catastrophes, such as the impact of a comet or asteroid.
26. Compares and contrasts the characteristics of stars, planets, moons, comets, and asteroids.
27. Demonstrate and model object/space/time relationships that explain phenomena such as the day, the month, the year, seasons, phases of the moon, eclipses and tides.
28. Identify appropriate problems for technological design, designs a solution or product, implements the proposed design, evaluates the product, and communicates the process of technological design.
29. Identify appropriate problems for technological design, designs a solution or product, implements the proposed design, evaluates the product, and communicates the process of technological design.
30. Identify individual nutrition, exercise, and a rest needs based on science and uses a scientific approach to thinking critically about personal health, lifestyle choices, risks and benefits.
31. Investigate the effects of human activities on the environment and analyze decisions based on the knowledge of benefits and risks.
32. Recognize that new knowledge leads to new questions and new discoveries, replicates historic experiments to understand principles of science, and relates contributions of men and women to the fields of science.

Grade 8-12 Science

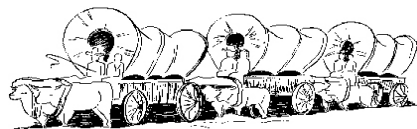
The student will:

1. Actively engage in investigations including developing questions, gathering and analyzing data, and designing and conducting research.
2. Actively engage in using technological tools and mathematics in their own scientific investigations.
3. Actively engage in conducting an inquiry, formulating and revising his or her scientific explanations and models (physical, conceptual, or mathematical) using logic and evidence, and recognizing that potential alternative explanations and models should be considered.
4. Understand atoms, the fundamental organizational unit of matter, are composed of subatomic particles. Chemists are primarily interested in the protons, electrons, and neutrons found in the atom.

5. Understand chemists use kinetic and potential energy to explain the physical and chemical properties of matter on earth that may exist in any of these three states: solids, liquids, and gases.
6. Understand the periodic table lists elements according to increasing atomic number. This table organizes physical and chemical trends by groups, periods, and sub-categories.
7. Understand chemical bonds result when valence electrons are transferred or shared between atoms. Breaking a chemical bond requires energy. Formation of a chemical bond releases energy. Ionic compounds result from atoms transferring electrons. Molecular compounds result from atoms sharing electrons.
8. Understand a chemical reaction occurs when one or more substances (reactants) react to form a different chemical substance(s) (products). There are different types of chemical reactions all of which demonstrate the Law of Conservation of Matter and Energy.
9. Understand Newton's Laws and variables of time, position, velocity, and acceleration can be used to describe the position and motion of particles.
10. Understand the first law of thermodynamics states the total internal energy of a substance (the sum of all the kinetic and potential energies of its constituent molecules) will change only if heat is exchanged with the environment or work is done on or by the substance. In any physical interaction, the total energy in the universe is conserved.
11. Understand waves have energy and can transfer energy when they interact with matter.
12. Understand electromagnetic waves result when a charged particle is accelerated or decelerated.
13. Understands cell functions involve specific chemical reactions.
14. Understand living organisms contain DNA or RNA as their genetic material, which provides the instructions that specify the characteristics of organisms.
15. Understand hereditary information is contained in genes, located in the chromosomes of each cell.
16. Understand biological evolution, descent with modification, is a scientific explanation for the history of the diversification of organisms from common ancestors.
17. Understand biological evolution is used to explain the earth's present day biodiversity: the number, variety and variability of organisms.
18. Understand organisms vary widely within and between populations. Variation allows for natural selection to occur.
19. Understand atoms and molecules on the earth cycle among the living and nonliving components of the biosphere.
20. Understand the distribution and abundance of organisms and populations in ecosystems are limited by the carrying capacity.
21. Understand the sun is the primary source of energy for life through the process of photosynthesis.
22. Understand food molecules contain biochemical energy, which is then available for cellular respiration.
23. Understand animals have behavioral responses to internal changes and to external stimuli.
24. Understand differences in structure and function among organisms and can identify the characteristics of relevant life forms.

Grade 8-12 Science (continued)

25. Understand that homeostasis is the dynamic regulation and balance of an organism's internal environment to maintain conditions suitable for survival.
26. Understand that living things change following a specific pattern of developmental states called life cycles.
27. Understand that in complex organisms there is a division of labor specific body systems i.e., respiration, digestion, nervous, endocrine, excretion, circulatory, reproductive, immune, skeletal and muscle.
28. Understand the theory of Plate Tectonics explains that internal energy drives the earth's ever changing structure.
29. Understand that the ultimate source of atmospheric and oceanic energy comes from the sun. Energy flow drives global climate and weather. Climate and weather are influenced by geographic features, cloud cover, and the earth's rotation.
30. Understands the processes of water cycling through surface water (oceans, lakes, streams, glaciers) ground water (aquifers), and the atmosphere. (hydrological cycle)
31. Understands geological time is used to understand the earth's past.
32. Understand the relationship between the earth, moon, and sun explains the seasons, tides and moon phases.
33. Understand stellar evolution.
34. Understand technology is the application of scientific knowledge for functional purposes.
35. Understand the severity of disease symptoms is dependent on many factors.
36. Understand natural resources from the lithosphere and ecosystems are required to sustain human populations.
37. Understand scientific knowledge describes and explains the physical world in terms of matter, energy, and forces. Sci-



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