Mathematics I (Algebra I)

Tile Company Office Manager

Subject Area: Mathematics I   Grade Level: 9   Date July 11, 2013

Lesson Overview

Learners will cooperate to perform and understand some of the duties vital to coordinating the business of a tile setting company. The mathematics will be about creating equations and inequalities to model costs, and solving these equations to calculate specific costs. In teams, learners will vet and compute payroll for various employees, figuring how a timesheet translates to a paycheck. Then, the same teams will employ the same techniques to evaluate a property turnaround list (PTL) that constitutes a contract between a home refurbishing company and the tile setters. For each line item on the PTL, learners will research materials costs and subtract from the amount promised on the PTL. The learners will divide the difference by the presumed cost of labor to determine how much time can be allotted to the line item. They will create inequalities to express the time that can be given to the task. After critically thinking about these time requirements, learners will decide whether or not to propose change orders. Learners will present their analyses and change order proposals, and justify their decisions in terms of cost and profit for the company.

Materials Included in this Lesson

Entry Letter
Exploration 1 Questions
Employee Timecard Data for 9 teams
Task 2 Introduction Letter
Percentage, Tax, and Burden Worksheet
PTL Work Orders for 9 teams
Blank PTL Cost-Calculation Spreadsheet
Base Labor Coverage Spreadsheet
Available Workers and Wages Table
Accountability Form
Team Meeting Form
Contract
Reflective Essay Guidelines

Other Materials for this Lesson

Construction Supply Store Website

Skills the Student will Learn

- Model mathematical information from a table or written description as a variable equation or inequality
- Rewrite an algebra equation as a spreadsheet formula
- Evaluate the expressions to solve an algebra equation with given contextualized data
- Create a printable result from a spreadsheet, either with a mail merge or by formatting the sheet itself
- Analyze results of an evaluated equation in context
- Make decisions based on analysis
- Defend decisions by demonstrating the effects of changing input values

Student Deliverables

- Equations to model a worker's paycheck
- A spreadsheet with formulas that mirror the equations and calculate the right paycheck amount
- Paychecks for several workers
- A presentation to explain and defend the equations, spreadsheet, and paycheck decisions and process
- Equations and inequalities that model the time that may be spent on a line-item from the PTL, given the difference between materials costs and the contract value of the line-item
- Spreadsheets with formulas that calculate the time that may be spent on a line-item
- Change orders for any line-items the learners find unacceptable
- A presentation to explain and defend the equations and inequalities, spreadsheets, and change orders decisions and process

Length of Lesson: 10 Days

Activity Day One

Entry Event: Video or letter from Citadel Tile office manager describing (with little detail but many "breadcrumbs") the two tasks for teams to complete.

Learners review the **rubrics** for the final presentations.

Learners conduct a "**know and need to know**" activity (similar to a KWL) in order to clarify and set expectations for the lesson.

Teams create **contracts** in order to clarify collaboration expectations and for facilitator(s) to ensure that the purpose of the project is understood by learners.

Assignment 1: Learners watch a video lesson to review variables, order of operations, expressions vs. equations, and how to evaluate an expression.

Activity Day Two

Team Meeting: Did teammates complete Assignment 1? Teams use the accountability process if

necessary. Teams review Day 2's schedule and assign individual work to teammates.
Exploration 1: Building on the skills of Assignments 1, learners interact socially to evaluate expressions and solve equations in several contextualized and decontextualized problems. The facilitator prompts, observes, assists, and assesses.
Prototype Presentation 1: Teams present an equation to model the paycheck of a sample worker with a very simple timesheet. Audience responds with feedback that is kind, specific, and helpful about modeling with equation and presenting that model.
Assignment 2: Learners watch a video lesson to learn basics of entering formulas in a spreadsheet.

Activity Day Three

Team Meeting: Did teammates complete Assignment 2? Teams use the accountability process if necessary. Teams review Day 3's schedule and assign individual work to teammates.
Exploration 2: Building on the skills of Assignments 1 and 2, learners interact socially to create spreadsheets that model the same calculations as in Prototype Presentation 1. Facilitator prompts, observes, assists, and assesses.
Prototype Presentation 2: Teams present an equation and a spreadsheet that models a more complex timesheet. Audience responds with feedback that is kind, specific, and helpful about modeling with equation and presenting that model.
Assignment 3: Learners watch a video lesson to learn basics of making a printable area of a spreadsheet OR to learn basics of creating a mail merge with a word processor and a spreadsheet.

