

Critical concept documents from the SD83 District Numeracy Committee

- Critical concepts are the concepts we have identified that students really need to develop a deep understanding of in order to be successful with higher level math
- These concepts are really important and should be seen as the “minimum”- some students may require additional time and/or small group instruction to master them.
- Spend as much time on these concepts as is needed to develop solid understandings
- The critical concepts aren’t the only ones that students should see during the year, but if they can’t master it all- make sure this is what is mastered😊
- Problem solving is an excellent way to weave the other areas of the curriculum into classroom instruction.
- Strongly recommend spending one math class per week working on multi-step problem solving where there is more than one way to solve the problem, and students need to struggle a bit to find a solution.
- When problem solving, don’t just do problems that follow along with the content you are working on in class at that time. We need to be able to find ways to start problems, and may need to try a number of different strategies. If we know that we are doing “combination problems” we don’t really need to problem solve- we just apply the same rote strategy we have been working on. It is less problem solving and more of strategy exercises.
- Problem solving is directly related to curricular competencies, and core competencies. Problem solving involves the application of content learning to new situations.
- There will be updates to these documents as we fine tune instructional progressions (and find errors😊)

The hope is that these critical concept documents provide the basis for common understandings, common strategies and common language so students are able to solidify their understandings of concepts and begin to be able to apply them to real life situations.

How to use the critical concept documents

- Sheets are divided into four sections for each critical concept.

Content box contains the learning standard

Language box: defines critical terms used in the concept. Most of the language is the language you should use with the students, although some says “note for teachers” and is to clarify language for teachers

Strategies box: attempts to walk through the main teaching strategies and sequence for the concept. Examples are given to illustrate most strategies.

- Talking bubbles are used to explain thinking or explain a strategy.
- These documents are meant to be quick snapshot looks at the strategies and content in each grade. You may need to seek out more information on how to teach certain strategies, how to use certain manipulatives etc.
- Look at the critical concept sheets for the grades before and after the grade(s) you currently teach. It is important to see what students should be coming in knowing, and where they will be headed once they leave your class

Where does this lead? This box shows examples of where this concept grows to in future years. There are relatively few concepts that are taught from K-12. The concepts just grow in complexity from one year to the next. The more that we can make connections from one year to the next, the more students will understand and be able to see relationships.

Many thanks to the District Numeracy committee for their hours and hours of work putting these sheets together!