



## Flashcards with Constant Time Delay: Letters, Numbers, Sight Words, Math Facts, Vocabulary

**Description.** Flashcard review with constant time delay is a motivating academic intervention. It helps students to memorize foundation academic content such as letter and number names, sight words, spelling words, and vocabulary definitions—while largely eliminating errors (Hua et al., 2013; Schuster, Stevens, & Doak, 1990; Stevens & Schuster, 1988).

Here is the general sequence for flashcards with constant time delay:

- The teacher prompts the student to identify an academic item on a flashcard.
- If the student is unable to respond correctly within a fixed span of time, the teacher always provides the correct answer.

The strategy combines regular performance feedback with consistent praise for correct responses.

While constant time-delay procedures across academic areas are highly similar, there are notable differences in how the cards are presented and feedback given. Instructions are given below for using constant time delay to teach letter and number identification, sight words, math facts, spelling words, and vocabulary definitions.

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### Constant Time Delay: Letters/Numbers/Sight Words

**Preparation.** The set of upper- or lower-case letters, numbers, or sight words to be used in the session are written on the front of flashcards, one item per card.

**Directions.** The teacher opens each session with these instructions (adapted from Schuster et al., 1990): *I am going to show you cards with letters/numbers/words. If you know the letter/number/word, say it. If you don't know the letter/number/word, say nothing or say 'I don't know'.*

**Phase 1: Teaching Sequence: No Delay.** When first introducing the flashcard items, the teacher presents each item, provides the answer with a 0-second delay (i.e., no delay), and immediately prompts the student to provide the answer.

The teacher shows each card and says, *This letter/number/word is [insert letter/number/word]. What is this letter/number/word?*

If the student answers correctly, the teacher states, *Right. The letter/number/word is [insert letter/number/word]. Good job!* or similar feedback and praise. The teacher then advances to the next card.

If the student fails to respond or responds incorrectly, the teacher repeats the initial prompt: *This letter/number/word is [insert letter/number/word]. What is this letter/number/word?*

**Phase 2: Practice Sequence: 5-Second Delay.** Once the student has been introduced to all flashcards, the teacher institutes the 5-second-delay phase, which continues for the duration of the session.

The teacher shows each card and says, *What is this letter/number/word?*



If the student initiates a response within 5 seconds and answers correctly, the teacher states, *Right. The letter/number/word is [insert letter/number/word]. Good job!* or similar feedback and praise. The teacher then advances to the next card.

If the student hesitates longer than 5 seconds before responding or answers incorrectly, the teacher says, *This letter/number/word is [insert letter/number/word]. What is this letter/number/word?*

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### Constant Time Delay: Math Facts

**Preparation.** A set of math facts (without answers) to be used in the session are written on the front of flashcards, one fact per card. The answer to the math fact appears on the back of each card.

**Directions.** The teacher opens each session with these instructions (adapted from Schuster et al., 1990): *I am going to show you cards with math facts. If you know the answer to the math fact, say it. If you don't know the answer to the math fact, say nothing or say 'I don't know'.*

**Phase 1: Teaching Sequence: No Delay.** When first introducing the flashcard items, the teacher shows each card, reads the math-fact appearing on the front, then reads the math fact plus the answer appearing on the back of the card, and finally has the student read the math fact and give the answer: *This fact is [insert math fact]. [Math fact] is [insert answer]. What is [insert math fact]?* e.g., *This fact is 3 times 8. Three times 8 equals 24. What is 3 times 8?*

If the student answers correctly, the teacher states, *Right. [Insert math fact] equals [insert answer]. Good job!* The teacher then advances to the next card.

If the student fails to respond or responds incorrectly, the teacher repeats the initial prompt: *This fact is [insert math fact]. [Insert math fact] is [insert answer]. What is [insert math fact]?*

**Phase 2: Practice Sequence: 5-Second Delay.** Once the student has been introduced to all flashcards, the teacher institutes the 5-second-delay phase, which continues for the duration of the session.

