

Model of Embedding Math Tutor in Classrooms

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Motivation

After being brought aboard on the TAACCCT 3 grant, I noticed that the students didn't see the connection between the math courses and other content courses. I was also tasked with helping improve developmental math scores. This led me to sitting in classes and trying to help the students make the connection.

IEFA

- Participation with students in a joint productive activity.
- Monitor and support student collaboration in positive ways.
- Listen to students talk about familiar topics such as home and community.
- Encourage students to use content vocabulary to express their understanding.
- Assures that students, for each instructional topic, see the whole picture as the basis for the understanding of all the parts.
- Interacts with students in socially appropriate ways that model conversations and courtesies of conversation.

Learning Objectives

- Identify the connection between math and other courses.
- Demonstrate an improvement in their math understanding
- Construct a better study plan.

Activity Sequence

- Sit in/participate in classes that have math in their content.
 - Help/instruct students.
 - ATDI 264
 - DST 216
 - M 111
- Help Instructors when needed.
- Sit in math courses and help out as needed.
- Tutoring (one-one or "café" style)
 - Math help.
 - Other Courses help.
 - Talking, Listening, etc..
- "Liquid" Scheduling
 - Always changing

Materials & Technologies Involved

$$\begin{array}{lll}
 1. \begin{cases} 7x - 8y = -1 \\ 7x - 6y = 1 \end{cases} & 2. \begin{cases} -x - 8y = -30 \\ 9x + 8y = 14 \end{cases} & 3. \begin{cases} -x - 2y = 6 \\ 10x + 5y = -15 \end{cases} \\
 4. \begin{cases} y = 3x - 1 \\ y = -6x + 8 \end{cases} & 5. \begin{cases} x = 6y + 9 \\ x + y^2 = 0 \end{cases} & 6. \begin{cases} -10x - 10y = 30 \\ 30x + 30y = -90 \end{cases} \\
 7. \begin{cases} 3x + 5y = -15 \\ 27x + 45y = -150 \end{cases} & 8. \begin{cases} x - y = 3 \\ x^2 + y^2 = 5 \end{cases} & 9. \begin{cases} 3x + 8y = -27 \\ 4x - 4y = 52 \end{cases} \\
 10. \begin{cases} 0x - 4y + 3z = 33 \\ 5x + 7y - z = -10 \\ 2x - 7y + 7z = 77 \end{cases} & 11. \begin{cases} -10x - y + 7z = -18 \\ -3x + 5y + 10z = -8 \\ -3x - 4y - 5z = -2 \end{cases} & 12. \begin{cases} x - 10y - 2z = -4 \\ 2x - 20y - 4z = 8 \\ 4x - 10y + 5z = -12 \end{cases} \\
 13. \begin{cases} -3x + 4y + 3z = 0 \\ 6x - 8y - 6z = 0 \\ 2x - y + 5z = 0 \end{cases} & 14. \begin{cases} 3x - 10y + 3z = -6 \\ -9x - 4y - 10z = 27 \\ 9x - 6y - 9z = 144 \end{cases} & 15. \begin{cases} x - y - 6z = 19 \\ -6x - 6y - 7z = 39 \\ 4x + 3y + 0z = -10 \end{cases}
 \end{array}$$

Graphing Inequalities

Same as graphing normally, except for 2 things!

① Dotted (Dashed) vs. Solid Line

$<, >$ means Dotted (Dashed)