Activity Day Four

Team Meeting: Did teammates complete Assignment 3? Teams use the accountability process if necessary. Teams review Day 4's schedule and assign individual work to teammates.
Exploration 3: Building on the skills of Assignments 1 and 2, learners interact socially to create equations, spreadsheets, and printed paychecks. Facilitator prompts, observes, assists, and assesses.
Performance Presentation 1: Teams present an equation, a spreadsheet, and a paycheck that models the result from the most complex type of timesheet. Facilitator evaluates based on the rubric.
Assignment 4: A Video or Letter from the office manager, explaining the second task (analyze the Property Turnaround List and create change orders).

Activity Day Five

Team Meeting: Did teammates complete Assignment 4? Teams use the accountability process if necessary. Teams review the Know/Need-to-know chart. Have any need-to-knows been answered? What new need-to-knows exist in light of assignment 4? Teams review Day 5's schedule and assign individual work to teammates.
Exploration 4: Learners use a building-supply website to explore the prices of items on the PTL and compare them to the payment promised for each line item. Learners make predictions about the profitability of each item and sort the items into good, acceptable, and poor categories (based only on predictions). These categories will be saved for later.

Skill Quiz 1: Learners will individually show competence with creating equations to model familiar and unfamiliar situations described in word problems.

Pre-assignment 5 activity: Learners will, with the facilitator's guidance, be informed of the need to *divide* the money promised on the line item by a cost-per-hour figure to find the maximum time allowable for the line item, and to express the result in an inequality to indicate "this length of time or less."

Assignment 5: A Video lesson on how to use division and inequalities to model the analysis of line items.

Activity Day Six

Team Meeting: Did teammates complete Assignment 5? Teams use the accountability process if necessary. Teams review Day 6's schedule and assign individual work to teammates.

Exploration 5: Building on the skills of Assignment 5, learners interact socially to create inequalities to model the analysis for line items (they will need to know a cost per hour for each type of labor involved). Facilitator prompts, observes, assists, and assesses.

Prototype Presentation 3: Teams present initial conclusions about profitability of line items, and compare those conclusions to the first predictions. Audience responds with feedback that is kind, specific, and helpful about modeling with inequalities and presenting those models, and drawing conclusions. Facilitator notes that there is missing information (how long it will actually take a worker to complete each task).

Assignment 6: A Video lesson on how to use a spreadsheet to model the same analysis as the inequalities, and on how to use real time requirements to make comparisons.

Activity Day Seven

Team Meeting: Did teammates complete Assignment 6? Teams use the accountability process if necessary. Teams review Day 7's schedule and assign individual work to teammates.

Exploration 6: Building on the skills of Assignment 6, learners interact socially to create spreadsheets that model the same analysis as the inequalities, and use real time requirements to determine how profitable the line items are.

Prototype Presentation 4: Teams present spreadsheets and demonstrate that they model the analysis correctly. Audience responds with feedback that is kind, specific, and helpful about modeling with inequalities and presenting those models, and drawing conclusions.

Assignment 7: A Video lesson on how to use the concepts of "markup" and "margin" to analyze how profitable a particular line-item is, and how to model this with a spreadsheet.

Activity Day Eight

Team Meeting: Did teammates complete Assignment 7? Teams use the accountability process if necessary. Teams review Day 8's schedule and assign individual work to teammates.

Exploration 6: Building on the skills of Assignment 7, learners interact socially to modify spreadsheets to calculate margin for line items. Based on the margin for individual items and the margin for the project overall, learners choose items for which they would like to create change orders.

Prototype Presentation 5: Teams present and defend their spreadsheets and change-order decisions

based on whether individual line items are profitable and on whether the overall project is profitable. Audience responds with feedback that is kind, specific, and helpful about modeling, analysis, and the team's decision-making.

Assignment 8: A Video or letter from the office manager, cautioning learners not to let individual line items be unprofitable, but also not to ask for too much money in the change orders. Video lesson about how to write change orders.

