UNIT 2 TOPIC 1 ADDITION

MATH INSPIRATIONS

INTRODUCTION TO
UNIT 2 TOPIC 1: ADDITION

Prerequisite Definitions And Theorems:
- Before beginning addition, students should have defined the following vocabulary:
  - All definitions from Unit 1: Number Sense, especially including:

pattern	number	digit
place value	greater than	less than
equal		

- Before beginning addition, students should have created the following theorems:
  - All theorems from Unit 1: Number Sense, especially including:
    - How to compare two or more values (Unit 1)

Target Definitions:
- Addition
- Sum

Target Theorems:
- The ultimate goal of this topic is to create a theorem for adding any multi-digit whole numbers. To accomplish this, students will begin by defining and understanding addition and then create adding single-digit and 2-digit addition theorems, building toward creating a theorem for adding any multi-digit number.
  - How to add single-digit numbers
  - How to add 2-digit numbers
  - How to add multi-digit numbers

Supplemental Games:
- This is a list of games which can be used as a supplement to enrich Topic 1: Addition. Each of these activities and games can be found in *Hands On Math: A Collection Of Incredibly Awesome Math Games,* which you can download from your My Account page in your mathinspirations.com account.
  - 100 and Out
  - All Aboard!
  - Casino
  - Dice War!
  - Double Digit
  - Pig
  - Pigtails!

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- o Save Twenty
- o Target Addition
- o Thirty-One Game
- o Three Corners
- o Uno Memory
- o War

What is Addition? Discussion Questions

Answer the following questions based on what you already know about addition. If you are unsure of what addition is, work through the story problems in the next few pages and come back to this page afterward.

1. What is addition?

2. List as many examples as you can of addition in your life.

3. Draw a picture of 3 + 4 (without the + sign).

4. List all the words you can think of that are related to addition. If you need help, use the story problems in the next few pages.

5. What is a sum?

How To Add Single-Digit Numbers Story Problems

Draw a picture or use manipulatives to help you solve the following word problems. Be prepared to prove your sums to another person. After solving the problem, write each question and sum as a math sentence.

1. Kim loves candy. She ate 4 fruit candies. Kim's brother knows how much she loves fruit candies and so he gives her 6 more. Kim ate them all in one bite! How many fruit candies did Kim eat altogether?

2. Josh and Todd are playing Uno. Josh already has 9 cards when Todd plays a draw 4 card. How many cards will Josh have after he draws 4 more cards?

3. Jay goes to the store and spends $7 on food and $8 on toys. What is the total amount of money that Jay spends at the store?

4. Harold has 1 comic book. Steve has 7 comic books. How many comic books do Harold and Steve have in all?

5. The yellow box has 9 donuts in it. The red box has 3 more donuts than the yellow box. How many donuts are in the red box?

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6. Joe has 9 oranges. Janet has 7 oranges. If Janet gives all of her oranges to Joe, how many oranges will Joe have?

7. Tyron falls asleep, but is woken up 3 hours later by a storm outside. He finally falls back asleep and is able to sleep for another 6 hours. How much total sleep does Tyron get?

8. There are 7 kids in the Robinson family and the mom just found out that she is pregnant with triplets! After they are born, how many kids will the Robinson family have?

9. Jake and Kallie are stranded on a deserted island. Luckily they find a coconut tree that has 6 coconuts. Then, as they are walking around the island, they find another 8 coconuts. What is the sum of all the coconuts they found?

10. You just finished 9 math problems! If your mom gives you 9 more problems to finish in addition to this one you're doing right now, how many problems would you do in all?

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How To Add Single-Digit
Numbers Direct Operation Problems

Solve the following adding single-digit number problems in any way that you would like to. You can use manipulatives, pictures, logic or some other way. Make sure that you are able to prove that your sum is correct to another person.

