## PERFECT PARTY PLANNERS Project Based Learning

## $4^{\text {th }}$ Grade Print \& Google Slides



## Print \& Digital Versions

azing Amos

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has a friend who is a magician. His name is Amazing Amos. He is available to come to the pn to entertain everyone. He offers three shows that are all different lengths. Review the
help you decide which show is best for the barbecue.


## Aligned to Math Standards

Food Planning
In the budget, $\$ 600.00$ has been set aside to purchase meat. You must calculate the cost of the hotdog and hamburgers. Mrs. Bradford's husband works at the local butcher shop and can order the hotdogs and hamburgers at a discount. Answer the questions below to find the total cost for the meat.

1. A package of 8 hotdogs costs $\$ 9.99$. Consider the number of packages you need for the party and calculate the total cost for the hotdogs. Use an area model to solve.


## Challenge Activities



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I. Teacher \& student directions
2. Party theme (create a table, evaluate data)
3. Food planning (addition/subtraction, and multiplication/division problems)
4. Buying bottled water (multiplication/division, word problems)
5. Buying paper goods (money word problems)
6. Renting chairs (money word problems)
7. Arranging tables and chairs (planning area)
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9. Amazing Amos (time word problems)

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14. Challenge 3: Time Capsule (measurement and problem solving)
15. Evaluation \& Rubric


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## For the Teacher

Perfect Party Planners is a Project Based Learning packet that will provide your students a variety of engaging and fun math challenges using the theme of planning an end-of-school-year celebration.

## The following standards are addressed:

- Ч.OA.A. 3 Solve multistep word problems posed with whole numbers and having whole-number answers using the 4 operations, including problems with remainders.
- $\quad$ 4.NBT.A. 2 Read and write multi-digit whole numbers using base ten numerals.
- 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.
- 4.NBT.B5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations.
- $4 . N F . B .4 ~ A p p l y ~ a n d ~ e x t e n d ~ p r e v i o u s ~ u n d e r s t a n d i n g ~ o f ~ m u l t i p l i c a t i o n ~ t o ~ m u l t i p l y ~ a ~ f r a c t i o n ~ b y ~ a ~ w h o l e ~ n u m b e r . ~$
- 4.MD.A.I Know relative sizes of measurement units within one system of units.
- 4.MD.A. 2 Use the 4 operations to solve word problems, including problems involving single fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as a number line that feature a measurement scale.
- 4.MD.A. 3 Apply the are and perimeter formulas for rectangles in real world and mathematical problems.


## Directions:

I. Decide if your class will complete the project as a whole group, in small groups or independently.
2. Copy packets and provide students with materials necessary to complete the packet.
3. Students should complete the project over several days.
4. Preview the activity with your students.
5. Challenge activities can be assigned or optional.
6. Students will complete the self-evaluation reflection rubric.
7. Allow students an opportunity to share their completed projects.


## Perfect Party Planners

The students in $4^{\text {th }}$ grade are having a celebration for the end of the school year. You and your classmates are responsible for planning the event. You will research and decide on food, drinks and activities. Each teacher will offer some unique planning help.

Here are your tasks:

- Read through the entire packet before beginning the activities.
- Work within a budget to purchase tables, chairs, drinks, food and entertainment.
- Create seating arrangements using tables and chairs..
- Plan a schedule for the celebration.
- Choose the best entertainment for your schedule.
- Complete creative word problems.
- Give the extra challenge pages a try. (optional)
- Complete the self-reflection and evaluation rubric.
- HAVE FUN!



## Perfect Party Planners

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Congratulations! You have made it to the end of the school year.

It is a tradition in your school for the students in grade 4 to plan their own end of the school year celebration. Throughout the year your grade has had various fundraisers to earn money to spend on your celebration. The amount of money in your class budget is $\$ 4,527.51$. Now that the end of the year is just a few months away, it is time to start planning.

Your must work with your teachers and classmates to plan a party that recognizes everyone's hard work and accomplishments. Students will be responsible for all planning, as well as the set up and clean up on party day. The most important part of your task is to be sure everyone enjoys good food and oldfashioned fun.

Included in the event will be all grade 4 students, their 6 teachers and 4 teaching assistants. No parents or siblings will be coming to the party. However, you must plan for the principal and assistant principal to join in the fun. You cannot spend more than the $\$ 4,527.51$ your grade level earned this year. You will use the money to purchase food, supplies and activities for the big event.

Let's get started!


## Perfect Party Planners

Complete the table using the data from the previous page. Then answer the questions.

|  | Votes for Lazy Luau | Votes for Campfire Fun | Votes for I Scream for Ice Cream | Total Students |
| :---: | :---: | :---: | :---: | :---: |
| Mr. Green's class |  |  | - ** |  |
| Ms. Butler's class |  |  |  |  |
| Mrs. Bradford's class |  |  |  |  |
| Ms. Clifford's class |  |  |  |  |
| Miss Gardner's class |  |  |  |  |
| Mr. Bell's class |  |  |  |  |
| Total |  |  |  |  |

I. What is the difference in number between the theme with the most votes and the one with the fewest votes?
2. What will the theme be for the end of year celebration?
3. How many students are in your grade? Show how you know.