Activity Day Nine

Team Meeting: Did teammates complete Assignment 8? Teams use the accountability process if necessary. Teams review Day 8's schedule and assign individual work to teammates.

==Exploration 7==: Teams make final decisions and refinements to their decisions and write change orders for their PTLs

Performance Presentation 2: Teams present and defend their inequalities, spreadsheets and change-orders. Facilitator evaluates based on the rubric.

Activity Day Ten

Reflection and Evaluation Day

Closing Team Meeting: Teammates discuss the team's collaboration on the project using the "Plus/Delta" protocol.

Collaboration Evaluation: Learners evaluate their teammates based on the collaboration rubric.

Closing Session: Learners discuss the project using the "I used to think/now I think" protocol.

Project Reflection: Learners write a reflective essay about how they grew as a learner through the project. Learners create a page in their portfolio website with this reflective essay and other evidence from their work in the project.

Project Evaluation: Learners respond to the BIA survey as well as a further survey from the facilitator.

Enrichment Suggestions

One enrichment option is already described: Choosing a mail merge technique to print the paycheck in a word processor instead of a spreadsheet. Other possibilities include developing a detailed understanding of why overtime rates are set the way they are, comparing the prevailing wage payment system to the incentive payment system, and exploring the incentives in the relationship between the developer providing the Property Turnaround List and the contractor executing it.

Student Resources

- Accountability Form
- Team Meeting Form
- Contract
- Reflective Essay Guidelines

Foundation Academic Standards

(California Common Core Higher Mathematics Standards)

Number and Quantity
Reason quantitatively and use units to solve problems.

- N-Q1.   Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- N-Q 2.   Define appropriate quantities for the purpose of descriptive modeling.
- N-Q 3.   Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Algebra
Interpret the structure of expressions.

- A-SSE1.   Interpret expressions that represent a quantity in terms of its context.
- A-SSE1a. Interpret parts of an expression, such as terms, factors, and coefficients.
- A-SSE1b. Interpret complicated expressions by viewing one or more of their parts as a single entity

Create equations that describe numbers or relationships.

- A-CED2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
- A-CED3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.

Understand solving equations as a process of reasoning and explain the reasoning.

- A-REI1.   Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

Solve equations and inequalities in one variable.

- A-REI3.   Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

CTE Pathway Standards

From CTE Standards for the Building and Construction Trades:

- D1.0   Recognize the impact of financial, technical, environmental, and labor trends on the past and future of the construction industry.
- D1.1   Understand significant historical trends in the construction industry.
- D2.0   Apply the appropriate mathematical calculations used in the construction trades.
- D2.1   Apply formulas to determine; area, volume, lineal, board, and square feet.
- D2.3   Estimate the materials needed to complete a specific task.
- D3.0   Interpret and apply information from technical drawings, schedules, and specifications used in the construction trades.

Lesson Plan Relevance To Externship

My externship with Citadel Tile and Marble was enlightening about many aspects of the business world in general and the construction industry in particular. One thing that I learned was that, particularly during the recent economic downturn, the role of office manager requires a dynamic, meticulous, multitalented person. Cindy, the office manager at Citadel, handles a huge variety of tasks, many of which require mathematical thinking. I was intrigued in particular by two jobs she does: taking the information on an employee's timesheet and breaking down what all the appropriate wage categories are, and taking the information on a "Property Turnaround List" – an itemized description of work to be done at a home – and analyzing whether the document describes a profitable agreement, or whether she needs to write change orders. These are, of course, only a few of the office manager's tasks, but I liked them as situations that require mathematical models. In real business, the office manager models these situations with spreadsheet formulas, and in this project, learners will model with Algebra equations and inequalities as well as with spreadsheets.

