

Middle School

Science

- We are learning to investigate questions, conduct experiments and solve problems using the processes of scientific inquiry and technological design.
- We are learning about the concepts, principles and processes of scientific inquiry. We can put to use the ideas, principles and processes of scientific inquiry.
- We are learning to formulate hypotheses that can be tested by collecting data.
- We can conduct scientific experiments that control all but one variable.
- We can collect and record data accurately using consistent measuring and recording techniques and media.
- We are learning to explain the existence of unexpected results in a data set.
- We can analyze measurements using data manipulation tools, quantitative methods (e.g., mean, mode, simple equations) and representational methods (e.g., simulations, image processing).
- We are learning to interpret and represent results of analysis to produce findings.
- We can report and display the process and results of a scientific investigation.
- We are learning about the concepts, principles and processes of technological design. We can put to use the ideas, principles and processes of technological design.
- We are learning to identify an actual design problem and establish criteria for determining the success of a solution.
- We can sketch, propose and compare design solutions to the problem considering available materials, tools, cost effectiveness and safety.
- We are learning how to select the most appropriate design and build a prototype or simulation.
- We can test the prototype using available materials, instruments and technology and record the data.
- We can evaluate the test results based on established criteria, note sources of error and recommend improvements.
- We can report the relative success of the design based on the test results and criteria.
- We understand the fundamental ideas, principles and interconnections of the life, physical and earth/space sciences.
- We know and are learning to put to use the ideas that explain how living things function, adapt and change.
- We can explain how cells function as “building blocks” of organisms and describe the requirements for cells to live.
- We can compare characteristics of organisms produced from a single parent with those of organisms produced by two parents.
- We can compare and contrast how different forms and structures reflect different functions (e.g., similarities and differences among animals that fly, walk or swim; structures of plant cells and animal cells).



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- We know and are learning to put to use the ideas that describe how living things interact with each other and with their environment.
- We can identify and classify biotic and abiotic factors in an environment that effect population density, habitat and placement of organisms in an energy pyramid.
- We can compare and assess features of organisms for their adaptive, competitive and survival potential (e.g., appendages, reproductive rates, camouflage, defensive structures).
- We know and are learning to put to use the ideas that describe properties of matter and energy and the interactions between them.
- We can explain interactions of energy with matter including changes of state and conservation of mass and energy.
- We are learning to model and describe the chemical and physical characteristics of matter (e.g., atoms, molecules, elements, compounds, mixtures).
- We know and are learning to put to use the ideas that describe force and motion and the principles that explain them.
- We can explain and demonstrate how forces affect motion (e.g., action/reaction, equilibrium conditions, free-falling objects).
- We can explain the factors that affect the gravitational forces on objects (e.g., changes in mass, distance).
- We know and are learning to put to use the ideas that describe the features and processes of the Earth and its resources.
- We are learning how to analyze and explain large-scale dynamic forces, events and processes that affect the Earth's land, water and atmospheric systems (e.g., jetstream, hurricanes, plate tectonics).
- We can describe interactions between solid earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth (e.g., erosion, El Nino).
- We are learning to evaluate the biodegradability of renewable and nonrenewable natural resources.
- We know and are learning to put to use the ideas that explain the composition and structure of the universe and Earth's place in it.
- We are learning to simulate, analyze and explain the effects of gravitational force in the solar system (e.g., orbital shape and speed, tides, spherical shape of the planets and moons).
- We can describe the organization and physical characteristics of the solar system (e.g., sun, planets, satellites, asteroids, comets).
- We can compare and contrast the sun as a star with other objects in the Milky Way Galaxy (e.g., nebulae, dust clouds, stars, black holes).



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- We are learning about political systems, with an emphasis on the United States.
- We understand and can explain basic principles of the United States government.
- We can describe how the responsibilities of the United States government and the Illinois government are shared and limited by the United States and Illinois Constitutions and significant court decisions.
- We are learning about the structures and roles of the political systems of Illinois, the United States and other nations.
- We can identify and compare the basic political systems of Illinois and the United States as prescribed in their constitutions.
- We are learning about election processes and responsibilities of citizens.
- We can compare historical issues involving rights, roles and status of individuals in relation to municipalities, states and the nation.
- We are learning about the roles and influences of individuals and interest groups in the political systems of Illinois, the United States and other nations.
- We can describe roles and influences of individuals, groups and media in shaping current Illinois and United States public policy (e.g., public opinion, special interest groups, formal parties, media).
- We are learning about United States foreign policy as it relates to other nations and international issues.
- We can compare the basic principles of the United States and its international interests (e.g., territory, environment, trade, use of technology).
- We are learning about the development of United States political ideas and traditions.
- We are learning to analyze historical influences on the development of political ideas and practices as listed in the Declaration of Independence, the United States Constitution, the Bill of Rights and the Illinois Constitution.
- We can describe how United States political ideas and traditions were instituted in the Constitution and the Bill of Rights.
- We are learning about economic systems, with an emphasis on the United States.
- We are learning how different economic systems perform in the exchange, production, distribution and consumption of goods and services.
- We are learning how market prices signal producers about what, how and how much to produce.
- We can explain the relationship between productivity and wages.
- We can describe the relationship between consumer purchases and businesses paying for productive resources.
- We can describe the causes of unemployment (e.g., seasonal variation in demand, changing jobs, changing skill requirements, national spending).



