

# Math Projects

## GRADES 3-5

Math Projects offer a great way to develop problem solving skills while linking your curriculum with real world situations and applications of math skills and concepts. You can set aside some time each week for students to work on projects collaboratively or use projects aligned with your current math unit for homework. Either way you will be providing opportunities for students to gather, analyze, and organize data; to make decisions, and to solve real life problems while applying key math concepts and skills.

[www.k-5mathteachingresources.com](http://www.k-5mathteachingresources.com)

**Math Projects** offer a great way to develop problem solving skills while linking your math curriculum with real world situations and applications of math skills and concepts. You can set aside some time each week for students to work on math projects in partnerships, or use projects aligned with your current math unit for homework.

While students learn how to "do" math, they must also learn how to articulate what they are learning. It is important to provide many opportunities for students to organize and record their work without the structure of a worksheet. The Math Projects in this file allow for different strategies and products to emerge. Students should be encouraged to choose their own method of solving problems and representing their findings.

Each Math Project includes a rubric to provide students with a clear understanding of what constitutes excellence and how their work will be evaluated. Encourage students to refer to the rubric regularly as they work on a project in order to ensure that their work is complete and fulfills the criteria. Rubrics can be used for teacher, self, or peer assessment.

**Tic-Tac-Toe** or Choice Boards encourage independent learning and provide a simple way of differentiating homework assignments and projects. Activities are typically presented in the form of a nine square grid with one activity written in each square. Students choose three activities to complete in a row diagonally, vertically, or horizontally. Activities vary in content, process, and product and can be structured to address different levels of student readiness, interests, and learning styles.

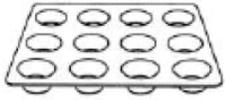
Adaptations for Tic-Tac-Toe boards include:

- allowing students to complete any 3 tasks - even if the completed tasks don't make a Tic-Tac-Toe,
- creating different Tic-Tac-Toe boards based on readiness or learning styles,
- creating boards of different sizes (e.g., 4 x 4),
- adding a 'Free Choice' square to the center of the board to allow students to create their own task.

You may choose to use the generic Math Tic-Tac-Toe Board or prefer to create your own board with tasks specific to a particular unit using the blank template provided.

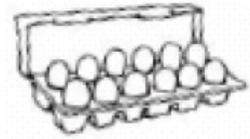
The following Math Projects are included in this file:

1. **Everyday Arrays:** Multiplication Arrays
2. **Exploring Area:** Area by Tiling
3. **Geometry in Your Neighborhood:** Angles, Lines, Geometric Shapes
4. **Planning a Birthday Party:** Calculating Costs
5. **Town Map Project:** Lines, Angles, 2-Dimensional Shapes
6. **Choose a Number:** Properties of a Number, Multi-Step Word Problems
7. **Tessellation Design:** Tessellations
8. **A Family Outing:** Calculating Costs, Bar Graphs
9. **Temperatures Across the World:** Line Graphs, Calculating Mean
10. **Planning a Vacation:** Calculating Costs, Currency Rates, Time Zones
11. **A Class Pizza Party:** Calculating and Dividing Costs
12. **Split the Bill:** Calculating and Dividing Costs
13. **Paint Your Bedroom:** Perimeter and Area
14. **Posting a Birthday Gift:** Calculating and Comparing Costs
15. **Build Your Dream Home:** Area, Perimeter, Calculating Costs
16. **Adjusting a Recipe:** Multiplying and Dividing Fractions
17. **Feeding a Family:** Line Graphs, Calculating Costs
18. **Famous Buildings of the World:** Converting Measurements, Bar Graphs
19. **Famous Bridges of the World:** Converting Measurements, Bar Graphs
20. **A Family Pet:** Calculating Costs, Bar Graphs
21. **A Class Picnic:** Designing a Schedule, Creating a Map, Calculating Costs
22. **A Thanksgiving Dinner:** Calculating Costs
23. **Design a Math Game**
24. **Create a Math Story Book**
25. **Famous Mathematicians of the Past**
26. **Math Tic-Tac-Toe**



A 3-by-4 array

# Everyday Arrays



A 2-by-6

For this project you will look for examples of arrays in the real world.

## Requirements:

- Search for 5, or more, arrays in your home, neighborhood or supermarket.
- Record each array and explain where you saw it.
- Describe how many rows, how many objects in each row, and the total number of objects in each array you find.
- Write a number model and a number story for each array.
- Think of a creative way to present your project. You can make a poster, a book, use technology, or come up with your own ideas !

Bring your project to school to share on: \_\_\_\_\_



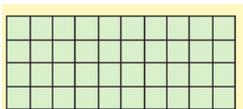
**Everyday Arrays Project Rubric**

**Name:**

**Date:**

| <b>Requirements</b>   | <b>4</b>   | <b>3</b>   | <b>2</b>  | <b>1</b>   |
|---|--|--|---|--|
| <b>Arrays</b>   | More than 5 arrays are clearly represented                           | 5 arrays are clearly represented   | Some arrays are clearly represented   | No arrays are clearly represented  |
| <b>Description</b>  | More than 5 arrays are described accurately                          | 5 arrays are described accurately  | Some arrays are described accurately  | Array descriptions are missing <u>or</u> incorrect   |
| <b>Number Stories</b>   | All number stories are clear and correct                             | Number stories are clear but contain one error   | Number stories are somewhat clear <u>or</u> contain two errors  | Number stories are missing, unclear, <u>or</u> contain more than 2 errors                              |
| <b>Mechanics</b><br>. spelling<br>. punctuation<br>. capitalization | No errors in spelling, punctuation, or capitalization                | A few minor errors in spelling, punctuation, or capitalization that do not interfere with reader's understanding | Several errors in spelling, punctuation, or capitalization that interfere with reader's understanding | Frequent errors in spelling, punctuation, or capitalization that interfere with reader's understanding |
| <b>Presentation</b>   | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way   | Some parts of the project are presented in an organized, creative or effective way                    | Project is not presented in an organized, creative or effective way                                    |

**Total: /20**



## Exploring Area



For this project you need to find the area of two rectangular figures in your home using tiling.

### Requirements:

- Choose two rectangular figures in your home. For example, you might choose a rug and the top of a table, the front cover of a newspaper and the floor of your kitchen, or any other two rectangular shapes you find.
- Choose a square unit. You can cut square units of the same size from newspaper or use a square unit that you have in your home (e.g. squares from a paper towel roll). Use tiling to cover each rectangular shape without gaps or overlaps using identical square units.
- Record the number of rows of square units, the number of square units in each row, and the number of square units in all that you used to cover each rectangular figure.
- Using pictures, words, and a number model show how you used tiling to find the area of each rectangular figure. Explain how the area is the same as would be found by multiplying the side lengths.
- Compare the area of the two rectangular figures you measured. Which rectangular figure had the larger area? How much larger?

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

**Exploring Area Rubric**

**Name:**

**Date:**

| <b>Requirements</b>   | <b>4</b>   | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|---|--|---|--|---|
| <b>Show Your Work</b>   | All work is shown and calculations completed accurately                            | All work is shown with one minor calculation error  | Not all work is shown <u>or</u> work contains several calculation errors                               | Work is not shown <u>or</u> work contains frequent calculation errors                                 |
| <b>Square Unit</b>  | Selected an efficient square unit to tile and compare selected rectangular figures | Selected an appropriate square unit to tile and compare selected rectangular figures                      | Unable to compare selected rectangular figures as a different square unit was used to tile each figure | Did not select an appropriate square unit to tile and compare selected rectangular figures            |
| <b>Explanation</b>  | Explanation is very clear and logical  | Explanation is clear and logical  | Parts of the explanation are clear   | Explanation is unclear <u>or</u> is not included  |
| <b>Mechanics</b><br><ul style="list-style-type: none"> <li>. spelling</li> <li>. punctuation</li> <li>. capitalization</li> </ul> | No errors in spelling, punctuation, or capitalization                              | Minor errors in spelling, punctuation or capitalization that do not interfere with reader's understanding | Several errors in spelling, punctuation or capitalization that interfere with reader's understanding   | Frequent errors in spelling, punctuation or capitalization that interfere with reader's understanding |
| <b>Presentation</b>   | Project is presented in a very organized, creative and effective way               | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way                     | Project is not presented in an organized, creative or effective way                                   |

**Total:     /20**



# Geometry in Your Neighborhood

For this project you will choose a building in your neighborhood and look closely at its geometric features.

## Requirements:

- Look closely at different buildings in your neighborhood. Choose a building with interesting geometric features and explain what it is used for.
- Sketch the building and label the different geometric shapes, lines and angles that you see.
- Explain why the building's geometric features are important. Be sure to use math vocabulary in your explanation. Use a dictionary or the Word Bank to check your spelling.
- Think of a creative way to present your work. You can make a poster, model, book, or multimedia presentation.

Bring your project to school to share on: \_\_\_\_\_

### WORD BANK:

right angle      acute angle      obtuse angle  
perpendicular lines      parallel lines      intersecting lines  
two-dimensional      three-dimensional  
square      rectangle      hexagon      trapezoid      rhombus  
triangle  
rectangular prism      cube      cylinder      sphere

**Geometry in Your Neighborhood Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>  | <b>1</b>  |
|--|--|---|---|---|
| <b>Sketch of Building</b>  | Sketch shows attention to detail                               | Main features of building are present in sketch   | Some features of building are present in sketch                                 | Sketch is incomplete <u>or</u> missing  |
| <b>Labels</b>  | All geometric shapes, lines and angles are labelled accurately | Most geometric shapes, lines and angles are labelled accurately   | Some geometric shapes, lines and angles are labelled accurately                 | No geometric shapes, lines and angles are labelled accurately                                       |
| <b>Explanation</b>   | Explanation is very clear                                      | Explanation is clear  | Some parts of explanation are clear   | Explanation is missing <u>or</u> unclear  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident       | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability. | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very creative and effective way      | Project is presented in a creative and effective way  | Some parts of the project are presented in a creative or effective way          | Project is not presented in a creative or effective way   |

**Total:        /20**



## Planning a Birthday Party

You are planning a birthday party. Your parents have agreed that you may invite four friends and will give you \$120.00 to buy everything that you need.

### Requirements:

- Use the internet, your local supermarket, or grocery store advertisements to research the cost of a birthday dinner for you and four guests at your house. You must include the cost of invitations, food and drinks, decorations, a birthday cake, and anything else you think you will need.
- Create a shopping list to fit your budget. Try to get as close to \$120.00 as possible.
- Show all your work.
- Write a paragraph explaining how you collected the information you needed and the math you used in completing this project.

Think of a creative way to present your project! You can make a poster, a book, use technology, cut and paste pictures from grocery store catalogues or come up with your own ideas.

Project Due Date: \_\_\_\_\_

**Planning a Birthday Party Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|--|---|--|---|
| <b>Show Your Work</b>  | All work is shown and calculations are completed accurately          | All work is shown with one minor mathematical error   | Not all work is shown <u>or</u> work contains several calculation errors           | Work is not shown <u>or</u> work contains many calculation errors                                   |
| <b>Explanation</b><br>(How did you collect your information? What math did you use?)                         | Explanation is very clear and logical                                | Explanation is clear and logical  | Parts of the explanation are clear   | Explanation is unclear <u>or</u> is not included  |
| <b>Budget</b>  | Costs fall within \$5.00 of given budget.                            | Costs fall within \$10.00 of given budget.  | Costs fall within \$15.00 of given budget.   | Costs are more than \$15.00 above given budget.   |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident             | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative or effective way                                 |

**Total: /20**

# Town Map Project

For this project you will create a map of an imaginary town that includes different kinds of lines, angles, and shapes.

1. Your map must include the following:

- The town name
- A map scale
- At least two sets of streets that are parallel
- At least two sets of streets that are perpendicular
- At least two streets that intersect another to form a right angle
- At least two streets that intersect another to form an obtuse angle
- Eight different 2-dimensional shapes to represent buildings or local attractions (e.g. park, movie theater, town swimming pool). Five of these shapes should be quadrilaterals.
- Names for each street/building/local attraction

2. Create a chart and list the street names or buildings in the correct categories.

| Parallel | Perpendicular | Acute Angles | Obtuse Angles | Quadrilaterals | Other 2-D Shapes |
|----------|---------------|--------------|---------------|----------------|------------------|
|          |               |              |               |                |                  |

3. Write out three sets of clear directions to get from one location to another in your town.

Your completed project is due on: \_\_\_\_\_

**Town Map Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|---|---|--|---|
| <b>Map</b>   | All required map elements are shown accurately                        | One required map element is missing <u>or</u> incorrect   | Two required map elements are missing <u>or</u> incorrect                          | More than two required map elements are missing <u>or</u> incorrect                                 |
| <b>Table</b>   | All information in table is presented accurately                      | Information in table contains one error   | Information in table contains two errors   | Information in table contains more than two errors  |
| <b>Map Directions</b>  | Directions to get from one location to another in town are very clear | Directions to get from one location to another in town are reasonably clear                                 | Some directions to get from one location to another in town are reasonably clear   | Directions to get from one place to another in town are unclear <u>or</u> missing                   |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident              | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way  | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative or effective way                                 |

**Total: /20**

**133****55**

## Choose a Number Project

**45****89**

For this project you will choose a whole number that has a special significance to you and create a poster, book, or multi-media presentation about it.

Your finished product must include:

- an explanation of why you chose this number.
- all **factor pairs** for your number .
- a description of your number. For example is it,
  - odd or even?
  - **prime** or **composite**?
  - a **multiple** of 1, 2, 3, 4, 5, 6, 7, 8 or 9 ?
- a pattern in which your number is the **fifth term** in a sequence of ten numbers.
- four different word problems in which your number is the **sum**, the **difference**, the **product** and the **quotient**.
- four different equations in which your number is an **unknown addend**, a **subtrahend**, an **unknown factor** and a **divisor**.
- two **multi-step** word problems featuring your number.
- the written word (and/or symbol) for your number in three foreign languages.
- two statistics or facts involving your number (e.g. a cheetah can run for short distances at 70mph, there are 42 US gallons in a barrel of oil).  
Hint: To research this type your number and then the word number in brackets into a search engine, e.g. 70 (number)
- three photographs, drawings, or newspaper/magazine clippings showing where you have recently seen your number used in the real world.
- a drawing or design that you create that represents your number in an unique way.