Rubric for the Office Manager Project

Student Deliverables	1 - Exceeds Expectations	2 - Meets Expectations	3 - Approaches Expectations	4 - Fails to meet Expectations
Timesheet Task: Equations, Spreadsheets, and Paychecks	Equations, spreadsheets, and paychecks not only match and are correct, but are formatted clearly. An observer can see without additional explanation that the products are correct.	Equations correctly model the correct wage compensation. Spreadsheets accurately model the equations. Paychecks are in the amount owed the employee.	Few, minor errors or mismatches among equations, spreadsheets, and paychecks. Errors are fixed and new paychecks issued.	Missing or badly incorrect equations, spreadsheets, or paychecks OR errors go un-fixed.
Timesheet Task: Presentation	The team's collaboration actually improves the presentation. Learners make a clear explanation, and in addition, answer unrehearsed questions about similar situations, to make clear they understand the process thoroughly. Documentation of the process is thorough and clear.	All members present professionally, politely, and as a team. Learners explain the process of modeling with equations and spreadsheets. They explain solving the equations and how this produces the right amount on the paycheck. The team displays visual /physical documentation of the process.	Teammates' contributions are somewhat uneven, but all contribute. Learners give an adequate explanation, but need help in the form of leading questions and prompts. Visual or physical documentation of the process is incomplete in minor ways.	Teammates do not significantly contribute, or deny responsibility, or criticize or blame one another. Learners do NOT give an adequate explanation, or do not seem to understand the process. Documentation of the process is absent or inadequate.
PTL Task:	Inequalities,	Inequalities correctly	Few, minor errors or	Missing or badly

Research, Equations, Inequalities, Spreadsheets, and Change Orders	spreadsheets, and change orders not only match and are correct, but are formatted clearly. An observer can see without additional explanation that the products are correct.	model the correct cost analysis. Spreadsheets correctly match the inequalities. Change orders are created for line items that were not profitable enough. Change orders are NOT created for line items that were already profitable enough.	mismatches among inequalities, spreadsheets, and change orders. Errors are fixed and new change orders are created.	incorrect inequalities, spreadsheets, or change orders OR errors go un-fixed.
PTL Task: Presentation	The team's collaboration actually improves the presentation. Learners make a clear explanation, and in addition, answer unrehearsed questions about similar situations, to make clear they understand the process thoroughly. Documentation of the process is thorough and clear.	All members present professionally, politely, and as a team. Learners explain the process of modeling and analyzing with inequalities and spreadsheets. They explain margin and how the overall margin and the individual line-item margin factored into change-order decisions. The team displays visual /physical documentation of the process.	Teammates' contributions are somewhat uneven, but all contribute. Learners give an adequate explanation, but need help in the form of leading questions and prompts. Visual or physical documentation of the process is incomplete in minor ways.	Teammates do not significantly contribute, or deny responsibility, or criticize or blame one another. Learners do NOT give an adequate explanation, or do not seem to understand the process. Documentation of the process is absent or inadequate.

Date: 9-25-2013

Office Managers of Room 4
Sacramento New Technology High School
1400 Dickson Street
Sacramento CA 95822

Dear Managers:

The growing economy is a new challenge for the construction industry. Companies like mine, Citadel Tile and Marble, are experiencing new demand. When we have a lot of work, we also need to hire a lot of new people. And the office manager job gets even bigger than it was before. I need help – but I need people who can really get the job done right.

I want your teams to take on two tasks:

1. Calculate paychecks for employees who work at different payrates throughout the day.

2. Analyze a Property Turnaround List to determine if change orders are necessary. Then create change orders that are reasonable and will be accepted by the general Contractor.

In each of these tasks you'll need to create equations to model the situation. You'll need to create these equations in Algebraic form, and also as formulas on a spreadsheet. You'll need to work with the equations to get the values we need for the paychecks and change orders. Please be accurate and professional – in business a lot depends on getting it done right.

Sincerely,

Cindy Sexton
Office Manager

Exploration 1 Station 1

The value of U.S. coins as an equation:

$$\frac{1p + 5n + 10d + 25q}{100}$$

p is the number of _____.

n is the number of _____.

d is the number of _____.

q is the number of _____.

What are 3 possible values for *p, n, d,* and *q* if the total value of my coins is $1.28?

Exploration 1 Station 2

1) $5x + 4y + 3z$

2) $(x - y) - z$

3) $(x - y)(x - z)$

4) $2x + y \cdot 3z + 2x$

5) $\dfrac{3xy}{z}$

Evaluate each of the above for $x = 5$, $y = 4$, and $z = 3$.

