1. **Plan the Ten-minute Talk**:

* **Choose** an important component of structure that students must develop over time to target and formulate a question.

Examples:

* 1. For what values of x is x-3 negative?
  2. Rewrite 6x2-9x as a product in as many ways as you can.
  3. For what values of x is  positive?
  4. Suppose in the expression , the y-value is getting bigger while the x-value stays the same. Is the value of the expression getting bigger, smaller, or staying the same? (Explain.)
  5. (See the back of this page for more examples.)
* **Plan** how you are going to get students to share their thinking, how you are going to encourage them to clarify their thinking, how you will hold back evaluative responses, and how you will close the activity.

1. **During the activity**: If possible, videotape, audiotape, take notes, or take pictures as soon as the class ends. Withhold your immediate responses and work to understand students’ explanations from their perspectives. Ask further questions (without putting words into the students’ mouths) to check to see if you fully understand what they meant to say.
2. **After the activity**: As soon as possible after the Ten-Minute Talk, use students’ responses for reflecting on what you know about the mathematics of the students.
   1. Write student responses.
   2. Choose at least one student’s response that was unclear to you and write questions that you could pose to this student to better understand his or her thinking. Briefly describe your purpose for asking these questions.
   3. Write questions you could ask to explore what you still wonder about students’ ideas. (Not leading questions.)
   4. Choose a question from (c) for the next week. When using this question, notice student responses that could indicate slightly different ways of thinking than the week before.

Ten-minute Talk examples for Structure

A. Place the following expressions into groups that represent

1. The sum of squares
2. The square of a sum
3. Neither of the above
4. Both a and b.

Be ready to explain why you put them in the groups you did.

(Mix these up when you present them to students because they are currently in the correct groups.)

|  |  |  |
| --- | --- | --- |
| Sum of squares | Square of a sum | Neither |
|  |  |  |

B. Like the above example, but use equations in two variables, equations in one variable, and expressions as three categories, using examples students have seen.

1. Without graphing, which functions will have graphs that are parabolas and which ones will have graphs that are lines? Briefly explain how you decided. What else can you say about the graphs without graphing them?

a. 

b. 

c. 

d. 

e. 

f. 

g. 