Be creative in your presentation and be sure to use our classroom resources to check the meaning of any math vocabulary above that you are unsure of.

Project Due Date: \_\_\_\_\_

Choose a Number Rubric

Name:

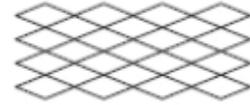
Date:

| Requirements   | 4  | 3   | 2  | 1  |
|--|--|---|--|--|
| <b>Math Requirements</b>   | All project components are completed accurately                      | All project components are completed with 1-2 mathematical errors                                       | One component of the project is missing <u>or</u> the project contains 3-4 mathematical errors | More than one component of the project is missing <u>or</u> the project contains more than 4 mathematical errors |
| <b>Explanation</b>   | Explanation of why number was chosen is very clear                   | Explanation of why number was chosen is reasonably clear  | Some parts of the explanation of why number was chosen are clear                               | Explanation of why number was chosen is unclear  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident             | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.                | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader.              |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way             | Project is not presented in an organized, creative or effective way  |

**Total:      /16**



# Tessellation Design



You are entering a design competition. The winner will create a large wall mural at your local park made from different shaped tiles that tessellate. You must make each tile by hand and create a unique wall mural.

## Requirements

- As part of your design process look for examples of tessellations in the environment. Draw, at least, three examples of tessellations you find and explain where you found them.
- Create a sample tessellation to cover a full sheet of paper using two or more regular polygons
- Explain why your pattern tessellates
- The mural will be 25 times the size of your sample. Calculate how many tiles of each shape you will need and the total number of tiles. Show your work.
- Read through your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

## Optional:

The artist M.C. Escher is famous for his drawings that show tessellations. Do some research on this artist and present your findings as a poster.

**Tessellation Design Rubric**

Name:

Date:

| Requirements   | 4  | 3   | 2   | 1   |
|--|--|---|---|---|
| <b>Draw examples of tessellations</b>  | Draws more than 3 examples of tessellations and explains where they were found         | Draws 2-3 examples of tessellations and explains where they were found                                      | Draws one example of a tessellation and explains where it was found                                   | Draws no examples of tessellations <u>or</u> does not explain where the tessellations were found    |
| <b>Create tessellation</b>   | Uses more than two polygons to create a tessellation that covers a full sheet of paper | Uses two polygons to create a tessellation that covers a full sheet of paper                                | Uses one polygon to create a tessellation <u>or</u> tessellation does not cover a full sheet of paper | Does not create a tessellation. Polygons may overlap or leave gaps                                  |
| <b>Show your Work</b>  | All work is shown and calculations completed accurately                                | All work is shown but calculations contain one mathematical error   | All work is shown but calculations contain 2-3 mathematical errors                                    | All work is not shown <u>or</u> calculations include more than 3 mathematical errors                |
| <b>Explanation</b>   | Very clearly explains the properties of a tessellation                                 | Clearly explains the properties of a tessellation   | Attempts to explain the properties of a tessellation but is unclear                                   | Does not explain the properties of a tessellation   |
| <b>Writing Conventions</b><br><ul style="list-style-type: none"> <li>. spelling</li> <li>. punctuation</li> <li>. capitalization</li> <li>. grammar</li> <li>. paragraphing</li> </ul> | Strong grasp of all standard writing conventions evident                               | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.                       | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |

**Total: /20**



# A Family Outing

Your parents have asked you to research and compare the cost of different family outings so that you can recommend one with a median price range. Research the costs involved in all members of your immediate family visiting the following venues on a Saturday afternoon: a museum, a zoo, an amusement park, an ice skating rink, or a movie theater.

## Requirements:

- Include a break down of the entrance costs for your family for each of the venues you researched and present this information in a bar graph. Be sure to give your graph a title, use an appropriate scale, and label each axis.
- Determine the outing with a median price range and write a recommendation for your parents based on this data
- Write a paragraph explaining how you collected your data and the math you used in completing this project
- Ask a friend or family member to read your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

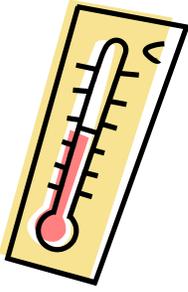
**A Family Outing Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>   | <b>2</b>  | <b>1</b>   |
|--|---|--|---|--|
| <b>Show your work</b>  | All work is shown and calculations completed accurately   | All work is shown with one minor calculation error   | Not all work is shown <u>or</u> work contains several calculation errors  | Work is not shown <u>or</u> work contains many calculation errors  |
| <b>Bar Graph</b>   | Bar graph includes title, labels on each axis, and appropriate scale. Data is represented accurately. | Bar graph has one feature missing (title, labels on each axis, appropriate scale). Data is represented accurately. | Bar graph has two features missing (title, labels on each axis, appropriate scale) <u>or</u> some data is not represented accurately. | Bar graph has more than two features missing (title, labels on each axis, appropriate scale) <u>or</u> data is not represented accurately. |
| <b>Explanation and Recommendation</b>  | Explanation and recommendation are very clear and based on data                                       | Explanation and recommendation are reasonably clear and based on data  | Some parts of explanation and recommendation are clear and based on data  | Explanation and recommendation are unclear <u>or</u> not based on data   |
| <b>Writing Conventions</b><br><ul style="list-style-type: none"> <li>. spelling</li> <li>. punctuation</li> <li>. capitalization</li> <li>. grammar</li> <li>. paragraphing</li> </ul> | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability.            | Basic grasp of standard writing conventions evident. Errors impair readability.   | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader.  |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way.                                 | Project is presented in an organized, creative and effective way   | Some parts of the project are presented in an organized, creative or effective way  | Project is not presented in an organized, creative or effective way  |

**Total: /20**



## Temperatures Across the World

Choose capital cities in two different countries, one in the **southern hemisphere** and one in the **northern hemisphere**.

Requirements:

- Use the internet, newspapers, or television weather broadcasts to research the temperature in each country over a one week period. Record this information in a chart and plot your data on a double line graph.
- Calculate the mean temperature for each country during this time and explain how you did this.
- Based on your data list ten items you would pack if you were to travel to each country at this time of the year.
- Explain how you collected your data and the math you used in completing this project.
- Ask a friend or family member to read your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

Be sure to present your project in a creative way!

