|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Appendix A |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| *Probe Sheet Sample Problems* |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **Sample Problem** | **BL** | **PPW** | **CH** | **CO** | **PPW-G** | **CH-G** | **CO-G** | **MS** | **Comb** |
| There were 11 students in the lunch line when 12 more students got in line. How many students are  in the lunch line now? | X |  | X |  |  |  |  | X |  |
| Ms. Smith has 12 boys and some girls in her class. If she has 25 total students in her class, how  many girls are in her class? | X | X |  |  |  |  |  | X |  |
| Mr. Rodgers had $73 in his wallet. Mr. Eddie has $61 in his wallet. How much more money did  Mr. Rodgers have in his wallet? | X |  |  | X |  |  |  | X |  |
| Betty Sue owns 12 horses, 15 cows, and a bunch of chickens. If she owns 38 animals in all, how many chickens does she own? |  |  |  |  | X |  |  |  |  |
| Cherokee weighed 22 pounds when we bought her. She put on 16 pounds the first year and 11 pounds the second year. How much does Cherokee weigh now? |  |  |  |  |  | X |  |  |  |
| The Bulldog weighs 48 pounds. The Rottweiler weighs 21 more pounds than the bulldog. The Corgi weighs 35 less pounds than the Rottweiler. How much does the Corgi weigh? |  |  |  |  |  |  | X |  |  |
| There were 12 engineers and 11 architects at the meeting. A bunch of engineers showed up late to the meeting. If there are now only 38 people at the meeting, how many engineers showed up late? |  |  |  |  |  |  |  |  | X |

*Note*. BL = baseline; PPW = part-part-whole; CH = change; CO = compare; PPW-G = part-part-whole generalized; CH-G = change generalized; CO-G = compare generalized; MS = mixed schemas; Comb = combined schemas.

|  |  |  |
| --- | --- | --- |
| Appendix B | | |
|  |  |  |
| *Teacher Responses on the School intervention Package Rating Form -Teacher* | | |
|  |  |  |
| **Construct** | **Item** | **Score** |
| Suitability | How much did you like the procedures used in the intervention? | 7 |
| Suitability | How acceptable did you find this intervention to be regarding your concerns? | 7 |
| Suitability | How willing were you to change your routine to carry out this intervention? | 6 |
| Suitability | How willing were you to carry out this intervention? | 7 |
| Suitability | How well did carrying out this intervention fit into your routine? | 5 |
| Suitability | Given your students math problems, how reasonable did you find the intervention? | 6 |
| Suitability | How clear is your understanding of the intervention after having used it in your classroom (or with your student)? | 7 |
| Suitability | To what extent were there disadvantages in implementing this intervention? | 6\* |
| Perceived Benefit | How severe are your student’s math difficulties now? | 4 |
| Perceived Benefit | Compared with other adolescents with math problems, how serious are your student’s problems? | 5 |
| Perceived Benefit | How likely is this intervention package to make permanent improvements in your student’s math performance? | 6 |
| Perceived Benefit | How effective was this intervention package? | 6 |
| Perceived Benefit | How effective was this intervention package for your student(s)? | 5 |
| Perceived Benefit | To what degree are your student’s math problems of concern to you? | 7 |
| Convenience | How disruptive was it to the class to carry out this intervention package? | 4 |
| Convenience | How costly was it to carry out this intervention package? | 7\* |
| Convenience | How much time each day was needed for you to carry out this intervention package? | 4 |
| Convenience | To what extent did undesirable side effects occur as a result of this intervention package? | 7\* |
| Convenience | How affordable was this intervention package for your classroom? | 7 |
| Convenience | How much discomfort did your student experience during the course of this intervention package? | 6\* |

Appendix C

*Study Level BC-SMD*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **BC-SMD** | **Std. Error** | **CI95 Lower** | **CI95 Upper** | **DF** | **Auto Correlation** | **ICC** |
| 3.05 | 0.27 | 2.54 | 3.60 | 98.30 | 0.28 | 0.10 |

*Note*. BC-SMD = Between Case-Standardized Mean Difference; CI95 = 95% Confidence Interval; DF = Degrees of Freedom; ICC = Intraclass Correlation.

*Study Level Tau-U*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tau-U** | **Std. Error** | **CI90 Lower** | **CI90 Upper** | **Pairs** |
| 0.95 | 0.08 | 0.83 | 1.00 | 1,320 |

*Note*. CI90 = 90% Confidence Interval.

