SCIENCE WARM-UP

15 MINUTES

Google

SCIENCE PASSPORT WARM-UP GUIDE

GOOGLE EARTH USAGE OVERVIEW:	Teachers will use [I'm Feeling Lucky](#) and [Street View](#) in Google Earth to randomly select a location in the world and relate it to science concepts. Teachers can also choose to preselect a location that lends itself well to relevant standards and objectives using [Search](#) or [Voyager Stories](#).
LESSON SUMMARY:	• Passport Warm Up is an engaging daily routine in which students **review** science objectives. • This activity is designed to be **independent practice** for students that requires minimal to no direct instruction on the part of the teacher. • Teachers can choose from the standards based example questions listed below, or use them as inspiration to generate their own questions. • To stay within the 15 minute time frame, teachers should use **1-2 questions per subject**.
LEARNING OBJECTIVES:	Students will engage in daily review of grade level science concepts.

SUGGESTED STANDARDS
GRADES 4 - 8

GRADE 4:   NGSS.4.ESS2.1- Make observations to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind or vegetation.

NGSS.4.ESS2.2- Analyze and interpret data from maps to describe patterns of Earth's features.

NGSS.4.ESS3.2- Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

GRADE 5:   NGSS.5.LS2-1- Develop a model to describe the movement of matter among plants, animals, decomposers and the environment.

NGSS.5.ESS2-1- Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

NGSS.5.ESS1-2- Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night and the seasonal appearance of some stars in the night sky.

NGSS.5.PS2-1- Support an argument that the gravitational force exerted by Earth on objects is directed down.

GRADE 6 - 8:   NGSS.MS-LS1-4- Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

NGSS.MS-LS1-5- Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

NGSS.MS-LS2-1- Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

NGSS.MS-LS2-3- Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

NGSS.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.

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TIME:	Lesson Outline with Estimated Time Allotment 15 minutes Total.
MATERIALS NEEDED:	• Access to Google Earth "I'm Feeling Lucky"/Voyager. • Student copies of Passport Warm Up Student Response Template.
IMPLEMENTATION GUIDE:	1. Select the subjects, standards and questions that are appropriate to your class. 2. Provide each student in your class with a copy of the Passport Warm Up Student Response Template (below). 3. Use I'm Feeling Lucky to "roll the dice" and randomly select a location in the world OR pre-select a location using Search or a Voyager Story. 4. Students respond to the questions using a print out of the Student Response Template (below) OR teachers can share the Student Response Template using Google Classroom. 5. When relevant, use Street View, Google Search and Wikipedia to gather the information needed for students to answer the questions about that location. Students can work independently or with a partner to search for information needed. 6. Allow time for students to share their answers with the class. 7. Quick Tip: Track your classroom's "travels" using Google Tour Builder!
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*Note - this template is designed for teachers to modify for use with their grade level and standards.

GRADE 4:
- Are rock formations visible in this location? If so, do they show evidence of changes in the landscape over time? (i.e.rock layers)
- Explain why there may or may not be mountains in this location based on your knowledge of Earth's Systems.
- Is this location near or far from the Earth's Equator? How does that affect the temperature and/or climate of this location?
- What types of natural hazards could pose a threat in this location? What can be done to protect people living in this location?
- Describe the ecosystem of this location.

GRADE 5:
- Research the ecosystem of this location and create a food web that includes a minimum of 3 organisms. (For example, grass --> cows --> humans).
- Based on the position of this location relative to the north pole, south pole and equator, make a statement about the amount of daylight per day during the month of December. (For example, this location is close to the north pole. This means that there will be very little daylight during the month of December.)
- Is this location in close proximity to the ocean? How does this influence the ecosystem here?
- What natural disasters may pose a threat to this location? What steps can be taken to minimize destruction?
- If you dropped a penny from a hot air balloon directly above this location, where would it land? Explain your reasoning.

GRADE 6 - 8:
- Research an example of a plant or animal in this location and describe a specific behavior that increases its odds of survival in this environment.
- Research one specific example of how the environmental factors of this location contribute to the growth of an organism (plant or animal).
- Research an example of an organism whose population is currently being threatened or is already extinct in this location. Identify the environmental factors that caused the decrease in population.
- Research an example of a food web in this location that includes at least one producer, consumer and decomposer represented.
- Refer to your model of the Earth-sun-moon system and this location's position on the Earth to determine what season it will be in the month of December. Explain your reasoning.

Welcome to:

SCIENCE