Project Due Date: \_\_\_\_\_

**Temperatures Across the World Rubric****Name:****Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>   | <b>2</b>   | <b>1</b>  |
|--|---|--|--|---|
| <b>Line Graphs</b>   | Line graphs include title, labels on each axis, and appropriate scale. Data is plotted accurately | Line graphs have one feature missing (title, labels on each scale, or appropriate scale). Data is plotted accurately | Line graphs have two features missing (title, labels on each axis, appropriate scale) <u>or</u> some data is not plotted correctly | Line graphs have more than two features missing (title, labels on each axis, appropriate scale) <u>or</u> data is not plotted correctly |
| <b>Show Your Work</b>  | Mean temperatures calculated accurately and strategy explained very clearly                       | Mean temperatures calculated accurately and strategy explained clearly   | Minor error made in calculating mean temperatures <u>or</u> explanation of strategy is clear but incomplete                        | Mean temperatures not calculated correctly <u>or</u> explanation of strategy is unclear   |
| <b>Interpret Data</b>  | All listed items relate to data   | Most listed items relate to data   | Some listed items relate to data   | Listed items do not relate to data  |
| <b>Explanation of Data Collection Method</b>   | Explanation is very clear and logical   | Explanation is reasonably clear and logical  | Some parts of explanation are clear  | Explanation is unclear <u>or</u> is not included  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability.          | Basic grasp of standard writing conventions evident. Errors impair readability.  | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader.                                     |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way                              | Project is presented in an organized, creative and effective way   | Some parts of the project are presented in an organized, creative or effective way   | Project is not presented in an organized, creative or effective way   |

**Total: /24**



# Planning a vacation

Your parents have asked you to plan a two week overseas vacation for your family in July. They have a budget of \$15,000.

## Requirements:

- Choose a suitable destination and research the cost of airfares, hotels, daily food allowance, entrance fees to tourist sites, daily travel costs and spending money for all members of your immediate family. Include a breakdown of all costs.
- Use the internet to research currency exchange rates (for \$1, \$10, \$100) and time differences between your home and the country you will visit
- Show all your work, as well as evidence that you stayed within your budget
- Explain how you collected your data and the math you used in completing this project
- Read through your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

**Planning a Vacation Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>  | <b>2</b>  | <b>1</b>  |
|--|---|---|---|---|
| <b>Show your work</b>  | All work is shown and calculations completed accurately                         | All work is shown with one minor calculation error  | Not all work is shown <u>or</u> work contains several calculation errors                  | Work is not shown <u>or</u> work contains many calculation errors                                   |
| <b>Budget</b>  | Holiday costs fall within \$100 of given budget                                 | Holiday costs are within \$500 of given budget  | Holiday costs are within \$1,000 of given budget  | Holiday costs are more than \$1,000 above given budget  |
| <b>Explanation</b>   | Explanation and information about currency rates/time differences is very clear | Explanation and information about currency rates/time differences is reasonably clear                       | Some parts of explanation and information about currency rates/time differences are clear | Explanation or information about currency rates/time differences is unclear                         |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident                        | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.           | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way            | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way        | Project is not presented in an organized, creative or effective way                                 |

**Total: /20**

# A Class Pizza Party!



Your class has decided to have a pizza party to celebrate the end of the school year. Your teacher will donate plates, cups, and napkins but would like you to research how much each student will need to contribute towards costs.

## Requirements:

1. Assume that each person in your class, including the teacher, will eat 3 slices of pizza. Calculate how many pizzas you will need.
2. Assume a 2 liter bottle of juice or soda will serve four people. Calculate how many bottles you will need.
3. Research the cost of delivery charges, drinks, and small, medium and large pizzas with one topping at three local pizzerias to determine the best option. Present your findings in a **table**.
4. Based on your research write a recommendation to your teacher suggesting:
  - where to purchase the pizza and drinks,
  - how much each student will need to contribute to cover the costs.

Be sure to show all your calculations and explain your thinking clearly.

5. Ask a friend or family member to read your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.
6. Present your work in an organized and creative way!

Project Due Date: \_\_\_\_\_

**A Class Pizza Party! Rubric****Name:****Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>  | <b>1</b>  |
|--|--|---|---|---|
| <b>Show Your Work</b>  | All work is shown and calculations completed accurately  | All work is shown with 1-2 minor calculation errors   | Not all work is shown <u>or</u> work contains several calculation errors            | Work is not shown <u>or</u> work contains frequent calculation errors                               |
| <b>Table</b>   | Information from local pizzerias is presented very clearly in table format with appropriate headings | Information from local pizzerias is presented clearly in table format with appropriate headings         | An attempt is made to present information from local pizzerias in a table           | Table is not included   |
| <b>Recommendation to Teacher</b>   | Recommendation is very clear and based on data   | Recommendation is reasonably clear and based on data  | Some parts of the recommendation are clear and based on data                        | Recommendation is unclear <u>or</u> is not based on data  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident   | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.     | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way                                 | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative and effective way | Project is not presented in an organized, creative, or effective way                                |

**Total: /20**

# Split The Bill



You visit a new restaurant for dinner with three of your friends. After a delicious meal the waiter hands you the guest check so that you can split the bill equally with your friends.

Requirements:

1. Decide on the type of restaurant you will visit. Create a restaurant menu that shows the price for five different drinks, entrees, sides dishes and desserts. Include the following in your prices:

All drink prices end in either 0 or 5

All entree prices end in an odd number

All side dish prices end in an even number

All dessert prices end in 9

2. Create a guest check that shows what each person ordered, the cost of each item and the total cost of the meal.
3. Split the bill equally with your friends. How much money does each person need to pay? Explain your thinking.

Think of a creative way to present your project! You can make a poster, a book, a multimedia presentation, or come up with your own ideas.

Project Due Date: \_\_\_\_\_

**Split the Bill Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|---|---|--|---|
| <b>Menu and Guest Check</b>  | Menu clearly shows the price for 5 different drinks, entrees, side dishes and desserts. Guest check clearly shows what each person ordered, the cost of each item and the total cost of the meal. | Menu or guest check are missing one requirement.  | Menu and/or guest check are missing several requirements                           | Menu or guest check are not included  |
| <b>Show Your Work</b>  | All work is shown and calculations completed accurately   | All work is shown with 1-2 minor calculation errors   | Not all work is shown <u>or</u> the project contains several calculation errors    | Work is not shown <u>or</u> the project contains many calculation errors                            |
| <b>Explanation</b>   | Explanation is very clear and logical   | Explanation is clear and logical  | Parts of the explanation are clear   | Explanation is unclear <u>or</u> is not included  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way  | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative or effective way                                 |

**Total:        /20**



## Paint Your Bedroom

Your parents have decided to help you paint your bedroom during the summer break. They have asked you to research how much it will cost to paint **two coats of paint** on your bedroom walls and ceiling.

### Requirements:

- Visit a hardware store online, or in your local community, and select the color/s that you would like to paint your bedroom walls and ceiling.
- Measure the perimeter of your bedroom. Using the dimensions of the room, calculate the area of the ceiling.
- Draw a floor plan of your bedroom with doors, windows, and dimensions clearly marked.
- Measure and calculate the area of each wall in your bedroom. Remember you are not painting doors or windows.
- Determine how much area one can of paint will cover (you can usually find this information on the can).
- Calculate the number of cans of paint you will need to purchase, the cost of the paint, the cost of any other supplies you think you may need (e.g., paint brushes, tape), and the total cost to paint the ceiling and walls of your bedroom with **two coats of paint**.

