Science Foundational Skills

* **Observation**: The ability to carefully observe phenomena, objects, or processes and gather relevant information using the senses.
* **Measurement**: Understanding the principles of measurement and using appropriate tools and units to quantify and describe properties such as length, mass, volume, temperature, and time.
* **Hypothesis formulation:** Formulating clear and testable hypotheses based on observations and prior knowledge and making predictions about the outcomes of experiments.
* **Experimentation:** Designing and conducting controlled experiments to test hypotheses, manipulating variables, and collecting empirical data systematically.
* **Data collection:** Using various methods to collect accurate and reliable data, including making observations, taking measurements, and recording experimental results.
* **Data analysis:** Analyzing and interpreting data using mathematical and statistical techniques, identifying patterns, trends, and relationships, and drawing conclusions based on evidence.
* **Critical thinking:** Applying logical reasoning, skepticism, and analytical skills to evaluate claims, arguments, and evidence in scientific contexts.
* **Problem-solving**: Identifying and defining scientific problems, developing strategies to address them, and applying scientific knowledge and methods to propose solutions.
* **Communication:** Clearly and effectively communicating scientific ideas, findings, and conclusions to different audiences using appropriate formats such as reports, presentations, and scientific papers.
* **Collaboration:** Working collaboratively with peers, mentors, and other professionals in scientific research and inquiry, sharing responsibilities, ideas, and resources, and contributing to collective learning and discovery