Solving Multistep Practical Problems (+,-,x,÷) – A Co-Teaching Lesson Plan

Co-Teaching Approaches

A "(Y)"in front of the following list items indicates the approach is outlined in the lesson. A"(N)"in front of the following list items indicates the approach is not outlined in the lesson.

- (Y) Parallel Teaching
- (Y) Team Teaching

- (N) Station Teaching
- (N) One Teach/One Observe

- (N) Alternative Teaching
- (Y) One Teach/One Assist

Subject

Grade 5 Mathematics

Strand

Computation and Estimation

Topic

Solving practical problems

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5.4   The student will create and solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division with and without remainders of whole numbers

Outcomes

Students will use computation and estimation to solve the practical math problem of budgeting and planning a trip.

Materials

- Trip Cards (attached; Number of People Traveling, Number of Days, Airline and Cost, Rental Car and Costs, Hotel and Cost, Change)
- Trip Sheet (attached; one per group)

- UPSC chart for problem solving (Understand, Plan, Solve, Check Problem Solving Strategy)
- Calculator

Vocabulary

difference, product, quotient, sum

Co-Teacher Actions

Lesson Component	Co-Teaching Approach(es)	General Educator (GE)	Special Educator (SE)
Anticipatory Set	Team Teaching	Generate discussion about vacations: ● prompt discussion with co-teacher on vacations; ● talk about various things that go into vacation: place, cost, budget, etc.; and ● discuss and model an example of a plan for vacation	Generate discussion about vacations: ● prompt discussion with co-teacher on vacations; ● talk about various things that go into vacation: place, cost, budget, etc.; and ● discuss and model an example of a plan for vacation
Lesson Activities/ Procedures	One Teach/One Assist	Introduce the lesson to the students, explaining that students will be taking a trip and that they will have $2,000 to spend on the trip. Discuss the playing cards as students are handed the information.	Begin forming students in groups. Hand out specific activity information, and help students read and understand any missing information. Prompt students to begin working.
Guided/ Independent Practice	Parallel Teaching	Have students work on the activity in pairs. The GE will float from group to group, monitoring their discussions Ask clarifying and refocusing questions of	The SE will pull groups to a back table to: ● facilitate learning for students who require the most interaction; ● prompt students throughout the

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		students as they work, such as, "Why are you choosing this option?" "How much money will you have left?" etc. Answer questions from groups, or help facilitate student conversations.	process to collect and select cards. Monitor their work, asking guiding and focusing questions, and monitor their work in trying to fill out the form accurately. ● facilitate the student conversations, prompting students to discuss with each other how to accurately converse and discuss with their peers.
Closure	Team Teaching	Bring the class back to a whole group. ● Have groups share their process and results with entire class. ● Have groups discuss their choices and reasoning for each. ● Groups may ask the class questions based on their information or to answer any questions they may have. ● While they are sharing, students must describe the mathematics that they used and why – operations, order of operations, properties used in calculations.	Bring the class back to a whole group. ● Have groups share their process and results with entire class. ● Have groups discuss their choices and reasoning for each. ● Groups may ask the class questions based on their information or to answer any questions they may have. ● While they are sharing, students must describe the mathematics that they used and why – operations, order of operations, properties used in calculations
Formative Assessment	Parallel Teaching	The completed group activity will be collected and graded based on completion,	The completed group activity will be collected and graded based on completion,

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Strategies		student interaction, and teacher observation. **Journal Writing Prompt** Jeremy was absent from class today. Describe/explain to him the kinds of mathematics you used while working together to plan the trip.	student interaction, and teacher observation. **Journal Writing Prompt** Jeremy was absent from class today. Describe/explain to him the kinds of mathematics you used while working together to plan the trip.
Homework	Team Teaching	Students will complete the daily homework in their homework journals.	

Specially Designed Instruction

- Students will use the UPSC chart to complete (see attached).
- Teacher will model each step required to complete this activity.
- Student work will be attached to the chart in order to better show learning and understanding.

Accommodations

- Use of fewer categories or fewer cards.
- As an alternative to each person filling in their portion, assign jobs, such as recorder, facilitator, and computation checker.
- Allow students to create nonlinguistic representations of their trips.
- Provide a list of steps for the team to follow.
- Facilitate discussion to allow students to identify practical applications of addition, subtraction, multiplication, and division in their daily lives.
- Use of a calculator.
- Use of a multiplication chart.

Modifications

- Modify cards to make simpler equations for students. Allow students to practice more specific information. For example, giving round totals, so students are not adding or subtracting with regrouping.

Notes

- "Special educator" as noted in this lesson plan might be an EL teacher, speech pathologist, or other specialist co-teaching with a general educator.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

Number of People Traveling Cards

2 people	2 people
3 people	3 people
3 people	4 people
4 people	4 people

Number of Days Cards

2 days	2 days
3 days	3 days
4 days	4 days
5 days	5 days

Airline and Cost Cards

Chi Airways $162 per person	Beta Airlines $268 per person
Alpha Airlines $189 per person	Epsilon Airways $322 per person
Omega Airlines $253 per person	Gamma Airways $121 per person
Kappa Airways $275 per person	Zeta Airlines $337 per person

Rental Car and Cost Cards

Watt Car Rental $25 plus $35 per day	Lense Car Rental $30 plus $15 per day
Micro Car Rental $15 plus $20 per day	Bushel Car Rental $50 plus $12 per day
Radian Car Rental $35 plus $17 per day	Dash Car Rental $28 plus $18 per day
Violle Car Rental $10 plus $36 per day	Karat Car Rental $23 plus $25 per day

Hotel and Cost Cards

La Quantum Inn $78 per day Maximum: 2 people	Comfortable Inn $89 per day Maximum: 2 people
Sleepy Inn $112 per day Maximum: 2 people	Campton Inn $145 per day Maximum: 2 people
Best Eastern $99 per day Maximum: 2 people	Emblem Suites $157 per day Maximum: 2 people
The Milton $64 per day Maximum: 2 people	Valentine Inn $138 per day Maximum: 2 people

Change Cards

A friend wants to join the group.	Your car rental company is having a sale. They are offering one day free.
Your hotel has a special offer. The cost is half off.	Your airline has added a new fuel fee. Add $35 per person.
One of the people in your group cannot go.	You have too many people for one hotel room. You have to get a second or third.
The car rental company does not have a big enough car for everyone. You have to rent another car.	The airline is offering a discount of $25 per person.

Trip Sheet

Name: _____   Name: _____

Name of vacation site: _____

Budget: $2,000

Number of people traveling: _____

Number of days traveling:_____

Cost of airfare per person:_____ Total cost: _____

Cost of rental car: _____

Cost of hotel per night _____ Total cost _____

Total cost of trip:_____

Change in cost based on change card:_____

Did the group have enough money to take the trip? _____

If so, how much extra money did the group have? _____

If not, how much more money did the group need? _____

UPSC Problem Solving Strategy Chart

Problem:

UNDERSTAND	PLAN
What is the problem asking?	What steps will I take?
What information do I know?	What strategies will I use?

SOLVE	CHECK
Work out the problem	Did I answer what the question asked?
	Does my answer make sense?