Charting My Progress – with **Grade 4-5 Science**

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| **Developing (1)** | **Proficient (2)** | **Distinguished (3)** |
| I can identify appropriate Metric/English units, variables, instruments and models.  I can recognize hypotheses, predictions, inferences and conclusions.  Label models and recognize properties of force, motion, energy and matter.  I can identify cell structures, structures of plants and animals.  I can identify components of ecosystems, including native Virginia organisms.  I can label or identify aspects of:   * Earth- space systems and cycles, * characteristics of oceans, weather instruments, * rock types, and * Earth- moon-sun system. | I can interpret scientific investigations.  I can explain processes using variables, Metric/English units, instruments, models, inferences and conclusions.  I can describe models of waves and circuits.  I can contrast and compare properties of force, motion, energy and matter.  I can classify and explain the life processes and living systems which include plants, ecosystems, cells, and plant and animal resources of Virginia.  I can describe Earth-space systems and cycles using:   * weather phenomena, * characteristics of the ocean, * changing of Earth’s surface.   I can explain the relationship between the Earth-moon- sun and solar system. | I can design scientific investigations, create models, summarize information, and make conclusions and inferences.  I can construct models.  I can analyze and summarize properties, including the interactions and relationships between force, motion, energy and matter.  I can summarize cell structures and life processes of plants and ecosystems.  I can make inferences and conclusions about the characteristics of organisms, which include native Virginia plants and animals.  I can evaluate Earth-space systems and cycles to make inferences and conclusions about:   * Earth-moon-sun relationships, * the characteristics of terrestrial and ocean ecosystems, and * the human impact on Earth’s changing surface. |

Charting My Progress – with **Grade 6-7-8 Science**

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| **Developing (1)** | **Proficient (2)** | **Distinguished (3)** |
| I can identify the components of a scientific investigation, the appropriate tools, and the techniques needed to reach valid conclusions using the nature of science.  I can define relationships among force, motion, energy, and matter.  I can identify organisms by their distinguishing characteristics and their relationships within the environment.  I can define the interactions and interdependence among the living and nonliving factors in ecosystems.  I can state factors that affect Earth.  I can identify interactions within our solar system. | I can demonstrate the ability to perform a scientific investigation using the appropriate tools and techniques to reach valid conclusions using the nature of science.  I can describe and interpret the relationships among force, motion, energy, and matter.  I can classify and describe organisms by their distinguishing characteristics and their relationships within the environment.  I can categorize interactions and interdependence among the living and nonliving factors in ecosystems.  I can explain factors that affect Earth.  I can distinguish interactions within our solar system. | I can design and evaluate a scientific investigation using the appropriate tools and techniques to communicate valid conclusions using the nature of science.  I can analyze and predict the relationships among force, motion, energy, and matter.  I can differentiate and categorize organisms by their distinguishing characteristics and their relationships within the environment.  I can analyze and predict interactions and interdependence among the living and nonliving factors in ecosystems.  I can summarize factors that affect Earth.  I can differentiate interactions within our solar system. |

Charting My Progress – with **Earth Science**

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| **Developing (1)** | **Proficient (2)** | **Distinguished (3)** |
| A student performing at this level should be able to:  I can recognize tools and methods used in scientific inquiry.  I can identify components, and processes of Earth and space systems.  I can identify three major rock types, minerals, provinces, plate boundaries, and components of a soil profile in the physiographic provinces of Virginia.  I can recognize features within cosmology, geology, and meteorology related to geologic time.  I can identify basic interactions among humans, resource use, and the environment. | A student performing at this level should be able to:  I can utilize scientific tools and inquiry to arrive at, support, and illustrate scientific conclusions.  I can compare and contrast the components and interactions of Earth and space systems.  I can classify and differentiate among the rocks, minerals, fossils, soil, and plate boundaries evidenced throughout the world, including the physiographic provinces of Virginia.  I can distinguish and explain modes of fossil preservation, geologic dating methods, atmospheric evolution, and theories regarding astronomic formation.  I can compare and contrast past and present environmental conditions to infer environmental impacts of resource consumption. | A student performing at this level should be able to:  I can design and evaluate investigations and theories using scientific inquiry.  I can design, construct, and evaluate models of Earth and space systems to make predictions about systems.  I can integrate, illustrate, and analyze the processes of the rock cycle and plate tectonics throughout the world, including features found in Virginia provinces.  I can differentiate and evaluate modes of fossil preservation, geologic dating methods, atmospheric evolution, and theories regarding cosmology.  I can analyze past and present environmental conditions to formulate conclusions and predictions about human use of resources and the impact on the environments and systems interactions. |

Charting My Progress – with **Biology**

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| **Developing (1)** | **Proficient (2)** | **Distinguished (3)** |
| A student performing at this level should be able to:  I can recognize the nature of scientific skills and safe laboratory procedures. Identify variables, sources of error, instruments, hypotheses, theory, and law.  I can identify the structures and processes needed by living systems.  I can select the characteristics of fossils, developmental stages and structures of organisms.  I can identify relationships within ecosystems, populations, fossil record. Recognize evidence for biological evolution, nutrient cycling, and natural selection. | A student performing at this level should be able to:  I can demonstrate appropriate nature of science skills when investigating, researching, reporting, and applying science content.  I can describe and explain chemical, life process, structure/function, and genetic relationships in living systems.  I can express and infer relationships based on fossil evidence, developmental stages, structural similarities, and new discoveries.  Within ecosystems, I can describe the flow of energy and nutrients, individual and population dynamics, and predict the effect of human activities. | A student performing at this level should be able to:  I can design and evaluate scientific investigations/research by applying nature of science skills.  I can outline and summarize the chemical, life process, structure and function, and genetic relationships in living systems.  I can diagram, summarize and make predictions based on fossil evidence, developmental stages, structural similarities, and new discoveries.  I can generate conclusions and inferences about ecological processes and the effect of human activities on ecosystems. |

Charting My Progress – with **Chemistry**

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| **Developing (1)** | **Proficient (2)** | **Distinguished (3)** |
| A student performing at this level should be able to:  I can recognize safe investigations, identify the variables, and follow safe laboratory procedures.  I can recognize that elements are unique, and properties can be determined from the periodic table.  I can identify compounds, formulas, and balanced equations, and that energy is involved.  I can recognize that chemical quantities are based on molar relationships.  I can recognize that the Kinetic Molecular Theory explains the behavior of matter and interactions between particles. | A student performing at this level should be able to:  I can design and illustrate safe and controlled investigations, and interpret the results using appropriate calculations, procedural and error analysis.  I can apply information provided by the periodic table to perform calculations, construct models, and make comparisons regarding the physical and chemical nature of matter.  I can classify and describe compounds and bonding to provide appropriate names, formulas, structures, and properties.  I can classify, describe and balance equations and interpret factors that affect equilibrium and kinetics.  I can apply the Kinetic Molecular Theory to predict the behavior of matter and interactions between particles. Apply molar relationships to perform calculations involving molar conversions, concentrations and stoichiometry. | A student performing at this level should be able to:  I can use procedural and error analysis to defend or refute the conclusions and/or results of a controlled investigation.  I can evaluate information derived from historical models and the periodic table to make inferences, conclusions, and predictions about chemical and physical nature of matter  I can use bonding principles to explain the interaction of substances during chemical changes, and evaluate their real life applications.  I can predict relationships in calculations and laboratory investigations, which include percent yield and limiting/excess reactants.  I can predict and infer the behavior of matter, based on the Kinetic Molecular Theory and interactions between particles. |