ELEMENTARY SCIENCE KINDERGARTEN CURRICULUM

Course 50020

Kindergarten students will be introduced to thebasic principles and practices of science in an integrated program. They study topics from Biology, Physical science, Earth science, and Ecology. With help and support, students will conduct investigations posing hypotheses, making observations, using scientific tools to collect data, analyze data, represent findings in models and draw conclusions. Major topics to be studies are.

KINDERGARTENSCIENCE OUTLINE:

Goals	Skills	Summative Assessments	Time Frame	Main Resources
• Explain and give examples of what "science" means. • Tell what safety is and explain its importance in science. • Describe what makes up our Earth. • Name and describe different types of weather. • Explain the difference between day and night. • Explain what water is and where it can be found. • Explain what "living" means and give examples of living things. • Give examples of what living things need to grow. • Give examples of how people are the same and how they can be different. • Give examples of how people can work together to protect our environment. • Provide examples of what technology is used for.	• Give examples of science tools and tell their uses. • Give examples of plant and animal differences. • Explain what it means to be healthy and tell examples of things someone can do stay healthy. • Participate in simple investigations to answer a question or test a prediction. • Explain differences between homes for people and homes for animals.	Weekly Tests	1-year	Environton Sources

KINDERGARTENSCIENCE MAP:

TIME FRAME	BIG IDEAS	CONCEPTS	ESSENTIAL QUESTIONS	STANDARDS	OBJECTIVES	DIFFERENTIATION	ASSESSMENT
Week 1	• Earth-Space Science	1. Time for science	• What does science mean	3.1.K.A9 • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists. S.K-2.A.1.1.1 Identify a scientific fact as something that can be observed using the five senses. S.K-2.A.1.1.2 Identify examples of technology. S.K-2.A.1.1.3 Describe how technology can help people (e.g., home appliances, phones, computers, transportation). S.K-2.A.2.1.1	• The learner will be able to explain and give examples of what “science” means	For students who struggle, only cut out the student’s name. Keep the rest of the sentence intact. The student would only need to connect their name to their sentence strip. LOW/1	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/1+Science+Assessment001.pdf

				Understand that making a change to an investigation may change the outcome(s) of the investigation. S.K-2.A.2.1.2 Describe outcomes of an investigation. S.K-2.A.2.2.1 Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer). S.K-2.A.3.1.1 Describe a system as being made of multiple parts that work together.			
Week 2	• Earth Space Science	1. World of science	• What are science tools and how can they help us?	3.1.K.A9 • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists. S.K-2.A.1.1.1 Identify a scientific fact as something	• The learner will be able to give examples of science tools and tell what they are used for	Present paper, pencils and pens to the class to show writing tools. Counting blocks, rulers and scales are tools for math. Students may need to see these tools to understand what tools are in the educational world.	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/2+Science+Assessment001.pdf

				that can be observed using the five senses. S.K-2.A.1.1.2 Identify examples of technology. S.K-2.A.1.1.3 Describe how technology can help people (e.g., home appliances, phones, computers, transportation). S.K-2.A.2.1.1 Understand that making a change to an investigation may change the outcome(s) of the investigation. S.K-2.A.2.1.2 Describe outcomes of an investigation. S.K-2.A.2.2.1 Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer). S.K-2.A.3.1.1 Describe a system as being made of multiple parts that work together.			
Week3	• Earth Space Science	1. Science safety	• What does "safety" mean and why is it important?	3.1.K.A9 • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current	• The learner will be able to tell what "safety" means and why it is important in science	Give students the opportunity to discuss rules that they might have in their homes. Why are house rules important? LOW/1	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/3+Safety+Assessment.pdf

				scientific knowledge. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists. S.K-2.A.1.1.1 Identify a scientific fact as something that can be observed using the five senses. S.K-2.A.1.1.2 Identify examples of technology. S.K-2.A.1.1.3 Describe how technology can help people (e.g., home appliances, phones, computers, transportation). S.K-2.A.2.1.1 Understand that making a change to an investigation may change the outcome(s) of the investigation. S.K-2.A.2.1.2 Describe outcomes of an investigation. S.K-2.A.2.2.1 Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer). S.K-2.A.3.1.1 Describe a system as being made of multiple parts that work together.			
Week 4	• Earth Space Science	1. Earth	• What is “Earth” and what do you think it is made of?	3.3.K.A1 Distinguish between three types of earth materials – rock, soil, and sand. S.K-2.D.1.1.1 Identify different types of Earth materials (e.g., rock, soil, sand, pebbles).	• The student will be able to give examples of what makes up our earth (ie: water, land, soil, etc.	Challenge students by asking questions about the picture of Earth. What color represents water? What color represents land? LOW/1 Is there more	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/4+Earth+Assessment001.pdf

