

Math

ICAHN CHARTER

SCHOOL 2

Day 8

Grade 4

I-ready: 20 minutes of Math

20 minutes of Reading

Chapter 1

Operations and Algebraic Thinking

Chapter 1 focuses on the domain Operations and Algebraic Thinking. The chapter contains lessons. Each lesson covers a cluster and several of the Math Standards in that cluster. For some clusters, there are more than one lesson. The clusters covered in this chapter are listed below.

Clusters:

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Lesson 1

Domain: Operations and Algebraic Thinking

Cluster: Use the four operations with whole numbers to solve problems.

Standards: Primary 4.OA.1; Secondary 4.NBT.1; Review 3.OA.7

Background Information:

How old are you? You can tell your age using a number that represents how many years you have been alive. You can use a number to tell the age of a pet, the age of a tree, or even the age of a building.



Lionel made a chart of the members of his family and how old they are now. His mother helped him with the ages that he did not know.


Adults	Age in Years	Children	Age in Years
Grandma Dee		Lionel	12
Dad	42	Claudia	7
Mom		Cory	3
Uncle Charles		Evan	14
Aunt Esther		Dawn	2


Part A Mom told Lionel that Grandma Dee is 10 times as old as Claudia. Write an equation that represents their ages. Then find Grandma Dee's age. Explain how you solved the problem.


Part B Mom is 4 times as old as Lionel. Is she older than or younger than Dad? How do you know? Show your work.

Part C Aunt Esther's age can be described as "a number times 4." Uncle Charles' age can be described as "the next greater number times 4." Uncle Charles' age is between 35 and 39 years. How old is Uncle Charles? How old is Aunt Esther? Explain your reasoning.

Part D Mom says that Evan is 6 times as old as Dawn. Lionel says that Evan is 7 times as old as Dawn. Who is correct? Explain your answer.

 2 Kyle is 11 years old. His dog, Arrow, is 3 years old. In how many years will Kyle be exactly 2 times as old as Arrow? Explain how you know.

 3 Dad planted a 4-year-old maple tree in the front yard. The apple tree in the back yard is 5 times as old as the maple tree. The oak tree nearby is twice as old as the apple tree. What are the ages of the apple tree and the oak tree? Show your work.

 4 Lionel's school building is 3 times older than Claudia's school building. Claudia's school building is 3 times older than Evan's school building. Evan's school building is 3 years old. How old are Claudia's school building and Lionel's school building? Use multiplication to show the relationship between the age of Lionel's school building and Evan's school building and explain what it means. Write equations to show your work.

Lesson 2

Domain: Operations and Algebraic Thinking

Cluster: Use the four operations with whole numbers to solve problems.

Standards: Primary 4.OA.2; Secondary 4.NBT.1, 4.NBT.4; Review 3.OA.3, 3.OA.8

Background Information:

Ms. Williams is shopping for school clothes and supplies. She always looks for the best deals to help her save money.



Ms. Williams lists the prices of several different items at three local stores. Help Ms. Williams compare the prices.

	Store Location		
	Walker Lane	Talbot Avenue	Sunny Road
Pencils 12-pack	\$4	\$3	\$6
Markers 6-pack	\$4	\$3	\$8
Crayons 48-pack	\$2	\$3	\$4

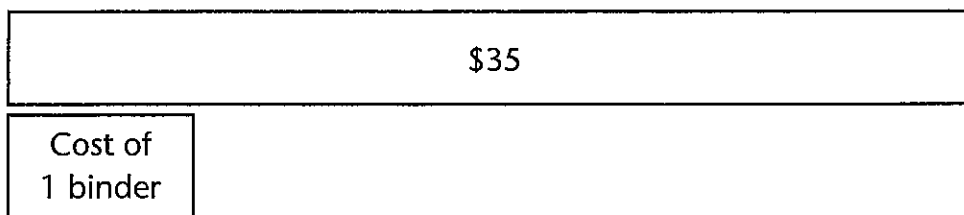
Part A What is the total cost of all three items at each store? At which store is the total twice as much as the least expensive store? Show your work.

Part B Ms. Williams buys 8 packs of markers from the Talbot Avenue store and 8 packs of crayons from the Walker Lane store. How much more does she pay for all of the markers than for all of the crayons? Show your work.

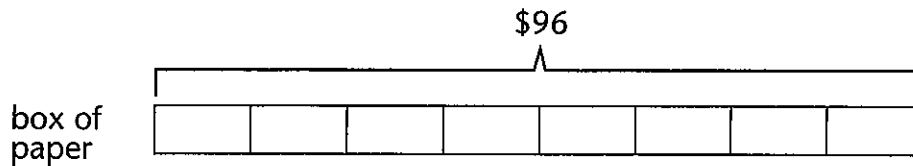
Part C Ms. Williams buys 4 packs of pencils on Thursday. On Saturday, the pencils are on sale for less, so she buys 3 times as many packs. How many packs of pencils does Ms. Williams buy on Saturday? Explain how you can solve this problem using multiplication. Explain how you can solve this problem using addition.



Isabella wants to buy some binders for school. The binders cost \$7 each. She draws a diagram to find how many binders she can buy for \$35. Complete the diagram. Then write a multiplication equation to find the answer.



- 3** Paper is sold in *reams* of 500 sheets. Denzel buys a box of paper that has 8 reams of paper inside. Use the drawing to find the cost of each ream. Complete the equations to show your work.



ream of paper

B = box of paper

r = reams of paper inside the box

_____ $\times r = B$

_____ $\times r = \$$ _____

$r = \$$ _____

- 4** Mr. Marsh orders supplies that his art classes will need. Use the chart to help him plan his order.

