Teacher Resource

Reading a Problem – KMWC Tips (continued)

M: Can I **MODEL** the situation with a picture or manipulatives?

The second stage takes into account the fact that not everyone *reads* the same way. It is well established that there are various learning styles and for many people it is very important for conceptual understanding that they be given the opportunity to create a concrete or visual representation of a stated situation - a model of some sort - whether with manipulatives or through a drawing/diagram. Hence, the second stage is the opportunity (offered only, not necessarily required) for modeling the facts picked out in the first stage.

This is also the stage in problem solving when students might have to estimate quantities or measurements that are not explicitly given but only indirectly described.

W: **WHAT** does the problem ask me to find?

It is only in this third stage that many students are able to state in their own words (if the problem was not originally absolutely clear), what the problem was asking for. Often students are asked to read the problem and to immediately re-state it in their own words; this not only often doesn't get done but also builds anxiety in students around problem solving in general. It is very important that students be able to put into their own words any word problems that are not immediately clearly understood if the students are going to be able to consider possible strategies that address the problem.

C: **CROSS OUT** any facts that are not needed.

At this stage it is safe to ask even the non-confident reader to cross out the facts from the first stage that are not needed. Understanding the problem situation gives insight into what facts may or may not pertain to what is being asked.

If a student still is not sure of what facts are important or unimportant, let them work on a solution to the problem (whether as a class, in groups or alone). And then, after a solution has been obtained have the student go back and cross out what now would be obvious as not having been necessary facts or information. While it may seem at first to be a bit redundant to do this after a solution has been obtained, it is critical to note that students who could not identify irrelevant information in the word problem at the outset will not quickly develop that skill unless you give them the opportunity to practice looking at those facts and seeing them as irrelevant. It does not matter that this may only be possible for a while at the end of the problem solving. What matters is that those facts are finally recognized as unnecessary information in the context of the problem situation. This development must not be by-passed.

Student Resource

Reading a Problem - The KMWC template

K: What facts do I **KNOW** from the information in the problem?
"What words or ideas don't I understand?"
M: Can I **MODEL** the situation with a picture or manipulatives?
"Is there any missing information that I can estimate?"
W: **WHAT** does the problem ask me to find?
C: **CROSS OUT** any facts that are not needed.