						water or land on Earth? How can you tell? MODERATE/2	
Week 5	• Earth Space Science	1. Water	• Where can water be found and why is water so important to living things?	3.3.K.A4 Identify sources of water for human consumption and use.	• The students will be able to give examples of where water can be found and give reasons why water is important to living things •	To challenge students, ask if they can name other forms of water. Talk briefly about snow, ice, steam, etc.	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/5+Water+Assessment001.pdf
Week 6	• Earth Space Science	1. Weather	• What are different types of weather?	3.3.K.A4 Identify sources of water for human consumption and use. 3.3.K.A5 Record daily weather conditions using simple charts and graphs Identify seasonal changes in the environment. Distinguish between types of precipitation. S.K-2.D.2.1.1 Identify weather variables (i.e., temperature, wind speed, wind direction, and precipitation). S.K-2.D.2.1.2 Identify how weather conditions affect daily life.	• The students will be able to tell examples of different types of weather	Ask students to pretend that the kids on the cover are wearing shorts, T-shirts, sandals and sunglasses. What type of weather would they be dressed for? (sunny and hot) MODERATE/2	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/6+Weather001.pdf
Week 7	• Earth Space Science	1. Day and night	• How are day and night different from one another?	3.3.K.A7 • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct	• The students will be able to tell examples of how day and night are different (i.e.: sun vs. moon and stars, light vs. dark)	Make a thinking bubble with the class. On construction paper or poster board, draw and cut out a conversation bubble. As students hold the “Thinking Bubble” over their heads, have students state their thoughts or what they know about the concepts of day or night. LOW/1	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/7+Day+and+Night001.pdf

				explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists. S.K-2.A.1.1.1 Identify a scientific fact as something that can be observed using the five senses. S.K-2.A.1.1.2 Identify examples of technology. S.K-2.A.1.1.3 Describe how technology can help people (e.g., home appliances, phones, computers, transportation). S.K-2.A.2.1.1 Understand that making a change to an investigation may change the outcome(s) of the investigation. S.K-2.A.2.1.2 Describe outcomes of an investigation. S.K-2.A.2.2.1 Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer). S.K-2.A.3.1.1 Describe a system as being made of multiple parts that work together.			
Week 8	• Earth Space Science	1. Sun	• What are some ways the sun can help us? How can the sun hurt us?	3.3.K.A7 • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing	• The students will be able to tell how the sun can help us. • The student will be able to explain	Make a chart with drawings to illustrate where the sun is in the sky during different times of day. Having a	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/8+Sun+Assessment001.pdf

				the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists. S.K-2.A.1.1.1 Identify a scientific fact as something that can be observed using the five senses. S.K-2.A.1.1.2 Identify examples of technology. S.K-2.A.1.1.3 Describe how technology can help people (e.g., home appliances, phones, computers, transportation). S.K-2.A.2.1.1 Understand that making a change to an investigation may change the outcome(s) of the investigation. S .K-2.A.2.1.2 Describe outcomes of an investigation. S.K-2.A.2.2.1 Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler,	how a sun burn can happen and how it can be prevented.	visual for students to refer to will help with their understanding.	

				balance scale, thermometer). S.K-2.A.3.1.1 Describe a system as being made of multiple parts that work together.			
Week 9	• Life Science	1. Life	• What does "living" mean?	3.1.K.A1 Identify the similarities and differences of living and non-living things. S.K-2.B.3.1.1 Distinguish between living and nonliving things. S.K-2.B.3.1.2 Identify plants and animals as living things.	• Students will be able to explain what "living" means and give examples of living things	Before starting this activity with the class, have a sorting mini lesson using pattern blocks as an example. What are the different ways to sort blocks? Color? Shape? Size? Now, how can we sort living things? People? Plants? Animals? MODERATE/2	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/9+Life+Assessment001.pdf
Week 10	• Life Science	1. Plants	• What do plants need to live?	3.1.K.A1 Identify the similarities and differences of living and non-living things. S.K-2.B.3.1.1 Distinguish between living and nonliving things. S.K-2.B.3.1.2 Identify plants and animals as living things.	• The students will be able to tell what plants need to survive	To strengthen the connection between what a plant needs and what is available in its environment. Ask students a series of questions. What kinds of plants grow in the desert? Do they need a lot of water? Would you find a water lily in the middle of the desert? Why or why not? LOW/1 Ask the students to try to explain their thinking.	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/10+Plant+Assessment001.pdf
Week 11	• Life Science	1. Animals	• How are some animals alike? • How are animals different from one another?	3.1.K.A1 Identify the similarities and differences of living and non-living things. 3.1.K.A3 Observe, compare, and describe stages of life cycles for plants and/or	• The students will be able to give examples of animals that are alike and explain. • The students will be able to give examples are	To stretch students thinking, ask them if they can describe the habitats of each bird. Would a hummingbird have a nest in a	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/11+Animals+Assessment001.pdf

