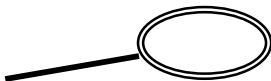


# Math Constructive Conversation Skills Poster

## Clarify Problem and Ideas for Solving It



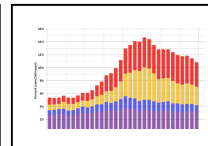
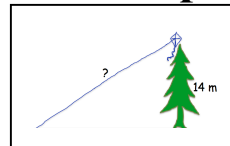
### Prompt starters:

- What are we trying to do?
- What is the problem asking?
- How does the problem begin?
- What happens in the problem?
- What do we need to know?
- How can we break this down?
- What type of problem is this?
- What patterns do we notice?
- What's a possible plan for solving it?
- What is your estimate for the answer?
- Why are you doing that?
- Where did that number come from?

### Response starters:

- In order to \_\_\_\_, we need to ...
- In other words,
- More specifically, it is ... because...
- Let's see, it is similar to the problem about ... that we did because...
- It is important to \_\_\_\_ because
- Let's stay focused on ....
- Let's get back to the idea of...
- In future problems like this one we need to remember to...

## Discuss Representations and Models



$$\int_0^{\infty} \sum_{l=0}^{\infty} \frac{A_l(x)}{2\pi}$$

### Prompt starters:

- How else can we show this?
- How can we draw or graph this?
- What symbols can we use?
- How can we explain this to others?
- How can we write what we are thinking/doing?
- How can we use symbols to represent this problem?

### Response starters:

- Maybe we can use...
- Another way to show this is...
- We can make a data table and...
- We can draw it like this because it says...
- This variable stands for...

## Build Math Solutions, Ideas, & Understandings

## Explain & Support Reasoning



Chain of reasoning w/ principles, axioms, constraints, properties, visuals, patterns...

### Prompt starters:

- Can you explain why you...?
- What does that mean?
- What are you doing?
- What math rule are you using?
- Can you give an example?
- How does the sample problem help us?
- What are examples of this problem from real life?
- Can you clarify where you...?
- How did you get this answer?

### Response starters:

- If we \_\_\_\_, then we need to \_\_\_\_ because...
- A key mathematical principle is making sure that you...
- In real life this is similar to when you want to...
- An example from my life is
- One case that illustrates this is...
- In math, we always need to...
- Let me show you what I mean.
- We can't do that because it...

## Use Multiple Methods for Solving

Visual	Verbal	Symbols	Objects

### Prompt starters:

- How can we solve it with symbols, ...
- What do you think about this strategy for solving it?
- What else could we do?
- We could also move this over there to...
- What are other ways to solve this?
- How can we write this in sentences?
- Let's try other methods for this problem.
- Let's back up and try a different way.
- Which method is most useful? Why?

### Response starters:

- I think these two methods relate because...
- I want to add on to your idea of...
- That method works because...
- I see it a different way,
- That makes me think of...
- We can agree that...
- Let's try to... and see what happens.