Be sure to show all calculations and explain the steps you took to complete this project.

**Optional:** You may also decide to either:

- a) paint the baseboards and trim a contrasting color, or
  - b) purchase a wall paper border.
- Include these expenses in your total cost.

Project Due Date: \_\_\_\_\_

**Paint Your Bedroom Rubric****Name:****Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|--|---|--|---|
| <b>Show Your Work</b>  | All work is shown and calculations completed accurately                  | All work is shown with 1-2 minor calculation errors   | Not all work is shown <u>or</u> work contains several calculation errors           | Work is not shown <u>or</u> work contains many calculation errors                                   |
| <b>Floor Plan</b>  | Very clearly presented floor plan showing all details and measurements   | Clearly presented floor plan showing all details and measurements   | Floor plan is unclear <u>or</u> does not include all measurements                  | Floor plan is not included  |
| <b>Explanation</b>   | Explanation of steps taken to complete project is very clear and logical | Explanation of steps taken to complete project is clear and logical   | Explanation of steps taken to complete project is clear in some parts              | Explanation is unclear <u>or</u> does not explain the steps taken to complete the project.          |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident                 | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way     | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative or effective way                                 |

**Total:      /20**



## Posting a Birthday Gift



Your twin cousins, who live in London, will be turning eight in three weeks time. Your parents have asked you to choose a suitable birthday gift for them both. You would like to send them either a basketball or a scooter each but need to research the cost of purchasing and posting these gifts.

### Requirements:

1. Research the cost to purchase two basketballs and two scooters suitable for eight year olds from a toy or sports store. You can visit a store, use shopping catalogues or use the internet. Present your findings in a table.
2. Visit a Post Office, in person or online, and research the cost to post the gifts to London. You will need to take into consideration the size and weight of each gift, how you will package them, and the best way to send them so that they will arrive in time for the twin's birthday. Create a table showing two possible options for packaging and posting each type of gift.
3. Based on your research write a recommendation to your parents explaining what you think is the best present to send, the best postage option, and the date the presents need to be posted by. Be sure to include all your calculations and explain your reasoning.
4. Ask a friend or family member to read your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

Project Due Date: \_\_\_\_\_

**Posting a Birthday Gift Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|--|---|--|---|
| <b>Show your work</b>  | All work is shown and calculations completed accurately              | All work is shown with one minor calculation error  | Not all work is shown <u>or</u> work contains several calculation errors           | Work is not shown <u>or</u> work contains numerous calculation errors                               |
| <b>Tables</b>  | Information in both tables is presented very clearly                 | Information in both tables is presented clearly   | Information in one table is presented clearly                                      | Information in tables is unclear <u>or</u> tables are not included                                  |
| <b>Recommendation</b>  | Recommendation is very clear and logical                             | Recommendation is clear and logical   | Parts of the recommendation are clear  | Recommendation is unclear <u>or</u> is not included   |
| <b>Writing Conventions</b><br><ul style="list-style-type: none"> <li>. spelling</li> <li>. punctuation</li> <li>. capitalization</li> <li>. grammar</li> <li>. paragraphing</li> </ul> | Strong grasp of all standard writing conventions evident             | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative, or effective way                                |

**Total:      /20**

# Build Your Dream Home



You have a budget of \$600,000 to buy a block of land and build your own home.

Your house must include:

- at least two bedrooms
- at least one bathroom
- kitchen
- laundry

You may choose to include any other rooms.

1. Draw a plan of your home (including front and backyards). Record the measurements for each room. Calculate the perimeter and area of each room, as well as the total perimeter and area of the house.
2. You need to purchase a block of land to build your house on. Choose a suburb in which to build your house, and calculate how much land you will need to purchase. Show the total cost for your block of land.

|                 |                        |
|-----------------|------------------------|
| Pelican Cove    | \$140 per square meter |
| Blue Lakes      | \$252 per square meter |
| Hoppers Fields  | \$275 per square meter |
| Ocean Boulevard | \$325 per square meter |

3. The building costs for your house will be \$199.00 per square meter. Calculate the cost based on the measurements on your plan.
4. Each room in your house needs to have flooring. You may choose tiles, carpet, or wooden floorboards. Research prices and record the cost of flooring for each room, as well as the total cost of all flooring.

Your finished project should include:

- a floor plan of your house, including front and back yards (label all measurements)
  - the perimeter and area of each room
  - the total perimeter and area of your house
  - the total perimeter and area of your block of land
  - the total cost of the land you will purchase
  - the type and cost of flooring chosen (explain how you researched these costs)
  - the total cost of your house showing that you stayed within the given budget
- Be sure to show all calculations!

Optional: You may choose to spend any remaining money on paint, wallpaper, or furniture for your house. Research costs and include this information in your presentation.

Project due date: \_\_\_\_\_

**Build Your Dream Home Rubric****Name:****Date:**

| <b>Requirements</b>   | <b>4</b>   | <b>3</b>   | <b>2</b>   | <b>1</b>   |
|---|--|--|--|--|
| <b>Floor Plan</b>   | The floor plan is very clear. All measurements are labelled.         | The floor plan is clear. All measurements are labelled           | The floor plan is unclear. Some measurements are labelled.                                   | The floor plan is unclear. No measurements are labelled.               |
| <b>Show all your work (including the perimeter and area of each room, the total perimeter and area of your house and block of land, the total cost of land, and the cost of flooring)</b> | All calculations are shown and completed accurately.                 | All calculations are shown but contain 1-2 mathematical errors.  | Not all calculations are shown <u>or</u> work is shown but includes 3-4 mathematical errors. | Calculations are not shown or include more than 4 mathematical errors. |
| <b>Budget</b>   | Very clearly shows how house was completed within the given budget   | Clearly shows how house was completed within the given budget    | Attempts to show how house was completed within the given budget, but is unclear             | House was not completed within the given budget                        |
| <b>Presentation</b>   | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way | Some parts of the project are presented in an organized, creative or effective way           | Project is not presented in an organized, creative or effective way    |

**Total: /16**



# Adjusting a Recipe Project

- 1. Find a simple recipe in a recipe book or on the internet with at least four fractions in the ingredients list. Write the original recipe.
- 2. Rewrite the recipe for twice as many people. Show your work and explain your strategy.
- 3. Rewrite the recipe for half as many people. Show your work and explain your strategy.
- 4. Explain how you would adjust your recipe to feed everyone in our class (don't forget the teacher!) If the quantity served is not given, estimate how many it will serve and explain what you would do to have enough for us all.
- 5. Use correct spelling.
- 6. Present your information in a CREATIVE way.
- 7. Optional - Make the recipe and bring the results to our Fraction Feast on \_\_\_\_\_!