1. 4 + 6 =

2. 1 + 8 =

3. 3 + 3 =

4. 6 + 5 =

5. 7 + 8 =

6. 2 + 9 =

7. 1 + 3 =

8. 3 + 7 =

9. 9 + 5 =

10. 8 + 4 =

11. 3 + 4 =

12. 6 + 7 =

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How To Add Single-Digit
Numbers Teaching And Hypothesis Creation

Now that you have discovered a pattern in adding single-digit numbers, try teaching adding single-digit numbers to a sibling, parent or friend (have them pretend that they don't know how to add single-digit numbers). Each problem will have some directions as to how to teach or how not to teach the problem. Follow the rules and do the best you can. Remember that you are teaching them, NOT doing it for them. One important rule for each problem is that you are not allowed to touch anything, the person you are teaching has to do all the work!

1. 5 + 6
    Help them solve this problem by having them use a manipulative of some sort.

2. 8 + 2
    Help them solve this problem by having them draw a picture.

3. 0 + 8
    You can help them solve this problem any way you would like, but you have to keep your hands behind your back.

4. 3 + 9

   For this problem, you are not allowed to talk.

5. 1 + 8

   For this problem, you are not allowed to say any numbers.

6. 7 + 4

   For this problem, you are not allowed to say numbers and you need to keep your hands behind your back and close your eyes.

How To Add Single-Digit Numbers Hypothesis

Write a general rule for how to add single-digit numbers:

How To Add Single-Digit
Numbers Hypothesis Test And Theorem

It's time to see if your adding single-digit numbers hypothesis will work every time in order to prove it as a true theorem. Solve each of the problems using only your hypothesis, word for word. Remember that when testing a hypothesis, you are only allowed to do exactly as the steps in your hypothesis direct. If you need to do something new, then you need to add to or write a new hypothesis. Then solve each problem in a second, different way, using a model, to see if the sum you arrived at with your hypothesis is the correct sum.

1. Fernando puts 8 ornaments on the Christmas tree. Later that day he decides to add 4 more ornaments to the tree. How many ornaments are on the Christmas tree?

2. Phinecia and Ferbita are building a toy roller coaster with nine sections. They need 9 gallons of paint for the roller coaster track and 1 gallon of paint for the car. How many gallons of paint do they need to buy for the whole project?

3. Blakely found 6 awesome shells on the beach. She decided to start a collection. By the end of the day, she had found 5 more shells and found 2 more the next day. How many shells does Blakely have in her new collection?

4. 0 + 9 =

5. 1 + 5 =

6. 4 + 1 + 2 + 6 =

7. 8 + 8 =

How To Add Single-Digit Numbers Theorem
Once you have tested your hypothesis and proven that it works for every problem, write your final theorem of how to add single-digit numbers below and also in your Definitions And Theorems book:

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Addition Puzzle Boxes

Insert the numbers 1-9 correctly in each box to complete the addition equations *without* repeating any numbers. Each puzzle box must contain the numbers 1-9. Each column and each row add up to the number written below and right of each row and each column.

Puzzle 1:
4			15
	5		20
3	1		10
14	8	23	

Puzzle 2:
		2	15
	4	1	10
8			20
20	13	12	

Puzzle 3:
	5		11
9			20
	6	1	14
18	14	13	

Puzzle 4:
3			16
		7	13
8			16
12	16	17	

Puzzle 5:
	5		15
3			16
	9		14
12	20	13	

Puzzle 6:
8			17
	1		15
	4		13
19	7	19	

Puzzle 7:
2			15
	4		14
		6	16
14	16	15	

Puzzle 8:
	8		13
2			15
	5		17
15	19	11	

Puzzle 9:
			16
6	1		11
		9	18
16	13	16	

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Supplemental Activity

Addition Coloring Page

Solve each math expression within each shape below. Then, match the sum of each shape's expression to its corresponding color in the guide below and color the shape its assigned color.

Sum	Color	Sum	Color
10	Red	11	Brown
12	Yellow	13	Orange
14	Pink	15	Green
16	Blue	17	Grey
18	Black	19	Purple

Addition Short Cuts

Solve each addition problem and then describe a general rule or shortcut for adding by the given number. You may not be able to find shortcuts or patterns for all of the problems.

