

Computation Intervention Strategy – Cover-Copy-Compare

For: Students in 1st grade and above who have not reached the benchmark/target score on the AIMSweb Computation (M-COMP) assessment or who are not fluent with any type of computation problem (basic facts or more complex). (Students in this intervention should be capable of being trusted to work independently. They should also have a good understanding of the strategies and/or algorithms used to solve problems—they are simply not fluent yet with computation.)

Materials:

- Sheet(s) of computation problems, either mixed problems or one type of problem depending on the student's needs
- Answer sheets corresponding to the sheets with problems listed above (For complex problems, all the steps to solving the problem should be visible to the student.)
- A blank sheet of paper used to cover the answer sheet

Recommended Duration and Frequency: This intervention should be conducted at least 3 times per week for 10 – 15 minutes per session. Monitor the student's progress once a week or twice monthly using the AIMSweb M-COMP probes. When the student's score is at the benchmark/target for 3 consecutive monitors and teacher observation confirms that the skill has been transferred to classroom work, the intervention may be discontinued.

Steps for Intervention:

Note: Before beginning this intervention, the student must be instructed on the methods, strategies, or algorithms they should use to solve the problems (i.e. drawing objects, counting on, lattice, etc. For basic facts strategies, refer to the “Math Basic Facts Intervention Strategy – Flashcard Procedure” or the Everyday Math manual. For algorithms, refer to the Everyday Math manual.

1. Explain to the student that s/he will be practicing computation problems independently to become faster and/or more accurate. Tell the student that after working a problem, s/he will be able to check his/her answer and make corrections if the answer was not correct. Tell the student that it might be tempting to copy the answer off the answer sheet, but it's important not to do that in order to get necessary skill practice. (If the teacher suspects this is happening, a peer or parent monitor should be provided.)
2. (Note: Watch the student using the correct process indicated in these instructions for 2 or 3 problems to ensure that the student understands what to do.) Give the student a sheet of computation problems, a sheet of the answers for those problems, and a blank sheet. Direct the student to **cover** the answers with the blank sheet.
3. If working on basic facts, instruct the student to **copy** the first problem next to its printed version on the worksheet. (Research indicates that, especially in the case of basic facts, copying the problem even though it's already printed before working it can help imprint the answer in memory.) The student should then work the first problem using a strategy or algorithm previously learned.

4. When an answer is obtained, tell the student to **compare** his/her answer (and steps used, if it is a complex problem) to the answer on the answer sheet. If the answer is correct, the student may continue with the next problem. If the answer is incorrect, direct the student to examine the problem (and steps) on the answer sheet to find his/her errors. Then tell the student to cover the answer sheet again, re-work the problem, and re-check it. Direct the student to circle any problems s/he can't understand.
5. Allow the student to work several problems independently in the time allotted, using the cover-copy-compare strategy indicated above.
6. When there is about 5 minutes remaining in the student's intervention time, meet with the student again to check his/her progress. Use a "think aloud" strategy to go over any problems the student circled to determine where the student's difficulty lies.
7. **Recording Sheet** (attached & sample below): Daily, record notes on the student's progress and any difficulties the student has with problems. These notes can be used at the start of each daily intervention time to help the student be proactive regarding previous difficulties and how to correct them.
8. **Progress Monitoring:** Monitoring the student's progress weekly or weekly or twice monthly using the AIMSweb M-COMP assessment.

Sample of a Recording Sheet:

DATE:	COMMENTS:
11/20/12	Had difficulty with 3/5 lattice problems on the sheet. Was consistently missing the X7 and X8 basic facts, and so was writing them incorrectly on the lattice.
11/21/12	Before beginning the problems today, we reviewed the X7 and X8 facts. Encouraged student to use the multiplication chart when a X7 or X8 fact appeared with the problem. Got 4/5 facts correct today. Got 6X4 wrong.
11/22/12	Reviewed the X7 and X8 facts again prior to working problems today. 6/6 correct.

Computation Intervention Strategy – Cover-Compare: Recording Sheet

Student Name:_____ **Inclusive Dates of Intervention:**_____

[illegible]

Computation Intervention Strategy – Cover-Compare– Integrity Check

Interventionist:_____ **Date:**_____ **Grade Level:**_____ **Tier**_____
Integrity Monitor:_____

Descriptor - Student	Yes	No	N/A
Student has scored below benchmark on the AIMSweb M-COMP universal screening or has difficulty with computation problems as demonstrated on classroom tests or activities.			
Student is in Grade 1 or higher.			

Descriptor - Materials	Yes	No	N/A
Student has a sheet of problems without answers, a sheet of the same problems with the answers (and steps to solve the problem, if complex), and a blank paper to cover the answer sheet.			
Interventionist has a recording sheet.			

Descriptor - Interventionist	Yes	No	N/A
The Interventionist maintains an environment conducive to task completion (quiet, manages behavior issues, engages student, etc.)			
Student has previously been instructed in the strategies and/or algorithms necessary to solve the kinds of problems s/he is using in this intervention.			
(If this is the first day of the intervention) The Interventionist describes the task to the student using the appropriate language, and monitors the student for 2 or 3 problems before leaving the student to work independently.			
(If the intervention has already been introduced to the student) The Interventionist meets with the student to go over any difficulties the student has had, using the notes taken previously.			
The Interventionist instructs the student to work independently using the correct cover-copy-compare procedure. (Student is monitored by a peer or other adult if unable to work independently.)			
The interventionist meets with the student just prior to the end of the intervention time to go over circled problems and check student progress, using “think alouds” to model problem-solving strategies, if necessary.			
The interventionist dates and makes notes on the Recording Sheet regarding student performance and any difficulty the student had.			
Student’s progress is monitored using AIMSweb M-COMP at least twice monthly.			

Cover-Compare Integrity Check Summary:_____ of _____ applicable components are observed.

Notes: