# Syllabus Self Contained Science

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| **Subject:** | Self Contained | |
| **Grade:** | Kinder | |
| **Teacher:** | **1.** | Maria Restrepo |
| | **2.** | Sara Fonseca |
| | **3.** | Maria Andrea Pinilla |

| **GRADE GENERAL OBJECTIVE** |
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| To introduce the inquiry cycle in order to answer questions that help the student to understand better the basic characteristics of his surroundings, generating awareness of his own body and his environment |

| **INQUIRY TOPIC FIRST TERM:** | **INQUIRY TOPIC SECOND TERM:** | **INQUIRY TOPIC THIRD TERM:** |
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| How does my body perceive the surroundings?<br><br>Big Ideas: Structure/function relationships in the senses | How do I know things around me are alive or not?<br><br>Big ideas: Energy, organized structures, equilibrium with their surroundings. | How can I perceive energy in movement?<br><br>Big Ideas: Energy, structures/function |
| **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** |
| Inquiry cycle suggested question:<br><br>How do our senses help us explore, investigate and understand the world?<br><br>Topics:<br><br>5 senses<br><br>Inquiry cycle steps<br><br>Sensory exploration<br><br>Senses description<br><br>Graphic organizers: compare, classify and characterize. | Inquiry cycle suggested question:<br><br>Is soil alive?<br><br>Topics:<br><br>Characteristics of living beings.<br><br>Classification of living things<br><br>Comparison between living and non-living<br><br>Needs of living beings | Inquiry cycle suggested question:<br><br>What are the differences of the movements of living compared to non-living beings?<br><br>Topics:<br><br>Different types of movements in living beings<br><br>Movement in non living beings. Simple machines |

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| **Subject:** | Self Contained | |
| **Grade:** | Transition | |
| **Teacher:** | **1.** | Patricia Rivera |
| | **2.** | Olga Simbaqueva |
| | **3.** | Mahli Rickie |

| **GRADE GENERAL OBJECTIVE** |
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| T***o recognize patterns and relationships of specific living and non-living beings of the local surroundings by describing the changes and interactions among them through exploration, posing and extending questions and hypothesis and construction of evidences and claims to seek answers and promote environmental awareness, through inductive and analogical reasoning.*** |

| **INQUIRY TOPIC FIRST TERM:** | **INQUIRY TOPIC SECOND TERM:** | **INQUIRY TOPIC THIRD TERM:** |
|---|---|---|
| ***How the body defends from diseases?***<br>***Big ideas: Structure/function/relationships*** | ***How do animals/plants survive in nature?***<br>***Big ideas: patterns/structrure/cause-effect*** | ***How is energy expressed in different forms in our daily lives?***<br>***Big idea: Flow of energy and matter*** |
| **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** |
| **Inquiry cycle suggested question:**<br>Why we must follow healthy routines and take care of our body?<br>**Topics:**<br>Inquiry cycle steps:<br>Step 1: Engage<br>Step 2: Explore<br>Step 3: Analysis and conclusion<br>Step 4: Communicate<br>The digestive system and digestion<br>Healthy diet (food pyramid)<br>Healthy routines (washing hands, brushing teeth, vaccination, check ups)<br>Germs in my body and everywhere | **Inquiry cycle suggested question:**<br>How have animals and plants adapted to solve problems?<br>**Topics:**<br>Inquiry cycle steps:<br>Step 1: Engage<br>Step 2: Explore<br>Step 3: Analysis and conclusion<br>Step 4: Communicate<br>Plants and animals general facts<br>Food/diet<br>Ways to protect/survive/predators<br>Plants and animals adaptations | **Inquiry cycle suggested question:**<br>How different types of energy are used in our daily life activities?<br>**Topics:**<br>Inquiry cycle steps:<br>Step 1: Engage<br>Step 2: Explore<br>Step 3: Analysis and conclusion<br>Step 4: Communicate<br>Energy is important in everyday life<br>Light, sound, and heat are forms of energy<br>Energy (sound, light, heat) can move from one object or material to another object or material (transfer) |

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| **Graphic organizers:** compare, contrast, classify, cause-effect.<br><br>**Lab practice:** Observing the growth of germs in petri dishes. | Plants and animals environment (water and land)<br><br>Life cycles<br><br>Animals/plants in technology<br><br>**Graphic organizers:** concept maps, Venn diagrams, sequence maps, cause-effect<br><br>**Lab practice:** Observing the body structure of different animals. | Sounds are vibrations that we can hear and sometimes see and feel.<br><br>**Graphic organizers:** concept maps, Venn diagrams, sequence maps, cause-effect<br><br>**Lab practice:** Observing ways energy is transfered to other objects in different environments (air, water, solids) |

