



'Say-Ask-Check' Metacognitive Prompts Tied to a Word-Problem Cognitive Strategy (Montague, 1992)		
Cognitive Strategy Step	Metacognitive 'Say-Ask-Check' Prompt Targets	Sample Metacognitive 'Say-Ask-Check' Prompts
1. Read the problem.	<p>'Say' (Self-Instruction) Target: <i>The student reads and studies the problem carefully before proceeding.</i></p> <p>'Ask' (Self-Question) Target: <i>Does the student fully understand the problem?</i></p> <p>'Check' (Self-Monitor) Target: <i>Proceed only if the problem is understood.</i></p>	<p>Say: "I will read the problem. I will reread the problem if I don't understand it."</p> <p>Ask: "Now that I have read the problem, do I fully understand it?"</p> <p>Check: "I understand the problem and will move forward."</p>
2. Paraphrase the problem.	<p>'Say' (Self-Instruction) Target: <i>The student restates the problem in order to demonstrate understanding.</i></p> <p>'Ask' (Self-Question) Target: <i>Is the student able to paraphrase the problem?</i></p> <p>'Check' (Self-Monitor) Target: <i>Ensure that any highlighted key words are relevant to the question.</i></p>	<p>Say: "I will highlight key words and phrases that relate to the problem question."</p> <p>"I will restate the problem in my own words."</p> <p>Ask: "Did I highlight the most important words or phrases in the problem?"</p> <p>Check: "I found the key words or phrases that will help to solve the problem."</p>
3. 'Draw' the problem.	<p>'Say' (Self-Instruction) Target: <i>The student creates a drawing of the problem to consolidate understanding.</i></p> <p>'Ask' (Self-Question) Target: <i>Is there a match between the drawing and the problem?</i></p> <p>'Check' (Self-Monitor) Target: <i>The drawing includes in visual form the key elements of the math problem.</i></p>	<p>Say: "I will draw a diagram of the problem."</p> <p>Ask: "Does my drawing represent the problem?"</p> <p>Check: "The drawing contains the essential parts of the problem."</p>
4. Create a plan to solve the problem.	<p>'Say' (Self-Instruction) Target: <i>The student generates a plan to solve the problem.</i></p> <p>'Ask' (Self-Question) Target: <i>What plan will help the student to solve this problem?</i></p> <p>'Check' (Self-Monitor) Target: <i>The plan is appropriate to solve the problem.</i></p>	<p>Say: "I will make a plan to solve the problem."</p> <p>Ask: "What is the first step of this plan? What is the next step of the plan?"</p> <p>Check: "My plan has the right steps to solve the problem."</p>
5. Predict/estimate the Answer.	<p>'Say' (Self-Instruction) Target: <i>The student uses estimation or other strategies to predict or estimate the answer.</i></p> <p>'Ask' (Self-Question) Target: <i>What</i></p>	<p>Say: "I will estimate what the answer will be."</p> <p>Ask: "What numbers in the problem should be used in</p>



	<p><i>estimating technique will the student use to predict the answer?</i></p> <p>'Check' (Self-Monitor) Target: <i>The predicted/estimated answer used all of the essential problem information.</i></p>	<p>my estimation?"</p> <p>Check: "I did not skip any important information in my estimation."</p>
6. Compute the answer.	<p>'Say' (Self-Instruction) Target: <i>The student follows the plan to compute the solution to the problem.</i></p> <p>'Ask' (Self-Question) Target: <i>Does the answer agree with the estimate?</i></p> <p>'Check' (Self-Monitor) Target: <i>The steps in the plan were followed and the operations completed in the correct order.</i></p>	<p>Say: "I will compute the answer to the problem."</p> <p>Ask: "Does my answer sound right?" "Is my answer close to my estimate?"</p> <p>Check: "I carried out all of the operations in the correct order to solve this problem."</p>
7. Check the answer.	<p>'Say' (Self-Instruction) Target: <i>The student reviews the computation steps to verify the answer.</i></p> <p>'Ask' (Self-Question) Target: <i>Did the student check all the steps in solving the problem and are all computations correct?</i></p> <p>'Check' (Self-Monitor) Target: <i>The problem solution appears to have been done correctly.</i></p>	<p>Say: "I will check the steps of my answer."</p> <p>Ask: "Did I go through each step in my answer and check my work?"</p> <p>Check: ""</p>

Reference

Montague, M. (1992). The effects of cognitive and metacognitive strategy instruction on the mathematical problem solving of middle school students with learning disabilities. *Journal of Learning Disabilities, 25*, 230-248.