

MATH TALK: Building mathematical ideas



Presenting our ideas



Who can give me an example?

What is another way to solve this problem?

How can you convince your classmates (partner)?

Can you compare your thinking with your partner's thinking?

How can you show your thinking using drawings, manipulatives, numbers, and words?



Adding to other ideas



Do you agree/disagree with _____'s idea? Why?

What would you like to add to _____'s idea?

Do you have a question about _____'s idea?

How can we restate it (question or statement) in our own words?



Making connections



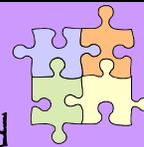
What connection can you make to what we have learned before?

How would you use this math in the real world?

How is this related to _____? What if _____?



Reflecting on what we learned

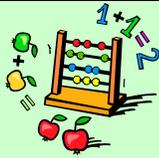


What concepts or ideas have you learned?

How do we use _____?

How can we answer the "E" essential question of the day?

MATH TALK: Building mathematical ideas



Presenting our ideas



I have an idea...

I have an example...

I have another way...

I can prove my thinking by...

I can show you what I am thinking using...

(drawings, manipulatives, numbers, words)



Adding to other ideas



I agree/disagree with _____'s idea...

I'd like to add to _____'s idea...

I have a question about _____'s idea...

I am not sure if I understand _____'s idea...



Making connections



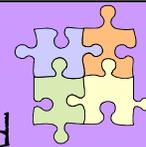
I can make a connection to what we learned before...

I use this math in the real world when I...

This is related to ...



Reflecting on what we learned



I learned that ...

I know how to...

I can answer the "E" essential question of the day...

How to use Math Talk to build mathematical ideas and discourse

To encourage mathematical discourse in your class, we can use the math talk poster to help our students. The idea is for students to build on each other's ideas. So as a visual for this classroom activity, we can use building blocks (multilink cubes) and give each child a cube when they add to the class discussions. In the beginning, you want to use this model using the concrete building block to encourage everyone to participate, but eventually, you will not need the building block because students will be rehearsed in this special talk! You can incorporate cooperative group talk to encourage shy or ELL students who may not eagerly share. They can be the group reporter of ideas and questions and still get building blocks to math talk.

FOCUS Framework in build mathematical ideas

Focusing

On

Conceptual Connection,

Unpacking the mathematics,

Student learning

Conceptual connections ~

- Mapping concept maps
- Connecting multiple representations
- Conceptual understanding
- Connecting to prior knowledge

Unpacking the mathematical ideas-

- Mathematical language and definitions
- Developing rich problems with context
- Develop accurate and meaningful explanation
- Consider instructional materials and tools

Student learning-

- Posing rich problems
- Listening to and responding to students questions, misconceptions and insights
- Eliciting, supporting and extending students' thinking, elaborations and strategies through classroom discourse
- Assess students' mathematics learning and take next steps.