The teacher shows each math-fact card and says, *What is [insert math fact]?*

If the student initiates a response within 5 seconds and answers correctly, the teacher states, *Right. [Insert math fact] equals [insert answer]. Good job!* The teacher then advances to the next card.

If the student hesitates longer than 5 seconds before responding or answers incorrectly, the teacher says, *[Math fact] is [insert answer]. What is [insert math fact]?*

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### Constant Time Delay: Spelling Words

**Preparation.** The set of spelling words to be used in the session are written on the front of flashcards, one item per card. The student also has a lined worksheet with room sufficient to write all spelling words reviewed in the session.

**Directions.** The teacher opens each session with these instructions (adapted from Schuster et al., 1990): *I am going to give you words to spell. If you know how to spell the word, write it on your sheet. If you don't know how to spell the word, just say 'I don't know' or wait for me to show you the word.*



**Phase 1: Teaching Sequence: No Delay.** When first introducing the flashcard items, the teacher prompts the student to spell the word, shows the correctly spelled word on the flashcard with a 0-second delay (i.e., no delay), and immediately prompts the student to spell the word.

The teacher says, *Spell* [insert spelling word] and immediately shows the student the flashcard with the spelling word, which the student copies onto the worksheet.

If the student spells the word correctly, the teacher states, *Right. You spelled* [insert spelling word] *correctly. Good job!* or similar feedback and praise. The teacher then advances to the next card.

If the student fails to respond or spells the word incorrectly, the teacher repeats the initial prompt: *Spell* [insert spelling word] and immediately shows the student the flashcard with the spelling word, which the student copies onto the worksheet.

**Phase 2: Practice Sequence: 5-Second Delay.** Once the student has been introduced to all flashcards, the teacher institutes the 5-second-delay phase, which continues for the duration of the session.

The teacher looks at the spelling word on each card but keeps that word hidden from the student. The teacher says, *Spell* [insert spelling word].

If the student initiates a response within 5 seconds and spells the word correctly, the teacher states, *Right. You spelled* [insert spelling word] *correctly. Good job!* or similar feedback and praise. The teacher then advances to the next card.

If the student fails to start writing the spelling word within 5 seconds or spells the word incorrectly, the teacher says: *Spell* [insert spelling word], and immediately shows the student the flashcard with the spelling word, which the student copies onto the worksheet.

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### Constant Time Delay: Vocabulary Terms & Definitions

**Preparation.** A set of vocabulary terms to be used in the session are written on flashcards, one term per card. For each card, the vocabulary term appears on the front; e.g., *Chlorophyll*. Both term and definition appear on the back in this or similar format: *[Term] is [definition]*. E.g., "*Chlorophyll is the green pigment in plants that converts sunlight to energy for photosynthesis.*"

**Directions.** The teacher opens each session with these instructions (adapted from Hua et al., 2013): *I am going to show you cards with vocabulary terms and definitions. If you know the meaning of the term, tell me if you don't know the meaning of the term, say nothing or say 'I don't know'.*

**Phase 1: Teaching Sequence: No Delay.** When introducing the flashcard items, the teacher initiates a practice sequence in which the student first pronounces each term, then reads that term's definition, then states both term and definition.

1. *Term Pronunciation: Practice.* For each card, the teacher shows the vocabulary term on the front of the card and says, *This vocabulary term is* [insert term]. *What term?*



If the student reads and pronounces the term correctly, the teacher states, *Right. The term is* [insert term]. *Good job!* or similar feedback and praise. If the student fails to respond or responds incorrectly, the teacher repeats the prompt: *This vocabulary term is* [insert vocabulary term]. *What term?*

2. *Definition: Practice.* The teacher turns the card over and reads aloud the full term and definition written on the back. The teacher next hands the student the card and directs the student to read the term-and-definition statement aloud. The teacher then takes the flashcard back.
3. *Term and Definition: Practice.* Before moving to the next card, the teacher again holds the current card up so that the student can see only the vocabulary term on the front. The teacher says, *What is this term. What does it mean?*

If the student begins to answer within 5 seconds and correctly names the word and provides an acceptable definition, the teacher says, *Right. The term* [insert term] *means* [insert definition]. *Good job!* The teacher then advances to the next card.

