

ACTIVE SCIENCE CURRICULUM MAP

1st/2nd Grade

LESSON # and TITLE	DESCRIPTION	LEVELS	COMMON CORE STANDARDS	LEARNING OBJECTIVES	ASSESSMENT
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	<i>MA Science Standards Grades 1st-2nd: 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)</i>	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	<i>MA Physical Science Standard Grades 1st and 2nd: 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,</i>	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the basics of physics	

			<i>such as in a straight line, zigzag, back-and-forth, round- and-round, fast, and slow. (p.54)</i>		
3. Senses	Introduces the 5 sense of the body and goes into detail of each sense individually	7	<i>MA Life Science Standard Grades 1st-2nd: Recognize that people and other animals inter- act with the environ- ment through their senses of sight, hearing, touch, smell, and taste. (p.40)</i>	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 non-living matter	7	<i>MA Physical Science Standard Grades 1st and 2nd: 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)</i>	Students should be able to identify key terms, analyze data and answer fundamental questions regarding the states of matter	
5. Properties of Matter	Introduces students to the various properties of matter (color, shape, size, texture)	8	<i>MA Physical Science Standard Grades 1st-2nd: Students sort objects by observable properties such as size, shape, color, weight, and texture. (p. 53)</i>	Students should be able to identify key terms, analyze data and answer fundamental questions regarding properties of matter	

LESSON DESCRIPTIONS

Lesson 1: Exploring Science (0 Data Driven, 7 Theoretical)

LEVEL	PURPOSE	Practical Application	KEY WORDS	FEATURES	DATA (ANALYSIS)	Wrap-Up
1 (T)	To learn what a Question is.	How do you ask a question?	Question, Who, What, Where, When, Why, How	Ability to identify what a question looks like and how it is structured.	None	Go ask a friend a question about their day.
2 (T)	To explain and teach the students what a hypothesis is	What is a good hypothesis for the question, "Why is exercise good for you?"	Hypothesis	Identification of a proper hypothesis from 3 given possibilities	None	Make a hypothesis for the question, "How could you take more steps during your next Active Science session?"
3 (T)	Learn what an experiment is and how they are used to test a hypothesis	Which experiment best tests the hypothesis, "Exercise is good for you because it keeps you healthy."	Hypothesis, Experiment	Identification of an experiment based on a given hypothesis	None	What experiment could you do to test the hypothesis, "I can win the race if I practice everyday."
4 (T)	Learn what a procedure is and how it relates to the scientific theory	Procedure order is important and should be followed	Procedure	Match the picture with the proper procedure order	None	Tell a friend you would use to get ready for bed.
5 (T)	Learn what and observation is and how it relates to the scientific theory	You are experiment with a soccer ball and a football to see which one rolls further	Experimenting, Observation	Be able to accurately make an observation during and experiment	None	Make an observation about what is happening around you. Tell your YMCA leader what you see.
6 (T)	Learn what results are and introduce what a bar graph is	Which results best match the hypothesis, "A soccer ball rolls better than a football."	Results, Hypothesis, Observation, Experiment	Identification of the best matched results based on a given hypothesis	None	Today you found out that results are what you learn from an experiment. You did and experiment on how many steps you took while running and how many you took while walking. Tell a

						friend what you think the results would be.
7 (T)	Learn what a conclusion is and its relation to the scientific theory	Which conclusion matches the bar graph?	Conclusion, Hypothesis, Experiment	Identification of a proper conclusion based on data given	None	Today you learned that a conclusion uses results to see if the hypothesis was right or wrong. Make a conclusion below. Tell a friend.

Lesson 2: Forces and Motion I (0 Data Driven, 7 Theoretical)

LEVEL	PURPOSE	Practical Application	KEY WORDS	Features	DATA (ANALYSIS)	Warp-Up
1 (T)	To learn about the concept of motion	Which object is in motion?	Motion	Identify an object that is in motion	None	Tell a friend about something you saw in motion during your activity today.
2 (T)	To learn about the different types of motion	Object matching with motion type	Motion	Match objects with their specific type of motion	None	Tell a friend what type of motion you used during Active Science today.
3 (T)	To learn about what speed is.	Matching animals with relative speed	Speed, Fast, Faster, Fastest	Identification of relative speeds	None	What were you doing when you were at your fastest today?
4 (T)	To learn about what force is	More force = more speed	Speed, Force, Push, Pull	Identification of how force affects speed	None	Picture of push and pull identification

5 (T)	To learn about direction	What direction is and how force also affects direction	Direction, Push, Pull	Identify change of direction	None	Go act out one type of direction and have your friend guess what kind of direction it is
6 (T)	To learn about how pushing and pulling can start and stop motion	Does this picture show someone pushing or pulling to start moving the backpack?	Push, Pull, Motion, Start, Stop	Choose "push" or "pull" to identify the picture	None	Can you think of a time during Active Science that you started or stopped something by pushing or pulling?
7 (T)	To learn about friction	Which place does the ball move with the LEAST friction	Friction	Identify images relating to friction	None	Which type of floor in the YMCA has the least friction

Lesson 3: Senses (0 Data Driven, 7 Theoretical)

