

Strategies to Solve Math Word Problems

Trades math involves tasks set in reality based contexts with complex steps that need you to identify key cognitive stages to solve these problems. The interpretation required to build a mental model of the situation allows you to simplify and build a foundation for translation into mathematics.

You start with your clear understanding of the technical language and terms being used as the basis for accurate modelling. These four learning strategies help to simplify and convert a written situation into applied math.

1. Define the key technical terms in the question. (translate)
2. Break down the text into individual mathematical operations. (chunk)
3. Choose mathematical formulas for the given situation. (apply)
4. Answer the individual sections in sequence. (solve)
5. Present the real results (completion)

1. Identify Key Information to Decode

With complex situations there is often a number of key points that need to be identified. When you take notes on this information it frees up your working memory to look for further relevant information. You can start with highlighting or underlining important parts of the text. Once you have these key items identified you can begin to chunk the question into parts.

2. Break the Text into Math Operations

Work backwards from the desired end of the problem to identify the answers you will need to find that will build to a final solution. In a simple problem this might be one or two operations. In more complex ones, there may be three or more.

Set up the probable order in which they will need to be solved. This can be adjusted as you go.

3. Choose the Applications

Once you have the individual smaller problems you can choose the appropriate formula for each one.

4. Solve the Problem Elements

Using your identified sequence, work forward from the basics and solve each part of your analyzed problem step by step.

Once you have all the elements solved you will arrive at the final answer.

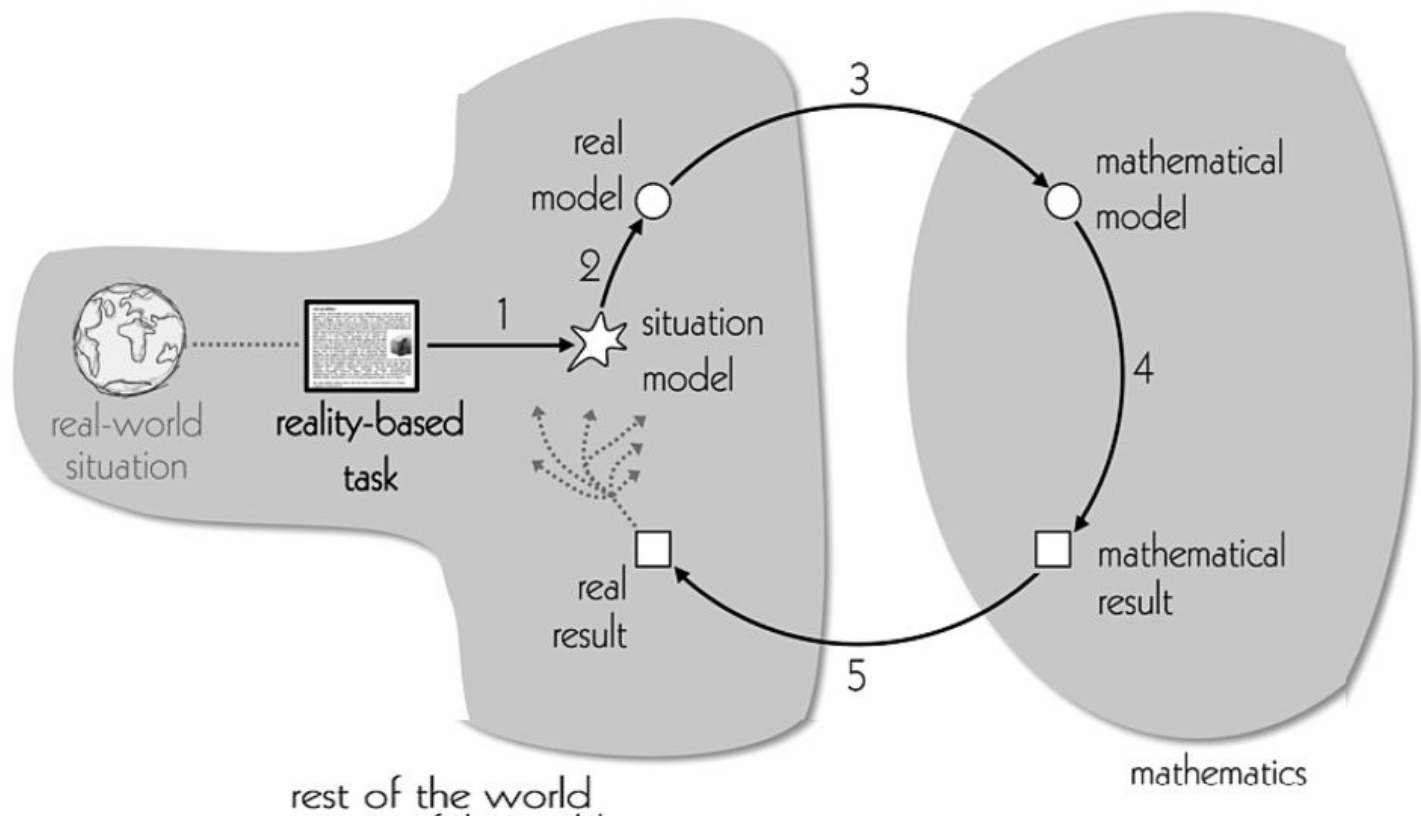
5. Real Results

Apply the results of your math solving to the real-world question.
Does it answer the question and give you real results?

If **yes** – you are complete!

If **no** – go back and analyze the formulas that you have chosen and the sequence in which they were applied.

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Visual model of reality-based mathematical tasks.

Adapted from: <https://link.springer.com/article/10.1007/s13138-025-00263-x>