Transdisciplinary Theme:
How the World Works – the impact of scientific and technological advances on society and the environment

Central Idea:
Society’s exploration of space is impacted by, and leads to, scientific and technological advances.

A study into (lines of inquiry):
- The interconnectedness of the earth, sun and moon (connection)
- The moon’s appearance over time from Earth (form)
- Scientific learning and technological advances (function)

Background:
Students will inquire into why we have day & night. During Project Moon Watch, they will journal their observations of changes in the moon’s appearance over time. Then, they will investigate how man’s study and exploration of space has led to technological advances and shaped our scientific learning.

Student Final Project:
Students will choose a topic of interest relating to space, and explain how it has been impacted by or has led to scientific and/or technological advances.

Technology Tie-In:
During this unit students will be working on identifying and recording the main idea and details from a non-print source (video, online encyclopedia, podcast). They will use a split screen application to accomplish this.
Field Experiences:
Students will visit the planetarium at The Children's Museum of Connecticut (West Hartford), which includes a presentation on “International Ancient Myths.” They will participate in NASA video-conferences with scientists from the Marshall Space Flight Center and Johnson Space Center to talk about The History of Modern Rocketry and Spacebots.

Learner Profiles & Attitudes:
Students will cooperate during group work, and communicate their new learning in a confident manner. They will be curious about space exploration and technology; and enthusiastically inquire about how the study of space has impacted technological advances.

Key Concepts:
Students will examine how the earth, sun and moon are connected to each other. They will observe and explain how the moon’s appearance (form) changes over time. Students will explore how technology functions to help us understand more about the natural world.

Approaches to Learning:
Throughout the unit, students will use their self-management skills by maintaining a daily lunar journal, sharing experiment materials, and planning & carrying out inquiry activities. They will use their research skills when they formulate inquiry questions about technological advances; and when they collect information for their project - using the internet and library resources.

TRY THIS!
• Put a small ball on the ground outside in the sunlight. The sun shines on it and lights it up like the sun lights up the moon. Now hold a bigger ball between the sun and the small ball. Try to line it up so that the shadow of the big ball falls on the small ball. What happens? Can you make a half moon, a quarter moon, and a full moon?
• What is your vision for the future? Write and illustrate a comic book, draw a poster, or find another creative way to show what the future of space exploration will look like. How will it affect the way you live?

Websites: Watch together, and talk about these space topics:
http://www.youtube.com/watch?v=5iWhCmITW8E&feature=youtu.be (space station assembly)
http://www.youtube.com/watch?v=tNhqqZHN5iw&feature=youtu.be (space debris)

PARENTS: Additionally, on the Media Center webpage, for each unit there will be suggested titles for more reading on the topics and ideas in the units. These books are available in the school library.
Parents: please fill out any that apply and return to your child’s teacher.

My child is displaying the learner profiles from his/her IB unit (communicators, inquirers). Here are some examples:

______________________________________________________

______________________________________________________

______________________________________________________

Here is how my child is showing the IB attitudes (confidence, cooperation, curiosity, enthusiasm):

______________________________________________________

______________________________________________________

______________________________________________________

My child has been demonstrating the approaches to learning (research, self management) by:

______________________________________________________

______________________________________________________

______________________________________________________

My child has taken action (additional investigations, trying to make a difference, reading more about the subject, doing an independent project, teaching others, etc.) regarding this unit. Here’s how:

______________________________________________________

______________________________________________________

______________________________________________________
IB Elements that Grade 5 students are focusing on during Unit 2/How The World Works:

**Approaches to Learning**

**Research Skills**
- Formulating Questions
- Observing
- Planning
- Collecting Data
- Recording Data
- Interpreting Data
- Presenting Research Findings

**Self-Management Skills**
- Gross Motor Skills
- Fine Motor Skills
- Spatial Awareness
- Organizational Skills
- Time Management
- Personal Safety
- Healthy Lifestyle
- Codes of Behavior
- Making Informed Choices

**Attitudes**

**Curiosity**
We are curious about the nature of learning. We also wonder about the world, its people, and cultures.

**Enthusiasm**
We enjoy learning and willingly put effort into the process.

**Confidence**
We are confident in our abilities. We have the courage to take risks, apply what we have learned, and make appropriate choices/decisions.

**Co-operation**
We co-operate, collaborate, and either lead or follow as the situation demands.

**Learner Profiles**

**Inquirer**
I ask questions and do research to learn new things. I like to discover new things about the world. I am enthusiastic and curious. I work to find answers to my questions. I will carry this love of learning throughout my life.

**Communicator**
I share my ideas with others. I am confident when I share my thinking; and I listen to the ideas of others. I communicate in various ways, both verbally and non-verbally. I am able to express myself in more than one language.

**Key Concepts**

**Connection**
How is it connected to other things?
We live in a world of interacting systems in which the actions of any individual element affects others.

| How is ______ connected to ______? |
| How is ______ related to ______? |
| How does ______ help us understand ______? |
| What are the similarities or differences between ______ and ______? |

**Form**
What is it like?
Everything has a form with recognizable features which can be observed, identified, described, and categorized.

| What is...? |
| What are...? |
| What kind of...? |
| What is it like? |
| What patterns do you see? |
| How do you describe...? |

**Function**
How does it work?
Everything has a purpose, a role, or a way of behaving which can be investigated.

| How important is ______? |
| How do they work together? |
| What do we use ______ for? |
| Why do we ______? |
| How do we use ______? |
| How or why does it ______? |