Sample Recipe: EASY SUGAR COOKIES (Makes 12)

## Ingredients:

- $\frac{2}{3}$  cup flour
- $\frac{1}{4}$  teaspoon baking soda
- $\frac{1}{8}$  teaspoon baking powder
- $\frac{1}{4}$  cup butter, softened
- $\frac{1}{4}$  cup white sugar
- 1 small egg
- $\frac{1}{4}$  teaspoon vanilla extract

**Directions:** Preheat oven to 375 degrees F (190 degrees C). In a small bowl, stir together flour, baking soda, and baking powder. Set aside. In a large bowl, cream together the butter and sugar until smooth. Beat in egg and vanilla. Gradually blend in the dry ingredients. Roll rounded teaspoonfuls of dough into balls, and place onto ungreased cookie sheets. Bake 8 to 10 minutes in the preheated oven, or until golden. Let stand on cookie sheet two minutes before removing to cool on wire racks.

**Adjusting a Recipe Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|--|---|--|---|
| <b>Show Your Work</b>  | All calculations are shown and completed accurately                  | All calculations are shown but include 1-2 errors   | Some work is shown <u>or</u> calculations include several errors                   | Work is not shown <u>or</u> calculations include many errors  |
| <b>Strategy</b>  | Problem solved using efficient strategy                              | Problem solved using appropriate strategy   | Used strategy that was partially useful, but did not lead to a full solution       | Inappropriate strategy used   |
| <b>Explanation</b>   | Explanation is very clear and logical                                | Explanation is clear and logical  | Some parts of the explanation are clear  | Explanation is unclear <u>or</u> is not included  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident             | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative or effective way                                 |

**Total:      /16**



# Feeding a Family Project

Research how much you would need to spend to feed a family of four for one week. Plan 3 meals per day, using **healthy** food choices. You may choose to use internet grocery stores to find the cost of individual food items, visit a supermarket, or use grocery store fliers.

## Requirements:

- Create a menu for each day of the week.
- Show all your work, including the costs of individual items, the total costs per day, and the total costs for one week.
- Create a line graph to show total costs for each day of the week.
- Explain how you collected your data, how you made your food choices, and the math you used in completing this project.
- Read through your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

**Feeding a Family Rubric****Name:****Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>  | <b>2</b>  | <b>1</b>  |
|--|---|---|---|---|
| <b>Show Your Work</b>  | All work is shown and calculations completed accurately   | All work is shown with one minor calculation error  | Not all work is shown <u>or</u> work contains several calculation errors  | Work is not shown <u>or</u> work contains many calculation errors   |
| <b>Daily Menus</b>   | All daily menus show healthy food choices   | Most daily menus show healthy food choices  | Some daily menus show healthy food choices  | Daily menus do not show healthy food choices  |
| <b>Line Graph</b>  | Line graph includes title, labels on each axis, and appropriate scale. Data is plotted correctly. | Line graph has one feature missing (title, labels on each axis, or appropriate scale). Data is plotted correctly. | Line graph has two features missing (title, labels on each axis, appropriate scale) <u>or</u> some data is not plotted correctly. | Line graph has more than two features missing (title, labels on each axis, appropriate scale) or data is not plotted correctly. |
| <b>Explanation</b>   | Explanation is very clear and logical   | Explanation is clear and logical  | Parts of the explanation are clear  | Explanation is unclear <u>or</u> is not included  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability.       | Basic grasp of standard writing conventions evident. Errors impair readability.   | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader.                             |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way                              | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative and effective way   | Project is not presented in an organized, creative or effective way   |

**Total:      /24**



# Famous Buildings of the World



For this project you will use the library or internet to research four famous buildings in the world.

## Requirements:

- Record the year each building was constructed, its height, and three other interesting facts about it.
- Display your data comparing the height of the four buildings in a bar graph.
- Create a chart in which you show the measurement for each building in centimeters, meters, and kilometers or in feet, yards, and miles.
- Explain how you collected your data and the strategy you used to convert the measurements.
- Use correct spelling, punctuation, capitalization, grammar and paragraphing.

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

**Famous Buildings of the World Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>   | <b>2</b>  | <b>1</b>   |
|--|---|--|---|--|
| <b>Measurement Conversions Chart</b>   | All measurement conversions are completed accurately  | Measurement conversions include one mathematical error   | Measurement conversions include 2 – 3 mathematical errors   | Measurement conversions include more than 3 mathematical errors  |
| <b>Bar Graph</b>   | Bar graph includes title, labels on each axis, and appropriate scale. Data is represented accurately. | Bar graph has one missing feature (title, labels on each axis, appropriate scale). Data is represented accurately. | Bar graph has two missing features (title, labels on each axis, appropriate scale) <u>or</u> some data is not represented accurately. | Bar graph has more than two missing features (title, labels on each axis, appropriate scale) <u>or</u> data is not represented accurately. |
| <b>Explanation of data collection method and strategy</b>  | Explanation is very clear   | Explanation is reasonably clear  | Some parts of explanation are clear   | Explanation is unclear   |
| <b>Writing Conventions</b><br><ul style="list-style-type: none"> <li>. spelling</li> <li>. punctuation</li> <li>. capitalization</li> <li>. grammar</li> <li>. paragraphing</li> </ul> | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability.        | Basic grasp of standard writing conventions evident. Errors impair readability.   | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader.  |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way                                  | Project is presented in an organized, creative and effective way   | Some parts of the project are presented in an organized, creative or effective way  | Project is not presented in an organized, creative or effective way  |

**Total: /20**



## Famous Bridges of the World

For this project you will use the library or internet to research four famous bridges around the world.

### Requirements:

- Record the year each bridge was constructed, its length, and three other interesting facts about it.
- Display your data comparing the length of the four bridges in a bar graph. Be sure to give your graph a title, use an appropriate scale, and label each axis.
- Create a chart in which you show the measurement of each bridge in either feet, yards, and miles or centimeters, meters, and kilometers.
- Explain how you collected your data and the strategy you used to convert the measurements.
- Use correct spelling, punctuation, capitalization, grammar and paragraphing.

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

**Famous Bridges of the World Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>   | <b>2</b>  | <b>1</b>   |
|--|---|--|---|--|
| <b>Measurement Conversions Chart</b>   | All measurement conversions are completed accurately  | Measurement conversions include one mathematical error   | Measurement conversions include 2 – 3 mathematical errors   | Measurement conversions include more than 3 mathematical errors  |
| <b>Bar Graph</b>   | Bar graph includes title, labels on each axis, and appropriate scale. Data is represented accurately. | Bar graph has one feature missing (title, labels on each axis, appropriate scale). Data is represented accurately. | Bar graph has two features missing (title, labels on each axis, appropriate scale) <u>or</u> some data is not represented accurately. | Bar graph has more than two features missing (title, labels on each axis, appropriate scale) <u>or</u> data is not represented accurately. |
| <b>Explanation of data collection method and strategy</b>  | Explanation is very clear   | Explanation is clear   | Some parts of explanation are clear   | Explanation is unclear   |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability.        | Basic grasp of standard writing conventions evident. Errors impair readability.   | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader.  |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way                                  | Project is presented in an organized, creative and effective way   | Some parts of the project are presented in an organized, creative or effective way  | Project is not presented in an organized, creative or effective way  |

**Total: /20**



## A Family Pet

Your parents are considering getting a family pet and have asked you to research how much it would cost to feed a hamster, a small dog, or a cat per year.

