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| **Learning Target** | **6.NS.4 - Understand and use prime factorization and the relationships between factors to:**   * Find the unique prime factorization for a whole number. * Find the greatest common factor of two whole numbers less than or equal to 100. * Use the greatest common factor and the distributive property to rewrite the sum of two whole numbers, each less than or equal to 100. * Find the least common multiple of two whole numbers less than or equal to 12 to add and subtract fractions with unlike denominators. | | | | | | | | | | |
| Image result for start here  **Prerequisite Skills** | **RULES OF DIVISIBILITY**  Image result for 1 icon  **(Pick 2-3 from the choices below)** | | | | | **PRIME & COMPOSITE NUMBERS**  Image result for 2 icon  **(Pick 2-3 from the choices below)** | | | | |
| **Choice A** – [Read](https://www.mathsisfun.com/divisibility-rules.html) about the rules of divisibility from 2-12 | | | | | **Choice A** – [Read](https://www.mathsisfun.com/prime-composite-number.html) about prime and composite numbers and then play [this game](https://www.mathgames.com/skill/4.98-prime-and-composite-numbers) to check your fluency | | | | |
| **Choice B** –. Look over the [handout](http://www.mpsaz.org/rmre/grades/grade5/homework_help/files/1-hmwk_divisibility.pdf) on the rules of divisibility | | | | | **Choice B** – [Read](https://www.smartickmethod.com/blog/math/operations-and-algebraic-thinking/divisibility/prime-numbers-sieve-eratosthenes/) how you can use the Sieve of Eratosthenes to see if a number is prime of composite | | | | |
| **Choice C** – Watch the [instructional video](https://youtu.be/Y1pAKJ4rf-M) (6:54) | | | | | **Choice C** – Watch the [instructional video](https://youtu.be/V08g_lkKj6Q) (5:30) | | | | |
| **Choice D** – Test your fluency on [mathgames.com](https://www.mathgames.com/skill/7.83-divisibility-rules) | | | | | **Choice D** – Practice finding prime numbers using [the interactive Sieve of Eratosthenes](http://www.transum.org/software/Sieve_of_Eratosthenes/Default.asp) | | | | |
| **Choice E** – Test yourself and play [Quizizz](https://quizizz.com/admin/quiz/5b9bf87800a6110019243738/6ns4-rules-of-divisibility-prerequisite) | | | | | **Choice E** - Play the [second Quizizz game](https://quizizz.com/admin/quiz/5b9c072955970500194e2614/6ns4-prime-and-composite-prerequisite-game-2) to apply the 2, 3, 5, and 7 rule to see if these numbers are prime or composite. | | | | |
| **Coaching Points** | Image result for rules of divisibility  **Sieve of Eratosthenes**   * Circle 2 and mark out all multiples * Circle 3 and mark out all multiples * Circle 5 and mark out all multiples * Circle 7 and mark out all multiples * The rest of the numbers are prime   **Big Idea**: If you want to see if a number from 2-100 is prime, run the number through the 2, 3, 5, and 7 tests! | | | | | | | | | | |
| **Prime Factorization** | **FACTOR TREES**  Image result for 1 icon  **(Pick 2-3 from the choices below)** | | | | | **LADDER**  Image result for 2 icon  **(Pick 2-3 from the choices below)** | | | | |
| **Choice A** – Watch the [video](https://youtu.be/tW97UU01ShY) on factor trees and prime factorization (6:34) | | **Choice B** – Read about factor trees and prime factorization [here](https://www.mathsisfun.com/prime-factorization.html) | | | **Choice A** – [Read](https://www.onlinemath4all.com/using-ladder-diagram-for-prime-factorization.html) how to use the ladder method to find the prime factorization of a number | | | **Choice B** – Watch the [video](https://youtu.be/4U4Sw0buYXw) on using the ladder method to find the prime factorization of a number (4:28) | |
| **Choice C** – Play the [math game](http://www.softschools.com/math/factors/factor_tree/) on factor trees | | **Choice D** – Play the [Math Goodies game](https://www.mathgoodies.com/factors/prime_factors) on factor trees | | | **Choice C** – Test yourself with this [online quiz](https://www.tutorialspoint.com/prime_numbers_factors_and_multiples/prime_factorization_online_quiz.htm) using the ladder method | | | **Choice D** – Play the prime factorization [IXL game](https://www.ixl.com/math/grade-6/prime-factorization) using the ladder method | |