Art Supplies	Cost per Item
Powdered paint jar	\$5
Plastic apron	\$8
Tablet of easel paper	\$9

Part A Mr. Marsh plans to order 6 jars each of yellow, blue, and red paint. He needs 5 times as many jars of black paint as jars of the other colors. What operation would you use to find the number of jars of black paint he plans to order? Write an equation and find the number of jars of black paint. What is the cost of all the black paint? Explain your solution.

Part B Mr. Marsh orders 8 aprons and 10 times as many tablets of easel paper. What does he spend on aprons and easel paper? Write an equation to find how much more he spent on easel paper than on aprons. Show your work.

Math

ICAHN CHARTER

SCHOOL 2

Day 9

Grade 4

I-ready: 20 minutes of Math

20 minutes of Reading

Lesson 3


Domain: Operations and Algebraic Thinking

Cluster: Use the four operations with whole numbers to solve problems.

Standards: Primary 4.OA.3; Secondary 4.NBT.3, 4.NBT.4; Review 3.OA.3, 3.OA.8

Background Information:

The Citywide Youth Choir is planning a tour. They will travel by bus to perform concerts in several cities. The leaders of the choir have to make many travel plans ahead of time so the tour runs smoothly.


 Ms. Cantrell plans for the buses. One bus company sends her a list of available buses.


Bus Size	Maximum Number of Passengers	Daily Price with 1 Driver
Grand	54	\$315
Large	47	\$295
Medium	38	\$278
Small	24	\$214

Part A The choir has 107 members and leaders. There will also be 15 adult sponsors on the trip. If they take 3 buses that are the same size, what is the smallest bus that will work? Why? How many empty seats will they have? Use estimation to check your answers.

Part B The choir will need the buses for 7 days. Use rounding to estimate the daily cost for 3 large buses. Then estimate the cost of these buses for 7 days. Show your work.

Part C The cost per day for a small bus is much less than the cost for a large bus. If Ms. Cantrell orders only small buses, how many buses will they need? Estimate whether the daily cost is less than or greater than the daily cost for 3 large buses. Explain your answer.

 2 At the first concert, the choir made \$432 on ticket sales. Each ticket sold for \$9. Albert estimates that they sold about 50 tickets. Frank estimates that they sold about 40 tickets. Which is the better estimate? Explain why you think so.

 3 The concert lasts 60 minutes, and the songs are all the same length. The choir sings a total of 12 songs, 2 of which are sung by the sopranos only. For how many minutes do the sopranos sing by themselves? Solve the problem by writing equations using a letter for the unknown quantity.

- 4 The leaders estimated that the trip would cover about 1,200 miles. Mr. Erickson made a list of actual miles each day. Compare the total miles in the list to the estimated number of miles. Round each number in the chart to the nearest hundred. Was the estimate reasonable? Explain. If the estimate is not reasonable, what is a reasonable estimate?

Day	Miles Traveled	Rounded Numbers
Friday	385	
Saturday	191	
Sunday	118	
Monday	303	
Tuesday	179	
Wednesday	107	
Thursday	206	

- 5 There were 61 girls and 46 boys on the choir trip. On Monday night, they stayed in camp cabins that had 8 beds in each cabin. How many cabins did they need for girls? How many cabins did they need for boys? Show your work.

Lesson 8

Domain: Operations and Algebraic Thinking

Cluster: Generate and analyze patterns.

Standards: Primary 4.OA.5; Secondary 4.OA.1; Review 3.OA.9

Background Information:

Roberto likes to play computer games. One of his favorite games asks players to solve a number pattern before they can move up to the next level.



One level of Roberto's favorite game is called Relationship Rule. A number goes in and then two operations are applied to it. Help Roberto answer the questions in this level.


Relationship Rule

INPUT	1	2	3	4	5	6	7
OUTPUT	9	17	25	33	41	?	?

Part A Compare each INPUT number to its OUTPUT number. What two operations are done to the INPUT numbers to make the OUTPUT numbers? Explain how you solved the rule.

Part B Roberto says that you could also multiply the INPUT number by 9 and subtract 1 from the product. Phil says that only works for one OUTPUT number, so it cannot be the rule. Who is correct? Explain why.

Part C Roberto uses only one step to find the two missing numbers in the chart. How is that possible? Write the numbers and explain how you found them. Show your work.

 Tanisha likes to play many types of number games on her computer, too. Tanisha is getting plenty of practice in math, and her mother approves of the games.

Part A While playing *The Pattern Game*, Tanisha came across the problem shown below. Solve the problem. Then write what you observe about the pattern.

Create a pattern that starts at 7 and adds 3.
What are the first six numbers?

Part B While playing *The Logic Game*, Tanisha was asked to solve the problem below. Solve this problem. Explain how you determined the pattern.

Start with 1. Make a pattern using an addition rule so that all of the OUTPUT numbers end with 1 or 6.
What is the rule? What are the first six numbers?

Math

ICAHN CHARTER

SCHOOL 2

Day 10

Grade 4

I-ready: 20 minutes of Math

20 minutes of Reading

Lesson 12


Domain: Number and Operations in Base Ten

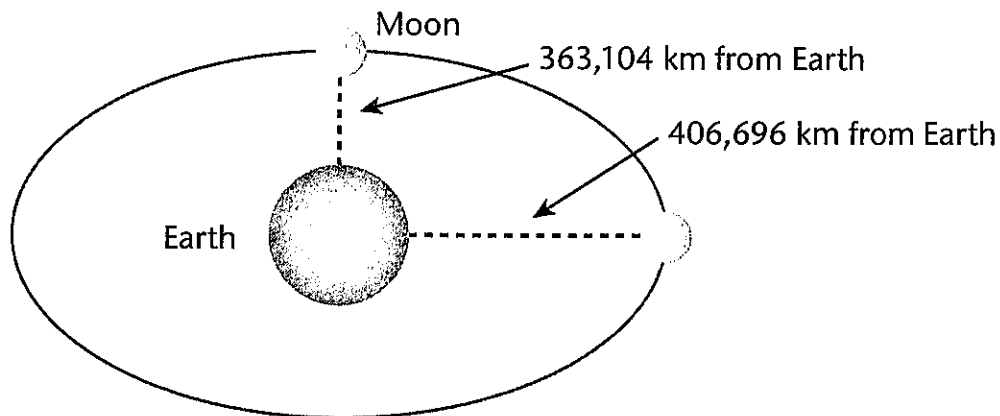
Cluster: Generalize place value understanding for multi-digit whole numbers.