Appendix D

*Fidelity Checklist*

Observer Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group of Students Observed:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ Orally states the objective for the day’s learning

\_\_\_\_\_ States the purpose for being a better problem solver (can be through student discussion)

\_\_\_\_\_ States the behavioral expectations for the day (i.e. raise hands or….)

\*\*Record Start Time as Modeling Problem 1 Begins: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Modeling Problem 1 (Required)

*Teacher must do all modeling steps first, students can respond if teacher has modeling correctly first).*

\_\_\_\_\_ Models identifying key information in the problem (underline the question and quantities)

\_\_\_\_\_ Models identifying the structure of the problem (part-part-whole, compare, change)

\_\_\_\_\_ Models putting information in the appropriate place on the schematic diagram

\_\_\_\_\_ Models identifying an appropriate solution plan

\_\_\_\_\_ Models computing the problem to find the solution (can use calculators)

\_\_\_\_\_ Models checking answer for reasonableness

Modeling Problem 2 (If needed)

\_\_\_\_\_ Models identifying key information in the problem

\_\_\_\_\_ Models identifying the structure of the problem (part-part-whole, compare, change)

\_\_\_\_\_ Models putting information in the appropriate place on the schematic diagram

\_\_\_\_\_ Models identifying an appropriate solution plan

\_\_\_\_\_ Models computing the problem to find the solution

\_\_\_\_\_ Models checking answer for reasonableness

Modeling Problem 3 (If needed)

\_\_\_\_\_ Models identifying key information in the problem

\_\_\_\_\_ Models identifying the structure of the problem (part-part-whole, compare, change)

\_\_\_\_\_ Models putting information in the appropriate place on the schematic diagram

\_\_\_\_\_ Models identifying an appropriate solution plan

\_\_\_\_\_ Models computing the problem to find the solution

\_\_\_\_\_ Models checking answer for reasonableness

Guided Practice Problem 1 (Required)

*Teacher should not be fully modeling. Teacher should correct errors as necessary.*

\_\_\_\_\_ Prompt identifying key information in the problem

\_\_\_\_\_ Prompt identifying the structure of the problem (part-part-whole, compare, change)

\_\_\_\_\_ Prompt putting information in the appropriate place on the schematic diagram

\_\_\_\_\_ Prompt identifying an appropriate solution plan

\_\_\_\_\_ Prompt computing the problem to find the solution

\_\_\_\_\_ Prompt checking answer for reasonableness

Guided Practice Problem 2 (Required)

\*\*Note if any/all students were dismissed from this guided practice due to not needing it: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ Prompt identifying key information in the problem

\_\_\_\_\_ Prompt identifying the structure of the problem (part-part-whole, compare, change)

\_\_\_\_\_ Prompt putting information in the appropriate place on the schematic diagram

\_\_\_\_\_ Prompt identifying an appropriate solution plan

\_\_\_\_\_ Prompt computing the problem to find the solution

\_\_\_\_\_ Prompt checking answer for reasonableness

Guided Practice Problem 3 (If needed)

\*\*Note if any/all students were dismissed from this guided practice due to not needing it: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ Prompt identifying key information in the problem

\_\_\_\_\_ Prompt identifying the structure of the problem (part-part-whole, compare, change)

\_\_\_\_\_ Prompt putting information in the appropriate place on the schematic diagram

\_\_\_\_\_ Prompt identifying an appropriate solution plan

\_\_\_\_\_ Prompt computing the problem to find the solution

\_\_\_\_\_ Prompt checking answer for reasonableness

\*\*\*Record STOP time after all Guided Practice is complete for all students: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conclusion

\_\_\_\_\_ Restates objective

\_\_\_\_\_ Solicits student input on how objective was addressed

Probe Sheet

Title of Probe Sheet: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ Presents students with appropriate probe sheet (verify from schedule).

\_\_\_\_\_ Known adult ONLY reads each item aloud to students

\_\_\_\_\_ Does not provide support to students (give feedback or suggestions on how to proceed….can give positive general praise but not specific to the work on the probes)

Observer Notes: Below, record any discrepancies, problems or issues that occurred during your observation (could include if fire alarm occurred, student behavior problems, if some students started probe before others, and if adult was prompting students on probe sheets).

Appendix E

*References From Figure 2*

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