Lesson Plan By: Becca Flanders  
Lesson: Introduction to Earth Sun Relationships incorporating P.E.  
Length: 30 minutes  
Age or Grade Intended: 3rd grade  
Source: original ☺

**Academic Standard:**  
Social Studies Unit Theme:  
3.3.4 Explain basic earth/sun relationships, including how they influence climate and identify major climate regions of the U.S.

**Performance/Behavioral Objectives:**  
After participating in the lesson, students will explain that the amount of heat a location on earth receives from the sun is related to how far away that place is from the sun with 100% accuracy.

**Assessment:** Students will use a diagram of the earth and the sun on a handout to write a brief explanation of what they learned. This will be placed in their unit journal.

**Advanced Preparation by Teacher:**  
To prepare for this lesson the teacher must find large place where children can run around outdoors. The teacher must also mark on the surface of that area a “sun” area as well as a “earth” area as show in the picture below. Three buckets must also be obtained and placed at the locations shown below. Bucket #1 should be labeled as “the North Pole,” bucket #2 should be labeled as “the equator” and bucket #3 should be labeled “the South Pole.” The teacher must create at least 100 small pieces of yellow paper which will be “sun rays.” These should be place within the boundaries of “the sun” For the second activity the teacher will need a large bucket with water in it and 3 small cups with a whole in the bottom of them. Lastly, the teacher must prepare a handout (see attached) and gather enough rulers so that each student has one.
Procedure:

Introduction/Motivation:
The teacher should begin the lesson by activating the students background knowledge about climates. Have a brief discussion about what the students already know about differences in the world’s temperatures. Explain that today we are going to try to discover why some parts of the world are always cold, and other parts of the word are always hot, and why some are just “in between”

Step by Step Plan:
- Divide the students into 3 groups. Each group will be assigned to either bucket #1, #2 or #3. Explain that each bucket represents a place on the earth (North Pole, South Pole, or the Equator). Their job is to run as fast as they can and bring “sun rays” from the sun to their team’s bucket. They must only carry one “sun ray” at a time and when the whistle blows they must freeze where they are and wait for instructions. (Bodily-Kinesthetic)
- Ask if there are any questions
- Let the game begin! Allow the students 2 minutes and then blow the whistle.
- Gather the students and their buckets to discuss what they discovered. Count which bucket got the most “sun rays” (should be the equator). (Logical-Mathematical)
- Ask:
  - “Was there a difference in distance that each team had to travel to their bucket? Who traveled the most? Who traveled the least?” (Bloom’s: Knowledge)
  - “Why do you think the Equator team got the most “sun rays” in their bucket?” (Bloom’s: Analysis)
- Pass out the diagram sheet that was prepared ahead of time.
- Explain that the sun’s heat travels to the earth in rays. Ask the children to draw a ray on their diagram that reaches the “North Pole”, and draw another ray on their diagram that reaches the “South Pole” Ask the students to measure the rays that they drew with a ruler. (Logical Mathematical)
  - “Which ray that you drew was the longest/shortest?” (Bloom’s Knowledge)
  - “How might the distance that the ray travels, affect the amount of heat that reaches the earth?” (Bloom’s: Analysis)
- Say, “Let’s explore this! Now we are going to play a second game that is similar to the first game. This time, instead of carrying “sun ray” packets, you will carry your “sun rays” as water in a cup that has a hole in the bottom. The water will represent the amount of heat that is coming from the sun to the earth.”
- Let the second game begin! Allow the students 2 minutes and then blow the whistle.
- Gather the students and their buckets to discuss what they discovered this time.
- Ask, “What happened to the “sun rays” as you ran along?” (Bloom’s: Knowledge)
- Ask, “How might this new game help us understand how the distance that the ray travels affects the amount of heat that reaches the earth?” (Bloom’s: Application)
- Explain how this is like the sun rays that come from the sun. If they must travel a long distance, some of their heat is lost, just like water was lost from the cup when it traveled a long distance.
**Closure:** Underneath the diagram on the handout, have the children write a brief explanation of sun rays and how they travel. (Linguistic Intelligence) Ask them to include the differences they noticed from doing the activities between the sun rays that reach the Equator and the sun rays that reach the North Pole or South Pole and how the distance that sun rays have to travel, affects how much heat reaches the earth. Have them spread out and sit with a partner while they write. They may talk to their partner about this and share ideas.

**Accommodations/Enrichments:** For the children in my class that have MiMH I would have them work with an understanding and reliable partner for the final assessment. I would come to their groups specifically and talk through everything with them. If a student has mobility limitations, they could still participate in this lesson. They could remain at the “sun” area and be responsible for handing students “sun rays” as they come running up. To challenge all the students in the class, I could pose an extra question that they could write about on their handout: “how do you think the distance from the sun, affects the kinds of plants and animals that are found in a particular place on earth.”

**Self Reflection:**
- I will know that my lesson was effective if students are able to make a connection between the activities and the actual earth sun relationship. I will assess this by carefully looking over what they wrote on their handout.