## Food Planning

Campfire Fun is the theme for this year's class party. The first thing you need to plan is food. In keeping with a camping theme, the decision is made to have a barbecue and serve hot dogs and hamburgers. Mr. Green used to work for a caterer and tells you it is best to plan for two hot dogs and one hamburger per person.
I. First, let's determine the total number of people attending the party. Show how you know.
2. How many hot dogs and hamburgers do you need to purchase for everyone attending?


> Hotdogs =

Hamburgers =

3. Hot dogs are sold in packages of eight. How many packages will you need? Show with an area model.
4. If hamburgers are sold in packages of ten, how many packages do you need for the party?

## Food Planning

You budgeted $\$ 200.00$ for rolls. To help you decide which rolls to purchase you must determine the cost for each type of package. Complete the table and circle the least expensive way to purchase each roll.

| Hotdog Rolls | 8 pack-\$2.49 | 10 pack-\$3.25 | 16 pack-\$4.16 |  |
| :---: | :---: | :---: | :---: | :---: |
| Number of packs needed |  |  |  |  |
| Show the math |  |  |  |  |
| Total Cost |  |  |  |  |
| Hamburger Rolls | 4 pack-\$2.80 | 8 pack-\$4.97 |  |  |
| Number of packs needed |  |  | 10 pack-\$6.33 |  |
| Show the math |  |  |  |  |
| Total Cost |  |  |  |  |

## Budget Break \#1

Periodically, you must return to the budget sheet and do your calculations. It is time to enter the cost for meat and rolls. After you enter the actual cost, you must calculate the difference as + (over) or (under) from the budgeted cost.

| Purchases | Budgeted cost | Actual cost |  | 产. Difference $+/$ - |
| :---: | :---: | :---: | :---: | :--- |
| Meat | $\$ 600.00$ |  |  |  |
| Rolls | $\$ 200.00$ |  |  |  |
| Water | $\$ 50.00$ |  |  |  |
| Paper Goods | $\$ 150.00$ |  |  |  |
| Rented Chairs | $\$ 1,500.00$ |  |  |  |
| Rented Tables | $\$ 1,500.00$ |  |  |  |
| Activities \& Decorations | $\$ 500.00$ |  |  |  |

## Buying Paper Goods

The table below shows quantities and prices for paper plates, napkins and plastic utensils that Miss Gardner can purchase at Walmart. Complete the table to see how much money you will spend. You have $\$ 150.00$ in your budget.

|  | Dinner Plates | Dessert Plates | Dinner Napkins | Dessert Napkins | Plastic Utensils |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Per Package | 100 | 225 | 75 | 300 | Set for 45 |
| Cost per package | \$24.38 | \$12.47 | \$7.17 | \$3.76 | \$8.25 |
| Packages needed |  |  |  |  |  |
| Extras? |  |  |  |  |  |
| Total Cost |  |  |  |  |  |

I. How much money in total will you be spending on paper goods? Show how you know.
2. Miss Gardner forgot to tell you about the $10 \%$ discount she can get as an employee. How much money will you save?
3. What is the new total for the paper goods? Show the math.

## Budget Break \#2

Now that you have determined the cost of the water and paper goods, it is time to enter their cost in the budget. First, enter the costs from Budget Break \#1 for meat and rolls. Then. enter the costs for water and paper goods. Don't forget to calculate the differences, +1 .

| Purchases | Budgeted cost | Actual cost |  |
| :---: | :---: | :---: | :---: |
| Meat | $\$ 600.00$ |  |  |
| Rolls | $\$ 200.00$ |  |  |
| Water | $\$ 50.00$ |  |  |
| Paper Goods | $\$ 150.00$ |  |  |
| Rented Chairs | $\$ 1,500.00$ |  |  |
| Rented Tables | $\$ 1,500.00$ |  |  |
| Activities \& Decorations | $\$ 500.00$ |  |  |



## Arranging Tables

Mr. Clifford will rent you the tables for a flat fee of $\$ 1,500,00$. The tables are square and can seat one person on each side. Tables can be pushed together to form rectangles or larger squares. Your teachers have asked each student to design one table arrangement with seating options for the party. Use the graph paper page to plan and draw your design for the barbecue.

Each square table is the size of one square on the graph paper. You must assign squares to tables and seats. As you arrange your tables, you must consider space between seats so that people can get in and out of their seats. Use a pencil to draw your shapes on the grid. Once you are happy with your design, create a key to help your teachers understand your plan. Be sure to shade the tables and chairs according to your key.

How many tables do you need from Mr. Clifford's store?
Use the example provided to help you get started. You must have the number of seats listed for each table. Your plan must include the correct number of seats for the party.

