**Lesson Plan**

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| **Teacher Name:** Heather McNeill | **Course:** Algebra 1 Standard | **Date:** 01/30/12 |

**Part I**

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| --- | --- |
| **Unit:** | Linear Functions – Graphing Linear Equations |
| **Benchmark:** | MA.912.A.3.8 , MA.912.A.3.12 |
| **Literacy Benchmark:** | LA.910.1.61 Use new vocabulary that is introduced and taught directly. |
| **Objective(s):**  **In student-friendly language** | Students will be able to:   * Determine whether or not a function is linear. * Write linear functions in standard form. |
| **Essential Question:** | What real-world situations resemble linear functions? |
| **Materials/Resources:** | Calculators, Smart Board |
| **Assessments:**  **Formative/Summative** | Formative: Observations and Discussions  Summative: Student Homework |
| **Key Vocabulary** | linear equation, standard form, constant |
| **Homework** | 3-1 Skills Practice: Graphing Linear Equations #1-8 evens |

**Part II**

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| **High-Yield Strategies:**  Check all that apply | **Marzano:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Identifiying Similarities and Differences |  | Summarizing |  | Nonlinguistic Representation | |  | Generating/Testing Hypotheses |  | Advance Organizer | x | Outlining/Webbing/Multi-Column Notemaking |   **Kagan Structures:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | RallyCoach |  | RallyRobin |  | RoundRobin | |  | Stand-Up Hand-Up Pair-Up |  | Quiz-Quiz Trade | x | Other: Numbered Heads Together |   **CRISS:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Think-Pair Share |  | KWL |  | Jigsaw | |  | Frayer Model |  | Anticipation Guide |  | Other: | |
| **Challenge Level (Bloom):**  Check all that apply  **Depth of Knowledge**  **(Webb):**  Check all that apply | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | x | Recall | x | Comprehension | x | Application | | x | Analysis |  | Synthesis | x | Evaluation |      |  |  |  |  | | --- | --- | --- | --- | | x | Level 1 (Recall) | x | Level 2 (Skill/Concept) | | x | Level 3 (Strategic Thinking) |  | Level 4 (Extended Thinking) | |

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| **Differentiation:**  Check all that apply | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | Content |  | Process | x | Product | x | Learning Environment | |

**Part III**

**Write Lesson Plan Here (Follow Phases of the Gradual Release Model)**

**Attach copies of advance organizers, handouts, assignments, Powerpoint or Notebook slides.**

* Students will take a quiz coving material from the previous week (multiplying polynomials).
* Notes: Graphing Linear Equations
  + We will begin notes for the new chapter and discuss the meaning of the new vocabulary. (Slide 2)
  + They will fill in definitions for each of the vocabulary words.
  + I will show them how to determine if a function is linear by attempting to write it in standard form. (Slide 4)
  + We will identify an example and a non-example of a linear equation together. (Slide 4)
  + They will identify linear equations with their team members and share their results with the class. (Slide 5)
  + We will review the results of the functions. (Slide 5)
  + Students will complete an exit slip. (Slide 6)

**Part IV**

**Higher Order Questions I will ask in this lesson (write them out):**

* **What does linear mean? Can we break it down or are there other words that sound similar?**
* **Why can’t both of the coefficients for x and y be 0 at the same time?**

**Lesson Plan**

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| --- | --- | --- |
| **Teacher Name:** Heather McNeill | **Course:** Algebra 1 Standard | **Date:** 01/31/12 |

**Part I**

|  |  |
| --- | --- |
| **Unit:** | Linear Functions – Graphing Linear Equations |
| **Benchmark:** | MA.912.A.3.8 , MA.912.A.3.12 |
| **Literacy Benchmark:** | LA.910.1.61 Use new vocabulary that is introduced and taught directly. |
| **Objective(s):**  **In student-friendly language** | Students will be able to:   * Understand what intercept means when used in math. * Find the x- and y-intercepts from looking at a graph. * Explain when there may only be one intercept. |
| **Essential Question:** | What real-world situation would represent an x- or y-intercept? |
| **Materials/Resources:** | Calculators, Smart Board |
| **Assessments:**  **Formative/Summative** | Formative: Observations, Discussions, Turned in classwork  Summative: Student Homework |
| **Key Vocabulary** | x-intercept, y-intercept |
| **Homework** | 3-1 Skills Practice: Graphing Linear Equations #1-9 odd, 10-12 |

**Part II**

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| **High-Yield Strategies:**  Check all that apply | **Marzano:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Identifiying Similarities and Differences |  | Summarizing |  | Nonlinguistic Representation | |  | Generating/Testing Hypotheses |  | Advance Organizer | x | Outlining/Webbing/Multi-Column Notemaking |   **Kagan Structures:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | RallyCoach |  | RallyRobin |  | RoundRobin | |  | Stand-Up Hand-Up Pair-Up |  | Quiz-Quiz Trade | x | Other: Numbered Heads Together |   **CRISS:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Think-Pair Share |  | KWL |  | Jigsaw | |  | Frayer Model |  | Anticipation Guide |  | Other: | |
| **Challenge Level (Bloom):**  Check all that apply  **Depth of Knowledge**  **(Webb):**  Check all that apply | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | x | Recall | x | Comprehension | x | Application | | x | Analysis |  | Synthesis | x | Evaluation |      |  |  |  |  | | --- | --- | --- | --- | | x | Level 1 (Recall) | x | Level 2 (Skill/Concept) | | x | Level 3 (Strategic Thinking) |  | Level 4 (Extended Thinking) | |

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| **Differentiation:**  Check all that apply | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | Content |  | Process | x | Product | x | Learning Environment | |

**Part III**

**Write Lesson Plan Here (Follow Phases of the Gradual Release Model)**

**Attach copies of advance organizers, handouts, assignments, Powerpoint or Notebook slides.**

* Notes: Graphing Linear Equations (Continued)
  + I will introduce the vocabulary of x- and y-intercept and will give an example of how to identify the x- and y-intercept from a graph. (Slide 7, 8)
  + We will identify the x- and/or y-intercept of two graphs (Slide 9)
  + I will check that students understand that the intercept is a single value, not a coordinate pair. (Slide 9)
  + They will work with their team members to identify the intercept(s). (Slide 10)
  + We will review the correct answers to each graph. (Slide 10)
  + They will create a real-world situation and show its results on a graph. (Slide 11)
  + They will individually complete the graded classwork assignment. (Slide 11)

**Part IV**

**Higher Order Questions I will ask in this lesson (write them out):**

* **What does intercept mean? Can we break it down or are there other words that sound similar?**
* **Will we always have both an x- and y-intercept? If not, give an example.**
* **Why don’t we write the x-intercept as (3,0) if the line crosses the x-axis at 3?**
* **Give an example of an intercept found in a real-world situation.**

**Lesson Plan**

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| **Teacher Name:** Heather McNeill | **Course:** Algebra 1 Standard | **Date:** 02/01/12 |

**Part I**

|  |  |
| --- | --- |
| **Unit:** | Linear Functions – Graphing Linear Equations |
| **Benchmark:** | MA.912.A.3.8 , MA.912.A.3.12 |
| **Literacy Benchmark:** | LA.910.1.61 Use new vocabulary that is introduced and taught directly. |
| **Objective(s):**  **In student-friendly language** | Students will be able to:   * Find the intercepts of linear equations by use of the equation, graph of the equation and a table. * Understand the connection between the three representations (table, equation and graph). |
| **Essential Question:** | Can you think of a time when one method of doing something was not always the best way? |
| **Materials/Resources:** | Calculators, Smart Board |
| **Assessments:**  **Formative/Summative** | Formative: Observations, Discussions  Summative: Student Homework |
| **Key Vocabulary** | Standard form, equation, table, graph |
| **Homework** | 3-1 Skills Practice: Graphing Linear Equations #13 - 18 |

**Part II**

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| **High-Yield Strategies:**  Check all that apply | **Marzano:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Identifiying Similarities and Differences |  | Summarizing |  | Nonlinguistic Representation | |  | Generating/Testing Hypotheses |  | Advance Organizer | x | Outlining/Webbing/Multi-Column Notemaking |   **Kagan Structures:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | RallyCoach |  | RallyRobin |  | RoundRobin | |  | Stand-Up Hand-Up Pair-Up | x | Quiz-Quiz Trade |  | Other: Numbered Heads Together |   **CRISS:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Think-Pair Share |  | KWL |  | Jigsaw | |  | Frayer Model |  | Anticipation Guide |  | Other: | |
| **Challenge Level (Bloom):**  Check all that apply  **Depth of Knowledge**  **(Webb):**  Check all that apply | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | x | Recall | x | Comprehension | x | Application | | x | Analysis |  | Synthesis | x | Evaluation |      |  |  |  |  | | --- | --- | --- | --- | | x | Level 1 (Recall) | x | Level 2 (Skill/Concept) | | x | Level 3 (Strategic Thinking) |  | Level 4 (Extended Thinking) | |

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| **Differentiation:**  Check all that apply | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | Content | x | Process | x | Product | x | Learning Environment | |

**Part III**

**Write Lesson Plan Here (Follow Phases of the Gradual Release Model)**

**Attach copies of advance organizers, handouts, assignments, Powerpoint or Notebook slides.**

* Notes: Graphing Linear Equations (Continued)
  + We will review how to find intercepts when looking at a graph. (Slide 13)
  + I will fill in the table using the equation provided. (Slide 13)
  + They will discuss with their team what they notice. (Slide 13)
  + We will make a table of values using the given equation. (Slide 14)
  + They will tell me the intercepts from looking at the table of values. (Slide 14)
  + We will discuss why a table of values is not always helpful. (Slide 14)
  + I will revert back to the previous slide and we will talk about what we see in common. (Slide 13)
  + They will plug o in for variables to find the intercepts. (Slide 15)
  + We will compare those values with a table and a graph. (Slide 15)
  + They will put an equation in standard form and graph it using the intercepts. (Slide 16)
  + They will work with their group members to find the intercepts to the 3 given equations. (Slide 17)
  + They will participate in Quiz-Quiz-Trade. (Slide 17)
  + We will review the lesson. (Slide 18)

**Part IV**

**Higher Order Questions I will ask in this lesson (write them out):**

* How is the information in the graphs, tables and equations related?
* Why do we plug zero in for x to find the y-intercept?
* Why/How are we able to graph a linear equation if we are only using the intercepts?

**Lesson Plan**

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| --- | --- | --- |
| **Teacher Name:** Heather McNeill | **Course:** Algebra 1 Standard | **Date:** 02/02/12 |

**Part I**

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| --- | --- |
| **Unit:** | Linear Functions – Rate of Change Lab |
| **Benchmark:** | MA.912.A.3.9 |
| **Literacy Benchmark:** | LA.910.1.61 Use new vocabulary that is introduced and taught directly. |
| **Objective(s):**  **In student-friendly language** | Students will be able to:   * Explore rates of change through an activity. * Assimilate and apply data. |
| **Essential Question:** | Where do we see rates in our day to day life? |
| **Materials/Resources:** | Smart Board, Rulers, Books, Binders, Masking Tape, Data Collection Table, Calculators |
| **Assessments:**  **Formative/Summative** | Formative: Observations, Discussions  Summative: Homework |
| **Key Vocabulary** | Rate, Ratio |
| **Homework** | Students will calculate the rates from their data. |