If the student hesitates in answering for longer than 5 seconds or answers incorrectly, the teacher repeats the teaching sequence above for this vocabulary term: (1) Term Pronunciation: Practice; (2) Definition: Practice; and (3) Term and Definition: Practice.

**Phase 2: Practice Sequence: 5-Second Delay.** Once the student has been introduced to terms and definitions on all flashcards, the teacher institutes the 5-second-delay phase, which continues for the duration of the session.

The teacher shows the term on the front of each vocabulary card and says, *What is this term. What does it mean?*

If the student initiates a response within 5 seconds and answers correctly, the teacher states, *Right. The term* [insert term] *means* [insert definition]. *Good job!* The teacher then advances to the next card.

If the student hesitates longer than 5 seconds before responding or answers incorrectly, the teacher turns the card over and reads aloud the full term and definition written on the back. The teacher then shows only the term on the front of that vocabulary card and says, *What is this term. What does it mean?*

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**Tips for Use.** Here are a couple of suggestions to enhance your use of this intervention:

- *Alter the length of the time delay if needed.* The procedures presented here for using flashcards with constant time delay include a 5-second delay during the teaching sequence. However, teachers are free to exercise their own judgment to shorten (e.g., 3 seconds) or lengthen (e.g., 10 seconds) the time delay to match the abilities and age level of the student. While that time delay can be changed, however, it is important that, once set, it is applied consistently. Also, when documenting this academic strategy in a student intervention plan, the teacher should record the length in seconds of the time-delay value selected.
- *Monitor the student's responses.* There are four possible types of significant student responses using constant time delay. The student can answer (1) correctly or (2) incorrectly during the several-second span BEFORE the teacher gives the cue (correct answer). Or the student can answer (3) correctly or (4) incorrectly AFTER being



given the cue (correct answer). All of these responses are meaningful and all should be recorded. For example, it is noteworthy when a student who initially answers correctly only after being given the cue begins to respond correctly immediately and without prompting. See the attached form, *Flashcards with Constant Time Delay: Recording Sheet*, as an example of a convenient instrument for tracking student responses for any time-delay intervention.

## References

- Hua, Y., Woods-Groves, S., Kaldenberg, E. R., & Scheidecker, B. J. (2013). Effects of vocabulary instruction using constant time delay on expository reading of young adults with intellectual disability. *Focus on Autism and Other Disabilities, 28*(2), 89-100.
- Schuster, J. W., Stevens, K. B., & Doak, P. K. (1990). Using constant time delay to teach word definitions. *Journal of Special Education, 24*, 306-318.
- Stevens, K. B., & Schuster, J. W. (1988). Time delay: Systematic instruction for academic tasks. *Remedial and Special Education, 9*(5), 16-21.



### Flashcards with Constant Time Delay: Recording Sheet. (Recording form adapted from Stevens & Schuster, 1988).

Directions: List each practice item in the 'Flashcard Items' column. If the student responds BEFORE you provide the correct answer, circle 'Before +' for a correct response or 'Before -' for an incorrect response. If the student responds AFTER you provide the correct answer, circle 'After +' for a correct response or 'After -' for an incorrect response --or no response.

Student: \_\_\_\_\_ Interventionist: \_\_\_\_\_ Academic Items: \_\_\_\_\_ Date: \_\_\_\_\_ Constant Time Delay/Seconds: \_\_\_\_\_

Number	Flashcard Item	Response 1	Response 2	Response 3	Response 4	Response 5	Response 6	Response 7
1		Before + - After + -						
2		Before + - After + -						
3		Before + - After + -						
4		Before + - After + -						
5		Before + - After + -						
6		Before + - After + -						
7		Before + - After + -						
8		Before + - After + -						
9		Before + - After + -						
10		Before + - After + -						

Stevens, K. B., & Schuster, J. W. (1988). Time delay: Systematic instruction for academic tasks. *Remedial and Special Education, 9*(5), 16-21.