

**TEACHER NAME:** Taylor Schlenk

**TITLE OF LESSON:** Math in Restaurants

**GRADE LEVEL(S):** 7-12 **LESSON DURATION:** 1—1 1/2 hours

**OVERVIEW:** Students take a glimpse into the life of Sue Torres, the owner of and chef at Sueños, a Mexican restaurant in New York City. Students are to help Sue decide where the best place would be to build another Sueños restaurant. In addition, students are to find the best price to charge for guacamole after identifying what Sue should pay for avocados. (PBS & WGBH Educational Foundation, 2017).

**SUBJECT MATTER:** Geography, English Language Arts, Math.

**LEARNING OBJECTIVES:** Students will identify patterns and relationships and will recognize equivalence and linearity. Students will be able to build connections between algebraic and numeric expressions. Students will apply what they know about numbers, operations, measurement, and statistics to an algebra application. Students will be able to construct multiple representations of data. Students will be able to compare the median, mean, and spread of two or more different data sets.

**STANDARDS:**

Geography: Space and Place:

- Students will develop an understanding of a place and the issues that affect it.

English Language Arts: Language:

- Students will use previously established rules for informal and formal discussions in small and large groups.
- Students will pose questions, listen to the ideas of others, and contribute their own ideas in group discussions and interviews in order to acquire new knowledge.
- Students will acquire new vocabulary and use it correctly in reading and writing.

Reading and Literature:

- Students will identify the basic facts and main ideas in a text and use them as the basis for interpretation.

Composition:

- Students will write with a clear focus, coherent organization, and sufficient detail.
- Students will use their knowledge of standard English conventions in writing, revising, and editing.

Math: The PBS website lists many mathematics standards; I have listed a few main standards.

- CCSS.Math.Content.7.EE.B.4a (Grade 7): Solve word problems leading to equations of the

form  $px + q = r$  and  $p(x + q) = r$ , where  $p$ ,  $q$ , and  $r$  are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

- CCSS.Math.Content.7.RP.A.2d (Grade 7): Explain what a point  $(x, y)$  on the graph of a proportional relationship means in terms of the situation, with special attention to the points  $(0, 0)$  and  $(1, r)$  where  $r$  is the unit rate.
- CCSS.Math.Content.8.F.B.4 (Grade 8): Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two  $(x, y)$  values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
- CCSS.Math.Content.HSF-LE.A.2 (High School - Functions): Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
- CCSS.Math.Content.HSF-LE.A.1b (High School - Functions): Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

**TECHNOLOGY COMPONENTS:** Students will complete most of the lesson online. This includes video, audio, digital, and web. Graphing calculator or app—Free GraCalc by William Jockusch.

#### **MATERIALS:**

- PBS LearningMedia account
- [PBS LearningMedia | Math In Restaurants](#) (search pbslearningmedia.org for “Math In Restaurants” if link doesn’t work.)
- Computers or iPads
- Printer: printed pages from PBS LearningMedia link; Location is Key worksheet (see handout at bottom of lesson plan); map of a section of New York City

**PREP FOR TEACHERS:** Be sure students each have individual PBS LearningMedia accounts. Run through the activity beforehand. Check technology to make sure everything works beforehand. Download and print the teachers guide from the Support Materials section of the PBS LearningMedia Math in Restaurants site.

**STUDENT MATERIALS:** PBS LearningMedia account, computer or iPad, pencil or pen, notebook, graphing calculator, materials provided by teaching including printed worksheets.



# Location Is Key

Have you ever thought about why your favorite restaurant is located where it is?

Brainstorm with your group why you think your favorite restaurant is located where it is. List your ideas.

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Conduct research on restaurant location using reliable sources.

Record with your group at least six factors that go into choosing a restaurant's location.

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