Mrs. Temoshok's Lesson Plan

WHAT TIME IS IT?

Objectives:

- Students will demonstrate an understanding of latitude and longitude by identifying locations by degrees.
- Students will learn and use the meanings of a.m. and p.m. appropriately.
- Students will become familiar with a 24-hour (universal) clock.
- Students will demonstrate an understanding of time zone changes by calculating the time at different degrees longitude.

Age: grades 4 – 6

Time: 1 – 2 lessons

Materials:

- Globe
- Clock
- Map of the world for each student or pair of students
- Copy of student worksheet for each student.

Instruction:

- Check for students' understanding of time zone differences by leading a discussion about why the whole world is not on the same time. Illicit ideas about why it is important that there be an agreed upon time universally. (Some ideas might be plane schedules, sporting events, TV shows, etc.) Explain that this came about a long time ago in a place called Greenwich, England. (The French wanted it to be in Paris, but the English prevailed.) So Greenwich became the place on the map we now call the Prime Meridian or 0 degrees longitude, otherwise called Greenwich Mean Time (GMT), ZULU time, or more properly, Universal Time. When traveling in a ship or plane there is a special clock that is always set to Universal Time. If you know your longitude and GMT time, you can figure out what time zone you are in.
- Demonstrate a 24-hour (universal) clock by counting from 1 a.m. (ante-meridian) and continuing counting past 12 p.m. (post-meridian) all the

way to 24:00. Students might make a chart relating the two types of clocks. (Ex. 2:00 p.m. = 1400 hours)

- Review longitude and latitude: Explain that there are 360^o of longitude (the circumference of the Earth) and that there are 24 hours in a day. So 360^o / 24 = 15^o. Meaning that for each 15 degrees west of GMT the time on the clock is (-1) and (+1) for each 15 degrees East from 0.
- This is a 2-step problem. First take the longitude and divide it by 15. Add or subtract that answer to the known GMT.
- Example: If the ship is at 30^o W, the time is (+2) hours from GMT. (30^o / 15 = 2). So if the GMT were 3:00, the local time would be 1:00.
- Distribute student worksheet and maps or globes. Have students work in pairs to complete the assignment.

Evaluation/Assessment

Students will be assessed on successful completion of the worksheet and successful writing of 2 original problems.

Name: ___________________

<u>WHAT TIME IS IT?</u>

Example:

What time would it be if the GMT is 4:00 a.m. and your longitude is 45oW?

45/15=3 4:00 - 3 = 1:00 a.m.

1. What time would it be if the GMT is 1:00 a.m. and your longitude is 45oW?

2. What time would it be if the GMT is 13:00 and your longitude is 30oW?

3. What time would it be if the GMT is 17:00 and your longitude is 75oW?

4. What time is it in Hawaii if the GMT is 3:00?

5. What time is it in the Galapagos Islands if the GMT is noon?

Make up two of your own problems to give to a classmate. Write the solutions on the back.

1.

2.