				animals. 3.1.K.A5 Observe and describe structures and behaviors of a variety of common animals. S.K-2.B.1.1.1 Describe basic external structures of animals and plants. S.K-2.B.1.1.2 Identify a plant or animal based on a given life cycle stage (e.g., butterfly, frog, seed-producing plant). S.K-2.B.3.1.1 Distinguish between living and nonliving things. S.K-2.B.3.1.2 Identify plants and animals as living things.	animals that are different and explain.	tree? Look at the ostrich. Do you think an ostrich would have a little nest in the top of a tree? Or would it have a nest on the ground? Is an ostrich's egg small or large? Why or why not? MODERATE/2 Have children explain their thinking.	
Week12	• Life Science	1. People	• How can people be alike? • How are people different from each other?	3.1.K.A1 Identify the similarities and differences of living and non-living things. S.K-2.B.3.1.1 Distinguish between living and nonliving things. S.K-2.B.3.1.2 Identify plants and animals as living things.	• The students will be able to explain how some people can be alike. • The students will be able to explain how people are different from one another.	To help students better understand how people can be alike and different, have students name ways that two classmates are alike and different. Then have students do the same with two teachers. MODERATE/2	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/12+People+Assessment001.pdf
Week13	• Life Science	1. Living things grow.	• What do living things need to grow?	3.1.K.A3 Observe, compare, and describe stages of life cycles for plants and/or animals. S.K-2.B.1.1.1 Describe basic external structures of animals and plants. S.K-2.B.1.1.2 Identify a plant or animal based on a given life cycle stage (e.g., butterfly, frog, seed-producing plant).	• The students will be able to tell examples of what living things need to grow	Show a different way to plant seeds. Place a damp paper towel in a plastic bag along with a lima bean seed. Seal the plastic bag and tape it on the classroom window. See how long it takes for the seeds to	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/13+Living+Things001.pdf

						grow in soil compared to the seeds in a plastic bag.	
Week14	• Life Science	1. Be Healthy	• What are ways to stay healthy?	3.1.K.A1 Identify the similarities and differences of living and non-living things. S.K-2.B.3.1.1 Distinguish between living and nonliving things. S.K-2.B.3.1.2 Identify plants and animals as living things.	• The students will be able to explain what it means to be healthy and tell examples of things someone can do stay healthy.	Give students an assortment of pictures of people practicing healthy habits. Provide a three column-sorting sheet labeled healthy eating, healthy exercise and healthy body. Have students sort the pictures and place them according to the healthy activity that the person is demonstrating.	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/14+Be+Healthy+Assessment001.pdf
Week15	• Life Science	1. Families	• What is a "family"? • How can families be different?	3.1.K.B1 Observe and describe how young animals resemble their parents and other animals of the same kind.	• The students will be able to explain what it means to be a "family". • The students will be able to recognize differences in families and discuss.	Ask students to look at the cover picture again. This mother duck and her ducklings are likely to be near a pond. Ask students to name other animal families that might live near a pond. LOW/1 When charting students responses, write the adult animal name along with the baby animal name. (Ex. Frog and tadpole)	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/15+Family+Assessment001.pdf
Week16	• Life Science	1. Homes	• What is a home? • How are homes different for people and animals?	3.1.K.C2 Describe changes animals and plants undergo throughout the seasons. 3.1.K.C3 CONSTANCY AND CHANGE	• The students will be able to explain what a "home" is for people and animals. • The students will be able to explain	To strengthen the connection between what an animal needs and what is available in its habitat, ask	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/16+Homes+Assessment001.p

