Science 6 Garcia Unit 2: Earth and Space	Math 6 DeLuigi Unit 2: Equations, Integers and Rational Numbers	

Essential Question: How does where you live on Earth change how you experience the seasons? How does geographical location affect traveling expenses compared to your home country?

Objective: Students will create a Public Service Announcement poster/video to explain how life in a certain geographical location will change based on the given scenario. Students will create an expense report for their emergency trip to the predetermined location.

GRASP: You will accurately assess and predict possible changes for a specified geographical location due to your chosen scenario. Your role will be acting as a top level scientist who has been sent by the Korean Government to report on a local area. Your video or poster is meant for both the Korean Government officials and the local population. You will create a poster or a video between 3 to 5 minutes long reporting on the changes. You will create an expense report to turn into the government to document your emergency trip.

Parts:

PSA Video/Poster: You will choose one form of communication to report to the government and the people of your area:
Video: 3-5 minutes long to be shown to the communities, addressing all the questions given with each scenario, including a before and after comparison of the area with model and visuals!
Poster: To be displayed in and around the cities affected**,** address all the questions given with each scenario, including a before and after comparison of the area with models and visuals!
Sources: You will need to document where you find the information and turn it in with your final product onto Schoology.

Due Dates: December 1 or December 2

Earth has been struck by a small Asteroid!

Don't worry you survived. :)

The asteroid was small but still it has caused significant changes to Earth!

WHAT YOU KNOW: You have discovered that Earth's tilt of 23.5 degrees is gone. Earth appears to be no longer tilted on its axis at 23.5 and now seems to be on 28.5 degrees. Also, you believe that earth is not rotating as fast. You know that this means significant changes to our seasonal cycle, days and nights, climate, and other aspects of life on Earth.

WHAT YOU NEED TO ACCOMPLISH: Your government has asked you to travel to specified geographical locations to report on the local changes within that region and around the world. You need to gather data of the local climate BEFORE the asteroid and the changes you expect to see after the asteroid.

ADDRESS THE FOLLOWING QUESTIONS:

1. How will the length of a year change?
2. How will the length of a day change (will the number of hours in a day remain 24?)
3. How will the length of daylight hours and the length of darkness hours change?
4. How will the seasons change?
5. What will our new climate be like in each season?
6. Make an inference on how will these changes affect: food sources, energy use, travel, timing, our calendar, international trade?
7. Identify <u>two major problems</u> that will likely be experienced and possible <u>solutions</u>.

The South Pole is Melting and Earth is Tipping Over!

WHAT YOU KNOW: Ocean levels have been on the slow and steady rise but due to drastic and rapid “climate change” the South Pole is melting even faster now, super fast, like an ice cube on hot pavement. You believe that because of this the Earth it going to be unevenly weighted and it will start to tip over. You have discovered that Earth’s tilt of 23.5 degrees is changing! In fact it is increasing and quickly. Currently it is at 28.5 degrees. You know that this means significant changes to our seasonal cycle, days and nights, climate, and other aspects of life on Earth.

WHAT YOU NEED TO ACCOMPLISH: Your government has asked you to travel to specified geographical locations to report on the local changes within that region and around the world. You need to gather data of the local climate BEFORE the tipping and the changes you expect to see after the Earth tips over.

ADDRESS THE FOLLOWING QUESTIONS:

1. How will the length of a year change?
2. How will the length of a day change (will the number of hours in a day remain 24?)
3. How will the length of daylight hours and the length of darkness hours change?
4. How will the seasons change?
5. What will our new climate be like?
6. Make an inference on how will these changes will affect: food sources, energy use, travel, timing, international trade.
7. Identify <u>two major problems</u> that will likely be experienced and possible <u>solutions</u>.

Expenses Report for Emergency Trip!

WHAT YOU NEED TO KNOW: Traveling can be very expensive, especially at the last minute. The Korean government would like a full report of your travel expenses for your 5 day trip to your destination.

