

## Course Description: Grade 2 Science

Welcome to IW Academy "Exploring the World of Science", a stimulating Grade 2 Science Course designed to ignite curiosity and foster a deep love for science. This course is meticulously crafted to align with the essential science standards for Grade 2 students, making learning exciting, engaging, and educational.

Over the course of the academic year, young learners will embark on an explorative journey, discovering the wonders of the natural environment, physical properties, and changes in the earth and sky. Students will dive into various scientific topics including:

1. **Life Sciences:** Students will delve into the life cycles of plants and animals, understanding how living things grow and change. To cement learning, students will have the opportunity to observe the metamorphosis of a butterfly firsthand.
2. **Earth Sciences:** Learners will explore the marvels of our planet, understanding the reasons for seasons, phases of the moon, and weather patterns. Interactive activities, like maintaining a weather journal and a DIY water cycle model, will be used to reinforce these concepts.
3. **Physical Sciences:** Here, the focus will be on understanding the states of matter (solid, liquid, gas) and the changes they undergo. Interactive experiments, such as melting ice or making homemade slime, will help demonstrate these principles.
4. **Environmental Sciences:** Students will learn about different habitats, food chains, and the importance of conservation. Field trips and nature walks will serve as practical examples.
5. **Scientific Method:** Throughout the course, emphasis will be placed on understanding the scientific method. Students will formulate questions, make observations, and draw conclusions.

In order to teach the skills in this subject, the course uses a variety of teaching techniques to insure the mastery of the mentioned skills. In addition, there will be a focus on the correct applications of the mentioned skills and acquired knowledge.

The various teaching techniques will encompass: video narration, video lectures, advanced graphics and animations, AI, Micro-learning, interactive exercises, games, interactive explanations, various evaluation methods, and internet exams.

This Grade 2 Science course is not just about absorbing facts, but about nurturing a scientific mindset: observing, questioning, exploring, and experimenting. It's about discovering the joy in science and the world around us, fostering a lifelong love for learning.

Parents and students can expect individualized attention, ongoing feedback, and continual assessment to ensure understanding and progress. With a mix of in-class activities, interactive experiments, and real-world applications, IW Academy Grade 2 Science promises a comprehensive and exciting learning experience for every budding scientist in Grade 2.

Below are highlights of the curriculum content, curriculum chapters, and science skills that are covered in the course.

| # | Chapter                  | Skills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| 1 | Chapter One: Animals     | <ul style="list-style-type: none"> <li>• Specifying the properties of living organisms ( response, reproduction, growth, etc.)</li> <li>• explaining the life cycle of animals based on their method of reproduction (eggs, birth)</li> <li>• distinguishing between the life cycles of animals that reproduce using eggs and animals that reproduce by giving birth</li> <li>• providing examples of animals that reproduce using eggs (frogs, chickens)</li> <li>• providing examples of animals that reproduce by giving birth (dogs, cats)</li> <li>• naming the offspring of animals, defining inheritance</li> <li>• specifying the difference in characteristics of animals of the same type</li> <li>• specifying the difference in characteristics of animals and their offspring</li> <li>• specifying the difference in characteristics between males and females</li> <li>• defining adaptation, defining structure</li> <li>• specifying the structures that help living organisms adapt to their environments,</li> </ul> |
| 2 | Chapter Two: Measurement | <ul style="list-style-type: none"> <li>• Clarifying how to measure lengths</li> <li>• classifying measuring tools as either accurate tools or inaccurate tools</li> <li>• explaining how to use the tools for measuring length</li> <li>• defining the measurement of mass, comparing masses using (weighing by hand, balance scale), explaining how to use the balance scale to measure mass</li> <li>• clarifying how to measure volume</li> <li>• learning about the liter</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3 | Chapter Three: Heat      | <ul style="list-style-type: none"> <li>• Specifying the sources of heat (sun, friction, fire, etc.)</li> <li>• explaining the benefits and uses of heat sources</li> <li>• understanding temperature</li> <li>• explaining how to measure temperature using touch</li> <li>• learning how to use a thermometer to measure temperature</li> <li>• distinguishing between hot and cold objects</li> <li>• classifying objects as either heat conductors or heat insulators</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|   |                      | <ul style="list-style-type: none"> <li>• clarifying the benefits of heat conductors and insulators</li> <li>• clarifying the dangers of heat sources</li> <li>• explaining how to properly handle heat sources</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4 | Chapter Four: Light  | <ul style="list-style-type: none"> <li>• Learning about light and its importance</li> <li>• classifying light sources as natural or manmade</li> <li>• specifying natural light sources, specifying manmade light sources</li> <li>• classifying objects as transparent or opaque</li> <li>• providing examples for transparent objects</li> <li>• providing examples for opaque objects</li> <li>• explaining how shadows are formed</li> <li>• explaining light reflection and its importance in our lives</li> <li>• providing examples of light reflecting materials</li> <li>• explaining the importance of light reflecting materials</li> </ul> |
| 5 | Chapter Five: Plants | <ul style="list-style-type: none"> <li>• Specifying the importance of the flower</li> <li>• classifying plants as flowering or non flowering plants</li> <li>• understanding flowering plants, understanding non flowering plants</li> <li>• providing examples of flowering plants</li> <li>• providing examples of non flowering plants</li> <li>• specifying the conditions of growth for flowering plants</li> <li>• learning the life cycle of flowering plants</li> <li>• clarifying the relationship between the environment and plants</li> <li>• clarifying plant adaptations</li> <li>• specifying plant growth factors</li> </ul>           |
| 6 | Chapter 6: Matter    | <ul style="list-style-type: none"> <li>• Understanding matter, specifying the properties of matter</li> <li>• understanding mass, understanding size</li> <li>• explaining the relationship between mass and the amount of matter</li> <li>• explaining how to measure mass, explaining how to measure size</li> <li>• classifying matter into three phases (solid phase, liquid phase, gas phase)</li> <li>• understanding the process of melting, understanding the process of freezing</li> </ul>                                                                                                                                                   |