Adding 0

1. 0 + 5 =

2. 18 + 0 =

3. 0 + 2 =

Describe what you do when adding by 0:

Adding 1

4. 1 + 7 =

5. 14 + 1 =

6. 6 + 1 =

Describe what you do when adding by 1:

Adding 2

7. 2 + 6 =

8. 12 + 2 =

9. 2 + 9 =

Describe what you do when adding by 2:

Adding 3

10. 3 + 9 =

11. 7 + 3 =

12. 11 + 3 =

Describe what you do when adding by 3:

Adding 4

13. 4 + 8 =

14. 11 + 4 =

15. 4 + 5 =

Describe what you do when adding by 4:

Adding 5

16. 5 + 6 =

17. 5 + 9 =

18. 12 + 5 =

Describe what you do when adding by 5:

MATH INSPIRATIONS

Adding 6

19. 6 + 7 =   20. 8 + 6 =   21. 14 + 6 =

Describe what you do when adding by 6:

Adding 7

22. 7 + 10 =   23. 9 + 7 =   24. 7 + 7 =

Describe what you do when adding by 7:

Adding 8

25. 8 + 7 =   26. 11 + 8 =   27. 8 + 12 =

Describe what you do when adding by 8:

Adding 9

28. 9 + 6 =   29. 8 + 9 =   30. 9 + 12 =

Describe what you do when adding by 9:

Adding 10

31. 10 + 4 =   32. 12 + 10 =   33. 6 + 10 =

Describe what you do when adding by 10:

Adding 11

34. 11 + 2 =   35. 6 + 11 =   36. 12 + 11 =

Describe what you do when adding by 11:

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Addition Patterns

Solve the following problems using your new addition theorem. Be careful to complete them in order in each group. As you are solving the first, second and third problems in each group, look for patterns to help you solve the additional problems in each group.

Group 1:

1. $2 + 4 =$

2. $12 + 4 =$

3. $22 + 4 =$

4. $2 + 14 =$

5. $2 + 34 =$

6. $12 + 34 =$

Group 2:

1. $3 + 8 =$

2. $13 + 8 =$

3. $23 + 8 =$

4. $43 + 8 =$

5. $3 + 18 =$

6. $13 + 18 =$

Group 3:

1. $11 + 5 =$

2. $1 + 15 =$

3. $11 + 15 =$

4. $11 + 35 =$

5. $21 + 35 =$

6. $31 + 35 =$

1. List at least 3 patterns in the problems above:

2. Using the patterns you observed, solve:
    $54 + 42 =$

3. How did you use your patterns to solve the problem above?

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How To Add 2-Digit Numbers Story Problems

Draw a picture or use manipulatives to help you solve the following word problems. Be prepared to prove your sums to another person. After solving the problem, write each question and sum as a math sentence.

1. Cowboy Jake is herding his cattle. He has already put 63 cows in their pen but he has 8 more stragglers he needs to round up. How many cows does Cowboy Jake have altogether?

2. Chandra Bahadur, the shortest man on Earth is only 24 inches tall. Yvonne is 46 inches taller than Chandra. How tall is Yvonne?

3. Baby monsters are born with 38 teeth. When they grow up, they get 34 more teeth without losing any baby teeth. How many teeth does an adult monster have?

4. Charlie the chipmunk has collected 61 nuts for the winter so far. He continues to collect nuts and gets another 27 before he has to hibernate. How many nuts does Charlie have stored for the winter?

5. Grace and her friends are having a super fun pizza party! For their party, they need 32 pieces of pepperoni pizza and 19 pieces of cheese pizza. How many total pieces of pizza does Grace need?

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6. The chickens on the McGreggor farm lay 47 eggs each week. How many eggs will the McGreggor's have after two weeks?

7. Ellie has 78 beautiful princess dolls. She received another 7 princess dolls for her birthday. How many princess dolls does she have in all?

