

COURSE: ALGEBRA

UNIT NAME: EVERYDAY MATH

TIME: 45 MINUTES

GRADE: 10TH

LESSON CREATED BY: GIFTON GREY, *Cultivating Global Citizenship, Summer 2011*

TEACHING POINT

How can we incorporate aspects of the Olympics into everyday math?

OBJECTIVES

At the end of this lesson, students will be able to:

- Connect athletics to math
- Use math to make cultural connections
- Determine when collected data or display of data may be biased
- Make a connection between goal-setting and achievement

MATERIALS

- Eight \$1 bills
- Promethean board
- Sticky, chart paper
- Calculators
- Text: Algebra 1 Prentice Hall

VOCABULARY

- Mean
- Mode
- Median
- Frequency
- Olympics
- Histogram

PROCEDURE

- 1) Students will complete their "Do Now."
- 2) The teacher will discuss answers to the "Do Now" activity and provide a website for additional information.
- 3) Students will do a mini-lesson in which they write characteristics of an Olympian and stick them onto a poster of the Olympic rings.
- 4) A brief lesson will be done to look at the shapes that make up an athletic track, while at the same time also taking a glimpse at the demographics of American society.
- 5) Students will participate in a goal-setting activity.

1) DO NOW

What is the name and nationality of the athletes with the following world records?

	<u>Name</u>	<u>Nationality</u>
1. Men's 100m track and field	_____	_____
2. Women's 100m track and field	_____	_____
3. Men's marathon	_____	_____
4. Women's marathon	_____	_____

Samuel Wanjiru (Kenya), Usain Bolt (Jamaica), Naoko Takahashi (Japan), Florence Griffith –Joyner (USA)

2) QUESTION

Principle: Preventing Prejudice

Where did you get your information?

The teacher will discuss the “Do Now” with the class and:

- 1) Find out how they came up with their answers
- 2) Reveal the answers
- 3) Provide a website where the answers can be found:
http://en.wikipedia.org/wiki/List_of_Olympic_records_in_athletics

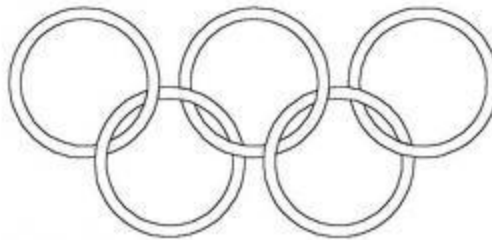
3) MINI LESSON – ACTIVITY#1

Principle: Preventing Prejudice

Principle: Promoting Social Justice

The teacher will ask the students: What does an Olympian look like? Does he/she have a certain look? Is he/she from a certain country or is he/she from a certain race or religion?

After the discussion, the teacher will give each student two sticky notes and challenge them to write one characteristic of an Olympian on each sticky and stick it onto a drawing of the **Olympic rings** on the chart paper.



After the rings have been fully decorated with characteristics, the teacher will discuss the responses with the class.