\leq, \geq means Solid

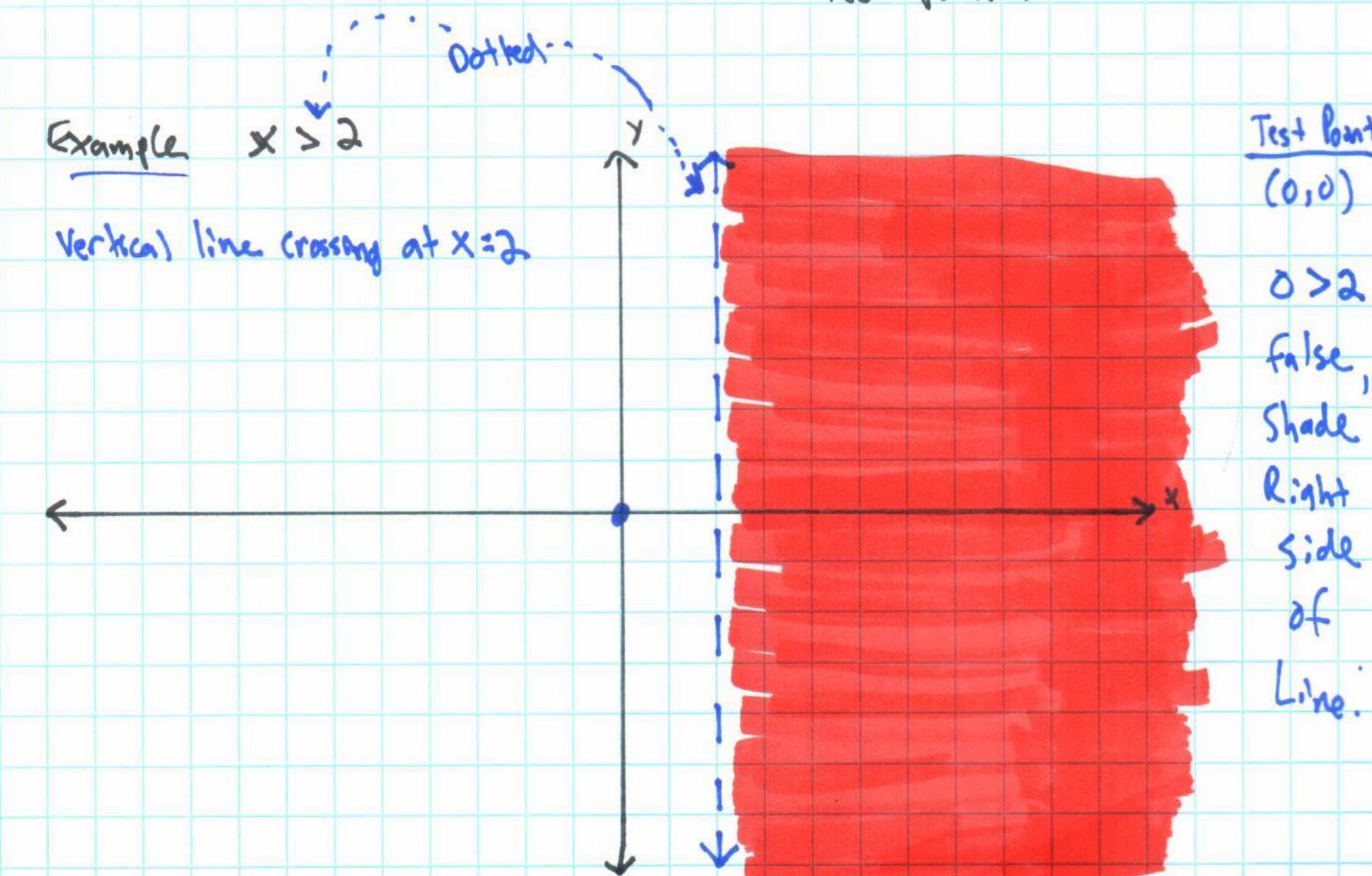
② Shading a side of the line.

① Pick a test point. $(0,0)$ best unless line goes through that point. Then use any other point.

- Plug in into the inequality and if it is:

TRUE \Rightarrow Shade the side of the line that contains the test point.

FALSE \Rightarrow Shade the side of the line that DOESN'T contain the test point!



Reflection & Revision

- Students loved having someone around to ask questions.
 - Both Math and other content areas.
- Helped construct a bridge between math and other courses with the students.
- Made it easier for students to ask for help. (Math or other)



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