WHAT YOU NEED TO ACCOMPLISH: You will need to research flights to your specified location, a hotel you would like to stay at, and the average of the cost of meals in that area. You will need to report your expenses on a Google Spreadsheet that will include your flights, hotel and food expenses in both your homeland currency and the destination currency.

ADDRESS THE FOLLOWING QUESTIONS:

What is the price of your round trip flight in Korean won?
What is the price of your round trip flight in the local currency? (show your work when doing the mathematical conversion)
What is the price of one night at the hotel of your choice in the local currency?
What is the price of one night at the hotel of your choice in Korean won?
What is the total price of your hotel stay for 5 nights in the local currency?
What is the total price of your hotel stay for 5 nights in Korean won?
What is the price of one meal in the local currency? (find the average from 3 different restaurants and show your work!)
What is the total price of all meals for 5 days in the local currency?
What is the total price of all meals for 5 days in Korean won?

Your government gave you 1,800,000 won for the trip. Do you have enough for the trip? Write an equation using positive and negative numbers representing the amount of money you have at the end of your trip.

Your hotel gives a 20,000 won discount if you stay for 5 or more nights. Write an algebraic expression using variable t, representing the total cost of the hotel for 5 nights

Write an algebraic expression representing the cost of your meals for the trip. Assume you will be eating 3 times per day for n number of days.

Science

	Exceeding	Meeting	Approaching	Beginning
MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.		Correct representation of sunlight angle falling on location **before and after** the change using a model/picture and how it affects the seasons **before and after** the change.	Representation with some errors of sunlight angle falling on location **before and after** the change using a model/picture and how it affects the seasons **before and after** the change.	Missing representation or representation with huge errors of sunlight angle falling on location **before and after** the change using a model/picture and how it affects the seasons **before and after** the change.
MS-ETS1-4 · Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.		Correct and realistic model or diagram with few mistakes of the Earth-Sun system and how the system will change within the scenario.	A model or diagram with some errors of the Earth-Sun System that cause some incorrect inferences about the seasons.	Missing model or diagram or diagrams and models with many mistakes that cause many incorrect inferences about the seasons.
Communication		Clear Communication and inferences of the location: how it was, will change and how to possibly solve the problems.	Some communication and inferences about what will change and how.	Little communication and inferences about what will change and how.
ISTE.5.a · advocate and practice safe, legal, and responsible use of information and technology.		Sources are relevant and helpful to the project. Full list of sources are turned in.	Some sources are missing or irrelevant. Most of the sources are helpful to the project.	No source list is turned in with project

Math

	Exceeding	Meeting	Approaching	Beginning
Math.Grade 6.4.0.E · Identify, explain, and use mathematics in everyday life		Complete all THREE: Identify, explain, and use mathematics to solve real world problems	Complete TWO out of the 3: Identify, explain, and use mathematics to solve real world problems	Complete ONE of the 3: Identify, explain, and use mathematics to solve real world problems
Math.Grade 6.1.0.D Problem Solving Plan: Determine an efficient strategy, verify, interpret, and evaluate the results with respect to the original problem		Complete all THREE: Determine an efficient strategy, Interpret and verify results (conclusion), Evaluate accuracy of results (conclusions)	Complete TWO out of the 3: Determine an efficient strategy, Interpret and verify results (conclusion), Evaluate accuracy of results (conclusions)	Complete ONE out of the 3: Determine an efficient strategy, Interpret and verify results (conclusion), Evaluate accuracy of results (conclusions)
Math.Grade 6.3.0.E Use appropriate representations, symbols, and informal and formal mathematical language to communicate mathematical thinking coherently and clearly.		Communicate mathematical thinking through use of all of the following: appropriate representations, symbols, and informal and formal mathematical language	Communicate mathematical thinking through use of some of the following: appropriate representations, symbols, and informal and formal mathematical language	Communication is unclear or incomplete. Communicate mathematical thinking using some of the following: appropriate representations, symbols, and informal and formal mathematical language