Mississippi Valley Archaeology Center
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This lesson was created by a teacher participating in a Wisconsin ESEA Improving Teacher Quality grant entitled Inquiry Based Technology-Mediated Teacher Professional Development and Application.

Title:	Gridding a 2 x 2 Meter Unit
Submitted by:	Janelle Nelson
Grade Level:	6-8
Subjects:	Math
Objectives:	Students will work cooperatively to measure a 2 x 2 meters square unit with two sides of each square unit aligning north.
WI Standards:	Math A.8.1, A.8.2, D.8.3, D.8.4
Duration:	One 45 minute class period
Materials/Supplies:	3 tape measures per group, 4 flags or corner holders (craft sticks will work) per group, compass
Vocabulary:	-Before the activity - gridding, grid unit, meters, -After the activity - Pythagorean theorem, 3-4-5-triangle ratio
Background:	Archaeologist set up a grid over the site and make numerous maps to record the locations of artifacts recovered during excavations. The maps along with notes, photographs, drawings and the artifacts are used by archaeologists now and in the future to reconstruct what happened at the site.
Setting the Stage:	Share with the students the information on how archaeologists document what is happening during an archaeological excavation from MVAC's web site at: http://www.uwlax.edu/mvac/ProcessArch/ProcessArch/field_documentation.html
Procedure:	1. Teach and discuss the vocabulary words before the activity. 2. Share the background information with students. Discuss any questions

they may have.
3. Set the stage for students.
4. Discuss the materials that they will be using to complete their task: Students will work cooperatively to measure a 2 x 2 meter square unit with two sides of each square unit aligning north.
5. No other directions will be given. There is little room for error. Measurements must be very precise. Only 1 centimeter will be forgiven.
6. Students need to be grouped (3-4 per group).
7. Take students out to a grass covered playground with their materials.
8. Allow students to measure while documenting cooperation of group members and comments overheard.
9. At the end of the class period, either discuss the possible solutions outdoor or back in the classroom.
10. Discuss the last two vocabulary terms.

Closure:

1. Ask students about their experience and how they solved the problem of creating a 2 x 2 meter square that had two sides aligned north. Get input from all groups. What would be the next step? Should we make a group site map? And then what?
2. Did anyone use the 3-4-5-triangle ratio to help them solve the gridding activity? Did you use the Pythagorean Theorem, A squared + B squared = C squared? Why is it so important to have precise measurement? What did you learn? Do archaeologists need to use math?

Evaluation:

Evaluate student participation and cooperation in the gridding activity and accuracy in measurement.

Links:

Follow-up Lessons – Find some Pythagorean Theorem Mathematics Lessons from your school's textbook.

Extension:

See Intrigue of the Past Lesson#9 "Gridding A Site." Pages 44-48 for many additional gridding lessons.

References:

Smith, Shelley J. and Jeanne M. Moe, etal. Intrigue of the Past. United States Department of the Interior, Bureau of Land Management. 1996."Gridding A Site," Lesson 9." p. 44-48.