Requirements:

- Show all your work.
- Display your data about the costs to feed each pet in a bar graph. Be sure to give your graph a title, use an appropriate scale, and label each axis.
- Write a recommendation for your parents based on your data
- Write a paragraph explaining how you collected your data and the math you used in completing this project
- Ask a friend or family member to read your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

**A Family Pet Rubric**

Name:

Date:

| Requirements   | 4   | 3  | 2   | 1  |
|--|---|--|---|--|
| <b>Show your work</b>  | All work is shown and calculations completed accurately   | All work is shown with one minor calculation error   | Not all work is shown <u>or</u> work contains several calculation errors  | Work is not shown <u>or</u> work contains many calculation errors  |
| <b>Bar Graph</b>   | Bar graph includes title, labels on each axis, and appropriate scale. Data is represented accurately. | Bar graph has one feature missing (title, labels on each axis, appropriate scale). Data is represented accurately. | Bar graph has two features missing (title, labels on each axis, appropriate scale) <u>or</u> some data is not represented accurately. | Bar graph has more than two features missing (title, labels on each axis, appropriate scale) <u>or</u> data is not represented accurately. |
| <b>Explanation and Recommendation</b>  | Explanation and recommendation are very clear   | Explanation and recommendation are reasonably clear  | Some parts of explanation and recommendation are clear  | Explanation and recommendation are unclear <u>or</u> not included  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability.        | Basic grasp of standard writing conventions evident. Errors impair readability.   | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader.  |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way                                  | Project is presented in an organized, creative and effective way   | Some parts of the project are presented in an organized, creative or effective way  | Project is not presented in an organized, creative or effective way  |

**Total: /20**



# A Class Picnic Project

Your teacher has asked you to plan a class picnic to a local park within walking distance of your school. You have \$135 to buy everything that is needed for the 27 students in your class.

Requirements:

1. Create a schedule or timeline for the day
2. Draw a map or write a list of instructions showing the best way to walk from school to the park you have chosen
3. Create a shopping list to fit your budget and justify the items and quantities you have chosen
4. Show all your calculations, as well as evidence that you stayed within your budget
5. Explain how you collected the information you needed and the math you used in completing this project
6. Ask a friend or family member to read your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.

Think of a creative way to present your project!

Project Due Date: \_\_\_\_\_

**A Class Picnic Rubric****Name:****Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|--|---|--|---|
| <b>Show your work</b>  | All work is shown and calculations completed accurately              | All work is shown with one minor calculation error  | Not all work is shown <u>or</u> work contains several calculation errors           | Work is not shown <u>or</u> work contains numerous calculation errors                               |
| <b>Schedule and Map</b>  | Schedule and map are presented very clearly                          | Schedule and map are presented clearly  | Schedule and map are somewhat clear  | Schedule and map are unclear  |
| <b>Explanation</b>   | Explanation is very clear and logical                                | Explanation is clear and logical  | Parts of the explanation are clear   | Explanation is unclear <u>or</u> is not included  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident             | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative, or effective way                                |

**Total:      /20**



# A Thanksgiving Dinner

You are planning a meal for Thanksgiving for your extended family. Your guests will bring drinks and side dishes. You will provide: one 24-pound turkey, 4 pounds of apples, 6 pounds of carrots, 8 pounds of potatoes, and 3 large pumpkin pies. Use internet grocery stores, visit a supermarket, or use grocery store fliers to find the total cost of all items you will provide for the meal.

## Requirements

- Show all your work, including the cost per pound for food items where applicable, the total cost for each item, and the total cost of the meal.
- Research how long it takes to cook a turkey per pound. If your family is planning to eat dinner at 6p.m. what time will you need to start cooking your 24-pound turkey? Explain your thinking.
- Explain how you collected your data and the math you used in completing this project.
- Ask a friend or family member to read your project. Have you used correct spelling, punctuation, capitalization, grammar and paragraphing? Edit your work as needed.
- Prepare a short (3-5 minutes) oral presentation in which you will share your project with the class.

Present your findings in a creative way! (e.g. poster, multimedia presentation, model, etc.)

**Thanksgiving Dinner Rubric**

**Name:**

**Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|--|---|--|---|
| <b>Show Your Work</b>  | All work is shown and calculations completed accurately              | All work is shown with one minor calculation error  | Not all work is shown <u>or</u> work contains several calculation errors           | Work is not shown <u>or</u> work contains many calculation errors                                   |
| <b>Written Explanation</b>   | Written explanation is very clear and logical                        | Written explanation is clear and logical  | Parts of the written explanation are clear   | Written explanation is unclear <u>or</u> is not included  |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident             | Strong grasp of standard writing conventions evident. Has some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.    | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Project Presentation</b>  | Project is presented in a very organized, creative and effective way | Project is presented in an organized, creative and effective way  | Some parts of the project are presented in an organized, creative or effective way | Project is not presented in an organized, creative or effective way                                 |
| <b>Oral Presentation</b>   | Student speaks clearly and confidently throughout the presentation   | Student speaks clearly and confidently for most of the presentation.  | Student speaks clearly and confidently in some sections of the presentation        | Student does not speak clearly and confidently in any part of the presentation                      |

Total /20



# Design a Math Game

You are a board game designer. You are creating a game for your classmates to play. Your game can focus on the concepts we have learned in our current math unit or include concepts from the units we have covered prior to this unit.

Requirements:

- provide clear written directions so players will understand how to play your game
- make an answer key to go with your game so players will be able to check their thinking
- write a brief description explaining how this game can help students improve their math skills and understandings
- use correct spelling, punctuation, grammar and capitalization in all sections of your game and your game description

Be sure to present your game in a creative and engaging way!

Project Due Date: \_\_\_\_\_

**Design a Math Game Rubric****Name:****Date:**

| <b>Requirements</b>  | <b>4</b>   | <b>3</b>   | <b>2</b>   | <b>1</b>   |
|--|--|--|--|--|
| <b>Game Content</b>  | All math content is of a suitable level                  | Most math content is of a suitable level                   | Some math content is of a suitable level                                     | Math content is not of a suitable level  |
| <b>Game Directions</b>   | Game directions are very clear                           | Game directions are reasonably clear                       | Some parts of the game directions are clear                                  | Game directions are not clear  |
| <b>Answer Key</b>  | Answer key is accurate                                   | Answer key contains 1 error                                | Answer key contains 2-3 errors   | Answer key contains more than 3 errors   |
| <b>Writing Conventions</b><br><ul style="list-style-type: none"> <li>. spelling</li> <li>. punctuation</li> <li>. capitalization</li> <li>. grammar</li> <li>. paragraphing</li> </ul> | Strong grasp of all standard writing conventions evident | Strong grasp of most standard writing conventions evident. | Basic grasp of standard writing conventions evident. Errors may impact game. | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse players. |
| <b>Creativity</b>  | Game is presented in a very creative and engaging way    | Game is presented in a creative and engaging way           | Some parts of the game are presented in a creative or engaging way           | Game is not presented in a creative or engaging way  |

**Total:     /20**

# Create a Math Story Book



In this project you can choose to create a math story book for our class library or a math story book to donate to a class library for another grade level.

