TOPIC:
Lab 1ES – The Influence of Sunlight on Living Things

STANDARD(S) & INDICATOR(S):
5.1.8.C.2: Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.
5.3.12.C.1: Analyze the interrelationships and interdependencies among different organisms, and explain how these relationships contribute to the stability of the ecosystem.

OBJECTIVE(S): Students will be able to:
• Discuss how sunlight might influence behaviors of plant and animals.
• Predict some relationships they expect to find with plants, animals and people, in areas in total light, dark and shady.
• Collect and analyze data to verify or modify their prediction.

MATERIALS:
Paper
Pencil
Clip Board (or IT & Cloud)
iPad
Evernote
Compass
BACKGROUND INFORMATION:
Since sunlight seems to affect all living things, we start our studies of ecology by investigating to influence of sunlight on them.

EDUCATION TECHNOLOGY INTEGRATION:
IT & Cloud
iPad
Evernote
IPhoto
Compass
Document projector
Projector
Powerpoint

CLASSROOM ACTIVITY DESCRIPTION (LABORATORY/EXERCISES/PROBLEMS) including detailed procedures:
Students will: 1) Collaborate: Develop 4 teams of 4 students and structure based on strengths, etc. 2) Perform: Field Study. 3) Construct: System for collecting and recording data. 4) Record as: Diagrams, Field Notes, Daily Data Log, and Data Table. 5) Classify: Living things observed in areas of light, dark, and light but shady. 6) Differentiate: Between conditions of the three environments (ie. moisture, wind, air and soil temp, etc.). Distinguish between plant, animals and people in areas of different light. Why were they there? What do they need? Evaluate conditions of the environments.

Using 16 cards, students will breakdown into four teams of four students each team. Students will predict relationships they expect to find with plants, animals and people, in areas in total light, dark and shady. During the field study, students will:
Diagram: applicable observations.
Record observations as field notes.
Each team will do a class presentation, from the front of the room, and from behind the instructor demonstration table.

HOMEWORK ACTIVITY/EXERCISES/PROBLEMS:
1. How did you determine the abundance of different organisms?
2. How do animals, including humans, react to sunlight?
3. How do plants seem to be affected by sunlight?
4. What Kinds of organisms flourish in sunlight?
5. What Kinds of organisms seem to avoid sunlight?
6. How could you test your conclusion?

PARAMETERS TO EVALUATE STUDENT WORK PRODUCTS:
Students’ reports show:
• Why more plants than animals live in sunlight.
• Why plants seem to flourish in the environment under study.
• That a relationship exists between plants and sunlight, (Students also suggest ways to investigate this relationship.)
• Ways to design an experiment that controls other environmental factors while testing the effect of sunlight.

REFERENCES:
Pottenger, Young, and Klemm (1994) Matter and Energy In the Biosphere: FAST2, Foundational Approaches to Science Teaching

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