

<b>Instructor: Gabriel Thompson</b>	<b>Class: 8<sup>th</sup> Algebra 1</b>	<b>Day: 3</b>	<b>Date: TBD</b>
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### Information about the Lesson

<b>Learning Theory</b> <input type="checkbox"/> Behaviorism <input type="checkbox"/> Cognitivism <input checked="" type="checkbox"/> Constructivism <input type="checkbox"/> Experiential	<b>Bloom's Cognitive Domain</b> <input checked="" type="checkbox"/> Remember <input checked="" type="checkbox"/> Understand <input checked="" type="checkbox"/> Apply <input type="checkbox"/> Analyze <input type="checkbox"/> Evaluate <input type="checkbox"/> Create	<b>Gardner's Multiple Intelligences</b> <input type="checkbox"/> Verbal/Linguistic <input checked="" type="checkbox"/> Logical/Mathematical <input type="checkbox"/> Visual/Spatial <input type="checkbox"/> Bodily/Kinesthetic <input type="checkbox"/> Musical/Rhythmic <input type="checkbox"/> Interpersonal/Social <input type="checkbox"/> Intrapersonal/Self-aware <input type="checkbox"/> Naturalist/Environmentally aware	<b>Lesson Type</b> <input type="checkbox"/> Present and Explain <input checked="" type="checkbox"/> Direct Instruction <input type="checkbox"/> Concept Lesson <input type="checkbox"/> Inquiry-Based Lesson <input type="checkbox"/> Cooperative Learning <input type="checkbox"/> Project /Problem-Based Learning <input type="checkbox"/> Classroom Discussion
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**Previous Lesson:** Students have learned about slope and slope-intercept form and how it affects the way a graph looks

**Future Lesson:** Students will discover another form, point-slope, that can be easily simplified to slope-intercept

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

- Lessons with practice on rate of change and slope and how to determine it. They will also have knowledge on the coordinate plane system and the axis' as well as slope-intercept form.

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

### Lesson Content and Design

**Central Focus / Big Idea:** Find the equation of a line (or graph a line) given a graph, two points, or a table (or equation)

**Objective(s):**

- **SWBAT** graph a line using point-slope form and determine the equation of a line in slope-intercept form point-slope form given a graph, table, or context.

**Guiding Question(s):**

- How does knowing a point-slope equation help you in the real world?
- Understanding the importance of candy, how can this equation reach the candy goal faster?

**Assessment:**

**Formative:** Assessment (Data Test) in 3-5 days.

**Summative:** Demonstrate an understanding of the point-slope formula through homework and IXL

**Academic Language:** Slope, slope-intercept, point-slope, y-intercept, x-intercept, independent variable, dependent variable

**Standard(s):**

- 2007 Mathematics 8.2.2.1, 8.2.2.3, 8.2.2.4, 8.2.4.1, 8.2.4.3

### 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	<b>5-10</b>	<b>Whole Group:</b> <b>1. Warm-up:</b> 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

<p><u>Construct:</u> Work to allow students to build new knowledge and skills</p>	<p>15-25</p>	<p><b>Whole Group:</b></p> <p><b>2. Showing relationship between slope-intercept and point-slope:</b>          Explain to students how slope-intercept and point-slope relate. Compare side by side the two formats and show how point-slope is derived from the slope formula itself. This is another practice-makes-perfect lesson that incorporates several word problems and examples to relate it to the real world.</p> <ul style="list-style-type: none"> <li>- Have students scribe notes labeled “Point-Slope.” Show several examples of how to not only determine the equation of a line, but how to simplify the right side even when it is not obvious. Show graphically, with a table, and with a word problem.</li> </ul> <p><b>3. Demonstrations:</b> 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.</p>
<p><u>Confirm:</u> Work to allow students to contrast new knowledge with prior and eventually come back with questions</p>	<p>25-35</p>	<p><b>4. Whole Group:</b> Students will work in their text books on problems that range from equations with a clear y-intercept to equations that will be in fraction form.</p>

**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.**