8. Joel ran a marathon, about 26 miles, on Monday and then on Saturday he tried to run even farther, running 30 miles. What was the sum of miles that Joel ran between the two days?

9. It takes David 56 gallons of water to fill his backyard pool. It takes Wayne 33 more gallons of water to fill his much larger pool. How many gallons of water does Wayne need to fill his pool?

10. Brian is going shopping for school stuff. He spends $48 at the bookstore and $56 at the school supply store. How much money does Brian spend?

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How To Add 2-Digit Numbers Direct Operation Problems

Solve the following adding 2-digit numbers problems in any way that you would like to. You can use manipulatives, pictures, logic or some other way. Make sure that you are able to prove that your sum is correct to another person.

1. 29 + 8 =

2. 43 + 11 =

3.
```
    48
+   51
```

4. 30 + 40 =

5. 25 + 25 =

6.
```
    73
+   24
```

7. 16 + 37 =

8. 55 + 18 =

9.
```
    48
+   13
```

10.
```
    33
+   60
```

11.
```
    57
+   52
```

12. 76 + 42 =

MATH INSPIRATIONS

13. 62 + 38 =

14.   53
    + 12

15. 9 + 67 =

16. 77 + 77 =

17.   57
   + 15

18. 36 + 47 =

19. 6 + 55 =

20.   25
    + 18

21. 81 + 44 =

22. 68 + 7 =

23.   67
   + 72

24.   14
   + 85

25.   66
   + 2

26. 37 + 92 =

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How To Add 2-Digit Numbers
Teaching And Hypothesis Creation

Now that you have discovered a pattern in adding 2-digit numbers, try teaching adding 2-digit numbers to a sibling, parent or friend (have them pretend that they don't know how to add 2-digit numbers). Each problem will have some directions as to how to teach or how not to teach the problem. Follow the rules and do the best you can. Remember that you are teaching them, NOT doing it for them. One important rule for each problem is that you are not allowed to touch anything, the person you are teaching has to do all the work!

1. 25 + 6
   Help them solve this problem by having them use a manipulative of some sort.

2. 80 + 20
   Help them solve this problem by having them draw a picture.

3. 61 + 38
   You can help them solve this problem any way you would like, but you have to keep your hands behind your back.

MATH
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4. 43 + 29

   For this problem, you are not allowed to talk.

5. 11 + 51

   For this problem, you are not allowed to say any numbers.

6. 78 + 49

   For this problem, you are not allowed to say numbers and you need to keep
   your hands behind your back and close your eyes.

How To Add 2-Digit Numbers Hypothesis
Write a general rule for how to add 2-digit numbers:

How To Add 2-Digit Numbers
Hypothesis Test And Theorem

It's time to see if your adding 2-digit numbers hypothesis will work every time in order to prove it as a true theorem. Solve each of the problems using only your hypothesis, word for word. Remember that when testing a hypothesis, you are only allowed to do exactly as the steps in your hypothesis direct. If you need to do something new, then you need to add to or write a new hypothesis. Then solve each problem in a second, different way, using a model, to see if the sum you arrived at with your hypothesis is the correct sum.

1. After 28 laps into the race, Speedy was in third place. 56 laps later Speedy finally made it into first place. What lap was it when Speedy made it into first place?

2. Courtney started the day with no money and by the end of the day she had made $94 more dollars. How much total money did Courtney have at the end of the day?

3. Teron is in charge of the fish at the pet store. His job this morning was to count how many fish they had in their two fish tanks. Teron counted 87 fish in the first tank and 23 fish in the second tank. How many fish were there altogether?

MATH INSPIRATIONS

4.
```
     0
  + 88
```

5.
```
    77
  + 24
```

6.
```
    38
  + 19
```

7.
```
    99
  + 99
```

How To Add 2-Digit Numbers Theorem
Once you have tested your hypothesis and proven that it works for every problem, write your final theorem of how to add 2-digit numbers below and also in your Definitions And Theorems book:

Rollin, Rollin, Rollin...

