

ACTIVE SCIENCE CURRICULUM MAP

Grade Levels: 3rd-5th

MISSION # and TITLE	DESCRIPTION	LEVELS	CURRICULUM STANDARDS	LEARNING OBJECTIVES
1. Exploring Science	Introduces the series of steps used to explore science, such as making a hypothesis, collecting data, analyzing results; and drawing conclusions.	12	MA Science Standards Grades 3-5: Inquiry “(Students begin) Formulating a hypothesis, planning the steps of an experiment and determining the most objective way to test the hypothesis... incorporating mathematical skills of measuring and graphing to communicate findings” (p.10)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the scientific method
2. Fitness Frenzy	Introduces concepts of physical fitness, including aerobic endurance, muscle flexibility, muscular strength, speed of movement, power and hydration	8	MA Health Standards Fitness “Students will, by repeated practice, utilize principles of training and conditioning, will learn biomechanics and exercise physiology, and will apply the concept of wellness to their lives.” (p. 4)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding fitness
3. Calorie Countdown	Introduces calories through the exploration of energy, calories burned, daily averages, empty calories, and portion sizes	10	MA Health Standards (K-5) Nutrition “Students will gain the knowledge and skills to select a diet that supports health and reduces the risk of illness and future chronic diseases.” (p.4)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding calories and healthy eating
4. Beat-by-Beat	Introduces students to functions of the heart with a focus on the relationships between heart rate, blood	6	MA Health Standards (K-5) Body Systems “Name the external and internal parts of the body and the body systems (nervous, muscular, skeletal, circulatory, respiratory, digestive, endocrine, and excretory systems). (p.	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the heart and its functions

	pressure and benefits of exercise		21)	
5. Energy Balance	Introduces the concept of energy balance and its role in maintaining a healthy lifestyle through proper eating habits and frequent exercise	8	MA Health Standards (K-5) Fitness “Identify the major behaviors that contribute to wellness (exercise, nutrition, hygiene, rest, and recreation) (p. 24)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding energy balance
6. Rethink Your Drink	Introduces students to the idea of healthy drinking habits by focusing on the amount of sugar and calories in popular beverages	6	MA Health Standards (K-5) Nutrition “Students will gain the knowledge and skills to select a diet that supports health and reduces the risk of illness and future chronic diseases.” (p.4)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding calories, sugars and healthy drinking habits
7. Sports Science I	Introduces concepts of sports sciences including speed, velocity and momentum	8	MA Science Standards (6-8) Motion of Objects “Explain and give examples of how the motion of an object can be described by its position, direction of motion, and speed.” (p. 68)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding, speed, velocity and momentum
8. Fast Food	Introduces students to healthy eating habits by focusing on fats (good and bad), calories and fast food choices	6	MA Health Standards (K-5) Nutrition “Students will gain the knowledge and skills to select a diet that supports health and reduces the risk of illness and future chronic diseases.” (p.4)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding fats, calories and fast food

Grade Levels: 1st and 2nd

MISSION # and TITLE	DESCRIPTION	LEVELS	CURRICULUM STANDARDS	LEARNING OBJECTIVES
1. Exploring Science	Introduces the concepts of the scientific theory including how to ask a question, how to form a hypothesis, gather data, analyze the data, and draw a conclusion from it	7	MA Science Standards Grades 1 st -2 nd : Students learn to ask questions about objects, organisms, and events in the environment. Tell about why and what would happen if? Make predictions based on observed patterns. Name and use simple equipment and tools to gather data and extend the senses. Record observations and data with pictures, numbers, or written statements. Discuss observations with others. (p.6)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the basics concepts of the scientific theory and model
2. Force and Motion I	Introduces the concept of basic physics with easy breakdown of motion, speed, force, direction, and friction	7	MA Physical Science Standard Grades 1 st and 2 nd : Students demonstrate that the way to change the motion of an object is to apply a force (give it a push or a pull). The greater the force, the greater the change in the motion of the object. Students describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round- and-round, fast, and slow. (p.54)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the basics of physics
3. Senses	Introduces the 5 sense of the body and goes into detail of each sense individually	7	MA Life Science Standard Grades 1 st -2 nd : Recognize that people and other animals interact with the environment through their senses of sight, hearing, touch, smell, and taste. (p.40)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the five senses of the body
4. States of Matter	Introduces students to what matter is, the various states of matter (solid, liquid, and gas), and differentiate between living and	7	MA Physical Science Standard Grades 1 st and 2 nd : Students identify objects and materials as solid, liquid, or gas. Recognize that solids have a definite shape and that liquids and gases take the shape of their container. (p.53)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the states of matter

	non-living matter			
5. Properties of Matter	Introduces students to the various properties of matter (color, shape, size, texture)	8	MA Physical Science Standard Grades 1 st -2 nd : Students sort objects by observable properties such as size, shape, color, weight, and texture. (p. 53)	Students should be able to identify key terms, analyze data and answer fundamental questions regarding properties of matter

