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| **MATH** **Grade 4**  **CURRIC-ULAR**  **COMP-ETENCES**  **(DO)** | | | **BIG IDEAS (UNDERSTAND)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Number**  Fractions and decimals are types of numbers that can represent quantities. | | | | | | | **Developing Computational Fluency**  Development of computational fluency and multiplicative thinking requires analysis of patterns and relations in multiplication and division. | | | | | | | | | | **Patterns and Relations**  Regular changes in patterns can be identified and represented using tools and tables. | | | | | | **Spatial Sense**  Polygons are closed shapes with similar attributes that can be described, measured, and compared. | | | | | | | **Statistics and Probability**  Analyzing and interpreting experiments in data probability develops an understanding of chance. | | |
| **CONTENT (KNOW)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| number concepts to 10000 | ordering and compar-ing frac-tions | | decimals to hundredths | | add and subtract decimals to hundredths | | add and subtract facts to 20 | addition and subtraction to 10000 | | | multiplication and division of 2 or 3 digit numbers by one digit numbers | | multiplication and division facts to 100 | financial literacy: monetary calculations including making change with amounts to 100 dollars and making simple financial decisions | | | increasing and decreasing patterns using charts and tables | algebraic relation-ships among quantities | line symm-etry | | 1-step equations with an unknown number using all operations | | regular and irregular polygons | | how to tell time using analog and digital clocks, using 12 & 24 hour clocks | | perimeter of regular and irregular shapes | | | one-to-one correspondence and many-to- one correspondence using bar graphs and pictographs | probability experi-ments | |
|  | | | -counting multiples  -flexible counting strategies  -whole number benchmarks  comparing and ordering numbers  -estimate large quantities  -place value 100s, 100s, 10s, 1s  -understanding the relationship between digit places and their value to 10 000 | -compar-ing and ordering of fractions with common denomina-tors  -estimating fractions with bench-marks (e.g. zero, half, whole)  -using concrete and visual models | | -fractions and decimals and represent part of a region, set, or linear model  -fractional parts and decimals are equal shares or equal sized portions of a whole or unit  -under-standing the relationship between fractions and decimals | | -estimating decimal sums and differences  -base 10 blocks, place value mats, grad paper, and number lines  -using addition and subtraction in real-life contexts and problem-based situations  -whole-class number talks | | -flexible use of mental math strategies | -estimating decimal sums and differences  -base 10 blocks, place value mats, grid paper, number lines  -using addition and subtraction in real-life contexts and problem-based situations  -whole-class numbers | | | -understanding the relationships between multiplication and division, multiplication and addition, division and subtraction  -decomposing, distributive principle, commutative principle, repeated addition, repeated subtraction  -using multiplication and division in real-life contexts and problem-based situations  -whole-class number talks | | -provide opportuni-ties for concrete and pictorial representations or multiplication  -building computa-tional fluency  -use of games  -looking for patterns in numbers such as in a 100 chart  -connecting multiplication to skip counting  - connect multiplication to division and repeated addition  - students should be able to recall multiplication facts 2s 5s 10s  -doubling, halving | -making monetary calculations, including decimal notation in real-life contexts and problem-based situations  -counting up, counting back, and decomposing to calculate totals and make change  -making simple financial decisions involving earning, spending, saving and giving | | | -change in patterns can be represented in charts, graphs and tables  -using words and numbers to describe increasing and decreasing patterns | -representing and explaining one-step equations with an unknown number  -describing pattern rules using words and numbers from concrete and pictorial representations | -using concrete materials such as pattern blocks to create designs that have a mirror image within them | | \_\_+ 4 = 15  n + 15 = 20  12 + n = 20  6+13 = | | -describing and sorting regular and irregular polygons based on multiple attributes  -polygons are closed shapes with similar attributes | | -tell time with analog and digital clocks using 12 and 24 hour clocks  -understanding am/pm  -understanding number of minutes in an hour  -half past, quarter to  -telling time in 5 minute intervals  -telling time to the nearest minute | | -using geoboards and grids to create, represent, measure, calculate perimeter | | | -one symbol represents a group of value (e.g. on a bar graph one square may represent five cookies) | -predicting single outcomes (e.g. when you spin using one spinner and it lands on a single color)  -using spinners, rolling dice, pulling objects out of a bag | |
| Reasoning and Analyzing | Estimate reasonably. |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Develop mental math strategies and abilities to make sense of quantities. |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Use reasoning and logic to explore and make connec-ions. |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Model mathematics in contextualized experiences |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Understanding and Solving | Develop and use multiple strategies to engage in problem solving |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Visualize to explore mathematical concepts |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Develop, construct, and apply mathematical understanding through role-play, inquiry, and problem solving. |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
|  | Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
|  | Communicate in many ways (concretely, pictorially, symbolically, and by using spoken or written language to express, describe, explain, and apply mathematical ideas). |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Communicating and Representing | Use mathematical vocabulary and language to contribute to mathematical discussions |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Explain and justify mathematical ideas and decisions |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Represent mathematical ideas in concrete, pictorial, and symbolic forms |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Connecting and Reflecting | Reflect on mathematical thinking |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Connect mathematical concepts to each other and to other areas and personal interests |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |
| Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts |  | |  |  | |  | |  | | |  |  | |  | | |  |  | |  | |  | |  | |  | |  | |  |  | | |  | |