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| Skill-Focused Lesson Template | | | | | | | | High-Impact Instruction Delivery Strategy:  Participation, CFU, Guiding Method |
| **Lesson Objective** | | **=** | Concept | & | Skill | & maybe | Context |  |
| To determine the LCM of a set of numbers using prime factorisation.  Success Criteria – complete IXL task I A.6 LCM ahieving a smart score of 100 | | | | | | | |
| **Conceptual Understanding** | | **=** | Definitions | & | Examples | & maybe | Non-Examples & Misconceptions |  |
| Concept – Using the product of prime factors, you can determine the Lowest Common Multiple (LCM) by identifying the largest product of each prime factor and then multiply them.  Using the LCM from daily review 2: LCM of 4 and 6 = 12  Using the product of prime factors from the daily review 3: 4 = 2 x 2 = 22 and 6 = 2 x 3  List prime factor of 4 and 6: 2 and 3  Do a check – why is 22 the largest product? Pair Share - Answer – as 2 is multiplied by itself twice for the number 4 and only once for the number 6  The largest product of 2 is 22 (composite number 4 – circle this)  The largest product of 3 is 3 (composite number 6 – circle this)  The LCM = 22 x 3 = 4 x 3 = 12  **Example 2:**  Determine the LCM of 540 and 600.  540 written as a product of prime factors = 22 x 33 x 5  600 written as a product of prime factors = 23 x 3 x 52  List prime factor of 540 and 600: 2, 3 and 5  Do a check – why is 23 the largest product?  Non volunteer - Answer – as 2 is multiplied by itself three times for the number 600 and only twice for the number 540  The largest product of 2 is 23 (composite number 600 – circle this)  The largest product of 3 is 33 (composite number 540 – circle this)  The largest product of 5 is 52 (composite number 600 – circle this)  **Example 3:**  Determine the LCM of 49000 and 2800.  49000 written as a product of prime factors = 22 x 53 x 72  Do a check – whiteboards – list the prime numbers of 49000 and 2800 - Answer – 2, 5 and 7  Show 24 is the largest product of 2 (circle 2800)  Do a check – whiteboards – write the largest product for 5 and 7 - Answer – 53 and 72  Do a check – non volunteer – why is 53 the largest product - Answer – as 5 is multiplied by itself three times for the number 49000 and only twice for the number 2800  2800 written as a product of prime factors = 24 x 52 x 7  List prime factor of 49000 and 2800: 2, 5 and 7  The largest product of 2 is 24 (composite number 2800 – circle this)  The largest product of 5 is 53 (composite number 49000 – circle this)  The largest product of 7 is 72 (composite number 49000 – circle this) | | | | | | | |
| **Steps for Skill Execution** | | Procedural steps needed to execute a skill. Also consider chunking, variations and misconceptions | | | | | |  |
| **To find the LCM of a set of numbers**   1. Write each composite number as a product of primes using index notation (if necessary) 2. Circle the largest product of each prime from the set of composite numbers 3. Write them as a product of primes 4. Perform the calculation 5. Write statement | | | | | | | |
| **(I DO, WE DO, YOU DO)** | | Multiple Examples (with Variations) and a Guiding Method | | | | | |  |