KEY:

= table

= chair

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
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## Amazing Amos

Mr. Bell has a friend who is a magician. His name is Amazing Amos. He is available to come to the celebration to entertain everyone. He offers three shows that are all different lengths. Review the options to help you decide which show is best for the barbecue.

| Amazing Amos |  |  |  | Snakes Alive | 35 minutes |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Show 1 | Disappearing Doves | 1 hour \& 10 minutes |  |  |  |
| Show 2 | Seeing is Believing | 50 minutes |  |  |  |

I. Mr. Bell suggests that before you decide which show to schedule, you should consider the length of each magic show. The celebrations must be cleaned up by 7:45 p.m. If Amazing Amos begins at 6:15 p.m., at what time will each of his shows end? Use the number lines to show your math.

## Show 1

Show 2

Show 3


## Final Plans

It is time to plan the schedule for this year's Campfire Jun celebration. Mr. Bell has gotten approval from the principal to run the event from 3:30-7:45. This includes time for set up and clean up. He has given you approximate times for each activity for the party. Add the start and end times for each activity to the table.

| Activity | Total Time | Start time | End time |
| :---: | :---: | :---: | :---: |
| Set-up | 40 Minutes |  |  |
| Races/Games | 75 Minutes |  |  |
| Transition for dinner | 8 Minutes |  |  |
| Barbecue | 42 Minutes |  |  |
| Magic Show | 50 Minutes |  |  |
| Clean-up | 40 Minutes |  |  |

I. Now that you have the schedule planned, which Magic Show is the best for your time slot?
2. What is the total amount of time for the entire celebration? Show in minutes and hours/minutes.

Total time in minutes:

## Last Minute Details = Word Problems

I. Your mom works for a food distributor. A week before the barbecue, she tells you that she can donate 3 boxes of individual snack bags. One box holds a variety of snacks like potato chips, pretzels, and popcorn. Each box holds $I I 2$ bags of snacks. How many individual snack bags will each person get? Show the math.
2. Will there be any bags left over? If so, how many?

3. Martin's dad owns Dairy Queen and offers to set up a Blizzard station. Each Blizzard needs $1 / 2$ cup of ice cream and I/4 cup of crushed cookies. Help Martin calculate the amount of ice cream and crushed cookies his dad should bring to the party for everyone to have one Blizzard..


## Challenge 1 = Relay Races

I. On the night of the party, Mr. Green set up relay races for all students. He created teams of 4 students each. Counting only students, how many teams were there in all?
2. Each team ran a relay around the soccer field. The top 5 teams and the runners' times are listed in the table below. Your task is to determine each teams' total time in minutes/seconds. Then, rank the teams in order from $\mathrm{l}^{\text {st }}$ through $5^{\text {th }}$. Calculate the team's total time in the box below the individual scores. Then write the team rank in the bottom box.

| The Razors | We Got This | The Cheetahs | Go Dog Go | Track Stars |
| :---: | :---: | :---: | :---: | :---: |
| Elle 2 min .23 sec . <br> Ray 1 min. 59 sec . <br> Mel 2 min . 18 sec . <br> Max 2 min. 7 sec. | Eric 2 min .9 sec . <br> Jan 2 min. 24 sec . <br> Ron 1 min .48 sec . <br> Mia 2 min. 12 sec . | Amy 2 min. 4 sec . <br> Dan 1 min. 56 sec . <br> Bria 2 min. 15 sec . <br> Nate 2 min . 27 sec . | Lenny 2 min. 35 sec . <br> Meg 1 min. 51 sec . <br> Jon 1 min. 53 sec . <br> Barb 2 min. 15 sec | Lucy 1 min. 46 sec . <br> Will 1 min .52 sec . <br> Cara 2 min .44 sec . <br> Ken 1 min. 58 sec |
|  |  |  |  |  |
|  |  |  |  |  |

## Challenge 3 = Class Time Capsule

Mr. Bell, the class advisor, has purchased plastic time capsules to be filled by everyone at the celebration with items that are important to them on that day. All the time capsules will be placed in a closet in the basement and will not be opened until the class members are seniors in high school. The time capsules are 8 " long by 6 " wide and are 4 " high. Think about $3-5$ items you would put into your time capsule. Name the items and explain why you would put them in the box.

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$\qquad$

## Perfect Party Planners

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Self Reflection: Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?


Rate this project!
Circle the statement you most agree with
I am ready for something harder
I found this challenging

## Perfect Party Planners

$\qquad$
Self Reflection Rubric: Select the parts of the rubric that express how you rate yourself on this Project Based Learning Activity. Circle or shade your selections.

| I felt very confident about the math in this project. | I felt pretty good about my ability to complete the math in this project. | I felt a lot of the math in this project was too hard for me to do alone. |
| :---: | :---: | :---: |
| I understood all of the math and did not need help to complete the problems. | I understand most of the math but needed a little help to solve some of the problems. | I understood some of the math but needed help to complete most of the problems. |
| I easily used many strategies to solve the math problems efficiently. | I needed some help to use the best strategies for solving the math problems. | I had trouble understanding the best way to solve many of the math problems. |
| I feel I am ready for a harder math project. | I feel I would like to spend more time practicing similar math problems. | I feel I need assistance to work on similar math problems |

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