

Pete's Burger Palace Teacher Guide

The "Pete's Burger Palace" engineering activity is intended to get students thinking about efficiency. Pete's is a struggling, "mom and pop" fast food restaurant that is having trouble competing with a more streamlined competitor. Pete's could do a number of things better and this activity is intended to be an open-ended and creative design challenge; there is no one correct or perfect answer. Prompt students to apply their own personal experiences and real-world background knowledge of restaurants to develop realistic solutions for Pete to implement.

Over the course of this mini-unit, students are asked to delegate employee responsibilities and labor hours, assess best practices in business, draft a floor plan and write an argumentative essay. Depending on your school's schedule, this activity could be expanded from 90 minutes to a few days or an entire week.

Within this guide are suggested grading rubrics for five main tasks. Feel free to adjust the point values to better fit your personal grading system. Each rubric is based on a 1-3 point scale except Task 5, which is based on a 1-5 point scale. For Tasks 1-4, encourage students to share the responsibility for each task within their groups. Task 5 is intended to be the individual and comprehensive, final component to the overall activity and requires considerably more work than Tasks 1-4. It also includes more opportunities for students to demonstrate mastery of concepts than the other tasks.

Task 1 Purpose: The goal of Task 1 is for students to consider the delegation of responsibilities at Pete's. As a small restaurant that has historically had little competition, Pete's has been delegating tasks in a way that might work well for a restaurant with a small volume of sales, but has not fared well against *Mr. Quickies* where customers have come to expect their food within minutes (or seconds) of ordering. Hopefully, this schedule gets students thinking about the distribution of labor hours at Pete's, but more on that later. For now, expect students to notice that an enormous amount of work exists for the food handlers to keep up with. Thus, many changes are possible for students to suggest. Possible student responses include:

- Pouring drinks is not the same as preparing food. Cashiers could easily fill drink orders.
- The soda fountain could be relocated to the dining-side of the restaurant so customers can fill their own drinks.
- As long as the food is packaged, cashiers are able to retrieve ingredients from the walk-in for the food handlers.
- Eliminate Cashier #3's position entirely in order to create a new rush-time only position dedicated to prep work.
- Use a potato slicer instead of cutting fries by hand.

Suggested Rubric for Task 1: Employee Responsibilities

3 = Students who earn a score of 3 have been especially creative with the delegation of responsibilities and listed the new responsibilities of each station in detail. They identified easy solutions to big problems by reimagining the goals of each employee. These solutions save Pete's time and/or money.

2 = Students who earn a score of 2 have suggested changes, but may have missed the mark. They may have suggested arbitrary or ineffective changes (such as eliminating the drive-through position) or changes that do not address the central problem of speed of service (such as stocking more paper cups). These solutions might not save Pete's time and/or costs.

1 = Students who earn a score of a 1 have not made any changes to the delegation of responsibilities. They may have misunderstood the prompt or not responded with sufficient detail. These solutions might cost Pete's time and/or costs.

Task 2 Purpose: The goal of Task 2 is to have students reconsider the way Pete spends his labor hours. Expect students to ultimately consider a delegation of labor hours that ensures employees do not start and end the day already behind. Do not require students to fill in every cell on the chart; instead, suggest they denote when the same information applies to multiple cells. Require them to be specific about what should be cleaned, stocked, sliced, etc.

Try to have students consider all of the tasks that go into cleaning a restaurant at the end of the night, such as shutting down and cleaning the deep fryer, bleaching countertops, wrapping and storing ingredients, sweeping and mopping the kitchen and dining areas, restocking cups, napkins and condiments, refilling soda fountains, etc. Possible student responses include:

- Scheduling more people at 10:30 so that employees can complete all of the cleaning and prep necessary to get them through the lunch rush (particularly slicing extra potatoes and veggies).
- At around 9:30, have employees begin to close up what they can for the night so they are able to get out of the restaurant with all the tasks completed. For example, in between customers they might close out one or two cash registers early, restock cups and napkins, and sweep or mop.
- Consider keeping five employees on past the end of the lunch rush at 2PM to help get the kitchen restocked and back in order.

Another important component to Task 2 is the division of labor hours. In Task 3, students must synthesize all of the labor hours that they spent in Task 2. It helps to pay careful attention to when each employee who works that day clocks in and out. If students want to use more employees than the six introduced to them, they are welcome to create new names for new employees. However, remind them to be careful not to allot more than 30 labor hours to the day.

Suggested Rubric for Task 2: An Average Day at Pete’s

3 = Students who earn a score of 3 have carefully filled out the chart with particular attention to tasks to accomplish and the delegation of labor. They have been careful to assign the appropriate amount of workers to each station, and have made noticeable deviations from Pete’s existing “average day.” Students have included detailed information on the tasks to be accomplished during each timeframe.

