Title: *Direct Proportion*		**Subject/Course:** *6th Mathematics*
Topic(s): In a proportional situation, variables are related by a constant factor Proportional relationships can be represented using a/b=c/d and y=kx as well as with manipulatives, pictures, tables, and graphs. Proportional reasoning can be used solve problems (including percent problems)	**Grade:** *6th*	**Designer(s):** J. Crews S. Sikes E. Oglesbee

Stage 1 – Desired Results

Established Goals:

M6A1. Students will understand the concept of ratio and use it to represent quantitative relationships.

M6A2. Students will consider relationships between varying quantities.

a) Analyze and describe patterns arising from mathematical rules, tables, and graphs.
b) Use manipulatives or draw pictures to solve problems involving proportional relationships.
c) Use proportions (a/b=c/d) to describe relationships and solve problems, including percent problems.
d) Describe proportional relationships mathematically using y=kx, where k is the constant of proportionality.
e) Graph proportional relationships in the form y=kx and describe characteristics of the graphs.
f) In a proportional relationship expressed as y=kx, solve for one quantity given values of the other two. Given quantities may be whole numbers, decimals, or fractions. Solve problems using the relationship y=kx.
g) Use proportional reasoning (a/b=c/d and y=kx) to solve problems.

M6A3. Students will evaluate algebraic expressions, including those with exponents, and solve simple one-step equations using each of the four basic operations.

M6D1. Students will pose questions, collect data, represent and analyze the data, and interpret results.

a) Formulate questions that can be answered by data. Students should collect data by using samples from a larger population (surveys) or by conducting experiments.
b) Using data, construct frequency distributions, frequency tables, and graphs.
c) Choose appropriate graphs to be consistent with the nature of the data (categorical or numerical). Graphs should include pictographs, histograms, bar graphs, line graphs, circle graphs, and line plots.
d) Use tables and graphs to examine variation that occurs within a group and variation that occurs between groups.
e) Relate the data analysis to the context of the questions posed.