

Developing and Extending the Concept of a Radian  
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Today's outline and activity

1. The 8 Mathematical Teaching Practices (see back)
2. Pedagogical considerations when teaching about the radian.
3. Student Activity: **How Much Is a Radian?**

**Steps 1-4:** Provided by the presenters to the whole group

**Step 5:** Find the center of your circle.

**Step 6:** Use a straightedge and draw a radius. Then measure your radius using string.

**Step 7:** Using the length of the radius (the string length), mark off the arc length that is equal to the radius.

**Step 8:** Draw a second radius from your marking to the circle's center to make a sector. Then cut out the sector that represents your radian.

**Step 9:** Answer the following questions. Come to a group consensus to support your answer using all six sectors in your group.

- a. Do larger circles correspond to larger angle measurements when following the procedure we used for determining an angle? Provide a reason for your response.
  - b. Define a *radian* in your own words.
  - c. How are radians related to degrees?
4. Reflection (The presenters will guide you through this part)
    - a. What other math topics does this lesson naturally lead to?
    - b. How could this lesson on the radian be extended?
    - c. What pedagogical considerations would you need for those extensions?
    - d. Where was \_\_\_\_\_ (MTP – see back) used in the lesson?
    - e. How could the lesson be modified to incorporate even more MTPs?

## Planning and Reflection Guide for Any Math Lesson

<b>Mathematics Teaching Practice</b>	<b>Where was MTP in the lesson?</b>	<b>Plans for Improvement</b>
<b>Establish mathematics goals to focus learning</b>		
<b>Implement tasks that promote reasoning and problem solving</b>		
<b>Use and connect mathematical representations</b>		
<b>Facilitate meaningful mathematical discourse</b>		
<b>Pose purposeful questions</b>		
<b>Build procedural fluency from conceptual understanding</b>		
<b>Support productive struggle in learning mathematics</b>		
<b>Elicit and use evidence of student thinking</b>		