LEVEL	PURPOSE	Practical Application	KEY WORDS	Features	DATA (ANALYSIS)	Wrap-Up
1 (T)	Introduce the topic of the 5 senses	The five senses are touch, taste, smell, hearing, and sight	Hearing, Taste, Touch, Smell, Sight, Senses	Identify 2 senses out of 3 possible choices	None	Walk around the room and use your sense to notice what you hear, see, smell, taste, and touch
2 (T)	More in depth on Touch	Touch is when you use your skin to feel things.	Touch, Senses	Match the way an object feels with that object	None	How can you describe the things you touched today during Active Science?
3 (T)	In depth on Sight	Sight is using your eyes to see things around you.	Sight, Senses	Choose the best word to describe a picture	None	How have you used this sense today during Active Science?
4 (T)	In depth on Hearing	Hearing is a sense that uses your ears to notice sounds.	Hearing, Senses	Correct identification of objects with their respective sounds	None	Tell a friend 5 sounds you heard today.
5 (T)	In depth on Taste	Your sense of taste uses your mouth and tongue to	Taste, Senses	Matching food their its	None	What taste words can you use to describe your lunch

		send information to your brain		respective taste		today?
6 (T)	In depth on Smell	Your sense of smell uses your nose to notice things around you.	Smell, Senses	Matching the correct smell with a respective image	None	Tell your Active Science leader 5 smells that you noticed today>
7 (T)	Recap on the 5 senses	You have these senses to notice things around you and to keep you safe	Touch, Taste, Smell, Hearing, Sight, Senses	Match the sense you would use to keep you safe	None	Tell a friend how you use your five senses during Active Science.

Lesson 4: States of Matter (0 Data Driven, 7 Theoretical)

LEVEL	PURPOSE	Practical Application	KEY WORDS	Features	DATA (ANALYSIS)	Wrap-Up
1 (T)	Introduction of what Matter is.	Matter can be put into three groups: solids, liquids, and gases	Matter, Solid, Liquid, Gas, Living, Non-Living	Sort Living and nonliving objects	None	Tell a friend one living thing and one non-living thing at Active Science.
2 (T)	Introduction to what Mass is.	Mass is how much matter weighs.	Matter, Mass	Put the pictures in order from heaviest mass to lightest mass.	None	Compare your mass to a piece of equipment from Active Science. Which is heavier?
3 (T)	Introduction to what Volume is.	Volume is the amount of space something takes up.	Volume, Mass	Put the pictures in order from least volume to most volume	None	Find two objects in the room. Which one has more volume? Tell your Active Science Leader
4 (T)	In depth of Solids	Solids are things that stay the same shape. They can look very different from each other	Solids, Mass, Volume, Matter	Which pictures are solids? (Pick multiple pictures)	None	What solids did you use during Active Science today?

5 (T)	In depth of Liquid	Liquid is a kind of matter that does not have its own shape, they take the shape of the object its in.	Liquid, Matter	Which one is not filled with a liquid	None	What liquids did you see or drink today?
6 (T)	In depth on Gas	Gas is a kind of matter that is in the air, can take the shape of the object its in, and can be invisible.	Gas, Matter	Which objects are filled with gas? (Multiple correct answers)	None	Tell a friend three kinds of gases.
7 (T)	Introduction to what Groups are.	Groups are a way to organize similar things	Groups, Matter, Solids, Liquids, Gases	Drag the picture into the state of matter	None	What group does Gatorade, water, and juice belong in? Tell a friend.

Lesson 5: Properties of Matter (0 Data Driven, 8 Theoretical)

LEVEL	PURPOSE	Practical Application	KEY WORDS	Features	DATA (ANALYSIS)	Wrap-Up
1 (T)	To learn what a property of matter is.	A property is a way to describe an object. (texture, color, size, shape)	Property, Texture, Color, Shape, Size	Describe properties of a soccer ball	None	Pick an object in the room and describe its properties to a friend
2 (T)	To learn what a color is	One property that describes the shade of something. This is called a color	Color, Property, Shade	Match colors to a picture of a shoe	None	What is the color of your sneakers?
3 (T)	To learn what a shape is	A shape is the outline of an object	Shape, Property, Color	Match pictures to the shape word	None	Tell a friend how the shape of water changes when an ice cube melts.
4 (T)	To learn what flexibility is	Flexibility is how much something bends	Flexibility, Property, Shape	Order the pictures in order from most to least flexible	None	Find a flexible object in Active Science.

5 (T)	To learn what texture is	Texture is how something feels	Texture, Property	Match texture words to pictures of objects	None	How is the texture of a basketball court different than the texture of a soccer field? Tell a friend.
6 (T)	To learn about what size is	Size is how big or small something is	Size, Property	Match the size word to the pictures of objects	None	Find three objects and line them up biggest to smallest.
7 (T)	To learn about what temperature is	Temperature is how hot or cold something is	Temperature, Property	Match the temperature word to pictures	None	What was the temperature outside today? (Hot, Warm, or Cold). Tell and Active Science leader.
8 (T)	Recap on what the properties of matter are	When the size, shape, or color of matter changes, it is called a physical change	Size, Shape, Color, Flexibility, Texture	Identify which picture is not a physical change	None	How can you physically change a piece of paper? Tell a friend.