**Grade 4 Module 3 Topic Analysis Handout**

**First Half of Lessons**

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| **Questions About the Topics** | **Answers from the Overview** | **Standards Addressed** |
| **Topic A- Multiplicative Comparison Word Problems**   * What context will students use to explore multiplicative comparisons? * What does Topic A lay the foundation for in upcoming years? | * + *(Area and perimeter.)*   + *(Grade 5 scaling and Grade 6 proportional reasoning.)* |  |
| **Topic B: Multiplication by 10, 100, and 1000**   * Why are students asked to reason between number disks and numerical work? * Topic B lays the foundation for which upcoming Module 3 Topics? | * + *(Allows students to see the role of place value units in multiplication and prepares them for the language of multiplying units together.)*   + *(Topics C, D, and H)* |  |
| **Topic C: Multiplication of Up to Four-Digits by Single-Digit Numbers**   * What methods will students use to record their work in Topic C? * What clarification does footnote 1 provide for the multiplication algorithm? | * + *(Distributive property, number disks, partial products, standard algorithm, area model.)*   + *(The standard algorithm for multiplication is not expected to be mastered until Grade 5 – 5.NBT.5. Students are introduced, being supported by place value strategies to prepare them from Grade 5 multiplication.)* |  |
| **Topic D: Two-Step Multiplication Word Problems**   * What is the purpose of Topic D? * What operations will students be able to use to solve the problems? | * + *(Students apply multiplication to solve multi-step word problems and multiplicative comparison problems.)*   + *(Addition, Subtraction and Multiplication.)* |  |

**Second Half of Lessons**

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| **Questions About the Topics** | **Answers from the Overview** | **Standards Addressed** |
| **Topic E: Division of Tens and Ones with Successive Remainders**   * Which foundational concepts does Topic E build upon? * What clarifications are provided by footnotes 2 and 3? | * + *(Types of division – groups size unknown/partitive and number of groups unknown/measurement.)*   + What clarifications are provided by footnotes 2 and 3? *(#2: remainders must be interpreted correctly. 7÷3 is not equal to 5÷2 since their answer is 2r1. The amount is different. #3: The division algorithm fluency is not expected until Grade 6, but is introduced alongside models to provide adequate practice.)* |  |
| **Topic F: Reasoning With Divisibility**   * How is Topic F connected to the work of this module? * Topic F provides the foundation for which upcoming Module 3 Topic? | * + *(Factors and multiples prepare students for division of larger dividends.)*   + *(Topic G)* |  |
| **Topic G: Division of Thousands, Hundreds, Tens, and Ones**   * Topic G builds upon the work of which Topics that came earlier in this Module? * What is the purpose of using number disks in this Topic? | * + *(Topic B, E and F.)*   + *(Visually supportive for decomposition alongside the algorithm.)* |  |
| **Topic H: Multiplication of Two-Digit by Two-Digit Numbers**   * Why is the work of Topic H placed last in this module? * What should students understand about partial products written vertically? | * + *(Most abstract and students have had more time to solidify their understanding of area models. Also, placing 2-by-2 digit multiplication before 1-digit divisors does not allow* students to connect 1 digit multipliers and their models.)   + *(They connect explicitly to the distributive property. Partial products can be 4 or 2 numbers.)* |  |