

Caution: Avoid Relying on the Key Word Strategy! It is often suggested that students should be taught to find “key words” in story problems. Some teachers even post lists of key words with their corresponding meanings. For example, “altogether” and “in all” mean you should add, and “left” and “fewer” indicate you should subtract. The word “each” suggests multiplication. To some extent, teachers have been reinforced by the overly simple and formulaic story problems sometimes found in textbooks and other times by their own reading skills (Sulentic-Dowell, Beal, & Capraro, 2006). When problems are written in this way, it may appear that the key word strategy is effective.

In contrast with this belief, researchers and mathematics educators have long cautioned against the strategy of key words (e.g., Clement & Bernhard, 2005; Kenney, Hancewicz, Heyer, Metsisto, & Tuttle, 2005; Sowder, 1988). Here are four arguments against relying on the key word approach.

1. The key word strategy sends a terribly wrong message about doing mathematics. The most important approach to solving any contextual problem is to analyze it and make sense of it. The key word approach encourages students to ignore the meaning and structure of the problem and look for an easy way out. Mathematics is about reasoning and making sense of situations. Sense-making strategies always work!

2. Key words are often misleading. Many times, the key word or phrase in a problem suggests an operation that is incorrect. The following problem shared by Drake and Barlow (2007) demonstrates this possibility:

There are three boxes of chicken nuggets on the table. Each box contains six chicken nuggets. How many chicken nuggets are there in all? (p. 272)

Drake and Barlow found that one student generated the answer of 9, using the words “how many in all” as a suggestion to add $3 + 6$. Instead of making sense of the situation, the student used the key word approach as a shortcut in making an operational decision.

3. Many problems have no key words. Except for the overly simple problems found in primary textbooks, a large percentage of problems have no key words. A student who has been taught to rely on key words is left with no strategy. Here’s an example:

Aidan has 28 goldfish. Twelve are orange and the rest are yellow. How many goldfish are yellow?

4. Key words don’t work with two-step problems or more advanced problems, so using this approach on simpler problems sets students up for failure as they are not learning how to read for meaning.