Exploration 1 Station 3

Jen, a tile setter, makes $9 per hour for transportation and setup, $15 per hour for the regular workday (up to 8 hours total), and $22.50 per hour for overtime, any time after that.

A) Write an equation to model Jen's pay.

B) Jen works for 10 hours on Monday, including one hour of transportation and setup. What is Jen's pay for that day?

Ken, a tile finisher, makes $9 per hour for transportation and setup, $12 per hour for the workday, and $18 an hour overtime.

C) Write an equation to model Ken's pay.

D) On Monday, Ken worked with Jen. What is Ken's pay for that day?

E) Would you rather be a tile setter or a tile finisher?

Exploration 1 Station 4

Evaluate each expression for $a = 5$ and $b = 2$.

1) $3a - 6b$

2) $3a - 8b$

3) $4a^2$

4) $4b^2$

5) $\frac{1}{2}a + \frac{1}{2}b$

6) $8 - a + b \cdot a$

7) $2 + 3 + 5 + a$

8) $2 - 3 + 5 - a$

Exploration 1 Station 5

At Starbucks, Ethiopia coffee costs $13.95 per

pound. House Blend coffee costs $11.95 per

pound. Tax is 8.5%.

  A) Write an equation for the total cost of

      buying these coffees.

  B) What did I buy if I spent $58.38?

Algebra 1 Office Manager Data for Prototype Performance 1
    Name_____

Team 1

Your employee is **Homer Butler**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 12.5 dollars per hour
Overtime: 18.75 dollars per hour

What is an equation that models Homer's payment?

On this week's timecard, Homer has worked these hours:

Transportation and setup: 2 hours
Regular Time: 38 hours
Overtime: 14 hours

Evaluate the equation you created above to find Homer's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
Name_____

Team 2

Your employee is **Alicia Hopkins**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 13.5 dollars per hour
Overtime: 20.25 dollars per hour

What is an equation that models Alicia's payment?

On this week's timecard, Alicia has worked these hours:

Transportation and setup: 5 hours
Regular Time: 35 hours
Overtime: 6 hours

Evaluate the equation you created above to find Alicia's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
    Name_____

Team 3

Your employee is **Brad Pierce**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 19 dollars per hour
Overtime: 28.5 dollars per hour

What is an equation that models Brad's payment?

On this week's timecard, Brad has worked these hours:

Transportation and setup: 2 hours
Regular Time: 38 hours
Overtime: 11 hours

Evaluate the equation you created above to find Brad's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
        Name_____

Team 4

Your employee is **Jaime Hernandez**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 16.5 dollars per hour
Overtime: 24.75 dollars per hour

What is an equation that models Jaime's payment?

On this week's timecard, Jaime has worked these hours:

Transportation and setup: 3 hours
Regular Time: 30 hours
Overtime: 0 hours

Evaluate the equation you created above to find Jaime's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
        Name_____

Team 5

Your employee is **Geneva Potter**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 31 dollars per hour
Overtime: 46.5 dollars per hour

What is an equation that models Geneva's payment?

On this week's timecard, Geneva has worked these hours:

Transportation and setup: 2 hours
Regular Time: 38 hours
Overtime: 7 hours

Evaluate the equation you created above to find Geneva's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
Name_____

Team 6

Your employee is **Wilbert Graham**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 12.5 dollars per hour
Overtime: 18.75 dollars per hour

What is an equation that models Wilbert's payment?

On this week's timecard, Wilbert has worked these hours:

Transportation and setup: 4 hours
Regular Time: 36 hours
Overtime: 16 hours

Evaluate the equation you created above to find Wilbert's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
       Name_____

Team 7

Your employee is **Steve Cross**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 18 dollars per hour
Overtime: 27 dollars per hour

What is an equation that models Steve's payment?

On this week's timecard, Steve has worked these hours:

Transportation and setup: 2 hours
Regular Time: 38 hours
Overtime: 9 hours

Evaluate the equation you created above to find Steve's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
Name_____

Team 8

Your employee is **Jacqueline Fletcher**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 25.5 dollars per hour
Overtime: 38.25 dollars per hour

What is an equation that models Jacqueline's payment?

