Introduction to Space

This issue of *Root & STEM* explores the sky and stars above us and the scientific perspectives behind space exploration. From thinking about life in our galaxy with an Indigenous lens to exploring the different perspectives of the sky and stellar knowledge, this issue asks learners to understand their connection to the universe and how it can impact human life. In exploring the vastness of space, we are reminded of the deep, ancestral knowledge Indigenous cultures hold about the stars, and how their wisdom offers valuable insights into our relationship with the universe.

The lessons in this issue are located at an intersection of Inuit and Western knowledge and perspectives. *Etuaptmumk* is the Mi'kmaq word for Two-Eyed Seeing – an Indigenous epistemology that teaches us how to incorporate both Indigenous and Western knowledge in our learning practices. This approach is exemplified by the work of individuals such as Wilfred Buck, a researcher and astronomer who acknowledges & integrates indigenous practices, culture, and/or beliefs within his work.

The lesson plans included in this issue are designed to introduce the learners to the impact of space and the role it plays in our lives and the world we live in. These are designed to provide the learners with hands-on opportunities to learn and explore the wonders of space effectively. Educators can reinforce IQ principles within activities surrounding the world around them and encourage inquisition in relation to the knowledge gained from participating.

Providing Support for Integrating IQ Principles

IQ Principles	Description of IQ and How They Are Connected with the Resource
Aajiiqatigiingniq	**Consensus Decision-Making, Communication Shared Understanding & Respecting Other Perspectives & Worldviews:** The concept of consensus decision-making relies on strong communication skills and a strong belief in shared goals. Developing effective games to help our communities to thrive takes collaboration, and an understanding of other views.
Pilimmaksarniq	**Concept of Skills and Knowledge Acquisition:** Space is all about exploring the unknown, and making sense of the universe we live in. Learners will acquire and gather knowledge, then apply it to their lives and beliefs.
Qanuqtuurungnarniq	**Concept of Being Resourceful to Solve Problems:** It is important that learners cultivate the skills of problem-solving resourcefulness, resource innovation and creativity, and adaptability and flexibility in

	the face of a quickly changing environment. The wonders of the world are often realized with ongoing new discoveries so it's important to be able to pay attention and follow these discoveries so as to not be left behind.
Piliriqatigiinniq	**Concept of Collaborative Relationship or Working Together for a Common Purpose:** This core Inuit value prioritizes the collective well-being over individual success. In the context of space and space exploration learning, this principle encourages a focus on collaboration, shared responsibility, and community-building within sharing research and findings that all contribute to a main goal of uncovering the unknown and understanding more about what is outside of our world.

Aligning Curriculum Standards with the New K-6 Nunavut Curriculum

Subject	Grades	Learning Strands	Descriptions
Science	1-6	"Physics"	This strand explores motion and its relationship with force and energy. The flow of energy in our physical world is discovered through investigations into motion, force, magnetism, gravity, electricity, light, sound, heat, flight, and machines.
Science	1-6	"Earth and Space"	This strand explores Earth and its place in the universe. Learners will investigate the natural cycles and systems of Earth, including seasons, weather, the water cycle, the rock cycle, the carbon cycle, and

			climate change, as well as the solar system in which Earth is found.
Science	1-6	“Life Sciences”	This strand explores the living world and our place in it. Learners will investigate the needs and uses of plants and animals and how they adapt to their environment and change environments.
Inuktitut and English First Language	1-6	“Reading”	This strand explores the processes, understandings, and strategies necessary to read and make meaning from text as well as begin to develop lifelong reading habits and attitudes toward reading.

Fostering Cross-Curriculum Learning

In order to help learners draw links between disciplines and get a deeper comprehension of the subject matter, cross-curricular teaching entails combining several subject areas into coherent, integrated learning experiences.

Cross-curricular teaching is a great way for teachers to incorporate different disciplines in education into one lesson. The different subjects can be considered as pieces of the puzzle that we provide for the learners to put together and create a “big picture” learning. As the learners learn about space exploration and how everything is connected, they will also be learning the essential vocabulary related to the theme and how to apply it to their own beliefs and understanding.

In other words, what learners learn in mathematics can be applied to languages, science, social studies, and arts in some capacity. To create a cross-curricular theme, teachers work collaboratively with other subject teachers. One way to do it is to decide on a theme with colleagues and explore learning opportunities that can apply to learners' skills and interests. Co-teaching, project-based learning (PBL), and thematic units are all tactics that can support this kind of learning and allow learners to use what they have learned in a comprehensive, real-world manner.

For example, in space exploration, educators can take a project-based learning approach and extend the learning over multiple weeks. For instance, learners can be tasked with building a scale model of the solar system. Learners can creatively design the scale model of the solar system, using the materials available in the classroom or at home, using the right size spheres to represent different planets, and showcase their model during a show and tell. This allows the teachers to bring cross-curricular collaboration, such as science, art education, mathematics, and language, all in one shared learning experience.