

## Supplemental File 6

### *Social Validity Interview Procedures, Questions, and Materials*

























#### **Interview Procedures**






















- Start by displaying math materials used during interventions and material matrix to give students a visual reference.
- Remind students that honesty is important for our research so we can make math better for other students.
- Display Likert questions one at a time.
- *Read all questions aloud to students.*

#### **Study Questions**











1. *[Grand tour question]* Tell me about the study we just finished. What did we do in the study?
  - a. *[Follow up probes]*
    - i. Tell me about the math we just did in our study. What math did we do in our study?
    - ii. What did you learn?
2. *[Grand tour question]* What did you like about the math lessons?
  - a. *[Follow up probes]*
  - b. What parts of the lesson made math easier for you? What was your favorite part about the math lessons?
  - c. What parts of the lesson made math harder for you? What was your least favorite part about the math lessons?
3. *[Grand tour question]* Were there any tools we used that were helpful for you? If so, which tools?
  - a. *[Participant-specific follow up probes based on additional support tools provided]*
    - i. Aaliyah–Tell me what you thought about using a timer when you completed your work. What did you think about it? Would you want to use it again in your classes? Why?
    - ii. Aaliyah–What did you think about using the extended checklist for the proportion problems?





















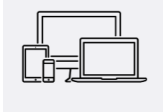




- iii. Esteban—What did you think using color coding when you circled facts in problems? What did you think about using them? Would you want to use it again in your classes? Why?
  - iv. Esteban—What did you think about using the reading app? Have you used it outside of our math lessons? Would you use it outside of our math lessons? Why or why not?
4. *[Grand tour question]* Let's talk about ratio and proportion problems. Which problem type was easier for you to solve? Was there a problem type that you preferred to solve more than the other? Why?
5. *[Grand tour question]* What did you learn that you think you will use in the future?
- a. *[Follow up probes]*
    - i. Can you give me an example of when you might use what you learned in the community or at home?






Study Questions				
I liked setting daily goals. 	Not true at all  Strongly Disagree	Not true  Disagree	True  Agree	Very true  Strongly Agree
I liked graphing my daily score. 	Not true at all  Strongly Disagree	Not true  Disagree	True  Agree	Very true  Strongly Agree
I liked choosing a theme/case file. 	Not true at all  Strongly Disagree	Not true  Disagree	True  Agree	Very true  Strongly Agree
I liked solving for my answers. 	Not true at all  Strongly Disagree	Not true  Disagree	True  Agree	Very true  Strongly Agree
I liked filling in the graphic organizer.	Not true at all  Strongly	Not true  Disagree	True  Agree	Very true  Strongly Agree

	Disagree			
<p>I liked using the manipulatives.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>I liked checking off the steps as I worked.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>I liked checking my work when I finished solving problems.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>I would like my teacher to teach me math like this.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>



<p>I would like to participate in more studies like this.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>If a friend were asked to participate in a study like this, I would recommend that they do it.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>

General Math Questions				
<p>I am good at math.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>I am good at solving word problems.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>I am good at using a calculator.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>I am good at multiplication.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
<p>I like using technology when I am learning.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>

<p>I like using technology to help me solve math word problems.</p> 	<p>Not true at all</p>  <p>Strongly Disagree</p>	<p>Not true</p>  <p>Disagree</p>	<p>True</p>  <p>Agree</p>	<p>Very true</p>  <p>Strongly Agree</p>
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**Final question:** Is there anything else you want to tell me about this study or about math?

Calculator



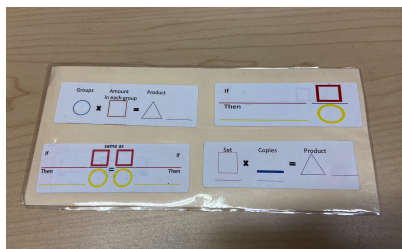
Gestures



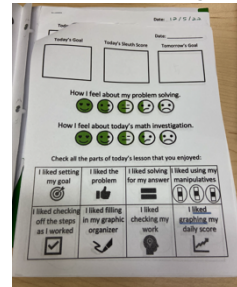
Rules

“This is to that as this is to that.”

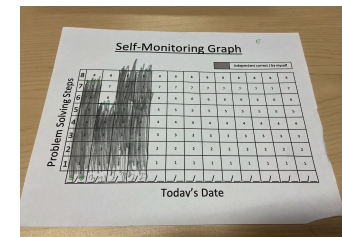
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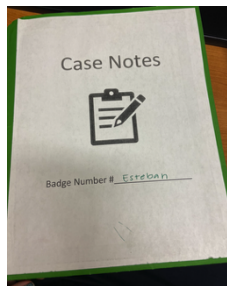
Goal Setting



Student Graph



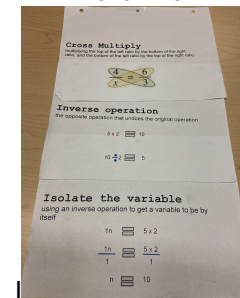
Student Case Notes



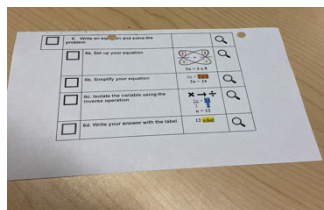
Theme Menu



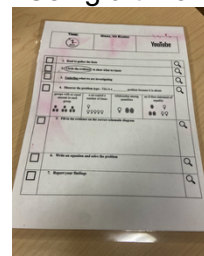
Word Wall



Extended checklist



Using a timer



Color coding