# Syllabus Self Contained Science

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| **Subject:** | Self Contained | |
| **Grade:** | First | |
| **Teacher:** | **1.** | Mariana Rodriguez |
| | **2.** | Marcela Pérez |
| | **3.** | Luz Maria Paredes |

| **GRADE GENERAL OBJECTIVE** |
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| **INQUIRY TOPIC FIRST TERM:** | **INQUIRY TOPIC SECOND TERM:** | **INQUIRY TOPIC THIRD TERM:** |
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| PATTERNS IN ENERGY AND MATTER | STRUCTURE-FUNCTION RELATIONSHIP IN HABITATS AND PLANTS | STABILITY AND CHANGE ON EARTH'S SURFACE |
| **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** |
| Inquiry cycle suggested question:<br><br>**Topics:**<br>1) PROPERTIES OF MATTER<br>(Patterns, Cause-effect)<br>• Describe matter<br>• Solids<br>• Liquids and gases<br>• Use matter<br>2) CHANGES OF MATTER<br>(energy and matter)<br>• Put matter together<br>• Mixtures<br>• Temperature Changes matter | Inquiry cycle suggested question:<br><br>**Topics**<br>1) LIVING THINGS IN HABITATS<br>(Structure-function)<br>• Habitats<br>• Forests and grasslands<br>• Water habitats<br>• Hot and cold deserts<br>2) PLANTS AND THEIR NEEDS<br>(cause-effect, structure-function,<br>• Plants need water<br>• Plants need light<br>• Plants make more plants | Inquiry cycle suggested question:<br><br>**Topics**<br>1) EARTH'S SURFACE<br>(patterns)<br>• Describe Earth's surface<br>• Oceans<br>• Freshwater<br>2) EARTHS'S SURFACE CHANGES<br>(Stability and change)<br>• Weathering and erosion<br>• Quick changes to Earth's surface<br>• Slowing Earth's Changes |

# Syllabus Self Contained Science

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| **Subject:** | Self Contained | |
| **Grade:** | Second | |
| **Teacher:** | **1.** | Magdalena Joya Tellez |
| | **2.** | Molly Celesta Cunningham |
| | **3.** | Leila Patricia Barrera |

| **GRADE GENERAL OBJECTIVE** |
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| To describe transformation processes in different physical and biological phenomena in order to establish cause and effect relationships through an enrichment in comparisons, data collection and structural characterizations. |

| **INQUIRY TOPIC FIRST TERM:** | **INQUIRY TOPIC SECOND TERM:** | **INQUIRY TOPIC THIRD TERM:** |
|---|---|---|
| CAUSE AND EFFECT IN PHYSICAL SYSTEMS | CAUSE AND EFFECT IN ECOSYSTEMS | CAUSE AND EFFECT IN DEVELOPMENT AND EVOLUTION OF PLANTS AND ANIMALS |
| **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** |
| **Topics:**<br>1) MOTION AND FORCES (patterns, cause-effect)<br>• Motion<br>• Gravity<br>• Forces can change motion<br>• Applied Force<br>2) MAGNETIC FORCES (cause-effect)<br>• Magnets | **Topics**<br>1) WEATHER AND CLIMATE (patterns)<br>• Weather changes<br>• Different climates<br>• Human role on climate change<br>2) CHANGES IN ECOSYSTEMS (cause-effect)<br>• Changes affect living things<br>• Natural hazards change environments<br>• Humans and natural hazards. | **Topics**<br>1) PARENTS AND OFFSPRING (patterns, cause-effect)<br>• Life cycles of plants<br>• Life cycles of animals<br>• Inherited and learn traits.<br>2) SURVIVAL (cause-effect)<br>• Animal group survival<br>• Adaptations<br>• Natural Selection<br>3) LEARN FROM THE PAST (scale, proportion and quantity)<br>• Things from long ago<br>• Fossils.<br>• Dinosaurs |

