

UPPER CUMBERLAND MIDDLE SCHOOL MATH PARTNERSHIP

SESSION # 17 OUTLINE

TITLE: Slope as Rate of Change

INSTRUCTOR: Sheryl Webb

STANDARDS:

GRADE LEVEL EXPECTATIONS:

GLE 0706.3.6 Conceptualize the meanings of slope using various interpretations, representations, and contexts.

GLE 0806.3.5 Use slope to analyze situations and solve problems.

CHECKS FOR UNDERSTANDING:

- ✓ 0606.1.4 Describe how changes in one quantity or variable result in changes in another.
- ✓ 0706.1.6 Develop meaning of intercept and rate of change in contextual problems.
- ✓ 0706.3.8 Understand slope as the ratio of vertical change to horizontal change.
- ✓ 0706.3.9 Identify a function exhibiting a constant rate of change as a linear function and identify the slope as a unit rate.
- ✓ 0806.3.7 Analyze situations and solve problems involving constant rate of change.
- ✓ 0806.3.8 Recognize a proportion as a special case of a linear equation and understand that the constant of proportionality is the slope, and the resulting graph is a line through the origin.
- ✓ 0806.3.12 Understand how rates of change of nonlinear functions contrast with constant rates of change of linear functions.

SPI's:

SPI 0706.3.4 Interpret the slope of a line as a unit rate given the graph of a proportional relationship.

ACTIVITIES: Participants will complete the Walk the Plank activity. The activity includes recording and plotting weights at 5 distances, finding slope of the lines, and writing equations.

INSTRUCTIONAL STRATEGIES MODELED:

The instructor will provide instructions and assist participants. The instructor will lead discussion about the results of the activity.

TECHNOLOGY/MATERIALS USED:

TI-84 graphing calculator/SmartView, laptop, internet, projector

WEBSITES:

<http://illuminations.nctm.org/LessonDetail.aspx?id=L682>

HANDOUTS ATTACHED:

Walk the Plank