Standards: Primary 4.NBT.3; Secondary 4.NBT.2, 4.NBT.4; Review 3.NBT.1

Background Information:

Danté loves to read books about space, the planets, and the stars. He wants to become an astronaut some day.

 Danté read a book about the moon. He drew a picture to show how the moon orbits Earth. He labeled the distances between Earth and the moon at two different times during a month.



Part A What is the shortest distance from Earth to the moon? What is that number rounded to the nearest thousand?

Part B Use $<$, $>$, or $=$ to write a comparison statement about the shortest and longest distances to the moon. Then round each number to the nearest hundred thousand. Use $<$, $>$, or $=$ to compare the rounded numbers.

Part C Danté rounds each distance to the nearest ten thousand. Then he says that the difference is between 40,000 and 50,000 kilometers. Show how he rounded the numbers. Is his answer reasonable? Explain why or why not.



Distances to the moon can also be given in miles. At the shortest point, the distance is 225,622 miles. At the longest point, the distance is 252,088 miles.

Part A Round the mile distances to the nearest hundred thousand. Is it reasonable to say that the difference is 100,000 miles? Explain why or why not.

Part B Round the mile distances to the nearest ten thousand. Explain why the difference is more reasonable than rounding to hundred thousands.

3 The average distance to the moon in kilometers is 384,403. Danté says that the distance to the moon and back is about 600,000 kilometers. Is his estimate reasonable? If not, explain his error.

4 The average distance to the moon in miles is 238,857. Complete the chart to round this number to the given place values.

Round to nearest	Rounded number
ten	
hundred	
thousand	
ten thousand	
hundred thousand	

Lesson 13

Domain: Number and Operations in Base Ten

Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Standards: Primary 4.NBT.4; Secondary 4.NBT.2, 4.OA.3; Review 3.OA.8

Background Information:

Dean enjoys high school football games, and he goes to every game he can. Most of the schools in his area have a football stadium.



Dean makes a list of the stadiums in his area and the number of seats in each stadium. Use the chart to answer the questions.


Football Stadium Seats

Name of Stadium	Number of Seats
Kendall Field	10,321
Gopher Bowl	4,786
Addison Stadium	11,504
Clarksdale Field	7,068
Hampton Stadium	3,995

Part A How many more seats are there at Kendall Field than at Clarksdale Field?
Show your work.

Part B How many more seats are there at Addison Stadium than at Hampton Stadium and Gopher Bowl combined? Show your work.

Part C At one game, there were 3,112 seats filled and 1,674 empty seats. Which stadium had this game? Explain the steps you used to find out.

 Aiko keeps a record of ticket sales at one baseball stadium. Her chart shows the number of tickets sold for 3 games.

Game Day and Time	Tickets Sold
Friday 7:00 P.M.	5,003
Saturday 3:30 P.M.	5,679
Saturday 7:30 P.M.	6,264

Part A Aiko says that the total sales for Saturday were about 12,000 tickets. Is this a reasonable estimate? Explain why or why not. Check the estimate by finding the actual sum.

Part B How many more tickets were sold for Saturday than for Friday?
Show your work.

3 The Wallace school gym has seats for 3,068 people. The Maclain school gym has seats for 1,534 people. Use $<$, $>$, or $=$ to write a comparison. Then find the difference. Show your work.

4 There were 873 people at a Jacksboro basketball game one week. The next week, 897 people were at the game. Find the sum and the difference of these numbers. Show your work.

Math

ICAHN CHARTER

SCHOOL 2

Day //

Grade 4

I-ready: 20 minutes of Math

20 minutes of Reading

Lesson 14

Domain: Number and Operations in Base Ten

Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Standards: Primary 4.NBT.4; Secondary 4.NBT.2, 4.OA.3; Review 3.OA.8

Background Information:

Charlotte lives near the Great Lakes. She wrote a report for Science class about all 5 of the Great Lakes.



Charlotte included a chart in her report. Use the chart to answer the questions.

Great Lakes Facts

Lake	Superior	Michigan	Huron	Erie	Ontario
Average depth in feet	483	279	195	62	283
Maximum depth in feet	1,332	925	750	210	802
Water area in square miles	31,700	22,300	23,000	9,910	7,340

Part A Which Great Lake covers the greatest number of square miles? How much bigger is it than the combined areas of Lake Erie and Lake Ontario? Show your work.

Part B Use $<$, $>$, or $=$ to write a comparison of the water area of Lake Michigan to Lake Huron. What is the difference in size? Show your work.

Part C Which lake has the greatest difference between its average depth and its maximum depth? What is the difference? Use estimation to narrow the choices. Show your work.

Part D A scuba diver explores Lake Huron. She dives 128 feet and then swims up 33 feet. How far above the deepest point is she then? Show your work.

Part E A professional diver goes to the bottom of Lake Ontario. He swims up 210 feet and then 354 feet higher. How far is he from the surface of the water? Show your work.

