

**5th Grade Math Lesson
Differentiation**

Everyday Math Lesson 10.2/10.5: Pan-Balance Problems with Two Balances

Students will.....

- Use addition, subtraction, multiplication, division and manipulatives to solve pan-balance problems, recording solutions by drawing/circling or crossing out
- Enrichment/Advanced Problem Solving Group: Use a pan-balance model to solve linear equations in two unknowns by formulating and testing various theories and justifying and explaining reasoning orally and in writing

	Remediation/Average Group	Enrichment/Advanced Group
Introduction (15-20 min.)	<p>Solve pan-balance problems in pairs by working together or independently,</p> <p>Students must show their work by drawing/circling/crossing out techniques to record their work in Math Journal</p> <p>Math Journal pg. 351 (1-4)</p> <p>Remediation: Students work in pairs (or teacher demonstrates) using pan-balance to solve pan-balance problems with pens, paperclips, pattern blocks and quarters.</p>	<p>Solve pan-balance problems in pairs by working together or independently,</p> <p>Students must show their work by drawing/circling/crossing out techniques to record their work in Math Journal</p> <p>Math Journal pg. 351 (1-4) and try to solve #5</p>
Assessment/Reflection (10 min.)	Students who are done with 1-4 in 15 min. and all answers are correct and work is recorded accurately move to enrichment group. If not, they keep working on 1-4.	Students who are done with 1-4 in 15 min. and all answers are correct and work is recorded accurately move to enrichment group
Main Task (40 min.)	<p>Students continue working in pairs solving problems 1-4 and testing possible solutions using the pan-balance while accurately recording all work. Students self-assess and then work on Math Boxes when finished.</p> <p>Use pan balances and hands-on materials for students to solve problems.</p>	<p>Group of 5-6 students meet in small group to formulate and test various theories to solve pan-balance problems (logic puzzles). Students justify and explain reasoning orally in small group with teacher facilitating discussion</p> <p>Pg. 351 (#5) on SmartBoard</p>
Assessment/Reflection (15 min.)	<p>Teacher checks at end of lesson for understanding making sure that student recorded their work accurately and if an answer is wrong, that student went back and figured it out with a partner or independently.</p> <p>Math Journal pg. 351 (#1-4)</p>	<p>Teacher checks written explanation for #5, first students share explanations that they wrote orally, and teacher checks that students recorded their work accurately at the end of the lesson, also makes anecdotal notes on various theories presented, and oral problem solving participation.</p> <p>Math Journal pg. 351 (#1-4) AND (#5)</p>
Using student learning to guide planning and instruction	Based on assessment, provide remediation if necessary to students who need it in next lesson(s), and use information to create future groups or regroup students.	Based on assessment, provide feedback on explanations, use notes to create future groups and further enrichment in next lesson(s).