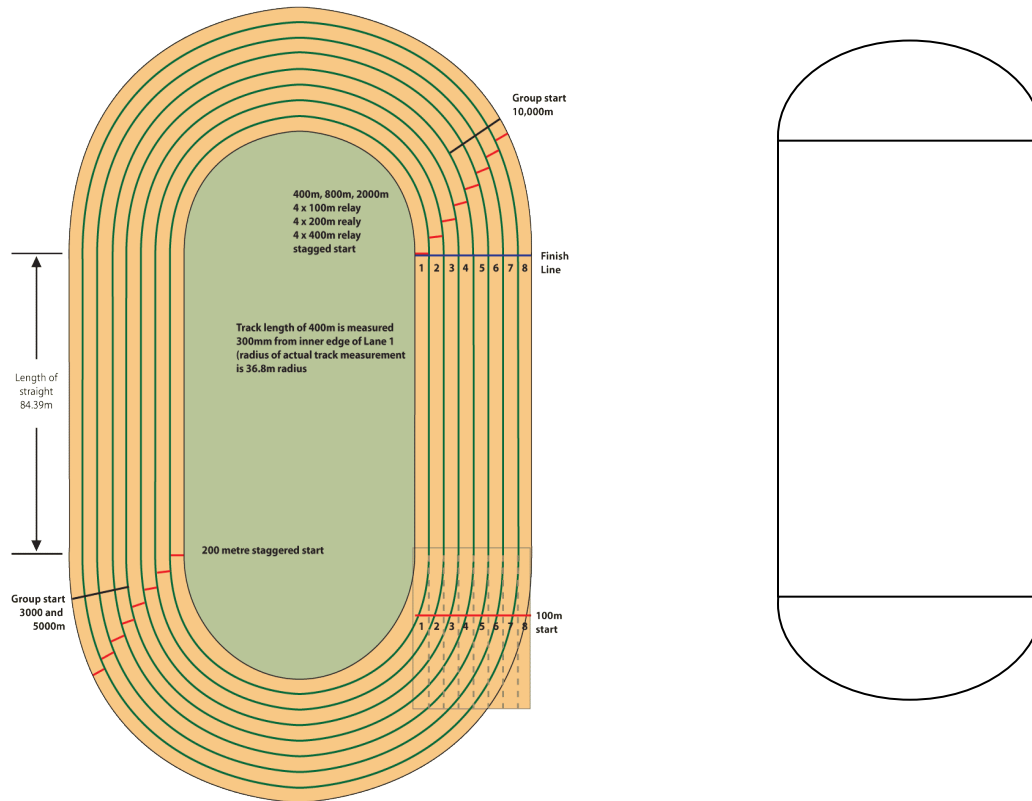
4) ACTIVITY #2

Principle: Exploring Multiple Identities

Principle: Preventing Prejudice

Principle: Adapting and Integrating Lessons Appropriately

The teacher will next show the students a drawing of an athletic track and ask them to identify the different shapes that make up the track.



Answers: Responses should include **semicircles** and a **rectangle**.

The teacher will then ask the class the following questions:

- 1) What groups of people make up the United States of America?
- 2) How is this class made up?

This question aims to elicit a variation of answers to encourage a discussion on multiculturalism. The expected answers should include race, religion, sexual orientation, ethnicity, etc.

The teacher will provide the website below, which can be used as a source for more information on the demographics of the United States: http://en.wikipedia.org/wiki/Demographics_of_the_United_States

5) ACTIVITY #3 – REACHING FOR YOUR GOAL

Principle: Preventing Prejudice

Principle: Adapting and Integrating Lessons Appropriately

In this activity, students will be divided into four groups. Each group will be assigned a wall in the room. The teacher will put a \$1 bill about 10ft up on each wall. The students in each group will then be challenged to jump as high as they can to reach the \$1 bill. Students will take turns attempting this task. During this time, the height of each student's jump is recorded. The money will go to anyone who touches it. If this

happens, then another bill will be placed higher and the game will continue until everyone has had four tries. The student who records the highest jump in the class will be the ultimate winner.

Note: Before the activity begins, the students will be asked to predict a winner.

Follow-up activity:

Each group will answer the following:

- 1) Could you predict the winner?
- 2) What did you learn from this exercise?
- 3) What is the average/mean height recorded?
- 4) What is the median height?
- 5) What is the mode height?

SUMMARY

Principle: Promoting Social Justice

The teacher will ask the students to compare the Olympics to the “Reaching Your Goal” activity. What did they learn? Could they predetermine who the winner would be? Why did they keep trying even though the dollar bill seemed to be out of their reach? What didn’t they give up? (**Perseverance**)

Should the winner have a certain look or belong to a specific race or religion?

The Olympics is all about equal opportunities and anyone from any background, race or religion can be a winner.

ASSESSMENT: Students will be assessed based on teacher observation, student involvement, class work, group involvement, journal entry, portfolios, group tests, and interviews.

HOMEWORK

Principle: Adapting and Integrating Lessons Appropriately

- 1) Draw a stem and leaf plot to represent the heights.
- 2) Draw a histogram to represent the heights
- 3) Draw a cumulative frequency histogram to represent the information.