2 The lake near Cassandra's home has a water area of 2,890 square miles. Cassandra has explored 875 square miles of the lake by boat. Write an addition equation to show the situation. Use w to represent the area she has not explored. Then solve for w .

3 Luther scuba dives in a lake that is 117 feet at the deepest point. He dives to the bottom and comes back up 43 feet. Write an equation to show the situation. Use d to represent the distance between Luther and the surface. Then solve for d .

Lesson 15


Domain: Number and Operations in Base Ten

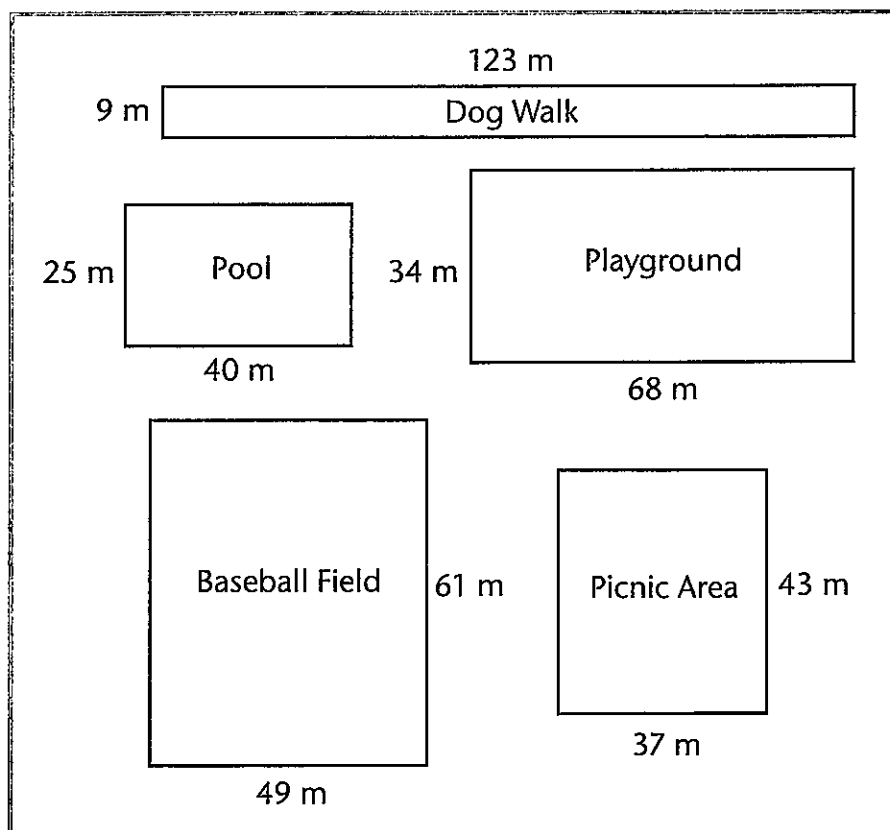
Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Standards: Primary 4.NBT.5; Secondary 4.OA.3, 4.NBT.2, 4.MD.3; Review 3.MD.7b

Background Information:

Pablo loves to go to the park, where he can do so many activities. Pablo's favorite park has several rectangular areas, each set up for a different activity.


 Pablo draws a map of his favorite park. The map includes the length and width, in meters, of each area.




Part A What is the area of the dog walk? State your answer in square meters.
Show your work.

Part B The length of one area is 2 times its width. Use estimation to show why it is not the baseball field. Then, name the correct area and show why twice the width is equal to its length.

Part C Which area is larger, the pool or the picnic area? Find the area of each.
Write a number sentence to compare the two areas.

 2 The park near Gina's house has a walking trail that is 5,286 feet long and 4 feet wide. Estimate the area of the walking trail. Then, find the actual area in square feet. Show your work.

 3 There is also a tennis court and a volleyball court at the park near Gina's house. The tennis court and the foul zone that surrounds the court is 78 feet long and 36 feet wide. The volleyball court and the foul zone that surrounds the court is 72 feet long and 45 feet wide. Which has the greater area? What is the difference of the areas? Show your work.

4 A concert in the park had 409 people at each performance. There were 3 shows. Did more than 1,200 people or less than 1,200 people attend altogether? Use estimation and the exact number to prove your answer.

5 The children's pool in one park is 63 feet long and 63 feet wide. The adult pool is 92 feet long and 75 feet wide. Find the area of each pool. How much larger is the adult pool than the children's pool?

Math

ICAHN CHARTER

SCHOOL 2

Day 12

Grade 4

I-ready: 20 minutes of Math

20 minutes of Reading

Lesson 16

Domain: Number and Operations in Base Ten

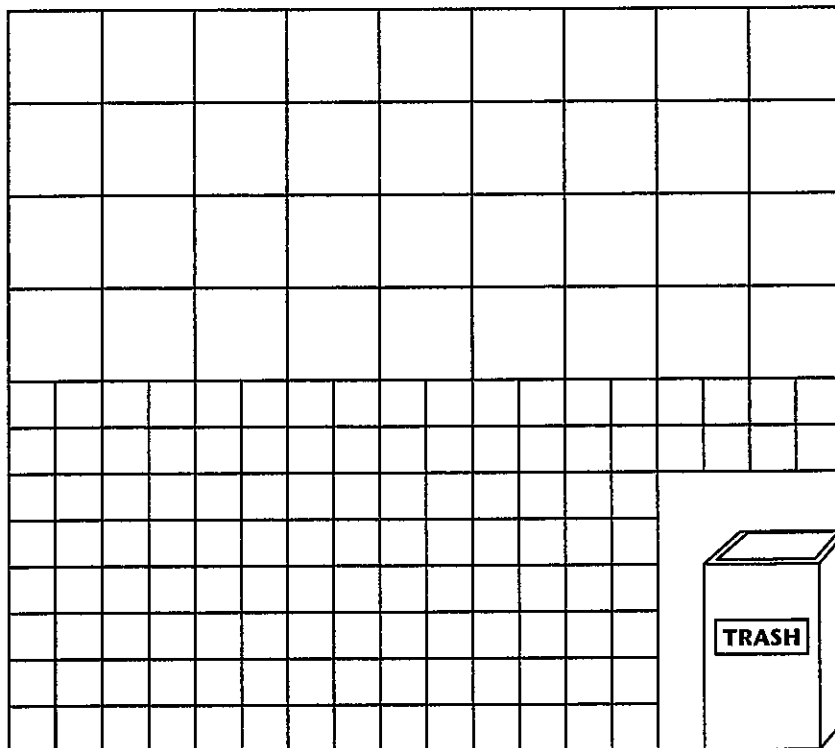
Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Standards: Primary 4.NBT.5; Secondary 4.OA.3, 4.MD.3, 4.NBT.3; Review 3.MD.7a

