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## Maze Game Using Smart Board

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# Generic Lesson Plan Template

You should submit this form in addition to any computer generated files/documents/models to your group folder on Angel. Please create a .zip file and upload the group of files as a single archive.

Name: John Palo
Grade level(s)/Subject taught: 9 <sup>th</sup> grade/ Coordinate plane
Objectives: To help students become familiar with the coordinate plane, plotting points, recognizing slopes of lines.

Please provide a rich **one-page, single-spaced**, description or a *vision* of your best thinking on a way or ways you might teach the planned lesson. (approximately ½ page for the teacher role, ½ page for the student role). Also, construct a tentative rubric that you might use with your students (see example)

Items to include in your lesson plan: (Choose your discipline/concepts from your own area).

1. *Write the Mathematical Concept or “key idea” that modeling will be used to teach:* (e.g. Students use mathematical modeling/ multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships)

Students will learn basics of a coordinate plane, such as the difference between positive and negative values for x and y, the origin, and problem solving.
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and/or...

- 1b. *Write the Science Concept or “key idea” that modeling will be used to teach:* (e.g. Organisms maintain a dynamic equilibrium that sustains life).

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Materials:

“...a rich **one-page, single-spaced**, description or a *vision* of your best thinking...”

Prompts:

1. How will you assess the prior knowledge of the student?
2. How will you begin the lesson?
3. What are the teacher and students doing every 5-10 minutes? (Teacher Actions and Student Actions)
4. How will you assess the learning for the lesson?

Using \_\_\_\_powerpoint and project interactivate (maze game)\_ I plan on having my students...  
(software / modeling package(s))

On the first day, I would have some questions about coordinate planes such as in what quadrants are the x values positive/negative and in what quadrants are y values positive/negative. This bellwork activity would probably last about 10 minutes or so. Next I would have the students brainstorm and review what they already know about coordinate planes (origin, x and y axis, etc.) on the first day. After going over key concepts and terms for about 10 – 15 minutes and illustrating them on the overhead, I would have the students watch a demonstration on the LCD projector of how to play the maze game. I would encourage students to take notes and ask questions. This should take about 10 -15 minutes more and perhaps even have some students come and try it (maybe on a SmartBoard or at least on my laptop).

On the second day, I would briefly review the handout sheet and what they are expected to do for the maze game. This should only take about 5 minutes. The remainder of the class, I would have the students (possibly in pairs if not enough computers are available) play the maze game while answering the questions on the worksheet. I would be walking around and monitoring their progress. Also, some of the questions require the students to demonstrate their skills before moving on so I would anticipate being called upon quite a bit. I anticipate the students should be able to finish the worksheet in one class period(about 35 – 40 minutes).

On the third day, I would have the students discuss their findings with each other in groups for the first 15 minutes or so. After that, we would come together as a class to discuss any patterns or trends we saw occurring. Also, I would have students come up to either the SmartBoard or laptop w/ the LCD projector and demonstrate. Hopefully, the students would see an improvement in at least time and possibly the number of moves they move the robot.

Assessment – I would collect the worksheets at the end of the day but the majority of the students assessment would come from watching them perform the tasks in real time. The rubric would be pretty basic as to whether the students are able to perform the tasks. Student’s participation would greatly affect their grade for this assignment. I would emphasize that as I monitored the students. Also, when working in groups on the 3<sup>rd</sup> day, group participation would also affect their grade and if they are able to recognize patterns. Question #3 from the worksheet would be a great question to see if students have a pretty good idea as to what slope is and how to determine it.

**\*\*Example:** "I was thinking about beginning the class on [modeling X] by using the overhead to ask students what they know about X. From this brainstorming session, I might ask them to get into groups and discuss one or more of the ideas they gave me. After about ten minutes, I would have the students give their ideas on X and write them down on a transparency so they would be able to see them for the entire hour. From here, I would provide a 10 to 15 minute demonstration of the basics of using \_\_\_\_\_ modeling software. I would use an conceptual example that they would find familiar with such as getting a cold and how it is transmitted. From here, I would have students at the computer stations using a prepared guide or tutorial to get them started on basic software usage. I expect that in a short time a number of students would "catch on" rather quickly and be able to help others. .... By the third lesson, I suspect that most would be well on their way to development of their own or small group models using the \_\_\_\_\_ software. My plan of assessment would probably be a group model so they would gain more confidence in using the software in a meaningful way. After the second or third lesson, I would ask them to choose from a list of thematic or topic areas that fit the software nice and develop a model using the technology. As a product, I may have partners share their model and describe to other small groups how it works. The rubric I design would be general at first so that I might see what kinds of the products the student were capable of creating. From the prototypes, I would hone my rubric to make the modeling product as challenging as possible without making it too difficult." Etc...