| **Choice E –** Practice with this [interactive tool](https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Factorize/). What does it mean if you can only make one array? Multiple arrays? | | **Choice F –** Go to the [Math Playground](https://www.mathplayground.com/factortrees.html) and use the factor tree to find the prime factorization of numbers | | | **Choice E –** Try this [online quiz](https://www.mcqlearn.com/math/g6/prime-factorization-mcqs.php) using the ladder method | | | **Choice F –** Find an expert in the classroom and get them to help you or visit the help desk | |
| **CW#1 –** With a partner, answer the [following questions](file:///C:\Users\McDowell%20Family\Desktop\6.NS.4%20-%20Factor%20Trees%20CW.pdf) one at a time. Be sure that you and your partner agree on each answer before moving to the next. | | | | | **CW#2 –** Roll the [interactive dice](https://www.curriculumbits.com/prodimages/details/maths/doubledice.html) to generate a number. With a partner, solve the question using the *Rally Coach* method on a sheet of notebook paper. Each person should solve 2-4 problems each. | | | | |
| **HW#1 –** Click [here](file:///C:\Users\mmcdowel\Downloads\6.NS.4%20-%20Factor%20Tree%20HW.pdf) to access the copy of tonight’s homework. Be sure that you check your work with the answer key. | | | | | **HW#2 –** Open the [HW document.](https://www.homeschoolmath.net/worksheets/table-factoring.php?col=2&row=4&type1=4&min4=4&max4=100&min1=4&max1=100&extraspace=5&border=1&color=teal&font=sans+serif&FontSize=14pt&pad=12&ptitle=&Submit=Submit&PDF_worksheet=1)  Disregard the directions and instead solve using the ladder method. Be sure to check your answers using the answer key provided. | | | | |
| **Summarizer** – After each goal, *Table Talk* with people around you and discuss key points learned. Update your note guide using information from the mini lesson and from your table talk conversations. | | | | | | | | | | |
| **Coaching Points** | Image result for prime factorizationImage result for factor trees and prime factorizationImage result for ladder and prime factorization | | | | | | | | | | |
| **GCF & Distributive Property** | **GCF**  Image result for 1 icon  **(Pick any 2-3 from the choices below)** | | | | **GCF & DISTRIBUTIVE PROPERTY**  Image result for 2 icon  **(Pick any 2-3 from the choices below)** | | | | | |
| **Choice A** – Watch the [video](https://youtu.be/8bIQL7TKBn4) on finding the GCF of two numbers using factor trees (1:36) | **Choice B** –.Watch the [video](https://youtu.be/3W8SeYgZcMo) on finding the GCF of two numbers using the ladder method (2:21) | | | **Choice A** – Watch this [video](https://youtu.be/MIN_TyuB_AA) to see an example of how to use the Distributive Property to write an equivalent expression (2:43) | | | **Choice B** – View the [SlideShare](https://www.slideshare.net/mlabuski/unit-4-lesson-6-gcf-distributive-property) presentation to see several practice problems. Page 2 has solutions. | | |
| **Choice C** – Select the level of difficulty as you find the GCF of two numbers by playing [Fruit Splat](http://www.sheppardsoftware.com/mathgames/fractions/GreatestCommonFactor.htm) | **Choice D** – Practice finding the GCF with [Quizizz](https://quizizz.com/admin/quiz/5b9d0d3f6110e900191a4e03/6ns4-gcf-basic) | | | **Choice C** – View the [Slideplayer](https://slideplayer.com/slide/10016343/) presentation | | | **Choice D** – Play this [ClassK12 game](https://www.classk12.com/grade-6-math/lcm-and-gcf-ns/equivalent-expression-with-distributive-property/6056) for practice | | |
| **Choice E** – Build fluency by practicing with [this game](https://www.mathgames.com/skill/6.52-greatest-common-factors-gcf) from Math Games | **Choice F** – Answer [GCF](https://fun4thebrain.com/beyondfacts/gcfsketch.html) questions to earn game time | | | **Choice E** – Play the [Quizizz](https://quizizz.com/admin/quiz/5b9d0de971177a0019c76308/6ns4-gcf-using-distributive-property) game on using the GCF and the Distributive Property to write equivalent expressions | | | **Choice F** – Play this [IXL game](https://www.ixl.com/math/grade-6/factor-using-the-distributive-property) to extend your understanding to writing equivalent algebraic expressions | | |