On this week's timecard, Jacqueline has worked these hours:

Transportation and setup: 5 hours
Regular Time: 35 hours
Overtime: 4 hours

Evaluate the equation you created above to find Jacqueline's pay for this week.

Algebra 1 Office Manager Data for Prototype Performance 1
Name_____

Team 9

Your employee is **Tasha Adkins**.

This person is paid at the following rates:

Transportation and Setup: 9 dollars per hour
Regular Time: 21.5 dollars per hour
Overtime: 32.25 dollars per hour

What is an equation that models Tasha's payment?

On this week's timecard, Tasha has worked these hours:

Transportation and setup: 5 hours
Regular Time: 32 hours
Overtime: 0 hours

Evaluate the equation you created above to find Tasha's pay for this week

Date: 9-25-2013

Office Managers of Room 4
Sacramento New Technology High School
1400 Dickson Street
Sacramento CA 95822

Dear Managers:

I wanted to let you know more of the process to analyze the items on the Property Turnaround List. For each one of these items, we need to be sure we are paid enough to cover a) the cost of the item, b) the cost of our employees' labor, and c) the profit we need to make.

For each item, you need to follow this procedure:

1) Find the cost of the item at a local building supply store.

2) Subtract the cost of the item from the value we are being paid for it on the PTL.

3) Divide the remaining amount by the number of hours we will need to spend working on it.

4) Compare this "payment per hour" to our cost per hour. Is the payment enough?

5) If the payment is not enough, write a "Change Order" to suggest a new payment.

I look forward to seeing your change orders and your presentations!

Sincerely,

Cindy Sexton
Office Manager

Percentages, Taxes, and Burdens   Algebra 1   Name

_____

1) How many ways can you write a percentage as a number?

    a. 50% = _____

    b. 10% = _____

    c. 5% = _____

    d. 8% = _____

    e. 8.5% = _____

2) Tax in Sacramento is 8.5%. Sellers are supposed to round up for values of 0.5 cents or more, and down for values of less than 0.5 cents.

    a. So what is the tax when I pay $1.00 for something?

    b. What is the total when I pay $1.00 for something?

    c. What is the tax when I pay $0.99 for two tacos?

    d. What is the total when I pay $0.99 for two tacos?

    e. What is the tax when I pay $19.99 for a huge party bucket from KFC?

    f. What is the total on that huge party bucket?

3) Employers have to pay a lot more for workers than just their paychecks. There are payroll taxes, unemployment insurance, workers' compensation insurance, and many other categories of costs. To simplify these calculations, employers have an estimate of all the costs called the "burden." For Citadel Tile and Marble's tile setters and tile finishers, the burden is estimated at 26% of the employee's pay.

    a. What is the burden on pay of $100?

    b. What is the burden on pay of $500?

    c. What is the burden on pay of $1,372?

    d. For the employee who earns $1,372, what is the total cost the company

       calculates?

Team 1

Property Address: 2315 Sequoia Ct.

Room: Kitchen

Dimensions: 9' by 10'

Install James Hardie HardieBacker 5 ft. x 3 ft. x 1/2 in. Ceramic Tile Backer Board
With MARAZZI Montagna Cortina 20 in. x 20 in. Porcelain Rustic Floor and Wall Tile

SKU: 202225
SKU: 314491

Line Item Payment: $300

Team 2

Property Address: 2315 Sequoia Ct.

Room: Bathroom

Dimensions: 5' by 8'

Install James Hardie HardieBacker 5 ft. x 3 ft. x 1/2 in. Ceramic Tile Backer Board
With Daltile Folkstone SandyBeach 6 in. x 6 in. Ceramic Tile (12.5 sq. ft./per case)

SKU: 202225
SKU: 607163

Line Item Payment: $180

Team 3

Property Address: 2315 Sequoia Ct.

Room: Upstairs Bathroom

Dimensions: 5' by 9'

Install Custom Building Products WonderBoard Lite 5 ft. x 3 ft. x 7/16 in. Backer Board
With Daltile Catalina Canyon 18 in. x 18 in. Porcelain Floor and Wall Tile (18 Sq. Ft. / Case)

SKU: 683256
SKU: 766813

Line Item Payment: $80

Team 4

Property Address: 305 Stanislaus Cir.

