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IT 7360

Spring 2013

A07 Develop Web App/Tool and Lesson 3

**Lesson- WebQuest on Distance and Midpoint for Review before Quads**

Standards:

GPS-

* **MCC9-12.G.GPE.4** Use coordinates to prove simple geometric theorems algebraically. *(Restrict contexts that use distance and slope.)*
* **MCC9-12.G.GPE.5** Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
* **MCC9-12.G.GPE.6** Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
* **MCC9-12.G.GPE.7** Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula

Learning Objectives:

1. Students will be able to use coordinates to prove simple geometric theorems algebraically.
2. Students will be able to explain their conclusion with the use of the distance, slope, and midpoint formula.
3. Students will be able to work cooperatively to determining specific characteristics of a road trip
4. Students will be able to expand on their current knowledge and put their own individual twist on the material.
5. The students will be able to reflect on the work that they do and

Essential Questions:

How can we use distance and midpoint formulas in real life situations?

Lesson Plan:

Engage- The students will begin the lesson by logging into the computer and will be assigned partners at the teacher’s discretion. The students will then log into the webquest which will take them through the entire lesson including directions.

Explore- The students will be looking into the multiple ways that distance and midpoint formula can be used when planning a trip and wanting to stop at certain destinations on the way. This will allow the students to review this information before having to use it in a more complex and abstract situation as a proof.

Explain- The students will plan their trips to a certain destination and also work around specific points of interest that include the middle of the trip as well as the total distance. The students have to document their trip including pictures and worked out examples.

Elaborate- The students will have to use the distance and midpoint formulas in a real life setting to form a trip and find some points of interest along the way and discuss the distance to each spots and the implications of each in comparison to the total distance.

Evaluate- The students will be evaluated in one overarching way on two different activities throughout the webquest. The students will first have to complete the warm up exercise that will get them thinking about the two formulas and fine tune some skills. The students will then be evaluated on their final product that they put together on the road trip and their reflection is included in this final product. A rubric is attached to the webquest.

Extend- The students will use the distance and midpoint formulas to help with the final reflection and the proof that will be used as the intro into the next days activity. The students will complete a reflection about their road trip and what they found about the midpoint and distance. They will then be given a quadrilateral in order to use the distance and midpoint formulas to find the type of quadrilateral.

Assessment

The students will be graded on their actual product once it is complete and turned in at the end of the lesson. The rubric that they will be graded on is on the webquest itself.

Warm Up Solutions:

1. 5.83
2. 12.08
3. 10.77
4. 13
5. 14
6. 13
7. (0, -2)
8. (1.5, 2)
9. (-3, -2)
10. (5, -4)
11. (-1, 1)
12. (-6, -1)
13. (11, -6)
14. (9, 10)