Math-in-CTE Lesson Plan Template

Lesson Title: Time is Money!		Lesson # 3
Author(s):	Phone Number(s):	E-mail Address(es):
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Occupational Area: Early Childhood Professions		
CTE Concept(s): Section 7.1: Demonstrate knowledge of the scope of early childhood care and education professions.7.1.A: Identify the various roles found within the early childhood care and education profession.		
Math Concepts: Students will discuss how to solve word problems involving time and money, work as a class to solve word problems focusing on addition, subtraction, multiplication and simple fractions.		
Lesson Objective:	Students will work with a partner to solve real world situations a director of a center may encounter.	
Supplies Needed:	Pencils, overhead, transparences, paper, calculator	

THE "7 ELEMENTS"	TEACHER NOTES (and answer key)
Introduce the CTE lesson. **Essential Question:** Begin the lesson by asking students to think about how time and money are used in the daily life of a preschool director. Objective: Increase student's knowledge of how to use time and workers to the best advantage for the center while still giving quality care to the children.	Suggest the following for topics of discussion: • Amount of time and staff it takes to get snack prepared. • The times the preschool day starts and ends • How much money a typical aide is paid per hour. • How much money a typical group leader is paid per hour. • How much money a typical director is paid per hour Ask students to predict which staff member's time is better used in the preparation of snack to utilize staff effectively.
2. Assess students' math awareness as it relates to the CTE lesson. Through discussion of the above essential question teacher observes related answers and assesses math awareness as it relates to the CTE lesson.	**Teacher Observation**: Through discussion with students determine if they understand how to use math every time they figure out how much time or money they have, spent or need to get a task done.

3. Work through the math example *embedded* in the CTE lesson. • During this lesson, students will be working together to apply the math skills they already know (addition, subtraction, multiplication and fractions) to solve real-life problems about money and time. They will begin by working to solve word problems about money and time. After practicing, students will work to apply the same writing and math skills as they prepare their own word problems involving wither time or money.	Write the following problem on the board or on an over head transparency: The director of a center is trying to find out which worker would be more cost efficient to prepare snack for the children. The amount of time it takes both the group leader and aid to prepare snack is ¼ of an hour. The group leader is paid $8.00 an hour and the aid is paid $6.00 an hour. Which worker would be the most cost efficient?
4. Work through *related, contextual* math-in-CTE examples. • Ask students how they would solve this problem.	• It should be obvious to the students that the person who is getting paid the least is the person who would be the best choice. • Say "You are correct but let's prove your answer."
5. Work through *traditional math* examples. First, discuss which operation they should use. Point out that the words "Most cost efficient" usually means the "cheapest".	• Go through the following steps with your students to solve this problem: • To find out how much money is being spent they need to find out how much each worker is being paid every 15 minutes. Therefore they must divide the salary of each worker by 4. The person making $8.00/hour makes $2.00/every 15mins. And the worker who makes $6.00/hour makes $1.50/every 15mins. Therefore the person who costs the company only $1.50 /every 15 mins. Is the cheapest to use for this particular job.
• **Work on this problem with the class:** **Mandy has asked Amber to have snack ready at 10:30. She has one hour to get it ready from the time she was asked by the director to get it ready. Amber knows that she can prepare snack in 15 minutes and doesn't need the whole hour to prepare. What time will she need to start snack preparation in order to have it ready on time?** • **To solve this problem, suggest that students set up the following equation: $5X number of hours=$20.**	• Discuss the way to solve the problem with the class. What operation must they use? Have them identify the need to use subtraction to determine that one hour earlier than 10:30 is 9:30 if Amber is slow. Since Amber is fast and only needs 15 mins. she can look at the clock and subtract 15mins. from 10:30 and know that she needs to begin snack at 10:15 and have it ready by 10:30. • Give students one final problem to work on with a peer: The director of a center needs paint made for her 1:00 art lesson. She let's the group leader know at 9:00 in the morning. It takes the group leader: 1 hour to prepare for this lesson and to make paint. Since this in not a usual job for the group leader the director agrees to pay her extra for this project.

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- **You may choose to set up a table such as this one to illustrate how the group leader earns money for each hour worked.**

No. of hours	Money Earned
1	$5
2	$10
3	$15
4	$20

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<td>She offered to pay her $5 an hour for the project. How many hours does the group leader need to work to earn $20 for concert tickets that she has wanted? If they know their multiplication tables, they will see that $5 x 4 hours =$20. If students have learned how to divide, they can divide $20 by 5 to get 4 hours.</td>
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<td>7. Formal Assessment
To test for understanding as students to work with their partners in developing a word problem focusing on time or money.</td>
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- The problem should give students practice working on addition, subtraction, multiplication or fractions. Have students write their problems on a piece of paper or on a transparency so they can present to the class. After they have written the problems, have them prepare their own solution in the form of an equation or equations, as well as a written explanation of the steps they used to solve the problem.
- Have each pair present its problem to the class. Have the presenting pair lead a discussion about he steps needed to solve the problem. They can reveal their own solutions.

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