| **CW#1 –** Use the [spinner](https://wordwall.net/resource/49009/maths/random-number-wheel-1-10) to create your numbers (multiply 2 spins for a number). Find the GCF and compare your answers with your partner before moving on. | | | | **CW #1 –** Use the [attached document and answer key](https://www.livingston.org/cms/lib4/NJ01000562/Centricity/Domain/523/GCF%20and%20the%20Distributive%20Property%20Worksheet%20ANSWERS.pdf) to practice using the GCF and the Distributive Property to rewrite numerical expressions. Be sure your answer matches your partner’s answer before moving forward. | | | | | |
| **HW#1 -** Use the ladder method or prime factorization to answer the [HW problems](file:///C:\Users\mmcdowel\Desktop\6.NS.4%20-%20GCF%20HW.pdf). Use the answer key to check your work. | | | | **HW #1 –** Click [here](http://www.commoncoresheets.com/Math/Algebra/Rewriting%20Expression%20as%20Multiples%20of%20a%20Sum/English/1.pdf) to practice using the GCF and the distributive property to write equivalent expressions. Be sure to check your answers before returning to class. | | | | | |
| **Summarizer** – After each goal, *Table Talk* with people around you and discuss key points learned from the material that you chose. Update your note guide if necessary. | | | | | | | | | | |
| **Coaching Points** | Image result for gcf and lcmImage result for gcf and lcm | | | | | | | | | | |
| **LCM & Real World** | **LCM (Pick any 2-3 from the choices below)**  Image result for 1 icon | | | | | | **GCF/LCM - REAL WORLD**  Image result for 2 icon  **(Pick any 2-3 from the choices below)** | | | |
| **Choice A** – Watch this [video](https://youtu.be/fRoWMakrIhw) for help finding the LCM using prime factorization (4:40) | | | **Choice B** – See how to use the ladder method to find the LCM of two numbers with this [instructional video](https://youtu.be/bgXZKEGIRIQ) (2:21) | | | **Choice A** – Watch this [video](https://youtu.be/7BUJEhPiyHE) for help determining the difference between GCF and LCM (2:45) | | | **Choice B** – Here is a [longer video](https://youtu.be/zMkoldWRgUs) to help you to determine if word problems are looking for the GCF or the LCM (9:55) |
| **Choice C** – Click here to play [Quizizz](https://quizizz.com/admin/quiz/5b9d0eba6110e900191a50ff/6ns4-lcm-basic) and practice finding the LCM | | | **Choice D** – Get some skill and drill practice playing [MathGames](https://www.mathgames.com/skill/6.53-least-common-multiples-lcm) | | | **Choice C** – Play [MathGames](https://www.mathgames.com/skill/6.54-gcf-and-lcm) to help you practice identifying real world questions using GCF and LCM | | | **Choice D** – Attempt the [Khan Academy](https://www.khanacademy.org/math/pre-algebra/pre-algebra-factors-multiples/pre-algebra-greatest-common-divisor/e/gcf-and-lcm-word-problems) practice problems |
| **Choice E** – Play the [Snowball Fight game](https://www.fun4thebrain.com/beyondfacts/lcmsnowball.html) as you practice finding the LCM of 2 numbers | | | **Choice F** – Additional [online practice](https://www.thatquiz.org/tq-r/?-j4-l5-p0) finding the LCM | | | **Choice E** – Practice finding the GCF and LCM by playing [IXL](https://www.ixl.com/math/grade-6/gcf-and-lcm-word-problems) | | | **Choice F** – Practice identifying GCF and LCM word problems as you play [Quizizz](https://quizizz.com/admin/quiz/5b9d0fe871177a0019c76679/6ns4-gcf-lcm-word-problems) |
| **CW#1** – Use the *Rally Coach* method to take turns solving these [classwork problems](https://cdn.kutasoftware.com/Worksheets/PreAlg/Least%20Common%20Multiple.pdf). An answer key is provided to assist your team. | | | | | | **CW#1** - In pairs, pick any [5 problems](file:///C:\Users\mmcdowel\Desktop\6.NS.4%20gcf_and_lcm_word_problems_with_key%20(2).pdf) to solve. Look for clues to help you identify whether each question requires you to find the GCF or LCM. Your team must agree on the answer before moving to the next question. | | | |
| **HW#1 –** Pick any [8 problems](https://www.lavc.edu/math/library/math105/Worksheets/lcmwholenoexp.pdf) to solve using the ladder method or prime factorization. Check your work using the answer key provided. | | | | | | **HW#1 –**Click to open [tonight’s homework](http://mcdowellnumbersense.weebly.com/uploads/2/6/7/6/26765014/gcf_and_lcm_word_problems.pdf). Look for key words and determine if each word problem is a GCF or LCM question. From there, solve each. | | | |