Background Information:

Instead of having his mail delivered, Mr. Rhodes picks up his mail at the post office. He rents a mailbox in the Post Office building lobby. The mailboxes are arranged along one long wall of the lobby.

1 The drawing represents the wall of mailboxes at the post office. There are two sizes of mailboxes—large and small. The large mailboxes are at the top. The top group has 9 mailboxes across and 4 mailboxes down.



Part A How many mailboxes are in this Post Office lobby? Show 2 different ways to solve the problem. Explain how you found your answer.

Part B Each of the large mailboxes is 8 inches wide and 8 inches tall. What is the area of the wall that is covered by the large mailboxes? Write and solve an equation to find the area. Explain your solution.

Part C Each of the small mailboxes is 4 inches wide and 4 inches tall. Write an equation to find the area of the wall covered by the small mailboxes using the Distributive Property. Then, find the total area of the small mailboxes.



Quinton buys 12 sheets of special memorial stamps at the post office. Each sheet has 8 rows of 9 stamps. How many stamps does Quinton buy? Can you write one equation to solve the problem? Explain your answer.

3 Shameka works 5 days each week at the post office. She helped 438 customers each day on Monday, Wednesday, and Thursday. She helped 502 customers each day on Tuesday and Friday. How many customers did Shameka help during that week? Show your work.

4 Ms. Sanders says that her post office delivers mail to 2,612 addresses every day. She estimates that they make about 12,000 deliveries in 6 days. Is her estimate reasonable? Explain why or why not. Then, find the actual number of deliveries.

5 The Kingsville Post Office has 22 rows of mailboxes. There are 38 mailboxes in each row. Estimate the total number of mailboxes. Then find the exact number.

Lesson 17


Domain: Number and Operations in Base Ten

Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Standards: Primary 4.NBT.6; Secondary 4.NBT.2, 4.NBT.3, 4.OA.3; Review 3.OA.8

Background Information:

Madsen Warehouse provides storage for computers and other electronics. When these items are sold, they are shipped all over the world.

 Mrs. Madsen keeps records of computer shipments. The chart shows the number of computers shipped in one year.


Computer Shipments in One Year

Destination	Number of Orders	Total Number of Computers
North America	8	2,384
Europe	5	3,145
Asia	7	2,842

Part A Each shipment to a destination included the same number of computers. Round each number of computers to the nearest hundred. Which destination shows an average order of about 400 computers? How do you know? What is the exact number of computers in each order shipped to that destination?

Part B How many computers were in each shipment sent to Europe? Use estimation to show if your answer is reasonable. Show your work.

Part C Did the shipments to North America contain more computers than the shipments to Asia? Show your work and write a comparison statement.

 Nina made a record of sound systems that were shipped from the warehouse. The shipments to each destination contained an equal number of sound systems.

Shipments in One Year

Destination	Number of Orders	Total Number of Sound Systems
Canada	4	1,196
Mexico	6	936
United States	9	2,516

Part A How many sound systems were shipped to Canada in each order? Show your work. Use estimation to show that your answer is reasonable.

Part B The shipments to the United States were equal except the last shipment, which had only 36 sound systems. How many sound systems were in the equal shipments? Write equations to show each step in your solution.

3 A school ordered 7 computers for a total of \$4,361. They also ordered 7 keyboards for a total of \$119. How much did the school spend for each computer with keyboard? Write equations to show each step in your solution.

4 The warehouse has 522 flat-screen televisions of one size. The televisions are kept in 3 storage areas of the warehouse, with an equal number of televisions in each area. Each area has 3 shelves. The televisions are stored with an equal number on each shelf. How many televisions are on each shelf? Show your work.

Math

ICAHN CHARTER

SCHOOL 2

Day 13

Grade 4

I-ready: 20 minutes of Math

20 minutes of Reading

Lesson 18


Domain: Number and Operations in Base Ten

Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Standards: Primary 4.NBT.6, 4.NBT.3; Secondary 4.NBT.5, 4.OA.3; Review 3.OA.8

Background Information:

The Bessemer farm has cows, chickens, and horses. Keeping the animals healthy and happy takes lots of time and work.


 Mr. Bessemer made out an order for food for the animals. Use his list to answer the questions.

<p style="text-align: center;"><u>3 Months of Food</u></p> <p>270 bales of hay for 6 horses</p> <p>4,050 pounds of grain for 3 cows</p> <p>300 pounds of chicken feed for 16 chickens</p>

Part A How many bales of hay does 1 horse eat in a month? Write equations to show the steps you use to solve the problem.

Part B How many pounds of grain does 1 cow eat in 1 month? Write equations to show the steps you use to solve the problem.

Part C Each chicken eats about 6 pounds of chicken feed in a month. How many pounds of chicken feed will be left after 3 months? Write and explain equations to show the steps in your solution.

 Molly has 5 horses. She feeds each horse 3 pounds of oats twice each day. How many pounds of oats does she feed in one week? Explain the steps in your solution.

3 Molly says that she uses about 900 pounds of oats for the horses each month. Is this a reasonable estimation? Explain why or why not.

4 Reuben has 4 pigs. He feeds them a total of 1,680 pounds of a soybean corn mixture in 3 months. How much does each pig eat each month? Explain the steps in your solution.

5 Jerry spends \$3,200 in 3 months on grain for his cows. He spends \$1,480 in 3 months on hay for his horses. How much is the combined cost each month? Show your work.

Lesson 22

Domain: Number and Operations—Fractions

Cluster: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

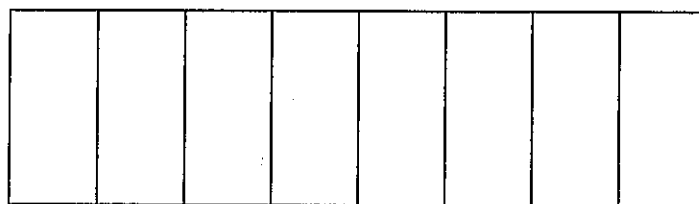
Standards: Primary 4.NF.3a; Secondary 4.NF.3d, 4.NF.2; Review 3.NF.1

Background Information:

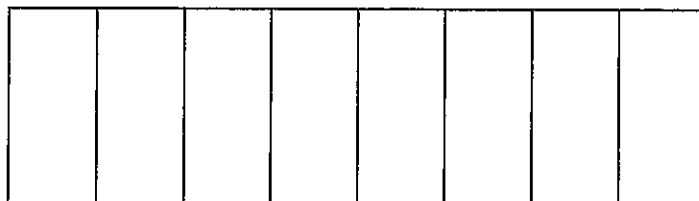
Farmers grow crops in fields that are very large. Some fields are divided into parts for growing different kinds of crops. Farmers use fractions to describe how much of a field is planted.

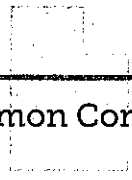


In Washington State there are fields filled with tulips. Each section of a field has tulips of a different color. Each field is divided into sections as shown below.

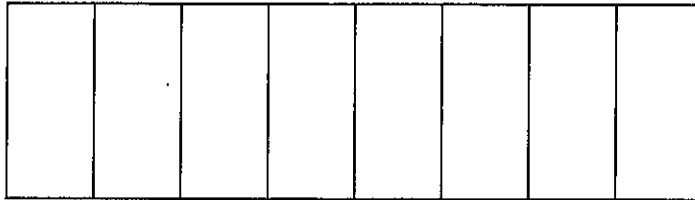


Part A Two parts of the field have red tulips and 3 parts of the field have yellow tulips. What fraction of the field has either red or yellow tulips? Use the model to show how to use unit fractions to find the sum.

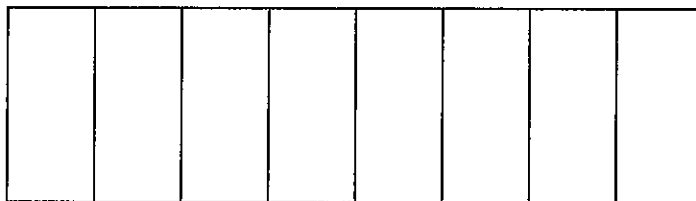
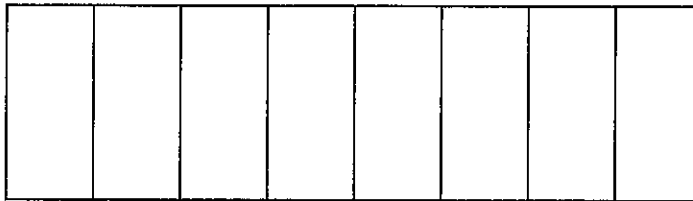




Part B The farmer plants $\frac{2}{8}$ of the field with white tulips. Now how much of the field is NOT planted? Show your work.

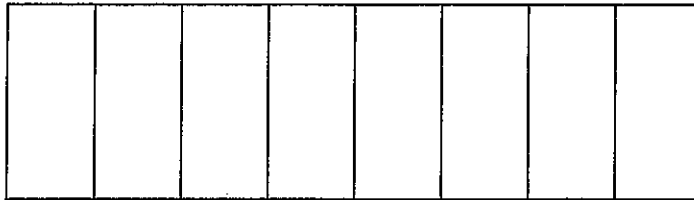


Part C How much more of the field is planted in yellow or white tulips than in red tulips? Use the model to show how to use unit fractions to find the difference.



2 Bob has a one-acre field that he wants to use to grow vegetables for his family.

Part A Show Bob how he could grow tomatoes in $\frac{2}{6}$ of the field and onions in $\frac{3}{6}$ of the field. What fraction of the field is left for growing pumpkins?



Part B Amanda tells Bob that they should divide the field into 12 equal parts and plant each part with different vegetables. Amanda wants to plant carrots, beets, lettuce, beans, and peppers. Can Bob still plant at least $\frac{1}{2}$ the field with tomatoes, onions, and pumpkins? Explain.

- 3** Corn grows in $\frac{3}{10}$ of one large field. Soybeans grow in $\frac{5}{10}$ of the same field. What fraction of the field has corn or soybeans growing in it? Draw a picture to represent the problem.

- 4** Deepak grows strawberries and raspberries on his farm. One field is $\frac{5}{8}$ covered with raspberry bushes. The rest of the field is covered with strawberry trees. What fraction of the field is covered with strawberry trees? Draw a model to represent the problem and help you find the answer.

Math

ICAHN CHARTER

SCHOOL 2

Day 14

Grade 4

I-ready: 20 minutes of Math

20 minutes of Reading

Lesson 23

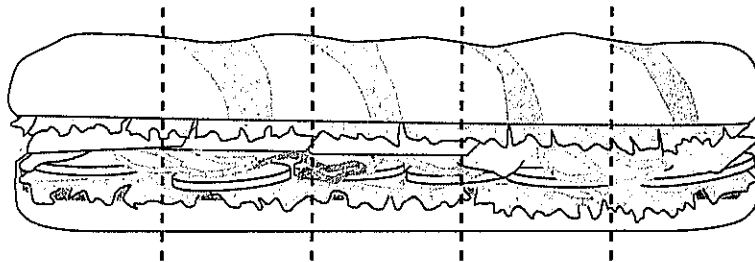
Domain: Number and Operations—Fractions

Cluster: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

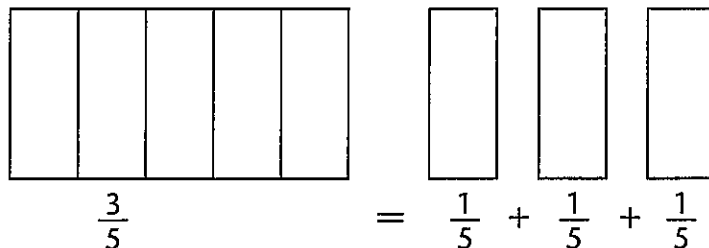
Standards: Primary 4.NF.3b; Secondary 4.NF.3a, 4.NF.3d; Review 3.NF.3c

Background Information:

Fractions are used every day in a sandwich shop. Each sandwich can be cut into as many parts as you would like. Stacy cuts her submarine sandwich into small pieces.

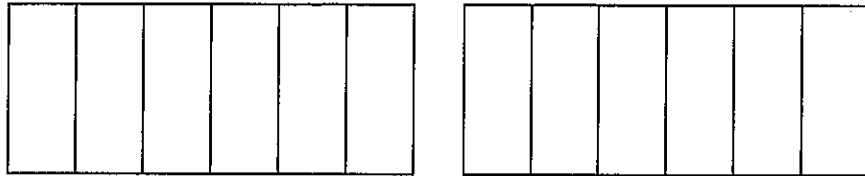


- 1** Stacy eats $\frac{3}{5}$ of the sandwich. She says $\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$. Stacy drew this picture on a napkin to prove her statement.



Fred says $\frac{3}{5} = \frac{2}{5} + \frac{1}{5}$. Is Fred correct? Explain. Draw a model to support your answer.

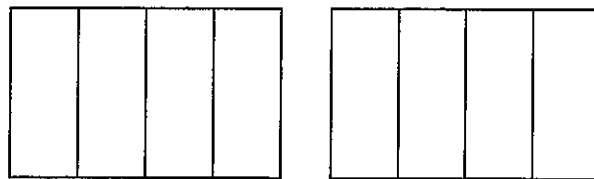
- 2** Beth and Tara share two foot-long subs. Beth ate all of her sub and $\frac{1}{6}$ of Tara's sandwich. Tara ate $\frac{3}{6}$ of her sandwich. How much of the sandwiches did the friends eat altogether? Use the model to help you solve the problem two ways. Fill in the boxes to complete the two equations that can be used to solve this problem.



$$1 + \frac{\square}{\square} + \frac{\square}{\square} = \underline{\hspace{2cm}}$$

$$\frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square} = \underline{\hspace{2cm}}$$

- 3** Tyrone slices $1\frac{1}{4}$ pounds of turkey. A customer buys $\frac{3}{4}$ pound of the sliced turkey. How much sliced turkey does Tyrone have left? Explain how you can use the model to complete the equations and solve the problem.

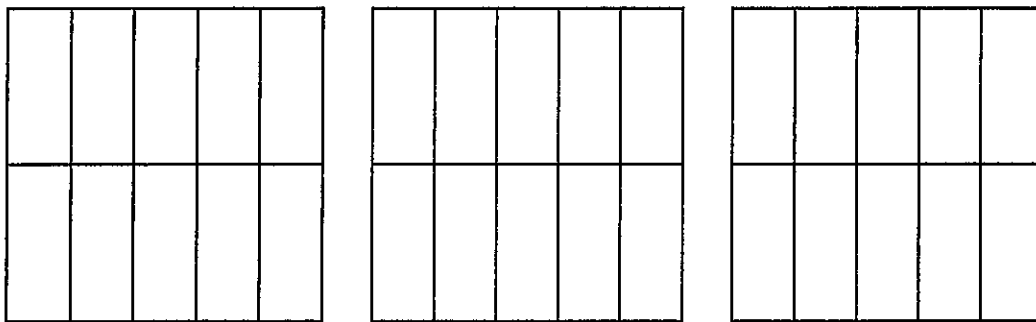


$$\frac{\square}{4} + \frac{1}{4} = \frac{\square}{\square}$$

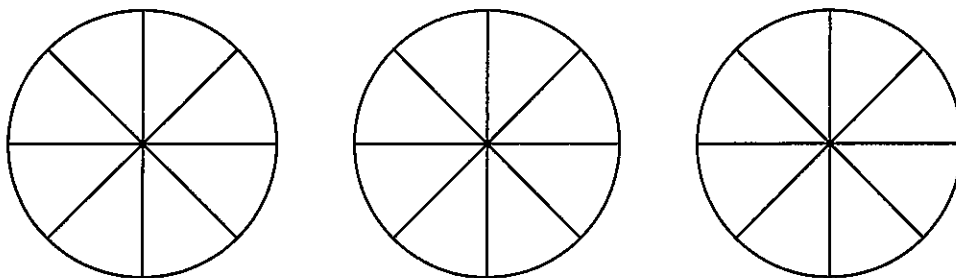
$$\frac{\square}{\square} - \frac{3}{4} = \frac{\square}{4}$$

4 Three friends have lunch at the Sandwich Shack. They each ordered one sandwich and one cookie.

Part A Bria has $\frac{5}{10}$ of a sandwich left. Sam has $\frac{7}{10}$ of a sandwich left, and Madison has $\frac{3}{10}$ of a sandwich left. How much of a sandwich did each friend eat? Who ate the most? Use the model and write equations to show your work.



Part B Bria ate $\frac{4}{8}$ of a salad. Sam ate $\frac{8}{8}$ of a salad, and Madison ate $\frac{6}{8}$ of a salad. Who ate the smallest amount of their salad? How much of the three salads is left over? Explain how you solved the problem.



5 Jake works at the deli counter in the Sandwich Shop. A customer bought $1\frac{1}{3}$ pounds of Swiss cheese and $\frac{2}{3}$ pound cheddar cheese. How much more Swiss cheese than cheddar cheese did the customer buy? Write and solve an equation to find the answer.

6 Avery buys lunchmeat to make sandwiches. She buys $\frac{3}{4}$ pound salami, $\frac{3}{4}$ pound ham, and $\frac{3}{4}$ pound turkey. How many pounds of lunchmeat did she buy? Write an equation to solve the problem. Draw a model to represent the problem.

Lesson 24

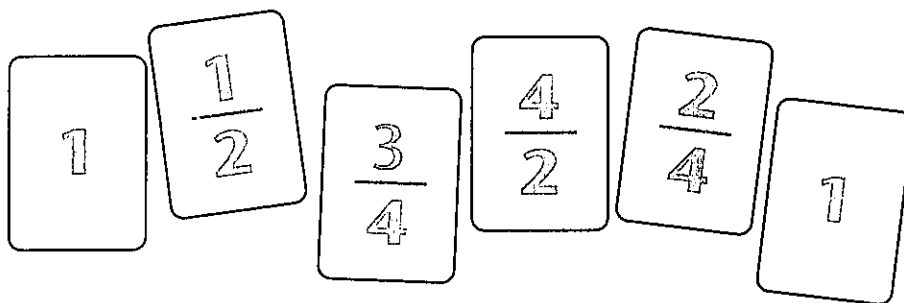
Domain: Number and Operations—Fractions


Cluster: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Standards: Primary 4.NF.3c; Secondary 4.NF.3b, 4.NF.3d, 4.MD.3; Review 3.NF.3c

Background Information:

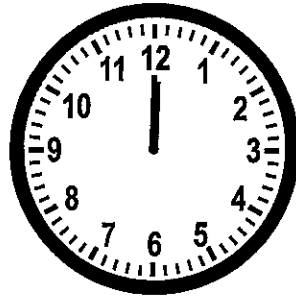
Dan and Soo like to play math games. Today they are playing games that involve fractions.



 In this game, each player draws 3 cards and finds the sum. The greater sum wins a point.

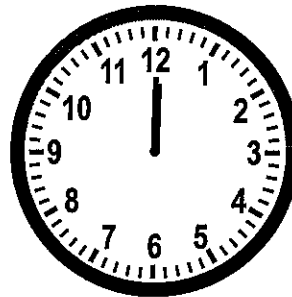
Part A Soo draws the cards for 1, $\frac{1}{2}$, and $\frac{4}{2}$. Dan draws the cards for 1, $\frac{2}{4}$, and $\frac{3}{4}$. Who wins the point? Explain your reasoning.

Part B Soo says she sometimes uses a clock to help her add fractions quickly. Explain how Soo and Dan could use a clock model to help them find the sum of the numbers on their cards.



Soo

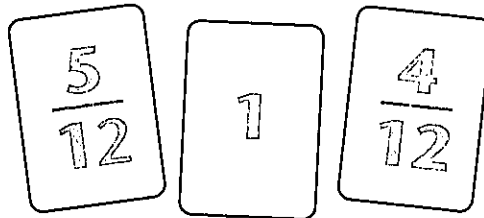
$$1 + \frac{1}{2} + \frac{4}{2}$$



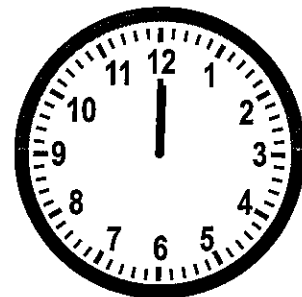
Dan

$$1 + \frac{2}{4} + \frac{3}{4}$$

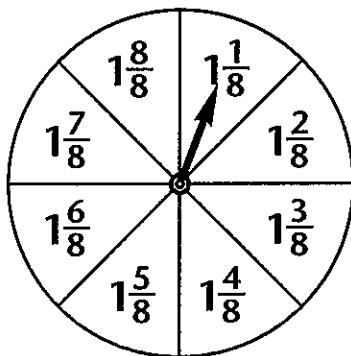
Part C On his next turn, Dan picked these cards.



Write an equation to show how Dan can add the numbers. How can Dan use a clock to solve the problem?



- 2** Michael and Jen play a game called Race to 10. Starting from 0, players spin a number and add that amount to their total score. The goal is to reach 10 before other players.



- Part A** Jen spins $1\frac{3}{8}$ and $1\frac{8}{8}$ on her first two spins. What is her total score?
Show two ways to solve the problem.

- Part B** Michael spins $1\frac{6}{8}$ and $1\frac{7}{8}$ on his first two spins. Is his total score greater than or less than Jen's score? Explain.