

SPIE-Executive Summary

Submission Date	2019-07-22 11:52:12
First Name	Kirk
Last Name	McCall
School	Modesto High School
Intern Site	Workforce Development
Site Supervisor	Bruce Merchant
Intern Experience	<p>I was at two different locations, one on 12th Street and the other on Hackett Road. Most of my time was spent in client services, with a smaller portion in data analysis. I gained a valuable overview of the different programs and services provided to assist people who are looking for employment, as well as an understanding of how data is used to make decisions that ultimately affect the client services that are performed.</p> <p>One thing that will change in my classroom is that I will have specific resources (Project YES, Summer Youth Workforce) to offer to students who are seeking employment, along with resources to offer to parents of students who are seeking employment. Rather than just hearing about these situations and offering emotional support, I can now specifically direct people to places that can help them.</p> <p>Because I spent time in many different parts of Workforce Development, I was able to network with a variety of people, particularly in the client services section. In particular, I now know people who work primarily with youth and people who work with adults who are displaced workers.</p> <p>I will share the insights and experiences from my internship in several ways. One, I will meet with the counseling office at Modesto High and make sure that they are actively promoting the youth services for students who are seeking jobs. Second, when I learn of parents who are seeking a job, I will give them direction about what resources to seek out. And third, I will verbally share about my internship with my colleagues when we have discussions about what we did during the summer.</p>
Use of internship	<p>There are three ways I plan to incorporate my intern experiences into my classroom.</p> <p>First, I will use the lesson plan that I am creating as a beginning of school activity to show students a practical application of mathematics and share with them what I did as an intern.</p> <p>Second, I will encourage my students and/or their parents who are looking for jobs to use the services provided by Workforce Development.</p> <p>Third, I will look for opportunities to students the value of “soft skills” that employers are looking for in their employees. This topic came up often in different workshops I attended and in conversations with people I met with. I have found that students are often focused on acquiring “hard skills” that will be needed in a specific occupation, even though they don’t know exactly what career path they will eventually end up on. They can, however, build “soft skills” throughout their high school years that will benefit them regardless of where they are in the future.</p>

Improve Internship

Overall, I was very pleased with my internship experience and wouldn't change much. There are a couple of minor areas that I would mention, though. When I started my internship, I was a little unclear of the organization structure of Workforce Development and how it related to EDD (a state agency) and CSA (a county agency). Because there is a degree of overlap in the three groups, there was a bit of confusion in my mind about how they all fit together. Also, since I met with a lot of different people, a personnel flowchart would have been helpful to know the structure of the organization.

Also, I did more observation than I had expected to do as an intern. Perhaps my impression of an internship was too narrow and I thought I would primarily be spending time doing "grunt work" that would assist those I was working with. I realize now that there was great value in seeing many different aspects of Workforce Development, but perhaps a little more "hands on" experience would have been helpful to me.

Standards-Based Lesson Template

Submission Date	2019-07-22 13:16:16
Teacher:	Kirk McCall
Class:	Mathematics II
Lesson/Unit Title:	Compound Annual Growth Rate
Abstract/summary of lesson:	<p>When raw data is reported without context, it can often lead to misunderstandings and faulty conclusions. One example is the number of jobs gained or lost in a specific industry over a particular time frame. Compound annual growth rate (CAGR) can be used to first of all compare the number of jobs gained or lost to the overall number of jobs in the industry in a period of time, and then secondly to compare the CAGR from different states in an “apples to apples” format to see trends.</p>
Students will know...	<p>Students will know...</p> <ol style="list-style-type: none">1. Raw and contextualized data2. Exponential growth
Students will be able...	<p>Students will be able to...</p> <ol style="list-style-type: none">1. Calculate compound annual growth rate (CAGR)2. Use CAGR to determine the change in the relative size of a specific industry.
Standards/Skills addressed	<p>Standard F-LE Construct and compare linear, quadratic, and exponential models and solve problems.</p> <ol style="list-style-type: none">3. Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. <p>Standard N-RN Extend the properties of exponents to rational exponents.</p> <ol style="list-style-type: none">1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.
Performance tasks/projects:	<p>From standard F-LE, students will see that CAGR is a type of exponential function, and compare/contrast it with a linear function.</p> <p>From standard N-RN, students will see that a rational exponent must be used in a CAGR function, and compare/contrast it with an integer exponent.</p>
Test and quiz questions or essay prompts:	<ol style="list-style-type: none">1. Why can raw data be misleading?2. What is the basic form of an exponential function?3. How does an exponential function differ from a linear function? How is it alike?4. What kind of numbers can be used as an exponent?
Other evidence to be used (e.g., observations, evaluation of work samples, discussion):	<ol style="list-style-type: none">1. Observation of individual calculations of CAGR.2. Observations of groups while confirming CAGR calculations.3. Class discussion of data and possible misunderstandings.4. Evaluation of assignment of CAGR calculations in quiz.

Student self-assessments:

Students will self assess their individual calculations of CAGR by checking their answers and then explaining how they obtained a correct answer or by identifying where they made an error in their initial calculation.

Objectives

Students will know...

1. Raw and contextualized data
2. Exponential growth

Students will be able to...

1. Calculate compound annual growth rate (CAGR)
2. Use CAGR to determine the change in the relative size of a specific industry.

Motivation:

I will present the number 1,319,520 to them and tell them that was the number of manufacturing jobs in California in 2018. I will then have them do a quick write about whether or not that is an encouraging number and what else they might need to know that would help them support their answer.

Presentation:

Ask students how they know if something is growing, and what evidence they would use as proof. Have students share examples.

Explain the difference between raw data (overall numbers) and contextualized data (numbers in context).

Show a graph of a linear function and have students in groups list what they know about the function. List responses on board. Focus on the constant growth rate.

Explain that not all functions have a constant growth rate and use an accelerating car as an example.

Show a basic exponential function and a basic linear function. Have students in groups find one similarity and one difference. Have students share observations. Describe CAGR and show formula.

As a class, do a step by step approach to finding the CAGR for California manufacturing from 2008-2018.

Have students as a group find the CAGR for Texas. Show solution for groups to check.

Have students as individuals find the CAGR for New York. Show solution for students to check, and then have them do a quick write to either explain how they got their answer or where they made an error.

Give each group a list with 5 other states and their data. Have each student find the CAGR for a state they choose. When all students in each group are done, give them answers and solutions and have them check their work, with students who got a correct answer helping students who didn't get a correct answer to revise their calculations.

Application/Activities:

1. Individual quick writes at the beginning and middle of the lesson
2. Group discussions about functions
3. Doing examples of CAGR together with me, with a small group, and on their own

Materials needed:

1. Chart titled "10 Year State Comparison of Manufacturing Industry"
2. Graphic titled "10 Year Nationwide Manufacturing Comparison by State"
3. Chart titled "Change in Relative Size of Manufacturing Industry Per State"
4. Index cards
5. Calculators

Assessment/Evaluation:

1. Formative assessment will be done as students are working in class individually and in groups, as well as through the feedback from quick writes and class discussions.
2. A summative assessment will be done when students are asked to find a CAGR on their own in a future quiz.

Closure/Reflection:

I will remind students of how raw data can be misleading and the original number that I gave them at the beginning. Next, I will ask a student volunteer what CAGR is and ask another student volunteer how to find CAGR. Finally, I will show them a graph of all states' CAGR for manufacturing and have them discuss in their group whether or not California is significantly different from the rest of the U.S. After getting feedback from a few groups, I will point out that we have gone from just knowing a raw number with no context and no way to interpret it to having a clearer understanding of what that number actually means.