| **Summarizer** – After each goal, *Table Talk* with people around you and discuss key points learned from the material that you chose. Update your note guide if necessary. | | | | | | | | | | |
| **Coaching Points** | Image result for prime factorization and lcmImage result for ladder and lcm Image result for gcf and lcm | | | | | | | | | | |

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| **Add & Subtract Fractions** | **ADD FRACTIONS  (Pick any 2-3 from the choices below)**  Image result for 1 icon | | **SUBTRACT FRACTIONS**  Image result for 2 icon  **(Pick any 2-3 from the choices below)** | |
| **Choice A** – Watch the [Khan Academy video](https://youtu.be/TuId1spuyoc) on adding fractions with unlike denominators (2:32) | **Choice B** – Watch this video to see the [Vedic method](https://youtu.be/w4sT3NAqc3c) for adding fractions (5:13) | **Choice A** – View this [short video](https://youtu.be/6d7h9mXKz94) on subtracting fractions with unlike denominators | **Choice B** – Watch this video to see the [Vedic method](https://youtu.be/1xsKnSoTAJA) for subtracting numbers with unlike denominators (6:31) |
| **Choice C** – Play [Math Games](https://www.mathgames.com/skill/6.138-add-fractions-with-unlike-denominators) to practice adding fractions with unlike denominators | **Choice D** –Play [the Math Playground game](https://www.mathplayground.com/fractions_add.html) to practice adding fractions with unlike denominators | **Choice C** – Play [Fruit Splat](http://www.sheppardsoftware.com/mathgames/fractions/FruitShootFractionsSubtraction.htm) to build fluency with subtracting fractions (Level 2a or higher) | **Choice D** – Practice subtracting fractions with [IXL](https://www.ixl.com/math/grade-5/subtract-fractions-with-unlike-denominators) |
| **Choice E** – Play [Football Fractions](http://www.math-play.com/football-math-adding-fractions/football-math-adding-fractions.html) and complete the pass to answer questions on adding fractions | **Choice F –** Practice adding fractions with unlike denominators as you play [Quizizz](https://quizizz.com/admin/quiz/5b9d429171177a0019c7b1af/6ns4-add-fractions-with-unlike-denominators) | **Choice E** – Play [Math Games](https://www.mathgames.com/skill/6.139-subtract-fractions-with-unlike-denominators) to practice adding fractions with unlike denominators | **Choice F –** Practice subtracting fractions with unlike denominators as you play [Quizizz](https://quizizz.com/admin/quiz/5b9d43666110e900191a9dc8/6ns4-subtract-fractions-with-unlike-denominators) |
| **CW#1 -** With a partner, select 4-6 [word problems](file:///C:\Users\mmcdowel\Desktop\6.NS.4%20-%20Add%20Fractions%20Word%20Problems.pdf) to solve. Compare your answers with a partner and refer to the answer key if necessary. To move ahead, your answers must match. | | **CW #1 –** With a partner, select 4-6 [word problems](file:///C:\Users\mmcdowel\Desktop\6.NS.4%20-%20Subtracting%20Fractions%20Word%20Problems.pdf) to solve. Compare your answers with a partner and refer to the answer key if necessary. To move ahead, your answers must match. | |
| **HW#1 –** Click to open up the [homework problems](https://www.superteacherworksheets.com/fractions/adding-fractions-unlike-denominators-req-simplifying_TWMQT.pdf). Pick any 8 problems to solve and check your answers before returning to class. | | **HW#1 –** Select 8 problems from the [skill and drill set](https://www.math-drills.com/fractions/fractions_subtract_hard_001.pdf?v=1360864244). Use the answer key to check your work. | |
| **Summarizer** – After each goal, *Table Talk* with people around you and discuss key points learned from the material that you chose. Update your note guide if necessary. | | | | |
| **Coaching Points** | Related image  **ANCIENT VEDIC METHOD – VERTICALLY & CROSSWISE** | | | | |

**Quiz Preparations**

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|  | **Step 1** – Review your personal data tracking form and determine which topics you should spend extra time studying. | **Step 2** – Based on your self-identified weaknesses, look over your note guide. | **Step 3** – Go to the [Number Sense Quizizz Collections](https://quizizz.com/collection/5ae1128876840d001a37c32a). Select games based on your weaknesses and play the game until you reach content mastery (> 80%). |