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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 benchmarkscomparing 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 = 15n + 15 = 2012 + n = 206+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 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |