24 Game

www.24game.com
www.firstinmath.com

How to Play: Make the number 24 using the four numbers on the wheel. You can add, subtract, multiply and/or divide. Use all four numbers on the wheel, but use each number only once.

Example: If your card has a 2, 11, 16, 17, the following steps/equations would give you 24:
$(17 - 16 + 11) \times 2 = 24$

First the student would tap the card, then say:
$12 \times 2 = 24$
This is called the "DECLARATION."
Then the student would give all the steps from the beginning, telling you how he arrived at that answer, like this:
$17 - 16 = 1$
$1 + 11 = 12$
$12 \times 2 = 24$

NOTICE: The "DECLARATION" must match the last step, or the player does not get the card.

Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____

Mmmmm...M&Ms

PREDICTIONS & OBSERVATIONS:

Make the following predictions about your bag of M&Ms. Write your predictions in complete sentences.

1. *How many M&Ms do you think are in the bags?*
2. *From your experience, what colors are the M&Ms?*
3. *What color will appear most frequently in your bag?*
4. *What color will appear least frequently in your bag?*
5. *Do you think any colors will not appear in your bag?*

After you have recorded your predictions, open your bag of M&Ms. Sort them by color, and create a line plot on graph paper to show the amount of each color.

DRAWING CONCLUSIONS:

1. *Compare your findings to your predictions. How accurate were your predictions?*
2. *How does your bag of M&Ms compare with the class average?*
3. *Were there any colors missing from your bag?*
4. *Which color appeared most frequently? Least frequently?*
5. *Compare your column and pie graph. Which graph tells a better story about the data and why?*
6. *How does graphing help us better understand and interpret information?*
7. *Does the class data reflect the average distribution of colors from the manufacturer?* www.m-ms.com/us/about/products/milkchocolatemms

Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____

Take a Chance!

Suppose that you roll two number cubes, each of which has faces numbered from 1 through 6. What are your chances of rolling a sum of 8?

Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____

Take a Chance!
Explore using Excel

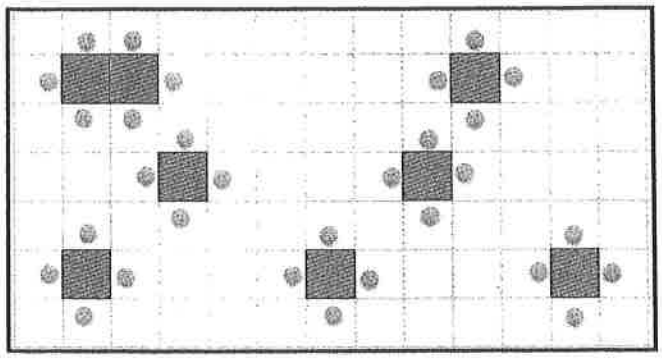
Suppose that you roll two number cubes. If the chances of rolling a sum of 1 through 12 are equally likely, how are the faces of each die numbered? Use your graph paper to make a table of outcomes.

Warm-Up # _____

Name: _____ Grade: ____ Date: _____

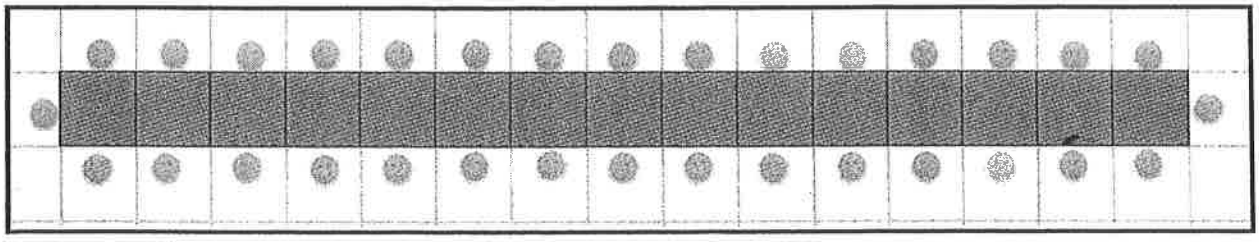
Spaghetti and Meatballs for All!

1. *Mrs. Comfort's brother and his wife, their daughter, her husband, and their twin sons arrived to Mr. and Mrs Comfort's house. This was after the Comforts' daughter and her husband and their two kids arrived.*



Starting with the arrangement above, Mrs. Comfort's brother pushed over 5 more tables so that the 12 people currently at the party could sit together. DRAW THIS NEW ARRANGEMENT ON YOUR GRAPH PAPER. Considering all eight tables, how many guests can be seated? Will this accommodate everyone coming to the party? Discuss with a partner.

2. *Suppose that Mrs. Comfort rented 32 chairs to seat all of her guests. Below is one arrangement that Mrs. Comfort could make to seat everyone. She needs 15 tables.*



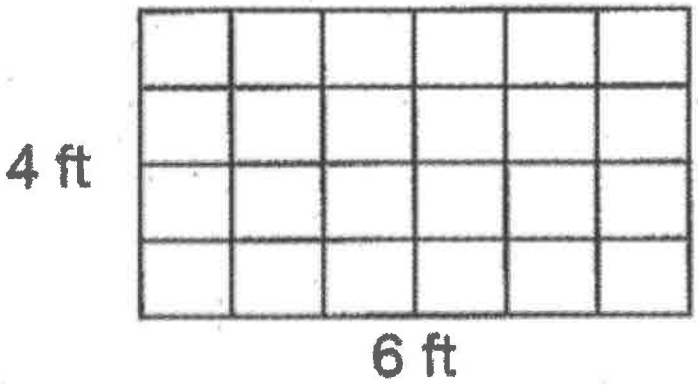
How else could you arrange tables so that 32 guests could be seated? You may need to rent more tables. Be sure to write down the number of tables you need for each arrangement.

Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____

Spaghetti and Meatballs for All!
Explore Using Excel

1. *On your graph paper, draw as many different table arrangements with an area of 24 square units. Make them in the shape of a rectangle, and be sure to record the perimeter of each arrangement and show your work. Which arrangement would seat the most people? The least? (Use the figure below to help you get started.)*



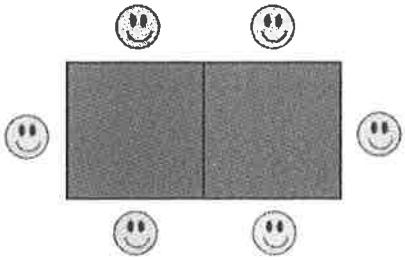
P = _____

Warm-Up # _____

Name: _____ *Grade:* ____ *Date:* _____

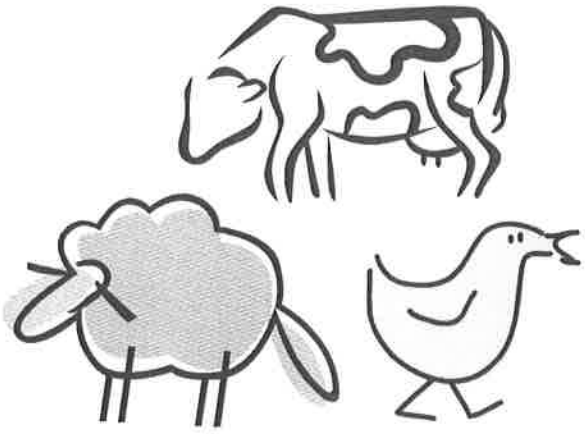
Spaghetti and Meatballs for All!

Four people can be seated at a single dinner table. If two tables are placed end to end, 6 people can be seated as shown in the diagram. How many tables must be placed end to end to seat 32 people?



Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____



Heads Up!

A total of 18 animals are in a field. Some are chickens, some are sheep, and some are cows. The total number of legs is 10 more than three times the total number of heads. How many chickens are in the field?

Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____

Heads Up!
Explore Using Excel

1. *A collection of thirty coins consists of dimes and quarters and has a total value of $4.35. How many of each type of coin are in this collection?*

2. *Using one or more of the coins, how many different amounts of money can be made from a collection of coins that consists of four pennies, one nickel, and one dime?*

3. *The toll for an automobile crossing a certain bridge is 50¢. The machines in the "exact change" lanes accept any combination of coins that total exactly 50¢, but they do not accept pennies or half dollars. In how many different ways can a driver pay the automobile toll in an "exact change" lane?*

Use this chart to record your outcomes from the Excel calculation worksheet:

	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs
Chickens												
Sheep/Cows												
Totals												

	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs
Chickens												
Sheep/Cows												
Totals												

	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs	Animals	Legs
Chickens										
Sheep/Cows										
Totals										

1 **Use the table, below, to calculate how many chickens are in the field.**
2 **Enter the number of chickens and the number of sheep/cows in the animals column.**
3 **Be sure to maintain a total of 18 animals while entering your number of animals.**
4 **View the formulas in cells C15, D15, D13, and D14.**
Be ready to explain what each means mathematically and in terms of the Excel program.

18 = Total Animals

64 = Total Legs = 3h+10 = 3(18)+10

	Animals	Legs
Chickens		0
Sheep/Cows		0
Totals	0	0

Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____

Beanstalk: The Measure of a Giant

Could you make a coat for the giant, Ray? How would you do it? Jot down your ideas. Be prepared to discuss them.

Name: _____ Grade: _____ Date: _____

Student Data Recording Sheet
Beanstalk: The Measure of a Giant by Ann McCallum
Ratio & Proportion - Making a Giant's Coat

Using a tape measure, measure your height and the circumference of your thumb, wrist, neck, and waist (in inches). Measure the circumference of the giant's thumb (in inches). Be sure to measure to the nearest 1/4 of an inch and record your answers in decimal form.

Circumferences (in inches)					
Name	**Thumb**	**Wrist**	**Neck**	**Waist**	**Height**

Circumference of the Giant's Thumb:
Object Representing Giant's Thumb:

Ratios				
Name	**Wrist/Thumb**	**Neck/Wrist**	**Waist/Neck**	**Height/Waist**
Totals				

Beanstalk: The Measure of a Giant by Ann McCallum

Ratio & Proportion - Making a Giant's Coat

Circumferences (in)						Ratios			
Name	Thumb	Wrist	Neck	Waist	Height	Wrist:Thumb	Neck:Wrist	Waist:Neck	Height:Waist
					Total (Group ___)				

		Total of Ratios				
Group	Number of Members	Wrist:Thumb	Neck:Wrist	Waist:Neck	Height:Waist	
A						
B						(Hand entered from other group's data)
C						(Hand entered from other group's data)
D						(Hand entered from other group's data)
E						(Hand entered from other group's data)
Totals:						
						Average Ratios of Body Parts

Object representing Giant's Thumb:	Pretzel Jar
Circumference (in) of Giant's Thumb:	

Giant's Measurements (in inches) Based on Above Averages:				
	Wrist:	Neck:	Waist:	Height:
				Height in Feet:

About how many people of your height would have to stand upon each other's shoulders to reach the height of the giant?	

Research to find an object in your environment that is approximately the same height as the giant.

http://geo.arc.nasa.gov/sge/jskiles/top-down/how_tall_that_is/how_tall_is_that.html

Warm-Up # _____

Name: _____ *Grade:* _____ *Date:* _____

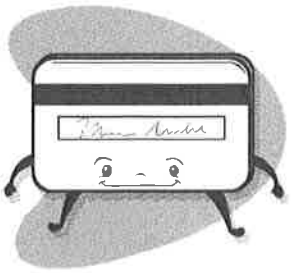
Charge It!

After you have completed your monthly payment chart, answer the following questions.

1. *How much did the item initially cost?*
2. *How much did you pay in total interest fees?*
3. *How much will it end up costing you, including interest fees?*
4. *How long did it take you to pay off your item?*

After you have used Excel to explore different scenarios, answer the following questions.

1. *How do you calculate total payments made?*
2. *What is the relationship between interest rate and amount of interest fees?*
3. *What is the relationship between principal and amount of interest fees?*
4. *What effect does percentage rate have on loan repayment time?*
5. *What effect does minimum/monthly payment have on loan repayment time?*
6. *What effect does purchase price have on loan repayment time?*
7. *Note any additional observations.*



Exploring Variables of Amount Charged, Interest Rate, Monthly Payment, Time as function of Monthly Payment, etc.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Item Purchased:							
Amount Charged:							
Annual Percentage Rate (APR):							
Monthly Interest Rate:							
Minimum Monthly Payment:							
Total Interest:							
Total Charges:							
Total Payments:							
Total Time:							

OBSERVATIONS/COMMENTS: