**TEACHER RESOURCE LIBRARY**

Grade 6 ~ ***Expressions and Equations: Dependent and Independent Variables (6.EE.9)***

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| **Represent and analyze quantitative relationships between dependent and independent variables.** |
| **Resources** | **9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.** *For example, in a* *problem involving motion at constant speed, list and graph ordered pairs* *of distances and times, and write the equation d = 65t to represent the* *relationship between distance and time.* |
| **My Stuff** |  |
| **Resource Books** | **Representations of Dependent and Independent Variables (including graphs and tables)****Elementary & Middle School Mathematics (VanDeWalle, 7th Ed.)** * TEACHER CONTENT
	+ Linear Functions: p. 274-276
	+ Teaching Considerations: p. 277-283
* STUDENT ACTIVITIES
	+ Tasks between blue lines on pages 275-277

**Elementary & Middle School Mathematics (VanDeWalle, 6th Ed.)** * TEACHER CONTENT
	+ Growing Patterns - A First Look at Functions: p. 271-282,
	+ Linear Functions: p. 288-289
* STUDENT ACTIVITIES
	+ Hot Dog Vendor task: p. 277
	+ How Many Gallons Left? (Activity 15.16): p. 281
	+ Tasks between purple lines on pages 281-284

**Elementary Mathematics for Teachers (Parker, Baldridge, 2004) ISBN 0-9748140-0-8*** TEACHER CONTENT
	+ Rates, Speeds, and Arithmetic with Units: p. 181-184
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| **Web**  | **Dependent and Independent Variables**STUDENT ACTIVITIES* **Cyberchase - Stop That Creature - Game** - <http://pbskids.org/cyberchase/games/functions/functions.html>
* **Math Playground - What’s the Function? - Game** - <http://www.mathplayground.com/functionmachine.html>
* **Mathwire - Guess My Rule: The Function Machine - Game** - <http://mathwire.com/games/guessmyrulegame.pdf>
* **Teams - Find the Function- Game** -

 <http://teams.lacoe.edu/documentation/classrooms/amy/algebra/5-6/activities/functionmachine/functionmachine5_6.html>* **Mathwire - Investigating Growing Patterns - Teacher Lesson** - <http://mathwire.com/algebra/growingpatterns.html>
* **Project Idea** - <http://www.teachforever.com/2007/10/project-idea-independent-vs-dependent.html>
* **Math Solutions - Two of Everything - Lesson Plan** - <http://www.mathsolutions.com/documents/0941355489_CH1.pdf>
* **UEN - “Function-al Machines and Spaghetti Graphs” Lesson** - <http://www.uen.org/Lessonplan/preview.cgi?LPid=18863>
* **UEN - “Patterns” Lesson** - <http://www.uen.org/Lessonplan/preview.cgi?LPid=6394>

**Two-Quantities in a Real-World Problem**STUDENT ACTIVITIES* **LearnAlberta - Exploring Algebra - Video and Interactive Lesson** - <http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.PATT&ID2=AB.MATH.JR.PATT.ALG&lesson=html/video_interactives/algebra/algebraSmall.html>

**Distance, Rate, and Time**TEACHER CONTENT * **Math.com - Distance, Rate and Time - Teacher Tutorial** - <http://www.math.com/school/subject1/lessons/S1U2L3GL.html>
* **Math.com - Distance, Rate and Time - Teacher Tutorial** - <http://www.k12math.com/math-concepts/algebra/drt.htm>

STUDENT ACTIVITIES\* **Illuminations - Understanding Distance, Speed and Time Relationships - Unit of Lessons and Interactive Applet**  -

 <http://illuminations.nctm.org/LessonDetail.aspx?ID=U101> |
| **Literature Connections** | Aesop’s The Crow and the Pitcher by Stephanie Gwyn BrownFortunately by Remy CharlipThe King’s Chessboard by David BirchMinnie’s Diner by Dayle Ann Dodds | One Grain of Rice by DemiTwo of Everything by Lily Toy HongWilma Unlimited by Kathleen Krull |