

Please Excuse My Dear Aunt Sally



Supplemental Activity Workbook

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Name _____

Remember PEMDAS!

Part A: Simplify the following expressions using the Order of Operations.

1. $(44 - 4) \div 5 + 4^2$

2. $(46 - 16) \div 3 + 5^2$

3. $2 \times (4 + 3) + 4^2$

4. $(9 \div 3 + 2^3) - 10$

5. $(49 - 3^2) \div (3 + 7)$

6. $5 \times (6 - 3) - 4^3$

Part B: Solve the equations.

7. $(6 + 2)^2 + (y \div 4) = 69$

8. $(66 - z^2) \div (8 - 6) = 25$

9. $(24 \div h) + (2 \times 4) = 16$

10. $24 \div (h + 2) \times 4 = 16$



Name _____

Vocabulary Challenge

Directions: Match the words from the Word Bank with their definitions below.

A. operation	B. shudder	C. mope	D. vendor
E. frazzled	F. sluggish	G. equipped	H. parentheses
I. exponent	J. illuminate	K. calculate	L. scheme

- _____ a pair of signs used to mark off a section of text or a mathematical expression
- _____ to tremble with a sudden movement
- _____ slow
- _____ to brighten, clarify, or add knowledge
- _____ a number or symbol placed above and to the right of another number or symbol to indicate the mathematical power of that number or symbol
- _____ worn out
- _____ prepared
- _____ to sulk
- _____ plan
- _____ to figure out
- _____ a person or company that sells something
- _____ an act or process



Name _____

Balloon Science

In the Playbook® story, *Please Excuse My Dear Aunt Sally*, one of the festival costs was 100 balloons! In this activity, you will learn about some of the science behind balloons.

Part A: Below are some interesting facts about the chemistry behind balloons.

- Why do balloons float in the air? *They are filled with helium (He), which is lighter than the air we breathe.*
- How does the material balloons are made of allow them to function the way we intend? *They are made of rubber which is very flexible, so it stretches, allowing the balloon to be blown up. A "balloon made out of paper wouldn't inflate into the round shape we want!"*

1. Fill in the following information about the element, Helium, using the Internet or your science book.

Atomic Number: _____

Atomic Weight: _____

Melting Point: _____

Boiling Point: _____

Density: _____

Phase at Room Temperature: _____

Element Classification: _____

Period Number: _____ **Group Number:** _____ **Group Name:** _____

2. What is the approximate composition of the air we breathe? Include the different elements and percentages of each. _____

Part B: You can complete this balloon experiment in your classroom!

Materials:

Balloons (not inflated)

Acetic acid (vinegar)

Sodium bicarbonate (baking soda)

Beakers

Plastic soda bottles

Funnels

Procedure: Pour 80 mL of acetic acid into the plastic bottle using the beaker. With the funnel, fill the balloon with 2 tablespoons of sodium bicarbonate. Place the opening of the balloon over the neck of the bottle and turn it upside down, emptying the sodium bicarbonate into the bottle.

Results:

1. Describe what happens.

2. Explain why this experiment works.



Name _____

Working on a Budget

Directions: In the Playbook® story, *Please Excuse My Dear Aunt Sally*, Dylan and Aunt Sally need to make sure the town stays under budget for its festival. In this activity, pretend you are in charge of budgeting for a community concert. Read the specifications below and fill in potential costs for each component in order to stay within your budget.

Total Budget: \$6,000

Items and Services Required:

- 2 Stages Cost of Each: _____
 - 3 Speakers and 4 Microphones Cost of Each: _____
 - Venue Cost: _____
 - Publicity (10 posters, 1 newspaper advertisement) Cost of Each: _____
 - Band Cost: _____
 - Food and drinks for refreshment stand Cost of Each: _____
- (add any other components you think of on extra lines)
- _____ Cost: _____
 - _____ Cost: _____
 - _____ Cost: _____

Now write a mathematical expression showing how each individual cost adds up to the total cost. Use parentheses and show each mathematical operation. Then write the total cost to confirm you have stayed under or at your budget.

Next, pretend you have sold 221 tickets to the event at \$10 each. Add this information to your expression, and then figure out the balance after combining your event expenditures and the income from ticket sales.

In the Playbook® story, the town saved money because several people donated supplies and services. Can you think of any ways to reduce your costs for your event?



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Answer Key

For Teacher Use Only

Working on a Budget

Student budget breakdowns and resulting expressions will vary.

Remember PEMDAS!

1. 24
2. 35
3. 30
4. 1
5. 4
6. -49
7. 20
8. 4
9. 3
10. 4

Vocabulary Challenge

1. H
2. B
3. F
4. J
5. I
6. E
7. G
8. C
9. L
10. K
11. D
12. A

Balloon Science

Part A:

1. **Atomic Number:** 2
Atomic Weight: 4.002602
Melting Point: 0.95 K (-272.2°C or -458.0°F)
Boiling Point: 4.22 K (-268.93°C or -452.07°F)
Density: 0.0001785 grams per cubic centimeter
Phase at Room Temperature: Gas
Element Classification: Non-metal
Period Number: 1 **Group Number:** 18 **Group Name:** Noble Gas
2. 78% nitrogen, 21% oxygen, 1% other including carbon dioxide and argon

Part B:

1. The balloon inflates.
2. The vinegar and the baking soda reacts when it mixes and forms carbonic acid. Carbonic acid immediately breaks down into water and carbon dioxide. The carbon dioxide released inflates the balloon.

Wacky Ways, Crazy Day

1. Parker Exley = Parentheses and Exponents, Mrs. Divine = Multiplication and Division, and Adam Subs = Addition and Subtraction
2. *Answers will vary.*
3. *Answers will vary.*
4. *Answers will vary.*
5. *Answers will vary.*