Room: Kitchen

Dimensions: 10' by 11'

Install James Hardie HardieBacker 5 ft. x 3 ft. x 1/2 in. Ceramic Tile Backer Board
With Daltile Briton Bone 18 in. x 18 in. Ceramic Tile (18 sq. ft./per case)

SKU: 202225
SKU: 605147

Line Item Payment: $290

Team 4

Property Address: 305 Stanislaus Cir.

Room: Kitchen

Dimensions: 10' by 11'

Install James Hardie HardieBacker 5 ft. x 3 ft. x 1/2 in. Ceramic Tile Backer Board
With Daltile Briton Bone 18 in. x 18 in. Ceramic Tile (18 sq. ft./per case)

SKU: 202225
SKU: 605147

Line Item Payment: $290

Team 5

Property Address: 305 Stanislaus Cir.

Room: Bathroom

Dimensions: 5' by 8'

Install Custom Building Products WonderBoard Lite 5 ft. x 3 ft. x 7/16 in. Backer Board
With Daltile 12 in. x 12 in. Catalina Canyon Floor and Wall Tile

SKU: 683256
SKU: 791091

Line Item Payment: $80

Team 6

Property Address: 305 Stanislaus Cir.

Room: Master Bathroom

Dimensions: 5' by 9'

Install James Hardie HardieBacker 5 ft. x 3 ft. x 1/2 in. Ceramic Tile Backer Board
With ELIANE Melbourne Sand 12 in. x 12 in. Ceramic Floor and Wall Tile

SKU: 202225
SKU: 785693

Line Item Payment: $110

Team 7

Property Address: 1328 Conifer Ln.

Room: Kitchen

Dimensions: 10' by 10'

Install Custom Building Products WonderBoard Lite 5 ft. x 3 ft. x 7/16 in. Backer Board With MARAZZI Artisan Raphael 18 in. x 18 in. Gray Porcelain Floor and Wall Tile

SKU: 683256
SKU: 637618

Line Item Payment: $300

Team 8

Property Address: 1328 Conifer Ln.

Room: Bathroom

Dimensions: 5' by 9'

Install James Hardie HardieBacker 5 ft. x 3 ft. x 1/2 in. Ceramic Tile Backer Board
With Daltile Briton Bone 12 in. x 12 in. Ceramic Tile (11sq. ft./per case)

SKU: 202225
SKU: 604968

Line Item Payment: $100

Team 9

Property Address: 1328 Conifer Ln.

Room: Master Bathroom

Dimensions: 6' by 10'

Install Custom Building Products WonderBoard Lite 5 ft. x 3 ft. x 7/16 in. Backer Board
With Merola Tile Arizona Zafiro 12 in. x 12 in. Ceramic Floor and Wall Tile (21 sq. ft./case)

SKU: 683256
SKU: 467127

Line Item Payment: $200

Tile Price per Case	Tile Number of Cases	Total Tile Price						
Backerboard Price per Piece	Backerboard number of Pieces	Total Backerboard Price		Subtotal	Tax			Total Price of Materials
Square footage of room	Tilesetter coverage per Hour	Tilesetter number of hours	Tilesetter payrate per hour	Tilesetter pay base cost	Tilesetter pay plus burden			
	Tile finisher coverage per hour	Tile Finisher number of hours	Tile Finisher payrate per hour	Tile Finisher pay base cost	Tile finisher pay plus burden			Total Price of Labor
				Total of Materials and Labor	Margin			Total Bid Price

STANDARDS OF FOOTAGE PERFORMANCE

TILE	CUT-UP AREAS (199 SqFt or below)				
Types/Sizes	SETTER LABOR			FINISHER LABOR	
	1st year	2nd year	Journeyman	1st year	Journeyman
1x1, 2x2, 3x3 Mosaic	109	125	156	320	400
1x1, 2x2, 3x3 Mosaic Pattern	95	108	135	320	400
1x1, 2x2, 3x3 Mosaic Mural	60	68	85	200	250
1x1, 2x2, 3x3 Mosaic Border	70	80	100	320	400
1x1, 2x2, 3x3 Mosaic Base (reduce by)	13%	12%	10%	9%	8%
6x6 Quarry Tile	123	140	175	240	300
8x8 Quarry tile	123	140	175	240	300
12x12 Ceramic	123	140	175	400	500
12x12 Stone (tight joint)	84	96	120	400	500
12x12 Stone (flamed finish)	105	120	150	240	300
18x18 Ceramic	140	160	200	400	500
18x18 Stone (tight joint)	77	88	110	400	500
18x18 Stone (flamed finish)	98	112	140	240	300
20x20 & up Ceramic	140	160	200	400	500
20x20 & up Stone (tight joint)	77	88	110	400	500
20x20 & up Stone (flamed finish)	98	112	140	240	300
Diagonal Set Tile	33%	30%	25%	30%	25%