| **Example 1 – I DO**  **Identify the LCM of 8 and 12 (all copy on whiteboard)**  **Step 1 – product of primes**  8 = 2 x 2 x 2 = 23  12 = 2 x 2 x 3 = 22 x 3  **Step 2 – identify largest product of each prime**  Circle 23 and 3 (do a pair share – why is 23 the largest product of 2 – 2 is being multiplied by itself 3 times for 8 and twice for 12)  **Step 3 – write the largest as a product of primes**  23 x 3  **Step 4 – perform the calculation**  23 x 3 = 8 x 3 = 24  **Step 5 – write the statement**  The LCM of 8 and 12 is 24.  **Example 2 We Do**  **Identify the LCM of 8 and 28**  **Step 1 – I Do**  8 = 2 x 2 x 2 = 23  28 = 2 x 2 x 7 = 22 x 7  **Step 2 – I Do**  Circle 23 and 7  **Step 3 – I Do**  23 x 7  **Step 4 - They Do – white board**  23 x 7 = 8 x 7 = 56  **Step 5 – They Do – non volunteer**  The LCM of 8 and 28 is 56.  **Example 4 – We Do**  **Identify the LCM of 25 and 66**  **Step 1 (I do)**  25 = 5 x 5 = 52  66 = 2 x 3 x 11  **Step 2 (they do)**  Circle 2, 3, 52 and 11  **Step 3 (they do)**  2 x 3 x 52 x 11  **Step 4 (they do)**  2 x 3 x 52 x 11 = 6 x 25 x 11 = 150 x 7 = 1650  **Step 5 (they do)**  The LCM of 8 and 28 is 56.  **Example 3 – We Do**  **Identify the LCM of 14 and 32**  **Step 1 I Do**  14 = 2 x 7  32 = 2 x 2 x 2 x 2 x 2 = 25 x 7  **Step 2 (I do)**  Circle 25 and 7  **Step 3 (they do) pair share**  25 x 7  **Step 4 (they do) whiteboard**  25 x 7 = 32 x 7 = 224  **Step 5 (they do) non volunteer**  The LCM of 14 and 32 is 224.  **Example 6 – We Do**  **Identify the LCM of 4, 10 and 25**  **Step 1 (I do)**  4= 2 x 2 = 22  10 = 2 x 5  25 = 5 x 5 = 52  **Step 2 (they do)**  Circle 22and 52  **Step 3 (they do)**  22 x 52  **Step 4 (they do)**  22 x 52 = 4 x 25 = 100  **Step 5 (they do)**  The LCM of 4, 10 and 25 is 100.  **Example 5 – Hinge Point – You DO**  **Identify the LCM of 48 and 72**  **Step 1 (I do)**  48 = 2 x 2 x 2 x 2 x 3 = 24 x 3  72 = 2 x 2 x 2 x 3 x 3 = 23 + 32  **Whiteboard**  **Which answer(s) are correct for step 2: A) 23 B) 32 C) 24 D) 3**  **Answer B and C**  **Step 4 (they do) - whiteboard**  24 x 32 = 19 x 9 = 144  **Step 5 (they do) – whiteboard**  The LCM of 48 and 72 is 144. | | | | | | | |
| **Objective Demonstration** | Question(s) or task(s) for students to demonstrate readiness for independent practice of the lesson objective. | | | | | | |  |
| **Skill Closure – Complete in your notebook**  **Pick any column and identify the LCM using product of primes:**  **\***  **24 and 32**  **16 and 28**  **\*\***  **24 and 108**  **\*\*\***  **44 and 165**  **8 and 12 and 18** | | | | | | | |



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| **Subskills/Prior Knowledge** | **=** | Identify any subskills or prior knowledge the students will need to complete the lesson. Revise these in your Daily Review. |
| Definitions: - cover in Daily Review & vocab box   * Prime Number (use choral response) – Daily Review 1 * Composite Number (use choral response) – Daily Review 1 * Factor – vocab box – Daily Review 3 * Multiple – vocab box – Daily Review 2 * LCM (use choral response) Daily Review 2 * Product of Primes (use choral response) – Daily Review 3 - Reteach * Index Notation (use choral response) – Daily Review 3 - Reteach   Daily Reviews:   1. Identify Prime Numbers from: 38 47 81 99 32 13 27 31 (Apply – You Do) 2. Find LCM of 4 and 6 (Apply – You Do) 3. Product of Primes    * Retrieve – definitions    * Write the composite number 84 as product of primes using index notation (Apply - We Do)    * Write the composite number 4, 6, 68 as product of primes using index notation (Apply - You Do) | | |

References: Archer, A. & Hughes, C. (2011) - Hollingswoth, J.R. & Ybara, S. E. (2018) - Hunter, M. http://www.csun.edu/science/ref/plans/lesson\_design\_hunter.html