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| **Subject:** | Self Contained | |
| **Grade:** | Third | |
| **Teacher:** | **1.** | Andrea Nensthiel |
| | **2.** | |
| | **3.** | Elena Morrice |

| **GRADE GENERAL OBJECTIVE** |
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| To understand patterns in living and non-living beings to classify it in order to infer about diversity, structures and function and create awareness of the importance of energy to keep a system working. |

| **INQUIRY TOPIC FIRST TERM:** | **INQUIRY TOPIC SECOND TERM:** | **INQUIRY TOPIC THIRD TERM:** |
|---|---|---|
| ENERGY TRANSFERS IN NATURAL AND DESIGNED OBJECTS | STRUCTURE-FUNCTION RELATIONSHIP IN PLANT AND ANIMAL SYSTEMS | CAUSE AND EFFECT IN EARTH´S SURFACE |
| **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** |
| Methodology: inquiery cycles with emphasis in formulation of explanitions, share ideas, collecting data, identification of variables.<br><br>Topics:<br><br>1. Transfers of energy<br><br>Types of energy: light, sound, heat, chemical, electricity, potential and kinectic. (Characteristics, uses, examples in daily life and transfers, evidence, variables, cause and effect, law of conservation of energy).<br><br>2. Energy and motion<br><br>Potential and kinetic energy. Design energy solutions-(Characteristics, uses, examples in daily life and transfers, evidence, variables, cause and effect, law of conservation of energy).<br><br>3. Energy resources<br><br>Renewable and non-renewable. | Methodology: inquiery cycles with emphasis in formulation of explanations, share ideas, collecting data.<br><br>Topics:<br><br>1. Structure and functions if living things<br><br>Physical and behaviour adaptation in plants<br><br>Classifying plants (vascular- non-vascular)<br><br>Physical and behavioir adaptations in animal<br><br>Classifying animals (vertebrate and invertebrate and their sub groups) | Methodology: inquiery cycles with emphasis in formulation of explanations, share ideas, collecting data.<br><br>Topics:<br><br>1. Earth changing features. History of earth´s surface and landforms characteristics and formation procesess.<br><br>2. Causes of change in the earth´s surface.<br><br>Natural: Earthquakes, volcanoes, tsunamies and floods.<br><br>Human: Global warming and pollution. |

# Syllabus Self Contained Science

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| **Subject:** | Self Contained | |
| **Grade:** | Fourth | |
| **Teacher:** | **1.** | Valerie Dean |
| | **2.** | Christina Hoffman |
| | **3.** | Clara Beltran |

| **GRADE GENERAL OBJECTIVE** |
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| To understand stability and change as major forces that shape and determine the behaviour of our body, ecosystems and planet through reinforcement of predictive reasoning and experiences that make students aware of the importance of conservation of diversity through evidence-based reasoning. |

| **INQUIRY TOPIC FIRST TERM:** | **INQUIRY TOPIC SECOND TERM:** | **INQUIRY TOPIC THIRD TERM:** |
|---|---|---|
| **SCALE, PROPORTION AND QUANTITY IN MATTER** | **ENERGY AND MATTER IN LIVING SYSTEMS** | **PATTERNS IN EARTH'S SYSTEMS AND SOLAR SYSEM** |
| **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** | **TERM CONTENTS (procedures, methods, techniques, themes and concepts of a specific area or discipline)** |
| **Topics:**<br>1) STRUCTURE AND PROPERTIES OF MATTER (scale, proportion and quantity)<br>• Matter's structure<br>• Matter's properties<br>• Metals and nonmetals<br>2) PHYSICAL AND CHEMICAL CHANGES (cause-effect)<br>• Physical changes<br>• Mixtures and solutions<br>• Chemical changes<br>• | **Topics:**<br>1) PLANT AND ANIMAL NEEDS (energy and matter)<br>• Plants and photsynthesis<br>• Animals and cellular respiration<br>• Plants and cellular respiration<br>2) MATTER IN ECOSYSTEMS (systems and system models)<br>• Interactions of living things<br>• Balance in ecosystems<br>• Cycles in ecosystems. | **Topics:**<br>1) INTERACTIONS OF EARTH'S MAJOR SYSTEMS (systems and system models; scale, proportion and quantity)<br>• Earth's major systems<br>• Effects of the geosphere<br>• Effects of the Hydrosphere<br>• Effects of the Atmosphere<br>• Effects of the Biosphere<br>2) THE SOLAR SYSTEM AND BEYOND (patterns, cause-effect)<br>• Movements of the Earth, Sun and the Moon<br>• Patterns of the moon<br>• Objects in space<br>• Stars and stars' patterns |