Problem Solving "Look Fors" Checklist

Lesson Plan Roll Out	Description	Goal Date:
Level 1	Establish Set-Up and Clean-Up Routines	end of Week 1.5 of school
Level 2	Extend Routines to involve entire Lesson Plan	end of Week 3 of school
Level 3	Meet Time Goals of entire lesson plan	end of week 4 of school
Level 4	Includes Creating Anticipatory Framework, and Tracking Data, and leading a purposeful discourse	end of week 6 of school

Preparation & Setup	Observable Criteria
An appropriately difficult story problem is selected or created based on students' previous thinking and understanding.	□ Problem type – worthwhile, accessible: likely to be successfully solved yet difficult enough to encourage further learning □ Size of numbers - within Ss' current counting proficiency; large enough to support appropriate level of difficulty. □ Context - realistic and familiar. □ Wording - simple and clear.
Teacher does the intellectual work of preparing the lesson using the Anticipatory Framework (AF).	□ Identifies learning goals, possible misconceptions. □ Systematically anticipates students' strategies (organized by increasing sophistication). □ Strategically plans purposeful pairing or other seating arrangements that encourage strategy sophistication. □ Allocates available lesson time for *launch*, *student work time*, and *discourse*, assuring a minimum of 15" for discourse.
All materials set up prior to the *launch*.	□ Problem is written at top of chart paper & covered up. □ Unifix cubes organized in sticks of 10 (same color) with at least two different colors (base 10 blocks for Grades 2+); Available within arm's reach in sufficient quantity given the size of numbers in problem. □ Paper and pencil are readily available. □ Representations of previous story problem solutions are posted and visible to children.

Launch	Observable Criteria
Teacher poses the story problem.	□ Tells an engaging story, provides context that motivates and provides background (before showing written problem) □ Shows the written story problem and reads it aloud. □ Covers the written story problem.
Teacher strategically calls on three students to retell the story. -Access Goal first 4 weeks	□ 1st child called on to retell can easily retell the story accurately. □ 2nd child represents the majority of children in the class and is likely to be able to retell the story accurately. □ 3rd child represents those likely to struggle to understand. □ T does not interrupt Ss as they retell the story (unless numbers are said incorrectly). □ T focuses on the intent of the retell, not exact language of story.

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	□ If S struggles with the retell, ask the S. who just successfully retold the story to retell the story again. The S who struggled needs to successfully retell the story, even when several attempts are needed.
Teacher poses a comprehension question to engage relational thinking and support the reasonableness of solutions. -Access Goal First 4 weeks	□ T uncovers the written story problem. □ T asks a comprehension question about the story and expects children to begin the relational thinking work as they explain what they think and why. □ Ss' responses to the comprehension question use evidence from the story (NOT explanations of keywords, operations, or strategies).

Student Work Time (8'-10")	Observable Criteria
Teacher monitors strategies students are using to solve the problem. Teacher purposefully selects strategies to be shared during culminating discussion (discourse), selects to maximize connections among strategies and accomplish the learning goals for the lesson.	□ First checks in with Ss using the most sophisticated strategies □ T strategically circulates to understand and track which strategies children are using to solve the problem. □ T identifies the strategies to be shared by children during the discourse, as related to the learning goals for the lesson. □ T understands these strategies thoroughly enough to represent them accurately during the discourse phase. □ T decides the order of strategies to be shared and notifies the specific Ss, including the order in which they will share their strategies (e.g., using numbered index cards). □ As needed, T selects a student to retell another student's strategy and notifies the specific child.

Discourse (At least 15")	Observable Criteria
Teacher orchestrates discourse focused on articulating and representing children's strategies	□ T reserves 10 - 15 minutes for discourse (the MOST important part of the lesson), and □ Strategic order of strategies shared, least-to-most sophisticated □ Establishes and maintains expectations for respectful and clearly articulated discourse. □ Children sit in a circle, make eye contact, respond to eachother □ When asked, Ss share their strategies with the other Ss, uninterrupted by the teacher (unless there is a need to clarify what a S did so the teacher can represent it accurately).
Teacher precisely creates a representation that accurately portrays the strategy each student shares.	□ T's representation matches the exact strategy or counting process used by S (using S's language); T circles the answer. □ T asks the story problem question and elicits an answer from S in a complete sentence; Records number & unit next to representation □ T asks the S for the number sentence that matches his/her strategy and records an accurate number sentence, drawing a box around the answer. □ T manages space on the chart paper to represent all strategies and number sentences shared.
Discourse engages all students.	□ Each student talks to the class rather than the teacher.

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	□ T monitors (and manages, as necessary) the attentiveness and engagement of each student.
Discourse focuses students on noticing details of each strategy and making connections among various strategies.	□ T asks Ss to compare how shared strategies (and number sentences) are alike and different. □ T explores (through questioning) the depth of S's thinking and understanding of important mathematical ideas involved in the problem and the strategies shared. □ T supports Ss' efforts to verbalize connections and make generalizations (conjectures).
Discourse focuses on number sentence that matches the story problem.	□ T asks Ss what number sentence matches the story and to give a rationale for their thinking. T represents the unknown number with an open box (Grades K-2) or a letter (Grades 3+).