

Mathematics: The Language of STEM

Camping Supplies: Money

Jane Zellers

CONTENT AND TASK DECISIONS

Grade Level(s): Third Grade

Description of the Task: Students will be given a wallet (a ziplock bag full of coins and bills, ranging from \$40-\$100) and a list of supplies they may need for their camping trip. Each group will have to count the amount of money they have to spend and determine what are the most important items, they will need for their overnight campout. Students will then have to determine if they have enough money to purchase them. Students will create a chart listing the items they are bringing with them, the amount of money they have to spend. The list of items they purchased along with the total cost and how much money they have left. They must explain why they purchased those items over the others.

Task:

You and your group will be spending the night camping. You will arrive to your campsite after dinner around 8:00 p.m. and will be there until breakfast at 7:00 a.m. You will each be allowed to bring one item with you. You will already be dressed appropriately for the weather so you will not need to purchase or bring additional clothing. All cooking supplies will be at the campsite. However, you will need to purchase any food or water you bring. You must build a fire and have at least one snack before bed.

Indiana Mathematics Content Standards:

3.AT.1: Solve real-world problems involving addition and subtraction of whole numbers within 1000.

3.AT.3: Solve two-step real world problems using the four operations of addition, subtraction, multiplication, and division.

3.M.4: Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the \$ symbol in the form of dollars and cents. Solve real-world problems to determine whether there is enough money to make a purchase.

Indiana Mathematics Process Standards:

PS.1: Make sense of problems and persevere in solving them.

- Students will make sense of the problem and will use the restraints and goals to develop a plan to solve it and will be able to explain their reasoning to their partner.

PS.3: Construct viable arguments and critique the reasoning others

- Students will be able to explain their reasoning and listen to their partner to come up with a schedule that works for both of them.

PS.6: Attend to precision

- Students will be able to communicate with their partners and with their classmates on why they planned their schedule.

Mathematics Content Goals:

The students will be able to create a list of the items they will need for their over-night camping trip. The students will be able to count the collection of coins and bills to determine how much money they have to spend.

The students will be able to determine the amount of money they have, they will spend, and the amount of money they have left over after purchasing their camping supplies.

The students will be able to communicate their justifications to their classmates on why they purchased their camping supplies.

Language Objectives:

Listening: Students will be able to work with their group members by communicating and actively listening to their peers.

Writing: Students will be writing in their math journal and creating a poster with their partner.

Materials:

- Each group will receive a zip-lock bag full of coins and bills, ranging from \$40-\$100.00.
- Math journals and pencils
- Chart paper/marker
- Supply List with prices
- Read Aloud about camping

THE LESSON

Before:

Activate prior knowledge

- Read a book about camping during Reader's Workshop, such as Amelia Bedelia Goes Camping.
- Review counting money and adding and subtracting money.
- Ask students if they have ever gone camping.
- Ask students what they know about camping.
- Have students write in their journals a list of items they would take if they were to go camping.
- Share these lists together to create a class list of supplies.
- Divide students into groups of three or pairs
- Introduce the task to the class.

Be sure the problem is understood

- Share the task aloud as well as posting it on the board.
 - Determine how much money you have and what items you will need to purchase for an overnight camping trip.
- Pass out copies of the task and the price sheet.

Establish clear expectations

- Communicate with your partners what items you think are necessary for your overnight trip before deciding on what to buy.
- Charts must list the items they are bringing and the amount of money they spent.

During:

Let go: While students are collaborating with their partner, the teacher is moving from group to group encouraging independent practice and struggle.

Listen actively: If students come to a problem or do not agree, the teacher can intervene by asking prompting questions such as:

- I notice that you do not agree, can you combine some ideas?
- This was a great thought; is there another way you can represent this information?
- When students are excited about a discovery, listen to what they have to say and encourage them to continue their conversation with one another.

Provide appropriate support: Pay close attention to the items and prices the kids are writing down. Have them show you amount of money they have and what strategies they used to determine the amount

they have to spend.

- As students are showing their work, and you notice them counting wrong, be sure to ask a question to guide them. (i.e. Great work, how did you get to this amount?)

After:

- **Promote a mathematical community of learners:**
 - Students will share their supply shopping list with the class. During their presentation they will explain how much money they had to spend and why they purchased the items they did. They will also share their strategy for finding out how much money they had to start with and how much they had left. For example, what bills would you use? What kind of change might you get back in return?
 - Some questions to ask during share time:
 - How did you come up with that idea?
 - Did you have to get rid of some of your items?
 - Can you show us an example of your strategy on the board?
 - Is there another way we can find this out?
 - How can we make this even better next time?
- **Listen actively without evaluation Make connections**
 - Students will have made some connections to camping in the “before” portion of the lesson.
 - Did you notice any connections between your shopping list and another classmates?
 - What were some differences between how you and your classmates made your supply list?
- **Summarize main ideas**
 - The students will be given a collection of coins and bills to determine how much money they can spend on camping supplies.
 - Terminology will be reviewed when activating prior knowledge

ASSESSMENT

Observe:

- Observations can be made during group presentations.
- Listening for student responses and questions to one another’s presentations.
- The completed poster.

Ask:

- What is an improvement you can make in the future?
- What is something new you learned that you can apply to solving money problems?
- How can you check for accuracy when calculating the cost of your supplies?

Provide worthwhile extensions. If students finish their supply list early, they can choose the following challenge options:

- Ask them what they would change if their money doubled or was cut in half.
- Allow students to use the internet to shop for items from another store. Would it be cheaper to buy their supplies on Amazon or Target.com?
- Share your list with another group. Can you provide feedback on each other’s shopping list?
- Make a detail list of what you would take if you were going for a week.

Camping Supplies Money Challenge

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Creative Campers Supply Store

	Bug Spray	\$2.00 a bottle or \$3 for \$5.00
	Matches	1 box for \$0.73 or 3 for \$2.50
	Lighter	\$1.50
	Lighter Wand	\$4.50
	Firewood	\$30.00
	Canteen/Water	\$22.50 filled \$1.00 for extra bottle 10 for \$5.00
	Flashlight	Large: \$9.99 (needs 4 batteries) Medium \$5.00(needs 2 batteries)
	Batteries	\$3.33 for a pack of 4
	Tent	\$46.65
	Compass	\$10.43

	Sleeping Bag	\$32.89
	Toilet paper	1 roll \$1.00 6 pack for \$5.25
	Gram crackers	\$1.44
	Hershey Bars	\$3.29 for a King size 2 King Size for \$6.00
	Marshmallows	\$2.17 for a big bag
	Hotdogs	\$1.67 for 10 hotdogs
	Buns	\$0.89 for 8 buns
	Corn/ Popcorn	\$1.48 makes enough for 2 people