Materials:
- A partner
- Two dice
- Record table (below)

Directions:
- This is a two player game. The goal is to be the player with the most rounds won after seven rounds.
- Take turns. The first player rolls two dice and forms the two possible numbers which can be made from the dice. For example, if the dice show a 3 and a 5, then the player would form the two numbers "35" and "53." If the dice showed a 1 and a 6, the two numbers would be "16" and "61."
- The first player then records the two numbers in the table below under the columns "Player 1 1st Number" and "Player 1 2nd Number" in the first row.
- Player 1 then adds the two numbers together and writes the sum under the "Player 1 Sum" column in the first row. This is their score for round 1.
- Player two begins their turn and repeats the same previous 3 steps to complete their round 1.
- The player with the highest sum for the round wins the round. If there is a tie, no one wins the round.
- Players take turns for seven rounds. After seven rounds, the two players count their number of rounds won. The player with the most rounds won wins the game.

| Round	Player 1 1st Number	Player 1 2nd Number	Player 1 Sum	Player 2 1st Number	Player 2 2nd Number	Player 2 Sum
1						
2						
3						
4						
5						
6						
7						

Variations:
- Instead of winning rounds, each player totals all of their sums and the greatest total wins.
- Instead of the greatest sum winning a round, try playing where the lowest sum wins the round.

Lost In Addition

In the maze below, begin at the box labeled "Start." Your goal is to drive through the roads of the maze, finding your way to the box labeled "End." Each path is a road and you must follow normal traffic laws. For example, you can only turn right onto the merge loops just like driving onto a freeway onramp loop. Also, you are not allowed to jump onto or off of any bridges and you are not allowed to drive through a number twice. As you travel from "Start" to "Finish," add the numbers you drive through.
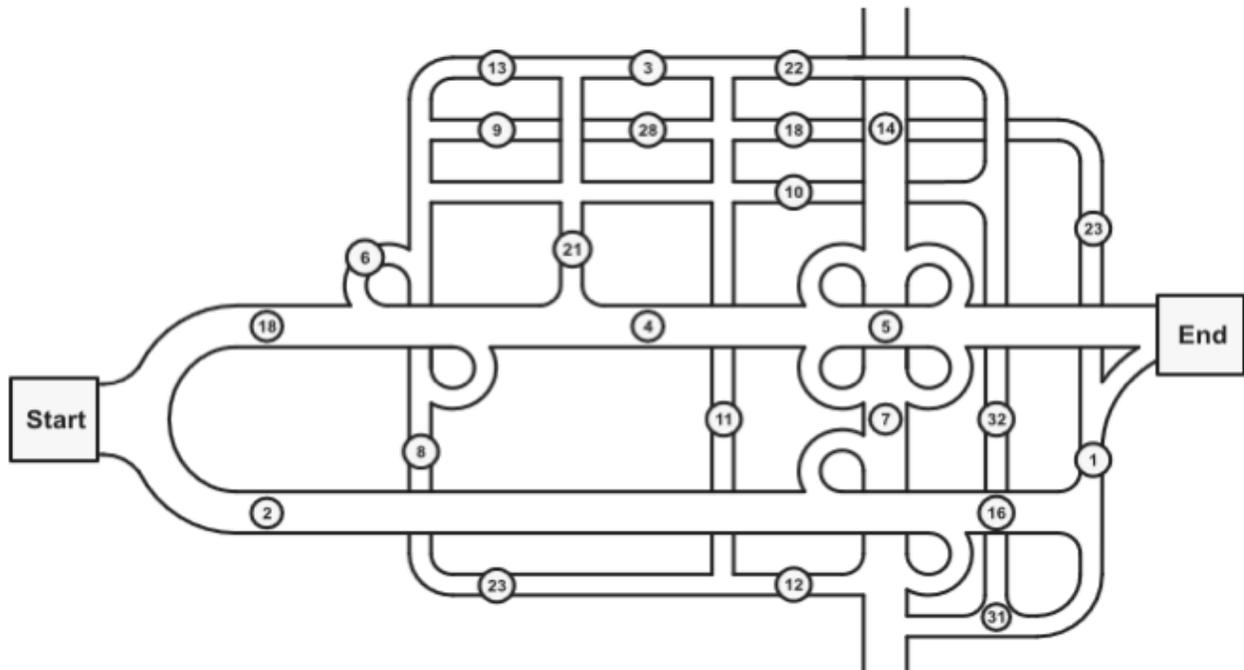
1. What path through the maze yields the greatest sum?

