**Unit 5: Linear and Exponential Functions**

**Overview:** After a broad study of functions in Unit 4 that focused on the concept of a function and the relationship between inputs and outputs, students will take a closer look at linear and exponential functions. Students will be very familiar with relationships which grow linearly, but this will be their first exposure to relationships which grow exponentially. Students will recognize real-world situations can be modeled with linear and with exponential functions. Additionally, students will write linear and exponential functions, including arithmetic and geometric sequences, given a graph, a table, a description of a relationship, or two input-output pairs. Students will use the functions they create to solve problems and will interpret the parameters of both linear and exponential functions in terms of a context.

**Louisiana Student State Standards:**

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| F.IF.7a  S.ID.7 | Graph linear and quadratic functions and show intercepts, maxima, and minima.  Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. |

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| **Monday** | **Lesson Obj.:** MLK Holiday |
| **Tuesday** | **Lesson Obj.:** Divide monomials using the properties of exponents. Simplify expressions using the quotient properties of exponents.  **CCSS:** A.SSE.2, F.IF.8b **Math Practice:** 8  **Activity(s):**  1. First Five: Graph Systems of Equations  2. Whole Group: TTW/TLW discuss questions from the homework.  3. Independent Practice: TLW complete the 7-2 Dividing Monomial Handout.  4. Homework: TLW complete the 7-2 Skills Practice WS.  5. Assessment: Make several copies each of five monomial expressions that need to be simplified. Give one expression to each student. As students leave the room, ask them to tell you the simplified versions of the expressions they possess.  **Materials:** Textbook, Workbook, Smartboard, Calculators |
| **Wednesday** | **Lesson Obj.:** Divide monomials using the properties of exponents. Simplify expressions using the quotient properties of exponents.  **CCSS:** A.SSE.2, F.IF.8b **Math Practice:** 8  **Activity(s):**  1. First Five: Graph Systems of Equations  2. Whole Group: TTW/TLW discuss questions from the homework.  3. Independent Practice: TLW complete the 7-2 Study Guide and Intervention WS.  4. Homework: TLW complete the 7-2 Practice WS.  5. Assessment: Make several copies each of five monomial expressions that need to be simplified. Give one expression to each student. As students leave the room, ask them to tell you the simplified versions of the expressions they possess.  **Materials:** Textbook, Workbook, Smartboard, Calculators |
| **Thursday** | **Lesson Obj.:** TLW review how to Multiply and Divide Monomials.  **CCSS:** A.SSE.2, F.IF.8b **Math Practice:** 8  **Activity(s):**  1. First Five: Multiplying Monomials  2. Whole Group: TTW/TLW discuss questions from the homework.  3. Independent Practice: TLW complete review problems from the textbook.  4. Assessment: Ticket Out.  **Materials:** Textbook, Workbook, Smartboard, Calculator |
| **Friday** | **Lesson Obj.:** Multiply and Divide monomials using the properties of exponents. Simplify expressions using the Division properties of exponents.  **CCSS:** A.SSE.2, F.IF.8b **Math Practice:** 8  **Activity(s):**  1. First Five: Multiplying Monomials  2. Whole Group: TTW/TLW discuss common problems before the test.  3. Independent Practice: TLW complete Test #12 Multiplying and Dividing Monomials  4. Assessment: Yesterday’s News. Ask students to write two ways in which the concepts of multiplying monomials helped them to understand dividing monomials.  **Materials:** Textbook, Workbook, Smartboard, Calculator |

**Accommodations for Special Needs:**

* Preferential seating for students with hearing or visual impairments, and required accommodations.
* Extended time on assignments and tests for resource students and students with accommodations.
* Resource students allowed to test in resource as requested by resource teacher.
* Lesson plans, study guides, assignment outlines, and tests provided in advance to resource teachers.
* Oral, visual, and written tasks to accommodate different learning styles.
* Use of group and cooperative activities to help weaker learners.