



How To: Master Math Facts: Cover-Copy-Compare

This intervention promotes the acquisition of math facts. The student is given a sheet containing math facts to practice. The student studies each math fact with answer that appears on the sheet, covers the fact briefly and copies it from memory, then compares the student-copied math fact and answer to the original correct model (Joseph et al., 2011; Skinner, McLaughlin & Logan, 1997).

Materials:

- *Cover-Copy-Compare Worksheet* (attached)
- *Cover-Copy-Compare Log* (attached)

Procedures: Here are the steps of Cover-Copy-Compare for math facts:

1. *[Teacher] Create a Cover-Copy-Compare math fact sheet.* The teacher selects up to 10 math facts for the student to practice during the session and writes those facts (including number sentence and answer) as correct models into the left column of the *Cover-Copy-Compare Worksheet* (attached). The teacher then pre-folds the sheet using as a guide the vertical dashed line ('fold line') dividing the left side of the student worksheet.
2. *[Student] Use the Cover-Copy-Compare procedures.* During the Cover-Copy-Compare intervention, the student is trained to follow these self-directed steps for each math fact:
 - Study the correctly completed math fact (model) that appears in the left column of the sheet.
 - Fold the left side of the page over at the pre-folded vertical crease to hide the original math fact ('Cover').
 - Copy from memory the math fact and answer, writing it in the first response blank under the 'Student Response' section of the Cover-Copy-Compare worksheet ('Copy').
 - Uncover the original correct model and compare it to the student response ('Compare'). If the student has written the math fact and answer CORRECTLY, the student moves to the next item on the list and repeats these procedures. If the student has written the math fact INCORRECTLY, the student draws a line through the incorrect response, studies the correct model again, covers the model, copies the model again from memory into the second response blank under the 'Student Response' section of the sheet, and again checks the correctness of the copied item..
 - Continue until all math facts on the sheet have been copied and checked against the correct models.
3. *[Teacher] Log: items mastered by the student.* The teacher should formulate an objective standard for judging that the student using Cover-Copy-Compare has 'mastered' a particular math fact (e.g., when the student is able to copy that fact with answer from memory without error on three successive occasions). The teacher can then apply this standard for mastery to identify and log items mastered in each session, using the appropriate *Cover-Copy-Compare Log Sheet* (attached).

Variations: One modification of Cover-Copy-Compare that may make it even more effective is to have the student respond orally. The student covers the original math fact and orally states the fact and answer rather than putting it in



writing (Skinner, Bamberg, Smith, & Powell, 1993). Because students can often respond more quickly by stating rather than writing their response, oral responding can speed the task and result in a larger number of effective learning trials in the time allocated.

References

Joseph, L. M., Konrad, M., Cates, G., Vajcner, T., Eveleigh, E., & Fishley, K. M. (2011). A meta-analytic review of the cover-copy-compare and variations of this self-management procedure. *Psychology in the Schools, 49*(2), 122-136.

Skinner, C. H., Bamberg, H. W., Smith, E. S., & Powell, S. S. (1993). Cognitive cover, copy, and compare: Subvocal responding to increase rates of accurate division responding. *Remedial and Special Education, 14*(1), 49-56.

Skinner, C. H., McLaughlin, T. F., & Logan, P. (1997). Cover, copy, and compare: A self-managed academic intervention effective across skills, students, and settings. *Journal of Behavioral Education, 7*, 295-306.



Worksheet: Cover-Copy-Compare Student:

Date:

Spelling Words/Sight Words/Math Facts	Student Response
1.	1a.
	1b.
2.	2a.
	2b.
3.	3a.
	3b.
4.	4a.
	4b.
5.	5a.
	5b.
6.	6a.
	6b.
7.	7a.
	7b.
8.	8a.
	8b.
9.	9a.
	9b.
10.	10a.
	10b.

Fold Line



Worksheet: Cover-Copy-Compare Student:

Date:

Math Facts	Student Response	
1.	1a.	1b.
2.	2a.	2b.
3.	3a.	3b.
4.	4a.	4b.
5.	5a.	5b.



Worksheet: Cover-Copy-Compare

Math Facts	Student Response	
6.	6a.	6b.
7.	7a.	7b.
8.	8a.	8b.
9.	9a.	9b.
10.	10a.	10b.



Cover-Copy-Compare Log: Mastered Items

Student: _____ School Yr: _____ Classroom/Course: _____

Type of CCC Worksheet: ___ Math Facts ___ Spelling Words ___ Sight Words

List Name/Description: _____

Cumulative Mastery Log: During the intervention, log each mastered item below with date of mastery.

Item 01:

Date:

Item 11:

Date:

Item 02:

Date:

Item 12:

Date:

Item 03:

Date:

Item 13:

Date:

Item 04:

Date:

Item 14:

Date:

Item 05:

Date:

Item 15:

Date:

Item 06:

Date:

Item 16:

Date:

Item 07:

Date:

Item 17:

Date:

Item 08:

Date:

Item 18:

Date:

Item 09:

Date:

Item 19:

Date:

Item 10:

Date:

Item 20:

Date:



Cover-Copy-Compare Log: Mastered Items

Item 21:	Date:	Item 34:	Date:
Item 22:	Date:	Item 35:	Date:
Item 23:	Date:	Item 36:	Date:
Item 24:	Date:	Item 37:	Date:
Item 25:	Date:	Item 38:	Date:
Item 26:	Date:	Item 39:	Date:
Item 27:	Date:	Item 40:	Date:
Item 28:	Date:	Item 41:	Date:
Item 29:	Date:	Item 42:	Date:
Item 30:	Date:	Item 43:	Date:
Item 31:	Date:	Item 44:	Date:
Item 32:	Date:	Item 45:	Date:
Item 33:	Date:	Item 46:	Date: