

DISNEY POPULATION





POPULATION DENSITY

Name _____ Date _____

At different times in your life, you've undoubtedly had the feeling that you were in a space that was too crowded. Around the globe, social scientists measure the geographic term *population density*. Population density is a measurement of the population per unit of area (often square miles). As you would expect, cities will have a much higher population density than small towns. However, it's when these cities begin to get compared with each other that you will get the sense of which cities feel the "busiest".

In the table, there are population and square mileage statistics for the six most populated cities in the United States. In order to calculate their population density, you will need to divide the population by the square miles. Use long hand division and round your answers to the nearest whole person.

City	Population (Estimated)	Square Miles (Rounded to the nearest whole)	Population Density
Chicago, IL	2,719,000	228	
Houston, TX	2,196,000	600	
Los Angeles, CA	3,884,000	469	
New York City, NY	8,406,000	305	
Philadelphia, PA	1,553,000	143	
Phoenix, AZ	1,513,000	518	



IF DISNEY WORLD WERE A CITY

Name _____ Date _____

If you've ever been able to go to a theme park, you'd notice that they are often busy. In Orlando, Disney World is in a different stratosphere. People flock from all over the world, at all times of the year to vacation at the most visited park in the world. Disney World is composed of four large theme parks: Magic Kingdom, Epcot, Animal Kingdom and Hollywood Studios. Considering the population density of the largest cities in the United States, how do the crowds compare to the most visited theme parks in the world on an average day?

In the table, you will find the total attendance for each of the parks in 2014. To find the average daily attendance, you will need to use division. Round your answers to the nearest person.

Park	Total Attendance	Average Daily Attendance
Magic Kingdom	18,588,000	
Epcot	11,229,000	
Animal Kingdom	10,198,000	
Hollywood Studios	10,110,000	
All Parks	50,125,000	

FOLLOW-UPS

1. Rank the theme parks based on their population density from greatest to least.

2. Compare the population densities of the four parks to the six most highly populated cities in the United States. Where would the parks rank?

3. New York City has a population density of 27,561 people/mi². How many times more dense are the Disney Parks than NYC? Round your answers to the nearest tenth.

PARK	TIMES MORE DENSE THAN NYC
Magic Kingdom	
Epcot	
Animal Kingdom	
Hollywood Studios.	

BRAINSTORM

Can you think of any other destinations that may have a population density larger than New York City?



MAGIC KINGDOM

Area:

0.16719 square miles

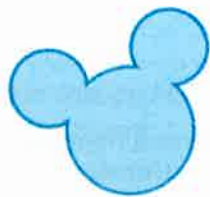
	Predicted Total Attendance	Predicted Daily Attendance (divide by 14 and round to the nearest person)	Predicted Population Density (people per square mile rounded to the nearest person)
January (Beginning)	478,192		
January (End)	273,252		
February (Beginning)	990,540		
February (End)	512,348		
March (Beginning)	1,297,949		
March (End)	1,502,889		
April (Beginning)	464,529		
April (End)	491,854		
May (Beginning)	614,818		
May (End)	956,384		
June (Beginning)	1,024,697		
June (End)	1,161,323		
July (Beginning)	1,332,106		
July (End)	1,174,986		
August (Beginning)	888,071		
August (End)	498,686		
September (Beginning)	204,939		
September (End)	341,566		
October (Beginning)	751,444		
October (End)	409,879		
November (Beginning)	519,180		
November (End)	819,757		
December (Beginning)	444,035		
December (End)	1,434,576		

FOLLOW-UPS

Based on the data, what times of the year are expected to be the busiest? The least busy?

What is the difference in population density between the busiest and least busiest months?

If you wished to travel when the population density was less than 200,000 people/mi², when could you go?



ANIMAL KINGDOM

Area: 0.79688 square miles

	Predicted Total Attendance	Predicted Daily Attendance (divide by 14 and round to the nearest person)	Predicted Population Density (people per square mile rounded to the nearest person)
January (Beginning)	262,352		
January (End)	149,915		
February (Beginning)	543,444		
February (End)	281,092		
March (Beginning)	712,098		
March (End)	824,535		
April (Beginning)	254,856		
April (End)	269,848		
May (Beginning)	337,310		
May (End)	524,704		
June (Beginning)	562,183		
June (End)	637,141		
July (Beginning)	730,838		
July (End)	644,637		
August (Beginning)	487,225		
August (End)	273,596		
September (Beginning)	112,437		
September (End)	187,394		
October (Beginning)	412,268		
October (End)	224,873		
November (Beginning)	284,839		
November (End)	449,746		
December (Beginning)	243,613		
December (End)	787,056		

FOLLOW-UPS

Based on the data, what times of the year are expected to be the busiest? The least busy?

What is the difference in population density between the busiest and least busiest months?

If you wished to travel when the population density was less than 20,000 people/mi², when could you go?

INCLUDES TEACHER GUIDE

Project-Based Learning Start a Lemonade Stand

Great for
5th-6th
grade!

LEMONADE

25¢

Fractions & Mixed Numbers
Decimal Operations

5.NBT.B.7

5.NF.B.4

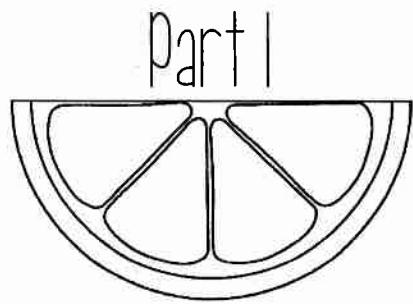
5.NF.A.1

5.NF.B.6

CCSS aligned

Promoting learning through
PERFORMING
in Education
high-interest activities

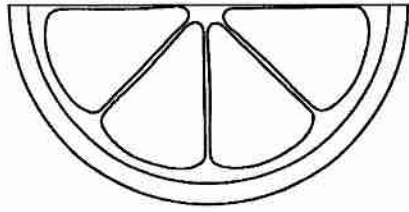
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Design Your Lemonade Stand

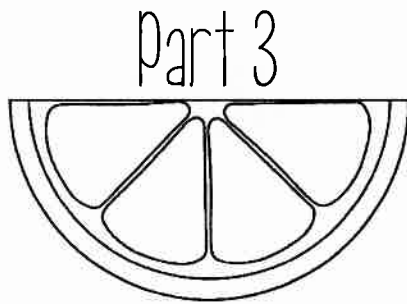
A large rectangular box with a black border, divided into three horizontal sections. The top section is a light gray rectangle. The middle section is white and contains a string of seven dark gray triangular bunting flags hanging from the top edge. The bottom section is a large white rectangle, intended for drawing the main body of the lemonade stand.

Part 2



Business Plan

Where will your lemonade stand be located?	
Who will be your customers?	
What days and hours will your stand be open?	
Will you have employees? Who will you hire and how much should you pay them?	
What will you need to buy for your stand (other than food & drink ingredients)?	
How many customers do you estimate you will have each day (estimate between 40-100)	



Building Your Lemonade Stand

One of your family members has decided to invest in your business by giving you \$200 for non-food items. Look at the price list below and decide what reusable items you will purchase for your lemonade stand. Begin with the most important items, and if you have money left over you can add some of the fun items. Keep in mind that you will need to buy more than 1 of some items because you may make more than 1 type of drink (lemonade & limeade).

All prices include tax

Small Wooden Lemonade Stand	\$42.50	Locked cash box to store money	\$22.63
Medium Metal Lemonade Stand	\$86.75	Measuring Cup	\$2.25
Fancy Large Lemonade Stand	\$120.63	Large basket for lemon storage	\$10.15
Glass Drink Pitcher	\$12.41	Large Lemonade Dispensers (Set of 3)	\$61.25
Stirring Spoons - Set of 2	\$1.40	Lemon Mascot Costume	\$63.99
Mini Fridge	\$75.84	Street Sign	\$22
Large container to store sugar	\$8.20	Small plastic cups (100 count)	\$3.99
Juicer	\$12.45	Cutting Board	\$10.50

**Glass
Drink Pitcher**



**Large
Lemonade
Dispensers
(Set of 3)**

Street Sign



Teacher Tips & Tricks

Part 4

Before Beginning

Find videos of lemonade and limeade recipes for students to watch and learn the process. Compare these recipes to the included recipes.

Discussion Points

- Which drink is more expensive: lemonade or limeade?
- Does having two types of drinks bring value to your business? Is it worth the added cost of limeade?
- What other drinks can you serve? One of the drink dispensers will hold 3 types. (Raspberry and strawberry lemonade are popular!)
- How can you use your customer number estimate to plan your shopping trips? What happens if you buy too few or too many supplies?

Connections

- Technology/Cooking: Students can look up recipes for other types of lemonade such as raspberry or strawberry. This is a great enrichment activity for students that finish their lemonade and limeade calculations early.
- ELA: Read news articles (TFK, Scholastic, NewsELA) about entrepreneurs throughout this activity.

Differentiation

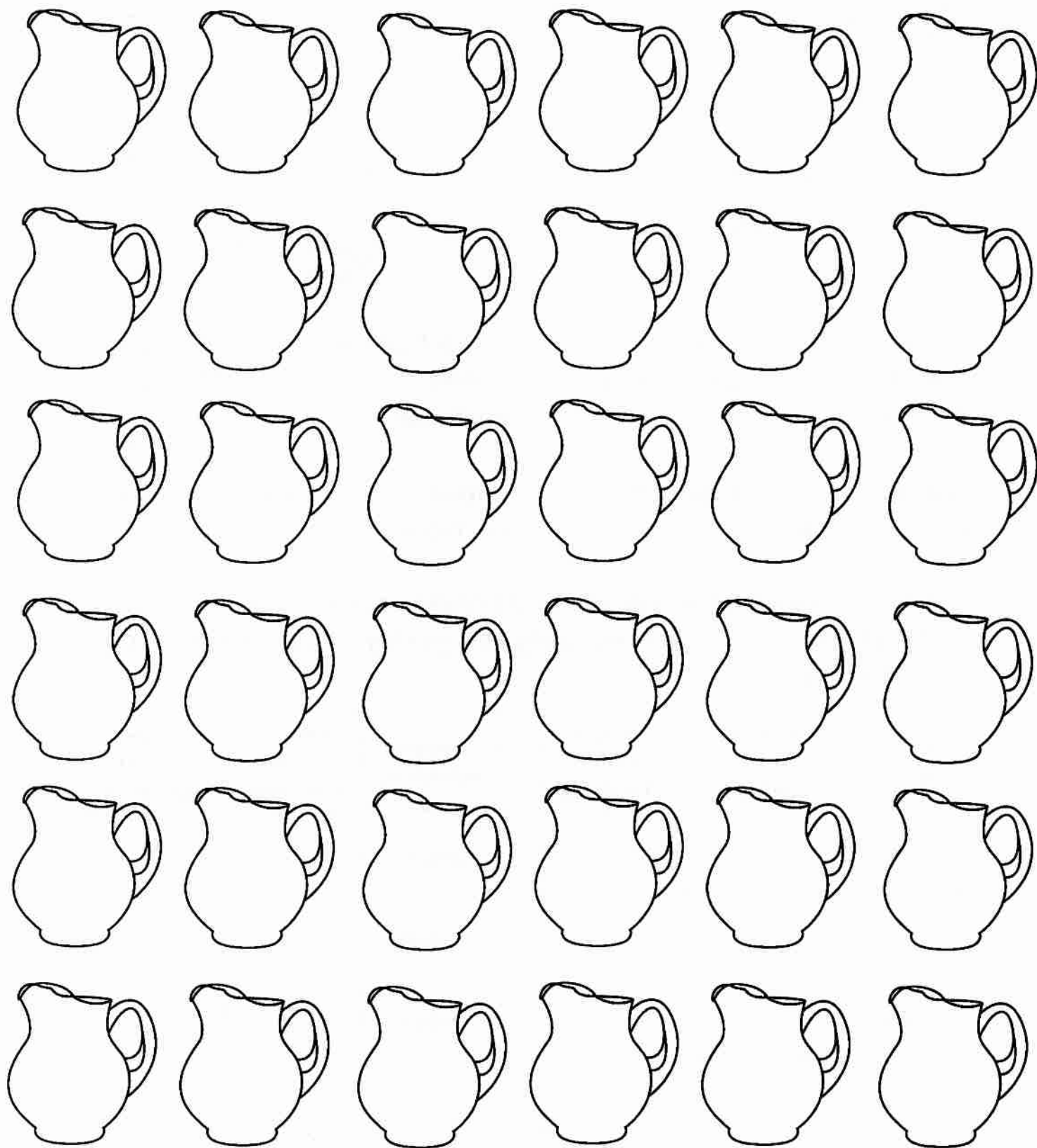
Continue to use gifted or advanced students as "accountants" and hold small group for extra help.

Process

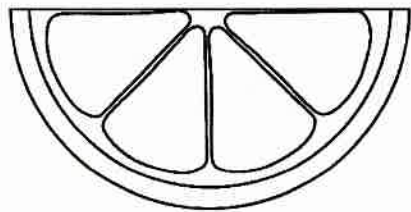
Part four involves more difficult math and reasoning. Students have to gather supplies based on recipes, and calculate cost and profit. Pitcher graphics (pg. 12) are included to help students visualize fraction problems or counting by 12s. Begin with a teacher example (another teacher example possibly?) or practice as a group using the pitcher graphics to model fractions.

Recommended Time: 60-90 minutes

Visual Representation: Use for modeling and/or counting during Part 4.



Part 4

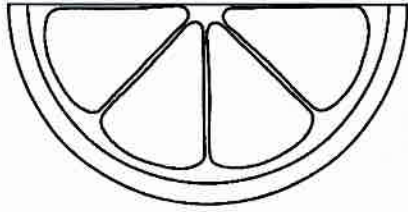


Gathering Supplies

Use your table of total ingredients for Lemonade and Limeade to calculate how much of each ingredient you need to buy at your weekly shopping trip. Show your work on another piece of paper.

Ingredient	Amount Needed Each Week for <u>Lemonade</u>	Amount Needed Each Week for <u>Limeade</u>	Total Needed Each <i>Week</i>
Sugar			
Water			
Lemons			
Limes			

Part 5



Cost Analysis and Marketing

Use the price list below to estimate how much each cup of lemonade and limeade costs you. Decide how much you will charge in order to make a profit.

Lemonade



Lemons \$0.33 each

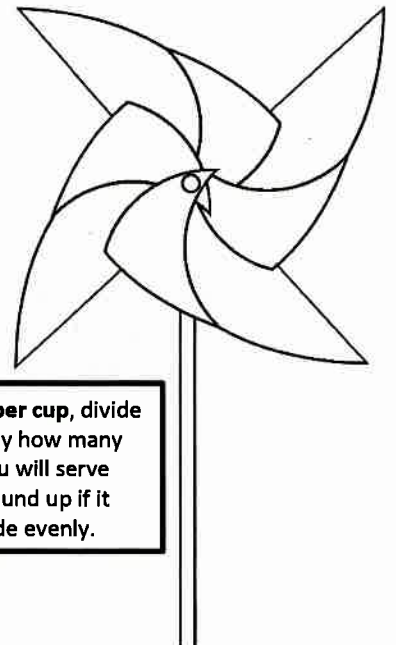


Sugar
\$1/cup

Ingredient	Total Needed Each Day	Cost Each Unit	Total Cost Each Day
Sugar		\$1/cup	
Water		No Cost	
Lemons		\$0.33 each	
Total Cost Each Day			
Cost Per Cup			

Now that you know how much each cup costs you, how much will you charge your customers for each cup of lemonade?

To find the cost **per cup**, divide the total cost by how many customers **you will serve** lemonade. Round up if it doesn't divide evenly.



Part 5.2 Create a flyer to advertise your Lemonade Stand!

