# Math Constructive Conversation Skills Placemat

## 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 ___.
- 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

**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 ___.

## Use Multiple Methods for Solving

<table>
<thead>
<tr>
<th>Visual</th>
<th>Verbal</th>
<th>Symbols</th>
<th>Objects</th>
</tr>
</thead>
</table>

**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.

## Explain & Support Reasoning

**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 ___.

## Representations and Models

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