6. Weather	Introduces the concepts of weather and water cycle, including condensation, evaporation, and precipitation.	7		Students should be able to identify key terms, analyze data and answer fundamental questions regarding the weather.
7. Math Addition	Introduces the concept of addition including solving word problems.	8	MA Math Standards Grades 1st and 2nd: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Students should be able to apply addition to solve word problems and give examples of addition problems. Students will be able to solve number stories of various types using addition strategies accurately.

8. Subtraction	Introduce the concept of subtraction including solving word problems.	8	MA Math Standards Grades 1st and 2nd: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Students should be able to apply subtraction to solve word problems and be able to give examples of addition problems. Students will be able to solve number stories of various types using subtraction strategies accurately.
9. Interpreting Graphs	Introducing the concept of interpreting graphs, analyzing data and drawing a conclusion based on the data.	8	MA Science Standards Grades 1st and 2nd: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	Students should be able to analyze data and be able to answer fundamental questions regarding graph interpretation.
10. Making Graphs	Introducing the concept of inputting data into a graph to be analyzed and interpreted.	8	MA Science Standards Grades 1st and 2nd: Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	Students should be able to input data into graphs and be able to answer fundamental questions regarding data collection.

11 Place Value	Introduce the concept of place values, including being able to understand and identify the place values of two-digit and three-digit numbers.	8	Ma Math Standards Grades 1st and 2nd: Understand that the two digits of a two-digit number represent amounts of tens and ones. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.	Students should be able to identify place values of two- digit and three-digit numbers. Students should be able to identify the place values of two-digit and three-digit numbers using hundreds, tens, and ones.
12. Time	Introduce the concept of telling time and be able to apply in word problems.	8	Ma Math Standards Grades 1st and 2nd: Tell and write time in hours and half-hours using analog and digital clocks. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	Students should be able to analyze and interpret data, and answer fundamental questions regarding to time. Students will be able to tell and write time to the nearest five minutes using analog and digital clocks; solve number stories involving concepts of time; use a.m. and p.m. accurately.

Grade Level: KINDERGARTEN

MISSION # and TITLE	DESCRIPTION	LEVELS	CURRICULUM STANDARDS	LEARNING OBJECTIVES
1. What is Science?	Introduces the basic concepts of science and describes the concepts of the scientific method.	8	MA Science Standards In kindergarten, students build on early experiences observing the world around them as they continue to make observations that are more quantitative in nature and help them identify why some changes occur. Students begin to learn to use these observations as evidence to support a claim through growing language skills.	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the basic philosophies of the scientific method.
2. Classifying Objects	Introduces the idea of categorizing objects based on different criteria. Classifies living from non-living things.	8	K-LS1-1. Observe and communicate that animals (including humans) and plants need food, water, and air to survive. Animals get food from plants or other animals. Plants make their own food and need light to live and grow. K-LS1-2(MA). Recognize that all plants and animals grow and change over time.	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the basics concepts of
3. Living Things	Introduces the basic concepts of the processes of living organisms.	8	K-LS1- 1. Observe and communicate that animals (including humans) and plants need food, water, and air to survive. Animals get food from plants or other animals. Plants make their own food and need light to live and grow. K-LS1- 2(MA). Recognize that all plants and	Students should be able to identify key terms and answer fundamental questions about the structure and processes of living organisms.

			animals grow and change over time.	
4. Our Bodies	Introduces basic concepts of human anatomy and physiology	8		Students should be able to identify the basic structure of the human body as well answer fundamental questions about the five senses.
5. Seasons	Introduces the basic concepts of seasonal changes including weather patterns and temperature.	8	K-ESS2-1. Use and share quantitative observations of local weather conditions to describe patterns over time. Examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month, and relative to temperature.	Students should be able to identify key terms regarding weather, temperature and answer fundamental questions about the four seasons.
6. Motion	Introduces the basic concepts of motion in multiple planes.	8	K-PS2-1. Compare the effects of different strengths of different directions of pushes and pulls on the motion of an object.	Students should be able to identify key terms and answer fundamental questions about motion.