Student: _____ **Teacher:** _____

Date: _____ **Grade:** _____

Teaching Multiplication Facts

This intervention is designed to **build fluency with multiplication facts while simultaneously decreasing errors**. Requires approximately 5 minutes each day.

Materials Needed:
Construct a set of flashcards for a set of multiplication facts (e.g., multiplication by 3's). Construct a worksheet with the same facts randomly arranged (e.g., Basic Skill Builders). You will also need a digital timer and graph paper.

Teacher (or peer tutor) Coach Card: (complete these steps every day)

_____ **Present each flashcard** to the student while verbally prompting the student with the question (e.g., "what is 3 x 3?").

_____ **Praise** correct responses that occur within 3 seconds of the prompt (e.g., "That's right, 3 x 3 is 9").

_____ If no response occurs within 3 seconds or the student gives an incorrect response, **give the student the answer** (e.g., "3 x 3 is 9").

_____ Immediately **re-deliver the verbal prompt** (e.g., "What is 3 x 3?").

_____ **Present each card twice**.

_____ Present the student with a worksheet containing the math facts you have just presented with flashcards to **obtain a timed sample of independent work**.

_____ **Set a timer for two minutes**. Instruct the student to begin working when you say "start", to complete as many problems as possible before the timer rings, to work horizontally across the paper without skipping any problems, and to put the pencil down when the timer rings.

_____ At the end of the two-minute time interval, give the student the answer key and **direct the student to circle each error and write the correct response underneath**.

_____ **Direct the student to calculate the number correct per minute and the number of errors**. The student may graph his or her progress across days.

Student Coach Card: (complete these steps every day)

_____ **Practice flashcards** with your teacher or tutor.

_____ **Take the timed test**.

_____ Place the answer key next to the worksheet and begin to **compare your answers to the answers on the key**.

_____ When you come to an error, **circle the error on your worksheet**.

_____ Re-read the question and **write the correct answer** (from the answer key) next to the incorrect answer that you have just circled.

_____ **Count the number of answers you got right**. Write this number at the top of the worksheet.

_____ **Count the number of answers you circled because they were errors**. Now write this number at the top of the worksheet.

_____ Take out **your progress graph**. Find the correct day along the bottom axis of the graph (i.e., x-axis). Now find the number correct on the side axis (i.e., y-axis). Make a dot on the graph that marks both spots. Do the same thing for number of errors.

How will you know if it's working: Number of problems correct should increase across days. Number of errors should decrease across days. In order to maximize effects, this intervention should be conducted daily.

Promoting generalization: Conduct sessions with mixed multiplication problems randomly selected from the mastered sets of cards/problems periodically (e.g., once per week).

References

Bennett, K., & Cavanaugh, R. A. (1998). Effects of immediate self-correction, delayed self-correction, and no correction on the acquisition and maintenance of multiplication facts by a fourth-grade student with learning disabilities. Journal of Applied Behavior Analysis, 31, 303-306.

Rhymer, K. N., Skinner, C. H., Henington, C., & D'Reaux, R. A., & Sims, S. (1998). Effects of explicit timing on mathematics problem completion rates in African-American third-grade elementary students. Journal of Applied Behavior Analysis, 31, 673-677.

Sample Chart for Monitoring Student Progress

CHART FOR _____IN _____
Student's Name Subject (Math, Reading, or Writing)

MONDAY

My best score is: _____
My score on the timed test is: _____
Did I beat my score? _____

TUESDAY

My best score is: _____
My score on the timed test is: _____
Did I beat my score? _____

WEDNESDAY

My best score is: _____
My score on the timed test is: _____
Did I beat my score? _____

THURSDAY

My best score is: _____
My score on the timed test is: _____
Did I beat my score? _____

FRIDAY

My best score is: _____
My score on the timed test is: _____
Did I beat my score? _____