## Requirements:

- Choose a math topic and decide on a title for your book (e.g. A Day Without Measurements, The Land of Quadrilaterals, Fraction Frenzy etc.)
- Create your main characters and supporting characters. Give each character a name and personality.
- Write a draft copy of an original math story.

Once you are ready to publish ....

- Design a cover for your book on cardstock or construction paper that reflects what the story is about. Include the title, author's name and an illustration on the front cover.
- Write a blurb on the back cover explaining how your book will help the reader learn more about math and suggest what grade level it is best suited to.
- Type or neatly print the text of your book.
- Number each page in your book .
- Include at least one illustration on each double page. You may use different mediums such as crayon, marker, colored pencil, computer graphics, magazines, etc.

Project Due Date: \_\_\_\_\_

**Create a Math Story Book Rubric****Name:****Date:**

| <b>Requirements</b>  | <b>4</b>  | <b>3</b>  | <b>2</b>   | <b>1</b>  |
|--|---|---|--|---|
| <b>Book Cover</b>  | Front cover includes title, author's name and appealing illustration. Back cover includes well written blurb. | Front cover includes title, author's name and illustration. Back cover includes blurb.                  | One requirement missing from front or back cover                                       | Book cover is not included <u>or</u> has more than one requirement missing                          |
| <b>Ideas and Content</b>   | Focus topic is clear. Story details show thorough understanding of math topic.                                | Focus topic is clear. Story details show good understanding of math topic.                              | Focus topic is somewhat clear. Story details show limited understanding of math topic. | Focus topic is not clear. Story details show little understanding of math topic.                    |
| <b>Illustrations</b>   | At least one illustration is included on each double page   | Most double pages include at least one illustration   | Some double pages include at least one illustration                                    | Few <u>or</u> no illustrations are included   |
| <b>Writing Conventions</b><br>. spelling<br>. punctuation<br>. capitalization<br>. grammar<br>. paragraphing | Strong grasp of all standard writing conventions evident  | Strong grasp of standard writing conventions evident. Some minor errors that do not impair readability. | Basic grasp of standard writing conventions evident. Errors impair readability.        | Minimal grasp of standard writing conventions apparent. Numerous errors distract or confuse reader. |
| <b>Presentation</b>  | Text is typed or neatly printed. Overall presentation is of a very high standard.                             | Text is typed or neatly printed. Overall presentation is of a high standard.                            | Some pages in the book are well presented.   | Very few pages in the book are well presented.  |

**Total: /20**



# Famous Mathematicians of the Past

Use the library or internet to research the life of a mathematician of the past. Your end product will be a short oral presentation in which you will share your findings with the class.

## Requirements:

- You must present an important contribution of the person, in addition to his or her life story.
- Create cue cards to use during your talk. Practice your presentation so that you are able to speak confidently and use eye contact with your audience.
- Your oral presentation should be of 5 minutes duration.
- Create a visual aid to add interest to your oral presentation (e.g. PowerPoint, model, poster etc.)
- After your presentation you will have 2 minutes to answer questions from the audience. Be ready to answer your classmates' questions.

Oral Presentation Date: \_\_\_\_\_

***There are many famous mathematicians. Here are a few names to get you started:***

Pythagoras  
Archimedes  
Rene Descartes  
Leonhard Euler  
Leonardo Fibonacci  
Euclid  
Blaise Pascal

**Famous Mathematicians of the Past Rubric****Name:****Date:**

| <b>Requirements</b>           | <b>4</b>  | <b>3</b>  | <b>2</b>   | <b>1</b>   |
|-------------------------------|---|---|--|--|
| <b>Content</b>                | Presentation is very well researched. Able to answer all class questions with clear explanations and elaboration. | Presentation is well researched. Able to answer most class questions. | Some parts of presentation are well researched. Able to answer some class questions. | Presentation is not well researched. Unable to answer any class questions. |
| <b>Delivery</b>               | Speaks very confidently and clearly throughout presentation   | Speaks confidently and clearly during most of presentation            | Speaks clearly<br>In some parts of presentation                                      | Mumbles or speaks too quietly for audience to hear                         |
| <b>Eye Contact</b>            | Constant eye contact with audience. Presents from memory with no need to refer to cue cards.                      | Consistent eye contact with audience, seldom looks at cue cards       | Displays minimal eye contact with audience. Reads mostly from cue cards.             | No eye contact with audience. Reads from cue cards.                        |
| <b>Visual Aid</b>             | Very original and effective visual aid  | Original and effective visual aid                                     | Visual aid is used but lacks originality and effectiveness                           | No visual aid used   |
| <b>Length of Presentation</b> | Meets time requirements   | Completes presentation within 2 minutes of allotted time              | Completes presentation within 3 minutes of allotted time                             | Presentation is too short or goes more than 3 minutes over allotted time.  |

**Total:      /20**

# Math Tic-Tac-Toe

Name \_\_\_\_\_

Due Date: \_\_\_\_\_

Directions: Complete 3 activities in a vertical, horizontal, or diagonal line. You may complete more than 3 activities if you wish.

|  |  |  |
|--|--|--|
| <p style="text-align: center;"><b>VOCABULARY</b></p> <p>Write the definition of 10 words related to our current unit. Give an example or draw a picture to illustrate each word.</p> | <p style="text-align: center;"><b>CREATE AN ASSESSMENT</b></p> <p>Create an assessment for our current unit. Include different types of questions (e.g. multiple choice, short answer, and extended response) and an answer key.</p> | <p style="text-align: center;"><b>POSTER</b></p> <p>Design a poster <u>or</u> comic strip that illustrates an important concept from our current unit.</p> |
| <p style="text-align: center;"><b>MULTIMEDIA</b></p> <p>Design a multimedia presentation to demonstrate five key concepts from this unit.</p>  | <p style="text-align: center;"><b>REAL WORLD APPLICATION</b></p> <p>Show examples of how the skills and concepts you have learned in this unit could be used in everyday life.</p>   | <p style="text-align: center;"><b>GAME DESIGN</b></p> <p>Design a game to review skills and concepts from the current unit.</p>                            |
| <p style="text-align: center;"><b>REFLECTION</b></p> <p>Write a letter to a family member explaining what you found easiest and what you found most difficult during this unit.</p>  | <p style="text-align: center;"><b>STUDY GUIDE</b></p> <p>Design a study guide that reviews key concepts from this unit.</p>  | <p style="text-align: center;"><b>POETRY</b></p> <p>Write and illustrate a poem <u>or</u> song about one or more concepts from the current unit.</p>       |

# Math Tic-Tac-Toe

Name \_\_\_\_\_

Due Date: \_\_\_\_\_

Directions: Complete 3 activities in a vertical, horizontal, or diagonal line. You may complete more than 3 activities if you wish.

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |

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