**Part II**

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| **High-Yield Strategies:**  Check all that apply | **Marzano:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Identifiying Similarities and Differences |  | Summarizing |  | Nonlinguistic Representation | | x | Generating/Testing Hypotheses |  | Advance Organizer |  | Outlining/Webbing/Multi-Column Notemaking |   **Kagan Structures:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | RallyCoach |  | RallyRobin |  | RoundRobin | | x | Stand-Up Hand-Up Pair-Up |  | Quiz-Quiz Trade |  | Other: Numbered Heads Together |   **CRISS:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Think-Pair Share |  | KWL |  | Jigsaw | |  | Frayer Model |  | Anticipation Guide |  | Other: | |
| **Challenge Level (Bloom):**  Check all that apply  **Depth of Knowledge**  **(Webb):**  Check all that apply | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | x | Recall | x | Comprehension | x | Application | | x | Analysis |  | Synthesis |  | Evaluation |      |  |  |  |  | | --- | --- | --- | --- | | x | Level 1 (Recall) | x | Level 2 (Skill/Concept) | | x | Level 3 (Strategic Thinking) |  | Level 4 (Extended Thinking) | |

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| **Differentiation:**  Check all that apply | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | x | Content | x | Process | x | Product | x | Learning Environment | |

**Part III**

**Write Lesson Plan Here (Follow Phases of the Gradual Release Model)**

**Attach copies of advance organizers, handouts, assignments, Powerpoint or Notebook slides.**

* Instruction
  + I will lead a brainstorm session about what a rate is. (Slide 20)
  + We will share examples of rates. (Slide 20)
  + I will explain directions for the activity. (Slide 21)
* Activity
  + Students will work in pairs to collect data
  + We will consider a real-world scenario involving a rate. (Slide 27,28)
  + They will brainstorm how their data is similar to the real-world example.
  + We will begin to set up our rates using our data. (Slides 23 – 26)
  + I will instruct the students to calculate their rates for homework. (Slide 29)

**Part IV**

**Higher Order Questions I will ask in this lesson (write them out):**

* What is a rate?
* How do we calculate a rate?

**Lesson Plan**

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| --- | --- | --- |
| **Teacher Name:** Heather McNeill | **Course:** Algebra 1 Standard | **Date:** 02/03/12 |

**Part I**

|  |  |
| --- | --- |
| **Unit:** | Linear Functions – Rate of Change Lab |
| **Benchmark:** | MA.912.A.3.9 |
| **Literacy Benchmark:** | LA.910.1.61 Use new vocabulary that is introduced and taught directly. |
| **Objective(s):**  **In student-friendly language** | Students will be able to:   * Explain and calculate rates of change. * Describe what causes rates to increase/decrease. |
| **Essential Question:** | Why would we want to change a rate in a real-life situation? |
| **Materials/Resources:** | Smart Board, Calculators |
| **Assessments:**  **Formative/Summative** | Formative: Observations, Discussions  Summative: Student Data Tables |
| **Key Vocabulary** | Rate, Ratio |
| **Homework** | To work on Carnegie. |

**Part II**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Challenge Level (Bloom):**  Check all that apply  **Depth of Knowledge**  **(Webb):**  Check all that apply | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | x | Recall | x | Comprehension | x | Application | | x | Analysis | x | Synthesis | x | Evaluation |      |  |  |  |  | | --- | --- | --- | --- | | x | Level 1 (Recall) | x | Level 2 (Skill/Concept) | | x | Level 3 (Strategic Thinking) | x | Level 4 (Extended Thinking) | |

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| **Differentiation:**  Check all that apply | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | Content |  | Process | x | Product | x | Learning Environment | |

**Part III**

**Write Lesson Plan Here (Follow Phases of the Gradual Release Model)**

**Attach copies of advance organizers, handouts, assignments, Powerpoint or Notebook slides.**

* Instruction
  + I will review with students the activity from the previous day.
  + They will discuss with their teams about how they found their rates and what caused the rates to change. (Slide 30)
  + I will ask a member from each team to share their idea(s).
  + We will explore a real-world problem involving rates of change. (Slide 31)
  + They will finish a graphing assignment that was previously assigned. (Slide 32)

**Part IV**

**Higher Order Questions I will ask in this lesson (write them out):**

* What causes your rate to change/increase/decrease?