2 = Students who earn a score of 2 have filled out the chart completely, but they may have suggested changes that are arbitrary, counterproductive or inefficient. There may be gaps in the delegation of labor or they may not have included much detail on the tasks they hoped the employees would accomplish.

1 = Students who earn a score of 1 have not completely filled out the chart. There may be unreasonably large gaps between shift changes or they may have ignored information regarding rush times. These students may have suggested changes that are arbitrary, counterproductive or inefficient, and changes may have been suggested inconsistently without much detail. These students may not have finished the assignment or may have copied directly from Pete’s average day without any noticeable changes.

Task 3 Purpose: Task 3 is directly related to Task 2. Labor hours are a huge expense in any business, and Pete is understandably concerned about spending more money on labor. The chart in Task 3 is an opportunity for students to review the shifts they worked up and tally the labor hours they used in their schedule in Task 2. While completing the chart in Task 3, students may notice changes or improvements they wish they had made in Task 2; if so, permit them to go back and forth between the two.

Suggested Rubric for Task 3: Labor Hours

3 = Students who earn a score of 3 have carefully filled out the chart. They have accurately represented the shifts they created in Task 2, and have spent less than 30 labor hours on their schedules.

2 = NA

1 = Students who earn a score of 1 have not filled out the chart with care. They may not have included all of the required information, have left out shifts or have used more than 30 labor hours on the schedule.

Task 4 Purpose: Task 4 is a creative component in which students have the chance to rethink the layout of Pete’s restaurant. Students should feel free to rearrange the restaurant, but keep in mind this is not the time to suggest new purchases to Pete. Possible student revisions include:

- Moving the wire racks so the cashiers have easier access to completed orders.
- Moving the soda fountain to the dining room so customers can fill their own drinks.
- Moving the soda fountain closer to the grill so the food handlers have easier access to it.
- Rearranging the refrigerator and the freezer so the food handlers have easier access to the refrigerator.
- Eliminating a cash register.

Suggested Rubric for Task 4: Floor Plan

3 = Students who earn a score of 3 have carefully sketched a detailed revised floor plan. They have made at least two changes that will make the kitchen more efficient.

2 = Students who earn a score of 2 have completed a sketch, but it might be unclear or contain changes that are arbitrary. The sketch includes minimal detail.

1 = Students who earn a score of 1 may not have completed their sketch entirely. They may not have made any changes to the floor plan or may have left out important components.

Task 5: Purpose: Task 5 is a concluding and comprehensive look at all the changes students suggest for Pete. It is students’ chance to make any suggestions to him that they were unable to in the preceding activities, as well as to explain their rationale for all of the changes they did suggest. It is also an individual writing assignment. Because this piece is considerably more intensive than the preceding activities, weigh it accordingly in student grades. The prompt suggests that students use the five-paragraph essay format, but this requirement is flexible. It is important that students understand how to organize their persuasive essays effectively (introduction, main points with evidence, conclusion).

Suggested Rubric for Task 5: Final Recommendations

5 = Students have made convincing arguments to Pete regarding the changes they suggest he implement. They have given strong evidence to support each of their arguments and organized the essay effectively. The essay is well written and formatted according to the guidelines in the prompt.

4 = Students have made effective arguments to Pete regarding the changes they suggest he implement. They have given evidence to support their arguments, but it may be inconsistent or less than convincing at times. They have organized the essay adequately. The essay is passably written and formatted according to the guidelines in the prompt.

3 = Students have made arguments to Pete regarding the changes they suggest he implement, but not all of the arguments are effective. They have given evidence to support their arguments, but the evidence is inconsistent or weak. They have organized the essay adequately, but perhaps inconsistently—certain paragraphs may not be fleshed out or the intro or conclusion may be short and incomplete. The essay may be poorly written or may not be formatted according to the prompt guidelines.

2 = Students have made arguments to Pete regarding the changes they suggest he implement, but the arguments are consistently ineffective. They have given little evidence to support their arguments and what they have included is ineffective or weak. The essay is disorganized or lacks cohesion. They have not included all of the information required in the prompt or may not have included an intro or conclusion paragraph. The essay may be formatted incorrectly or lack sufficient information.

1 = Students have made arguments to Pete regarding the changes they suggest he implement, but the arguments are weak or incomprehensible. The essay is disorganized and incomplete. They have not included all of the information required in the prompt and/or lack an intro or conclusion paragraph. The essay may be formatted incorrectly or lack sufficient information.