				Describe changes that occur as a result of climate.	differences between homes for people and homes for animals.	several questions. What animals live in the Arctic? How do they stay warm? Would you find a lizard in the Arctic? Why or why not? LOW/1 Ask the students to try to explain their thinking.	df
Week17	• Life Science	1. Share the Earth	• How could we help take care of Earth?	3.1.K.A5 Observe and describe structures and behaviors of a variety of common animals. S.K-2.B.1.1.1 Describe basic external structures of animals and plants. S.K-2.B.1.1.2 Identify a plant or animal based on a given life cycle stage (e.g., butterfly, frog, seed-producing plant).	• The students will be able to tell examples of ways that people can work together to take care of the earth.	Ask students to think of other ways they can help to share Earth's resources. Have students explain their thinking by indicating what resource they would save and who it would help. Would it help humans, animals or both? LOW/2	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/17+Share+the+Earth+Assessment.pdf
Week18	• Life Science	1. Technology	• What does the word "technology" mean? • What is technology used for?	3.1.K.A9 • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and	• The students will be able to explain what "technology" means. • The students will be able to tell examples of what technology is used for.	Challenge students by asking if they can name different technology that is used by their city or town. Add their ideas to the chart.	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/Week+10+Assessment001.pdf

				compare them with their current scientific knowledge. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists. S.K-2.A.1.1.1 Identify a scientific fact as something that can be observed using the five senses. S.K-2.A.1.1.2 Identify examples of technology. S.K-2.A.1.1.3 Describe how technology can help people (e.g., home appliances, phones, computers, transportation). S.K-2.A.2.1.1 Understand that making a change to an investigation may change the outcome(s) of the investigation. S.K-2.A.2.1.2 Describe outcomes of an investigation. S.K-2.A.2.2.1 Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer). S.K-2.A.3.1.1 Describe a system as being made of multiple parts that work together.			
Week 19	• Physical Science	1. Materials	• What are things made of?	3.2.K.A1 Identify and classify objects by observable properties of matter. Compare different kinds of materials and discuss their uses. S.K-2.C.1.1.1 Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking	• The students will be able to tell examples of objects and what they are made of.	Challenge students by asking what senses we lose when we are blindfolded. LOW/1 Which senses do we depend on more without our	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/Week+19+Assesment.pdf

				and cooking, freezing, heating, evaporating, melting).		sight? LOW/1	
Week 20	• Physical Science	1. Things can change.	• How can things change?	3.2.K.A3 Describe the way matter can change. 3.2.K.A5 CONSTANCY AND CHANGE Recognize that everything is made of matter. S.K-2.C.1.1.1 Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).	• The students will be able to tell examples of things that can change and how they change.	Challenge students' thinking by asking them to name other ways to change a piece of paper (folding, coloring it, etc.). LOW/1	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/Week+20+Assessment001.pdf
Week 21	• Physical Science	1. Energy	• What does energy mean?	3.2.K.A3 Describe the way matter can change. 3.2.K.A5 CONSTANCY AND CHANGE Recognize that everything is made of matter. S.K-2.C.1.1.1 Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).	• The students will be able to explain what "energy" means.	For further investigation, experiment with different possible variables. Ask students the following questions – What will happen if less water is used? If the canister is filled to the top? If half a tablet is used? HIGH/1 Discuss results. What energy forced the lid off? Where did the energy come from? HIGH/1	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/Energy+Assessment.pdf
Week 22	• Physical Science	1. Move it	• Does everything move?	3.2.K.A3 Describe the way matter can change. S.K-2.C.1.1.1 Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).	• The students will be able to tell examples of things that move	Encourage students to think of adverbs that describe movement. Create a list of these ways. Keep this list visible during this lesson. There are more opportunities during this lesson to add to the list	https://s3-us-west-2.amazonaws.com/static.studiesweekly.com/online/resources/panels_media/Week+22+Assessment001.pdf

Week 23	• Physical Science	1. Magnets and Gravity	• What kind of objects are “magnetic”?	3.2.K.A1 Identify and classify objects by observable properties of matter. Compare different kinds of materials and discuss their uses. S.K-2.C.1.1.1 Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).	• The students will be able to tell examples of items that are “magnetic” or attracted to a magnet	This lesson lends itself to many larger questions and will generate an excellent list of questions for young scientists to continue to wonder about. If time and space allows, consider adding an “ I wonder….” list to your classroom based on questions that they may ask.	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/Magnets+and+Gravity+Assessment.pdf
Week 24	• Physical Science	1. Models	• What is a “model”?	3.2.K.A1 Identify and classify objects by observable properties of matter. Compare different kinds of materials and discuss their uses. S.K-2.C.1.1.1 Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).	• The students will be able to explain what a “model” is and give some examples of models they have seen.	Challenge students by asking about the models found in a classroom? Are they all toys? Or are they tools for learning – a globe, for example? LOW/1	https://s3-us-west-2.amazonaws.com/static.studieweekly.com/online/resources/panels_media/Models+Assessment.pdf