Linear Relationships at *Tasty Tacos*

Lesson:

Engage students in the content.

You begin working at *Tasty Tacos* with the pay schedule listed in the table below:

Years	Earnings per hour
2	$6.85
4	$7.55
6	$8.25

1. Ask students to describe the pattern found in the table.

2. Enter the data into the list storage of your calculator.

> Teacher Tip:
> Instruct the students on how to enter a list. This includes setting up the number of lists you wish to use. Discuss with students how to name their lists if the calculators have that capability.

3. State an appropriate graphing window, and then graph the data using that window. (CLG: 1.1.2)

> Teacher Tip:
> At this point stop and discuss with your students what makes an appropriate graphing window. Discuss the mathematics behind graphing data just as if you were graphing it on paper. Discuss the domain of the *x* values and the range of the *y* values. Help students to see the data points in different windows and understand the need for an appropriate window.

4. What type of relationship exists in the data points? Use mathematics to justify your answer. (CLG: 1.1.1)

> Teacher Tip:
> Discuss with the students linear and non-linear relationships.

5. Write an equation that describes the relationship between the years (x) and the earnings per hour (y). Use mathematics to explain how you determined your equation. Use words, symbols, or both in your explanation.(CLG: 1.2.1)

> Teacher Tip:
> Discuss with students how to explain the steps they went through to get the equation.

6. Enter your equation into your calculator. Then graph the equations with the data points in the table. Describe the association between the data points and the graph of the line.

> Teacher Tip:
> Discuss with students how to graph the equation and data points together.

7. What is the slope of the equation and what does it mean in the context of the problem?

> Teacher Tip:
> Emphasize the concept of slope, as a rate of change, in the context of the problem.
> Students should use the table feature of the calculator to see the connection between the slope and table values.

8. What is the y-intercept of the equation and what does it mean in the context of the problem?

9. If this pattern continues, what would the earnings per hour be after working 15 years? Use mathematics to explain how you determined your answer. Use words, symbols or both in your explanation.

10. If this pattern continues, after how many years of service would you earn $9.65 per hour? Use mathematics to explain how you determined your answer. Use words, symbols, or both in your explanation.

A student worksheet " Linear Relationships at the Carnival" is included for a similar activity. In this activity, students will represent a pattern in a table and then by writing an equation.

Extra practice items are also included.