

**TEAM-Math and AMSTI Math Science Partnership Professional Mathematics
Learning Communities**

Presenter’s Guide for Equity and Access

Overview

Title of Activity/Lesson	Equity and Access
Time Allotment	60 minutes
Audience	All participants
Content Objectives	Standards for Mathematical Practice
Pedagogical Objectives	Principles to Actions – Mathematics Teaching Practices
Overview of Big Ideas	<ul style="list-style-type: none"> • Productive and Unproductive Beliefs Related to Equity • Defining Equity • Growth vs. Fixed Mindset • Standards for Mathematical Practice • Mathematics Teaching Practices
Materials	<ul style="list-style-type: none"> • Equity and Access Power Point • Productive and Unproductive Quiz Slide Key (Hard copy for participants) • Carol Dweck Video from Youtube https://www.youtube.com/watch?v=MTsF2TaEaJA • Standards for Mathematical Practice Look Fors • 5 x 5 Dot grid paper for each participant • Short Video (Looking for Squares) • Mathematics Teaching Practices

Outline/Plans	What Might Happen/Dialogue
<u>Productive and Unproductive Beliefs Quiz</u>	
Show the slide with the four statements.	Instruct participants to write down whether they believe each statement is productive or unproductive.
Quiz on beliefs related to equity issues. Show the quiz on the PowerPoint. Give the participants time to write down their responses.	“Write your response without consulting with anyone! This is your gut level reaction, and no one will know how you responded.”
Hand out the Productive and Unproductive Quiz Key. Ask participants to discuss one of the statements with their elbow partners	“What does it mean for students if teachers and/or administrators ascribe to any of the aforementioned beliefs?” “Pick one to discuss with your elbow partners.”
Bring participants back together.	Ask them to briefly share what they discussed in their pairs.
<u>Defining Equity</u>	
Go over the different definitions for equity in a conversational style.	Ask the following questions: “What is equity?” “What does bidirectional mean?” “Why is it important not to be able to predict what students from different backgrounds can do?”
<u>Mindsets Video</u>	Ask participants the following questions:

<p>Show Dr. Carol Dweck on Fixed vs. Growth Mindsets video.</p> <p>Ask participants to discuss the video and its implications for teaching and learning mathematics.</p>	<ol style="list-style-type: none"> 1. What can be done to change a student's fixed mindset toward mathematics? 2. What are the implications for the teaching and learning of mathematics? 3. What can be done to change a teacher's fixed mindset toward mathematics?
<p><u>Standards for Mathematical Practice</u> Hand out the Standards for Mathematical Practice Look Fors. Go over the Standards.</p>	<p>Go through the slides for the Standards for Mathematical Practice to refresh everyone's memory of the standards. If participants appear not to know them, ask participants to read through the Look Fors.</p>
<p><u>Looking for Squares Problem</u> Go through the launch of the looking for squares problem. Then ask participants to find a square with 10 square units on the 5 x 5 Dot grid.</p>	<p>Ask the following questions: What is the area of the unit square? What is the area of the 2 x 2 square? What are other upright squares that can be found in a 5 x 5 grid? What is the area of the tilted square? How do you know? Ask participants to find a square with an area of 10 square units. Ask participants to share their solutions. Next ask participants the following questions:</p> <ol style="list-style-type: none"> 1. What mathematics did you use to solve the problem? 2. What standards for mathematical practice were utilized?
<p>Next, show the short version of the <u>Looking for Squares Video</u>.</p>	<p>Ask the following questions:</p> <ol style="list-style-type: none"> 1. What productive beliefs are supported by the instruction in the video? 2. What shifts in teaching and learning need to occur in most classrooms in order to meet the needs of more students? 3. What standards of mathematical practice did you notice?
<p><u>Mathematics Teaching Practices</u> Discuss the teaching practices.</p>	<p>Discuss the teaching practices with the participants. Talk about how the teaching practices can help teachers to help students to develop the standards for mathematical practice. Ask participants to look at their handout.</p>