2. What path through the maze yields the lowest sum?

3. Find a path which yields a sum of exactly 91.

How To Add Multi-Digit Numbers Story Problems

Draw a picture or use manipulatives to help you solve the following word problems. Be prepared to prove your sums to another person. After solving the problem, write each question and sum as a math sentence.

1. Hoagie's Deli can make 287 sandwiches in one day. The manager of the deli decides that he needs to increase his store's productivity and so he makes a goal to make at least 150 more sandwiches every day. How many sandwiches does the deli need to make each day to meet the manager's new goal?

2. Yesterday, a TV network had 1,045 viewers for the 8:00 AM show and 3,982 viewers for the 9:00 AM show. How many viewers did they have for the two programs combined?

3. A long time ago, 814 warriors were sent to battle to save their homes. After a while, 539 more warriors were sent to help in the fighting. How many total warriors fought in the battle?

4. A shoe factory made 872 pairs of green shoes and 67 pairs of orange shoes. How many pairs of shoes did the factory make that were green or orange?

5. Since he was hired, a waiter has served 4,217 adults and 119 children. What is the total number of guests he has served?

MATH INSPIRATIONS

6. A scientist believes there are 1,176 small parakeets and 537 large parakeets in a particular part of the rainforest. What is the total parakeet population she believes are in that part of the rainforest?

7. A company decides to build a gigantic amusement park that would be even better than Disneyland. The park would cover 7,729 acres of existing farmland, as well as 946 acres of forest. How many total acres would the park cover?

8. During all the sessions of summer camp, 939 campers went home on time and 142 campers went home early. In total, how many campers attended camp?

9. The Super Awesome Math blog has 132,045 followers in the U.S. and 11,111 followers around the rest of the world. How many followers does the blog have in all?

10. There is a snail problem in Paris. People in southern Paris squished 8,624 snails, and people in northern Paris squished 5,502 more snails than the people in southern Paris. How many snails did the people in northern Paris squish?

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How To Add Multi-Digit
Numbers Direct Operation Problems

Solve the following adding multi-digit numbers problems in any way that you would like to. You can use manipulatives, pictures, logic or some other way. Make sure that you are able to prove that your sum is correct to another person.

1. 100 + 243 =

2. 480 + 37 =

3.   305
    + 149

4. 682 + 618 =

5. 274 + 513 =

6.   2,300

    +   69

7. 300 + 57 =

8. 538 + 200 =

9.   406
    + 340

10.   173
     + 529

11.   5,037
     +   604

12. 4,507 + 3,000 =

13. 21,839 + 781 =

14.   173
     + 835

15. 911 + 671 =

16. 555 + 555 =

17.   212
    + 646

18. 1,030 + 5,748 =

19. 61,334 + 739 =

20.   981
    + 581

21.   948
    + 368

22. 1,030 + 5,748 =

23. 187,452 + 17,822 =

24.   2,945,138
    +   258,291

25. 83,199 + 9,392 =

26. 800,939 + 1,299,393,807 =

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How To Add Multi-Digit
Numbers Data Collection

Make a list of at least 10 of the adding multi-digit numbers math sentences you found in the previous problems (story problems and/or direct operation problems).

1.   2.

3.   4.

5.   6.

7.   8.

9.   10.

How To Add Multi-Digit Numbers Observations

Using the list above, write down a list of patterns you notice. What is meant is, if you were given one of these problems, could you explain exactly how to add multi-digit numbers? As always, do the best you can. Try to be as clear as possible. Start by trying to find a pattern in some of the problems on your list and then test that pattern on the other problems on the list to see if it works for all of them.