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|   |                                 | <ul style="list-style-type: none"> <li>• distinguishing between melting and dissolving</li> <li>• understanding the process of evaporation</li> <li>• understanding the process of condensation</li> <li>• clarifying the relationship between an objects surface area and evaporation speed</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 7 | Chapter Seven: Sound            | <ul style="list-style-type: none"> <li>• Clarifying how sound is made and transmitted</li> <li>• clarifying the relationship between vibration and sound formation</li> <li>• specifying the materials that allow sound to pass through</li> <li>• naming the sounds made by living organisms, specifying the type of sound based on its source</li> <li>• classifying sounds as high pitched and low pitched</li> <li>• classifying sounds as loud or low, clarifying how loud and low sounds are made.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8 | Chapter Eight: The Environment  | <ul style="list-style-type: none"> <li>• Defining environment, specifying the components of an environment</li> <li>• explaining the importance of non living environmental components to living organisms</li> <li>• defining habitat, specifying the properties of a habitat</li> <li>• classifying a habitat based on its properties</li> <li>• classifying energy sources as renewable or non renewable</li> <li>• understanding renewable energy sources, understanding non renewable energy sources</li> <li>• specifying renewable energy sources (sun, wind, etc.), specifying non renewable energy sources</li> <li>• clarifying the importance of renewable energy sources, clarifying the importance of non renewable energy sources</li> <li>• understanding pollution</li> <li>• specifying environmental pollutants, specifying water pollutants, specifying air pollutants, specifying soil pollutants</li> <li>• specifying ways to protect the environment from pollution</li> <li>• understanding recycling, understanding how to handle environmental pollutants</li> </ul> |
| 9 | Chapter Nine: The Earth and Sun | <ul style="list-style-type: none"> <li>• Specifying the components of soil</li> <li>• clarifying the importance of soil</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|    |                                            | <ul style="list-style-type: none"> <li>• understanding the process of weathering, understanding the process of erosion</li> <li>• understanding the factors that can change the Earth's surface</li> <li>• specifying the natural phenomena that were created as a result of weathering and erosion</li> <li>• defining a star</li> <li>• explaining the importance of the Sun</li> <li>• explaining the relationship between the size of stars and their distance from the Earth</li> </ul>                                                                                                                                                     |
| 10 | Chapter Ten: The Human Body and its Health | <ul style="list-style-type: none"> <li>• The definition of an organ, classifying organs as sensory organs or internal organs</li> <li>• specifying the human sensory organs (the five senses)</li> <li>• specifying the human internal organs, specifying the functions of sensory organs, specifying the functions of internal organs</li> <li>• understanding healthy behaviors, understanding unhealthy behaviors</li> <li>• providing examples of healthy behaviors that should be followed, providing examples of unhealthy behaviors that should be avoided</li> <li>• clarifying the importance of following healthy behaviors</li> </ul> |

