

# CGI Story Problem Implementation Checklist

Preparation & Setup	Observable Criteria
<p>An appropriately difficult story problem is selected (or written) based on children's previous cognition (thinking and understanding).</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Problem type is likely to be successfully solved and difficult enough to encourage further learning (i.e., it is a worthwhile and appropriate next problem).</li> <li><input type="checkbox"/> Number sizes are within children's current counting proficiencies and large enough to support an appropriate level of difficulty.</li> <li><input type="checkbox"/> Context is realistic and familiar.</li> <li><input type="checkbox"/> Wording is simple and clear.</li> </ul>
<p>Teacher does the intellectual work of preparing the lesson using the Anticipatory Framework.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Teacher identifies <u>learning goals and possible misconceptions</u> relating to the specific problem in the lesson.</li> <li><input type="checkbox"/> Teacher systematically <u>anticipates the strategies</u> children will use for the specific problem in the lesson, organized by increasing sophistication.</li> <li><input type="checkbox"/> Teacher strategically plans purposeful pairing (or other seating arrangements) to encourage increasing strategy sophistication.</li> <li><input type="checkbox"/> Teacher allocates the available lesson time to <i>launch</i>, <i>student work time</i>, and <i>discourse</i>, assuring a minimum of 15 minutes for the discourse.</li> </ul>
<p>All materials are set up prior to the <i>launch</i>.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Story problem is written at the top of chart paper and <u>covered up</u>.</li> <li><input type="checkbox"/> <u>Unifix cubes in sticks of 10 (same color) in at least two different colors</u> (and Base-10 blocks for Grades 2+) are available within arm's reach in sufficient quantity for the numbers in the problem.</li> <li><input type="checkbox"/> Paper and pencil are readily available.</li> <li><input type="checkbox"/> Representations of previous story problem solutions are posted and visible to children.</li> </ul>

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Launch	Observable Criteria
<p>Teacher <u>poses the story problem.</u></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Teacher tells an <u>engaging story</u> that provides motivation and background for the context of the story problem (before showing the written story problem).</li> <li><input type="checkbox"/> Teacher shows the written story problem and reads it aloud.</li> <li><input type="checkbox"/> Teacher covers the written story problem.</li> </ul>
<p>Teacher strategically calls on <u>3 children to retell the story.</u></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <u>First child called on to retell is one who can easily retell the story accurately.</u></li> <li><input type="checkbox"/> <u>Second child is one who represents the majority of children in the class and is likely to be able to retell the story accurately.</u></li> <li><input type="checkbox"/> <u>Third child represents those who the teacher anticipates may be struggling to understand the story.</u></li> <li><input type="checkbox"/> <u>Teacher does not interrupt children as they retell the story (unless numbers are said incorrectly).</u></li> <li><input type="checkbox"/> Teacher focuses on the intent of the retell, not the exact language used in the story problem.</li> <li><input type="checkbox"/> If a child struggles with the retell, ask the child who just successfully retold the story to retell the story again. The child who struggled needs to successfully retell the story even if several attempts are needed.</li> </ul>
<p>Teacher poses a comprehension question to engage relational thinking and support reasonableness of solutions.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <u>Teacher uncovers the written story problem.</u></li> <li><input type="checkbox"/> <u>Teacher asks a comprehension question about the story and expects children to begin the relational thinking work as they explain what they think and why.</u></li> <li><input type="checkbox"/> Children's responses to the comprehension question use evidence from the story, not explanations about key words, operations, or problem solving strategies.</li> </ul>

3 tasks  
 1) strategy  
 2) answer  
 3) generalization

Student Work Time (8-10 minutes)	Observable Criteria
<p>Teacher monitors children's strategies being used to solve the problem and purposefully selects strategies to be shared by children during the discourse to maximize connections among strategies and accomplish the learning goals for the lesson.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Teacher checks in with those with the most-sophisticated strategies first.</li> <li><input type="checkbox"/> Teacher strategically circulates to understand and track which strategies children are using to solve the problem.</li> <li><input type="checkbox"/> Teacher identifies the strategies to be shared by children <u>during the discourse as related to the learning goals for the lesson.</u></li> <li><input type="checkbox"/> Teacher understands those strategies thoroughly enough to represent them accurately during the discourse.</li> <li><input type="checkbox"/> Teacher decides the order of strategies to be shared and notifies the specific children about the order in which they will share their strategies (e.g., using numbered index cards).</li> <li><input type="checkbox"/> As needed, teacher selects a student to retell another student's strategy and notifies the specific child.</li> </ul>

Pick 4

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<b>Discourse (at least 15 minutes)</b>	<b>Observable Criteria</b>
Teacher orchestrates discourse focused on articulating and representing children's strategies.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Teacher reserves at least 15 minutes for the discourse (the most important part of the lesson).</li> <li><input type="checkbox"/> <u>The order of strategies shared is strategic (from least-sophisticated to most-sophisticated).</u></li> <li><input type="checkbox"/> Teacher establishes and maintains expectations for respectful, clearly-articulated discourse.</li> <li><input type="checkbox"/> When asked, children share their strategies with the other children, uninterrupted by the teacher, unless there is a need to clarify what the child did so the teacher can represent it accurately.</li> </ul>
Teacher precisely creates a representation that accurately portrays the strategy each child shares.	<ul style="list-style-type: none"> <li><input type="checkbox"/> <u>Teacher representation matches the exact strategy and counting process used by the child (using the child's language) and circles the answer.</u></li> <li><input type="checkbox"/> Teacher asks the question from the story problem and elicits an answer from the child in a complete sentence and records the number and unit next to the representation.</li> <li><input type="checkbox"/> Teacher asks the child for the number sentence that matches his/her strategy and records an accurate number sentence, drawing a box around the answer.</li> <li><input type="checkbox"/> Teacher manages the space on the chart paper to represent all of the strategies and number sentences shared.</li> </ul>
Discourse engages all children.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Each child talks to the class rather than the teacher.</li> <li><input type="checkbox"/> Teacher monitors (and manages, as necessary) the attentiveness and engagement of each child.</li> </ul>
Discourse attends to noticing details of each strategy and making connections among various strategies.	<ul style="list-style-type: none"> <li><input type="checkbox"/> <u>Teacher asks the children to compare how the shared strategies (and number sentences) are alike and different.</u></li> <li><input type="checkbox"/> Teacher explores (through questioning) the depth of children's thinking and understanding of the important mathematical ideas involved in the problem and the strategies shared.</li> <li><input type="checkbox"/> Teacher supports (when applicable) children's efforts to verbalize connections and generalizations (conjectures).</li> </ul>
Discourse attends to the number sentence that matches the story problem.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Teacher asks the children what number sentence matches the story and to give a rationale for their thinking. Teacher represents the unknown number with an open box (Grades K-2) or a letter (Grades 3+).</li> </ul>