For the interventionist:

- Interventions should begin with **5 minutes or so of basic fluency**, things the student already knows how do but needs to get faster at. You can use questioning, drawing problems (questions) on white board, flash cards, playing cards, dice, games, whatever. Typically this is adding/subtracting or multiplying/dividing.

- Work on **dry erase boards**, preferably vertical surfaces (a classroom whiteboard or dry erase poster board fixed to wall). Sometimes with manipulatives its easier to sit and use an individual dry erase board.

- **Monitor progress:** Keep notes on what was covered and every day review the learning the day before.

- When stretching to new skills or working on skills, the most important question we ask is **"*how did you get that?*"** Reinforce the need for students to **verbalize their reasoning.** Help them find words to describe what they did. "OH, you counted up?" or "You worked from a known fact?" "You used what you know about doubles?" "Did you imagine a number line? Counters? Ten frame?" " Ten-pairs?" But don't do the talking for them.

- Help students **get comfortable with struggling mentally**. It's hard to not offer answers! But hold off. If they're stuck, ask "Well, what are you thinking?" We think differently about math when we speak about math. Give guidance when you have to.

- Paper-pencil practice is necessary and plays a role, but our struggling learners need to talk and interact with someone. **Keep interventions as interactive as possible**. Allow movement, dialog, and sense making.

- **C-R-A continuum** is very important. Use manipulatives to reinforce procedures. You may have to help students model the same thing repeatedly, over time.

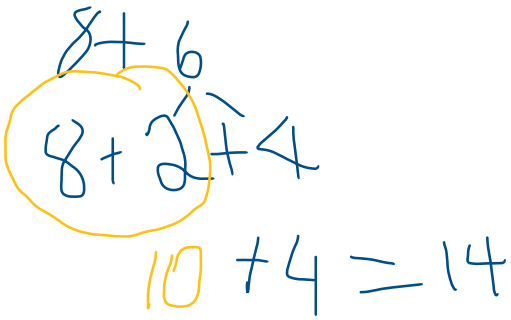
- **Avoid "tricks" "rules"**, and rote memorization. Developing fluency is not the same as memorizing. For instance, lost of kids can skip count by two or five out loud, but its because it has become a "sing song", something they can recite, but it may not be attached to number sense at all. Students know to "borrow" or "carry" (*regroup*) because they've been shown and they have practiced, but they may not know what that actually means.

- Always link addition to subtraction. If working on addition, pause periodically to have student say or write out the **fact family** or answer related subtraction facts. Same with multiplication/division.

- A basis for fluency is being able to **compose and decompose** numbers (take them apart in different ways).
  Why:

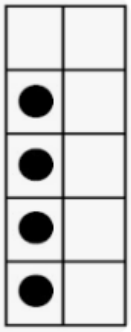
  Students solving $8+6$ or $18 + 26$ or $1\,248 + 96$ are all doing the same thing: Because we work in a base ten system, we are always "making ten".

  When we add 8 + 6, we are thinking 8 + 2 + 4



  For this reason, we do a lot of work with ten frames. Students should be able to subitize in ten frames and give the related number to make ten.

  For instance, you allow the student to glance at this card for 2 seconds, then cover it:



  You ask "How many dots"? So the student hopefully saw it was one less than 5, so they say 4.
  Then ask "So then how many are empty"? Student should say six without thinking, counting, using fingers, etc. The student needs to get fluent with knowing the pairs of numbers that make ten ("ten-pairs") because if they are not, they will always need to count on their fingers, or draw dots, or count up mentally.
  We are not done with this exercise till kids know all the pairs that make ten. Fish for ten is an exercise that supports this. Using this skill never goes away—its embedded in all the math we do. If we can't add, we can't subtract, and we can't multiply. If we can't multiply, we can't divide or work with fractions, etc.

- **Provide LOTS of models**: Ten frames, base ten blocks, number lines, Number bond diagrams, part-part-whole boxes, fact families.

- **Games** are great interactive and engaging ways for kids to practice. Kids should LOVE intervention time. But even when it's not their turn, make sure they're helping do the math—not just answering, but talking about how they got an answer.

- Be curious. **Listen**. ***Remember the person doing the talking is doing the learning.***

- Help your student feel comfortable by reminding them that being fast at math doesn't mean your better at math. Slower processors often think more deeply about the math. We're not working on fluency to get faster, necessarily, but to get more efficient. If we don't get fluent with basic facts then our brain is tied up with computation and can't move on to the deeper mathematics (like the shape, orientation, graph, trend, data, probability, etc).

- Infuse your time with students with **growth mindset** talk. We can be transparent about why we do things. We can respect kids' maturity by telling them that we do things because research points to positive outcomes —that we need models to attach our thinking to. That we *will* learn and grow. That making mistakes creates more neural activity than practicing things we already know how to do. And that struggling in math is like body-building: Even if you don't get the right answer, or even if you don't get an answer at all, struggling with mathematical reasoning and engaging in mathematical dialog improves your brain and your thinking.

- End your notes with progress you saw and things to keep working on, including maybe a quick plan for next session.

- **Track progress with the I Can statements** provided for Sask Curriculum. A more detailed description of what each one means follows in the binder—a summary of Sask Curr'm outcomes K – 9.

- And of course, **relationships** are everything. Help your student see a sense of achievement. Point out progress. Appreciate focus and effort.