MOSCOW SCHOOL DISTRICT
CURRICULUM GUIDE
Subject/Course: Science
Grade 4

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students apply scientific methods to conduct experiments, analyze alternative explanations and communicate results of tests. Students analyze and follow multi-step instructions.

Goal – The student will:	*Objectives (to be reached by the end of fourth grade)*	*Samples of Applications*	*Curriculum Materials (including technological resources)*	*Key Vocabulary for Standard 1*
Goal 1.1: Understand Systems, Order, and Organization	• 4.S.1.1.1 Explain that a system consists of an organized group of related objects that form a whole. (588.01.a)		• Magnetism and Electricity (FOSS) • Ideas and Inventions (FOSS) • Measurement (FOSS) • Simple Machines (FOSS)	• analyze • concept • control • data • evidence • experiment • form and function • hypothesis • inference • investigation • measure • metric • model • Observations • predications • procedures • scientific explanation • SI system • Systems • U.S. customary system of measurement • variable
Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations	• 4.S.1.2.1 Make and record observations then analyze and communicate the collected data. (588.02.a) • 4.S.1.2.2 Define observations and inferences. (588.02.b) • 4.S.1.2.3 Make, describe and/or use models. (588.02.c)			
Goal 1.3: Understand Constancy, Change, and Measurement	• 4.S.1.3.1 Describe how changes occur and can be measured (588.03.b) • 4.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (588.03.c)			
Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State No objectives at this grade level.				
Goal 1.5: Understand Concepts of Form and Function	• 4.S.1.5.1 Explain the relationship between shape and use. (588.05.a)			
Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills	• 4.S.1.6.1 Write questions that can be answered by conducting scientific tests. (589.01.a) • 4.S.1.6.2 Conduct			

	scientific tests. (589.01.b) • 4.S.1.6.3 Use appropriate tools and techniques to gather and display data. (589.01.c) • 4.S.1.6.4 Use data to construct a reasonable explanations.. (589.01.d) • 4.S.1.6.5 Make predictions based on data (589.01.e) • 4.S.1.6.6 Analyze alternative explan-ations. (589.01.f) • 4.S.1.6.6 Communicate the results of tests to others in multiple formats. (589.01.g)			
Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors - No objectives at this grade level.				
Goal 1.8: Understand Technical Communication	• 4.S.1.8.1 Analyze and follow multi-step instructions. (598.02a)			

Standard 2: Physical Science

Students use scientific instruments to describe and measure the properties of the three states of matter.

Goal – The student will:	***Objectives*** ***(to be reached by the end of fourth grade)***	***Samples of Applications***	***Curriculum Materials*** ***(including technological resources)***	***Key Vocabulary for Standard 2***
Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions	• 4.S.2.1.1 Use instruments to measure properties. (590.01.a) • 4.S.2.1.2 Describe the physical properties of solids, liquids, and gases. (590.01.b) • 4.S.2.1.3 Explain the changes caused by heating and cooling materials. (605.01.c)		• Measurement (FOSS)	• Compounds • Elements • gas • liquids • mixtures • physical change • physical properties • solids
Goal 2.2: Understand Concepts of Motion and Forces - No objectives at this grade level				
Goal 2.3: Understand the Total Energy in the Universe is Constant - No objectives at this grade level.				
Goal 2.4: Understand the Structure of Atoms - No objectives at this grade level.				
Goal 2.5: Understand Chemical Reactions - No objectives at this grade level.				

Standard 3: Biology

Students analyze how plants and animals adapt to their environments. Students classify vertebrates.

Goal – The student will:	*Objectives (to be reached by the end of fourth grade)*	*Samples of Applications*	*Curriculum Materials (including technological resources)*	*Key Vocabulary for Standard 3*
Goal 3.1: Understand the Theory of Biological Evolution	• 4.S.3.1.1 Analyze and communicate the adaptations of plants and animals to their environment. (592.01.a) • 4.S.3.1.2 Describe the difference between vertebrate and invertebrate animals. (592.01.c) • 4.S.3.1.3 Classify the five groups of vertebrates (mammal, reptiles, amphibians, birds, and fish) based on characteristics. (592.01.c)			• cells • compare and contrast • energy • photosynthesis • traits
Goal 3.2: **Understand the Relationship between Matter and Energy in Living Systems -** No objectives at this grade level.				
Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things - No objectives at this grade level.				

Standard 4: Earth and Space Systems

Students investigate the basic contents of our solar system.

Goal – The student will:	*Objectives (to be reached by the end of fourth grade)*	*Samples of Applications*	*Curriculum Materials (including technological resources)*	*Key Vocabulary for Standard 4*
Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems	• 4.S.4.1.1 Compare and contrast the basic components of our solar system (planets, sun, moon, asteroids, comets, meteors). (594.01.b) • 4.S.4.1.2 Explain the effect of gravity on orbits and objects. (594.01.c) • 4.S.4.1.3 Explain the effect of moon's gravity on Earth's tides. (594.01.c)			• atmosphere • classification • climate • continental drift • erosion • rock cycle • tectonics
Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System No objectives at this grade level.				

Standard 5: Personal and Social Perspectives; Technology

Students explain how people have invented tools to meet a need or do a job.

Goal – The student will:	*Objectives (to be reached by the end of fourth grade)*	*Samples of Applications*	*Curriculum Materials (including technological resources)*	*Key Vocabulary for Standard 5*
Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced No objectives at this grade level.				• environment • nonrenewable • renewable • technology
Goal 5.2: Understand the Relationship between Science and Technology	• 4.S.5.2.1 Identify tools used for space exploration and for scientific investigations. (595.01.b)			
Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them - No objectives at this grade level.				

Terms of significance that are not derived from a particular standard

aquarium
astronomy
biology
cell wall
cementing
chemistry
chloroplasts
chromosomes
compacting
convert
crust
display data
dominant
ecology
ecosystem
engineering
environmental
flexible
geology
hibernating
hydroelectric
inner core
mantle
manufacturing
mass
molecules
nucleus
nutrients
outer core
phase
physics
population
precipitation
processes
rate
recessive
recyclable
rigid
sediment
state
vaporize
weathering