Instructor: Gabriel Thompson	Class: 8th Algebra 1	Day: 1	Date: TBD

Information about the Lesson

Learning Theory	Bloom's Cognitive Domain	Gardner's Multiple Intelligences	Lesson Type
__ Behaviorism __ Cognitivism _x_ Constructivism __ Experiential	_x_ Remember _x_ Understand _x_ Apply __ Analyze __ Evaluate __ Create	_x_ Verbal/Linguistic _x_ Logical/Mathematical _x_ Visual/Spatial __ Bodily/Kinesthetic __ Musical/Rhythmic _x_ Interpersonal/Social _x_ Intrapersonal/Self-aware _x_ Naturalist/Environmentally aware	__ Present and Explain _x_ Direct Instruction __ Concept Lesson __ Inquiry-Based Lesson _x_ Cooperative Learning __ Project /Problem-Based Learning __ Classroom Discussion

Previous Lesson: Students have learned about rate of change and how it affects the way a graph looks
Future Lesson: Students will discover how rate of change is slope and can be found in several different ways

Prerequisites: *Before beginning this lesson students will have:*

- Two lessons with practice on rate of change and how to determine it.

Materials Needed: TI-84 Calculators, Holt Textbook, Ruler (optional), Pencil

Lesson Content and Design

Central Focus / Big Idea: Find the slope of a given line on a graph, two points, or a table

Objective(s):

- **SWBAT** determine the slope of a line given a graph, points, or a table.

Guiding Question(s):

- What is the meaning or purpose of slope?
- How can we connect it to candy?

Assessment:

Formative: Assessment (Data Test) in 5-7 days.
Summative: Demonstrate an understanding of the slope formula through homework and IXL

Academic Language: Slope, rate of change, (x_1, y_1), rise over run, m

Standard(s):

- 2007 Mathematics 8.2.2.1, 8.2.2.4, 8.2.4.1

Presentation/Syntax (Example given below…note the tiered portion in blue and red)

Elements	Minutes	Detailed Description
Consider: Work to prepare students and access prior knowledge and experiences	**5-10**	**Whole Group**: 1. **Warm-up:** Students will use white boards and markers and attempt to perform the problem - Students will have 2 minutes to practice the problem - They will then take 5 minutes to discuss with teacher and think-pair-share with their tables

Construct: Work to allow students to build new knowledge and skills	**15-25**	**Whole Group:** **2. Different elements of rate of change:** Explain to students that rate of change is equal to m, is equal to rise over run, is equal to change in y-values over change in x-values, is the slope. - Have students scribe notes labeled "Slope." Show rate of change and the "train" that leads to slope. Show graphically, with a table, with a word problem, and with desks. **3. Demonstrations:** Before students have the opportunity, teacher will show a problem on the board. To get on with class work, students must demonstrate how to find the slope of the problem and relate it in one or more ways.
Confirm: Work to allow students to contrast new knowledge with prior and eventually come back with questions	**25-35**	**4. Whole Group:** Students will work in their text books on problems that range from basic findings of slope to challenge and extend problems that require a multi-step process to find a solution.

Differentiation (Example given below)

Planned Support /Extension/ Differentiation for Specific Students:

Students are allowed to work at different rates to accommodate their change (see what I did there?!) Students are placed at table groups of 4-5 and vary at different levels of academic skill. Teacher will re-teach individually or in small groups as needed. Only the high students will reach the challenge and extend section allowing them to explore in arbitrary numbers.

Groups:
See seating chart for more details (see what I did there?!)

The groups are differentiated by math levels to give a variety of ideas when working. This grade is a little higher in academic level so typically there are 2-3 high students with 2 medium-low students. The choice of thoroughness in the problem is the student's alone. The "ready-to-go" students finish the whiteboard problem within 30 seconds whereas the "not-ready-yet" students may need more examples, individualized help and/or guided instruction which can take up to 10 minutes. Teacher may assign less problems to start with in order to ensure all aspects are covered. If middle-low students are able to complete those problems, then it is established that they try the other problems for more practice.

Individual Student Accommodations:

Jimbob:

- **10 minute sensory break at the end of class.**
- **Student uses task chair with that swivels to allow for slight movement**
- **Student has para Jen to help keep on task and help him advocate for help when needed.**
- **Student can wear his own personal headphones or sound eliminators during work times due to sensory hearing needs.**
- **Student implements expectations (point) sheet during and at the end of class to help promote on-task behavior.**