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- We are learning that scarcity calls for choices by consumers.
- We can describe the “market clearing price” of a good or service.
- We are learning to explain the effects of choice and competition on individuals and the economy as a whole.
- We are learning that scarcity calls for choices by producers.
- We are learning to identify and explain the effects of various incentives to produce a good or service.
- We are learning about trade as an exchange of goods or services.
- We are learning the effects of increasing and declining imports and exports to an individual and to the nation’s economy as a whole.
- We can explain how comparative advantage forms the basis for specialization and trade among nations.
- We can explain how workers can affect their productivity through training and by using tools, machinery and technology.
- We are learning about the impact of government policies and decisions on production and consumption in the economy.
- We are learning to identify the types of taxes levied by differing levels of governments (e.g., income tax, sales tax, property tax).
- We can explain how laws and government policies (e.g., property rights, contract enforcement, standard weights/measurements) establish rules that help a market economy work effectively.
- We are learning about events, trends, individuals and movements shaping the history of Illinois, the United States and other nations.
- We are learning to apply the skills of historical analysis and interpretation.
- We are learning how historians use models for organizing historical interpretation (e.g., biographies, political events, issues and conflicts).
- We are learning how to make inferences about historical events and eras using historical maps and other historical sources.
- We can identify the differences between historical fact and interpretation.
- We are learning about the development of political events.
- We can describe how different groups competed for power within the colonies and how that competition led to the development of political institutions during the early national period.



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- We can explain how and why the colonies fought for their independence. We can explain how colonists' ideas are reflected in the Declaration of Independence and the United States Constitution.
- We can describe the way the Constitution has changed over time as a result of amendments and Supreme Court decisions.
- We can describe ways in which the United States developed as a world political power.
- We can compare the political characteristics of Greek and Roman civilizations with non-Western civilizations, including the early Han dynasty and Gupta empire, between 500 BCE and 500 CE.
- We are learning to identify causes and effects of the decline of the Roman empire and other major world political events (e.g., rise of the Islamic empire, rise and decline of the T'ang dynasty, establishment of the kingdom of Ghana) between 500 CE and 1500 CE.
- We are learning to identify causes and effects of European feudalism and the emergence of nation states between 500 CE and 1500 CE.
- We can describe political effects of European exploration and expansion on the Americas, Asia, and Africa after 1500 CE.
- We are learning about the development of economic systems.
- We can describe economic motivations that attracted Europeans and others to the Americas, from 1500 to 1750.
- We can explain relationships among the American economy and slavery, immigration, industrialization, labor and urbanization, from 1700 to present.
- We are learning how economic developments and government policies after 1865 affected the country's economic institutions including corporations, banks and organized labor.
- We are learning about major economic trends from 1000 to 1500 CE including long distance trade, banking, specialization of labor, commercialization, urbanization and technological and scientific progress.
- We can describe the economic systems and trade patterns of North America, South America and Mesoamerica before the encounter with the Europeans.
- We can describe the impact of technology (e.g., weaponry, transportation, printing press, microchips) in different parts of the world from 1500 to present.
- We are learning about Illinois, United States and world social history.
- We can describe characteristics of different kinds of communities in various sections of America during the colonial/frontier periods and the 19th century.
- We can describe characteristics of different kinds of families in America during the colonial/frontier periods and the 19th century.
- We can identify the origins and analyze the consequences of events that have shaped world social history including famines, migrations, plagues, slave trading.



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- We are learning about Illinois, United States and world environmental history.
- We can describe how early settlers in Illinois and the United States adapted to, used and changed the environment prior to 1818.
- We can describe how the largely rural population of the United States adapted, used and changed the environment after 1818.
- We can describe the impact of urbanization and suburbanization on the environment from 1850 to present.
- We can describe how the people of the Huang He, Tigris-Euphrates, Nile and Indus river valleys shaped their environments during the agricultural revolution from 4000 to 1000 BCE.
- We can explain how expanded European and Asian contacts affected the environment of both continents from 1000 BCE to 1500 CE.
- We are learning about world geography and the effects of geography on society, with an emphasis on the United States.
- We can find, describe and explain places, regions and features on the Earth.
- We are learning how people use geographic markers and boundaries to analyze and navigate the Earth (e.g., hemispheres, meridians, continents, bodies of water).
- We can explain how to make and use geographic representations to provide and improve spatial information including maps, graphs, charts, models, aerial photographs, satellite images.
- We can analyze and explain characteristics of the Earth's physical systems. We can analyze and explain interactions of the Earth's physical systems.
- We can explain how physical processes including climate, plate tectonics, erosion, soil formation, water cycle, and circulation patterns in the ocean shape patterns in the environment and influence availability and quality of natural resources.
- We can explain how changes in parts of an ecosystem affect the system overall.
- We are learning about relationships between geographic factors and society.
- We can explain how human activity is affected by geographic factors.
- We can explain how patterns of resources are used throughout the world.
- We are learning to analyze how human processes influence settlement patterns including migration and population growth.
- We are learning about the historical significance of geography.
- We can explain how and why spatial patterns of settlement change over time.
- We can explain how interactions of geographic factors have shaped present conditions.



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- We are learning about social systems, with an emphasis on the United States.
- We can compare the characteristics of cultures as reflected in their language, literature, arts, traditions and institutions.
- We can explain how language, literature, the arts, architecture and traditions contribute to the development and transmission of culture.
- We are learning about the roles and interactions of individuals and groups in society.
- We are learning to analyze how individuals and groups interact with and within institutions (e.g., educational, military).
- We can explain how social institutions contribute to the development and transmission of culture.
- We are learning how social systems form and develop over time.
- We can describe ways in which a diverse U.S. population has developed and maintained common beliefs (e.g., life, liberty and the pursuit of happiness; the Constitution and the Bill of Rights).
- We can explain how diverse groups have contributed to U.S. social systems over time.