FLOORS (row group label for all data rows)

These workers are available to work at the houses for Citadel Tile and Marble on construction day.

First	Last	Classification	Year	Base Pay
Robin	Baldwin	Tile Setter	2	$15
Craig	Salazar	Tile Setter	3	$18
Stuart	Mendoza	Tile Setter	1	$13
Olga	Copeland	Tile Finisher	2	$12

Accountability Notification Form

Group Member: _____ **Date:** _____

Type of Notification:

- o   Counsel

- o   Warning

  - o   Counsel has previously been given orally or in writing (describe):

    _____

    _____

- o   Discipline Suggested

  - o   Warning has previously been given <u>in writing</u>

  - o   This is a special case in which discipline is warranted without warning (describe):

    _____

    _____

  - o   The teammate did not meet expectations given in the warning

  - o   The following action is recommended:
    _____

  - o   Firing is recommended

FACTS (What did the teammate do or not do):

RULES (What norms or rules did the teammate's actions conflict with):

IMPACT (What are the possible negative consequences of the teammate's actions):

SUGGESTION (What must the teammate do to correct the problem – be specific):

KNOWLEDGE (The teammate has the right to respond in writing to this report).

Teammates' names and signatures:

Staff members' names and signatures:

PROJECT NAME:

TEAM NAME:

TEAMMATES:

Role	Name	Phone	Email	Signature
Facilitator				
Liaison				
Scribe				

TEAM NORMS:
1) Deliverables

2) Absences

3) Team Meetings
a) *The team will meet at the beginning of class to set the agenda, and at the end of class to review the agenda.*
b) *All teammates will participate in meetings.*
c) *Meetings will be called if norms are not followed, or*
_____
4) **Communication**
a*) During meetings all monitors will be off and headphones will be off and out of ears. Teammates will sit knee-to-knee facing each other.*

4)Decisions

5) Accountability

6) Concerns

CLIENT: *Who is our client in this project? What does our client need?*

PROBLEM STATEMENT: *What is the problem to be addressed with this project?*

PROJECT DESCRIPTION: *How will our team's work solve this problem?*

PRODUCT DESCRIPTION: *What product(s) will our team develop with this work?*

MAJOR DELIVERABLES:

Deliverable	Description	Due Date

IDEATION: *What are our initial ideas about how we might solve the problem?*

DECISIONS: *What decisions has the team made?*

PROTOTYPING:

Prototype	Date Prepared	Improvements Needed – Feedback

Weekly Team AgendaAlgebra 1   TEAM NAME: _____   WEEK OF:
_____

Monday

NAME	Work	☑

Tuesday

NAME	Work	☑

Wednesday

NAME	Work	☑

How to use this agenda: With your team, use the daily agenda from echo to plan your individual work for the day. At the end of the class period, meet again to check off ONLY items that have been completed. Remaining items become "homework." At the beginning of The next Lesson Plan Template class, review homework. (Work that has not been completed can be noted as a concern on the reverse side.)

Weekly Team AgendaAlgebra 1   TEAM NAME: _____   WEEK OF:
_____

Thursday		
NAME	Work	☑

Friday		
NAME	Work	☑

Concerns		
NAME	Issue	☐☐solved/ Acc. Rep?

Lesson Plan Template
Rev. 1/16/12

Write a reflection on your growth in the project. You may use the guidelines below:

"In the Office Manager project, I grew in the area of _____ (content knowledge and design thinking, collaboration, written communication, oral communication, or agency). One experience that helped me grow was _____. (Also support this idea with 3 or more sentences)"