

Lesson 1: Defining Equity in Math Education

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Grade Level(s)

12th grade students enrolled in “Mathematical Decision Making for Life”

Lesson Overview

Students will read an article about equity in math education and discuss the issues it raises. Students will record the main points of the article in a graphic organizer and supply their own examples of these points from their own experiences in education.

Learning Objectives

The class will explore a framework and establish a set of vocabulary for discussing equity in math education. Students will contextualize their past experiences with mathematics in the mapping space offered by the article.

Standards

- How to initiate and participate effectively in a range of collaborative discussion with diverse partners on grades 11-12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively. In particular, how to:
 - o Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. (SL 11-12.1b)
- How to present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. (SL 11-12.4)

Preparation

- Prepare examples of Access, Achievement, Identity and Power from your own experience as a learner and as a teacher to spark conversation with students if needed.

Materials and Resources

- Copies of article, “Framing Equity: Helping Students ‘Play the Game’ and ‘Change the Game’” by Rochelle Gutiérrez, available in this PDF: <http://www.todos-math.org/assets/documents/TEEMv1n1excerpt.pdf>
- Blank paper for creating graphic organizer.

Activity 1: Read and Annotate “Framing Equity” (10 min.)

- “I’m continuing to think about my hope that we spend this year together truly enjoying math and leaving with an enhanced ability to talk about it. I hope you all leave saying, ‘I like math. I am good at it. I’m not afraid of it. Math will not be the thing that stops me.’ I’d like to unpack that last statement. What would it mean for math to be the thing that does stop you? What does it look like to change that outcome if it seems like math is a barrier? Think about that for a moment, and we’ll share...”
 - o Allow a few minutes for quiet reflection, then share in small groups, then share as a class.
- “Many of these comments contribute to a conversation about equity. I truly believe that you are the ones who will make a difference for the future. Not only will you go on and lead your own lives, but you will hopefully be allies for change for the better. For you to do that, I believe you not only need good math, but you need to understand the context for math education. Furthermore, we are going to work with kids from the school next door in order to impact their outcome in math and in school. In doing this, we will expand into a deeper and broader understanding and appreciation of math ourselves. To begin our unpacking of this issue, I’d like to begin with an article about equity in the math classroom.”
 - o Pass out article. You have two purpose questions for this reading. Write these at the top of the article. What does it mean to “play the game”? What does it mean to “change the game?” Allow ~10 minutes for students to read and annotate the article.

Activity 2: Discuss in groups (5-6 min.)

- Allow time for students to discuss their thoughts about the article in groups of 2-3.

Activity 3: Graphic Organizer and Whole Class Discussion (15-20 min.)

- Pass out a blank sheet of paper and have students draw a large diagram similar to the Dimensions of Equity diagram in the article.
- As a whole class, identify headlines for how the article defined Access, Achievement, Power, and Identity. List these headlines under the bubbles for each concept. Provide

some of the examples that you prepared ahead of time to get the conversation going if students have a hard time identifying with their own experiences in mathematics.

- Ask students to think about how their math experiences have reflected or omitted these identifying characteristics of each concept. Allow time for them to write down examples that come to mind, then ask for those who'd like to share.
- List these as examples under the bubbles for each concept. Provide some of the examples that you prepared ahead of time as seed examples to get the conversation going if students have a hard time identifying with their own experiences in mathematics.

Troubleshooting

- It is likely that students may have a hard time conceptualizing some of the characteristics provided by the article to develop the ideas of Access, Achievement, Identity, and Power. For this reason, it is a good idea to reflect as a teacher of mathematics about your own understanding of how these tensions have played out in your own classroom and be prepared to honestly share some examples. At the same time, it is important that you keep yourself situated at "the crossroads of these tensions" and mostly offer insight in helping your students name the dimension that may be at play in their own experience.
- Students may be hesitant or unpracticed in reflecting on the methodologies they have experienced in their math education and being able to describe how these experiences reflect Identity and Power, in particular. For this reason, it is important to be prepared to talk about examples of this in a way that establishes the norms of active listening, allowing others to express an opinion without attachment, and respectful response to the ideas of others. If this is not a norm in your classroom environment, consider establishing these norms as part of the beginning activity.

Assessment

- Closure Statement: "We are going to work with students at _____ Elementary in order to impact their academic outcome in mathematics. In doing this, I hope to help us expand and deepen our own understanding and appreciation of math. To begin this work, it will be helpful to uncover and make conscious more of our own experiences, understandings and attitudes about math."
- Prompt students to use the article and the graphic organizer to further reflect on their math experiences in your school in particular, then on their math experiences in elementary and middle school. Ask them to add these examples to their graphic organizer as a homework or take home assignment.