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How To Add Multi-Digit Numbers
Teaching And Hypothesis Creation

Now that you have discovered a pattern in adding multi-digit numbers, try teaching adding multi-digit numbers to a sibling, parent or friend (have them pretend that they don't know how to add multi-digit numbers). Each problem will have some directions as to how to teach or how not to teach the problem. Follow the rules and do the best you can. Remember that you are teaching them, NOT doing it for them. One important rule for each problem is that you are not allowed to touch anything, the person you are teaching has to do all the work!

1. 159 + 123
   Help them solve this problem by having them use a manipulative of some sort.

2. 261 + 198
   Help them solve this problem by having them draw a picture.

3. 1,290 ÷ 390
   You can help them solve this problem any way you would like, but you have to keep your hands behind your back.

4. 1,031 ÷ 181

For this problem, you are not allowed to talk.

5. 40,339 + 10,001

For this problem, you are not allowed to say any numbers.

6. 1,834 + 829

For this problem, you are not allowed to say numbers and you need to keep your hands behind your back and close your eyes.

How To Add Multi-Digit Numbers Hypothesis

Write a general rule for how to add multi-digit numbers:

How To Add Multi-Digit
Numbers Hypothesis Test And Theorem

It's time to see if your adding multi-digit numbers hypothesis will work every time in order to prove it as a true theorem. Solve each of the problems using only your hypothesis, word for word. Remember that when testing a hypothesis, you are only allowed to do exactly as the steps in your hypothesis direct. If you need to do something new, then you need to add to or write a new hypothesis. Then solve each problem in a second, different way, using a model, to see if the sum you arrived at with your hypothesis is the correct sum.

1. Kaylee really wants to become a princess. By the time she is 20 years old she has kissed a total of 23,842 frogs. She finally decides in the next 20 years she will kiss 1,300 more frogs. What is the total number of frogs Kaylee will have kissed in her lifetime after the next 20 years?

2. King Demitri has decided to perform a census on his two largest towns, Sloventon and Ingeport, to see how many subjects he has there. When the census gets returns, it shows he has 432,903 subjects in Sloventon and 178,996 subjects in Ingeport. How many total subjects does King Demitri have in the two towns?

3. At the end of the summer, four brothers had made different amounts of money. Dan made $785, Ryan made $1,000, Ben made $38 and Ned volunteered for free so he made no money. How much money did the four brothers make altogether?

4. 2,934 + 8,472 =   5. 12,842 + 5,009 =

6.   34,824   7.   78,394,034
    +   2,591   + 34,392,576

How To Add Multi-Digit Numbers Theorem

Once you have tested your hypothesis and proven that it works for every problem, write your final theorem of how to add multi-digit numbers below and also in your Definitions And Theorems book:

Alphametrics!

For the following problems, correctly identify the digit which each letter represents. The same letters in each problem have the same value. For example, both S's in the first problem have the same value as do all of the O's. However, the letters of each problem have different values than those of the other problems. For example, the S in the first problem has a different value than the S in the second problem.

1.
```
    S O
  + S O
  T O O
```

2.
```
    U S
  + A S
  A L L
```

3.
```
    E D
  + D I
  D I D
```

4.
```
    D I
  + I S
  I L L
```

5.
```
    D A N
  + N A N
  N O R A
```

6.
```
    C O C A
  + C O L A
  O A S I S
```

7.
```
      N O
    M A N
  +   N O
  H A N D
```

8.
```
    S P O T
        A
  +   T O P
  G H O S T
```

9.
```
    M O S E S
  +  M E E T S
   S A L O M E
```

10.
```
    T E S S
  + S E E S
  E L L E N
```

Magic Squares

A magic square is a grid of numbers where the totals of each of the rows, columns and main diagonals add up to the same sum, known as the *magic number*. Use your awesome math skills to complete each of these magic squares.

The *Magic Number* is 15

		6
	5	
	9	

The *Magic Number* is 136

16			
60			12
56	28		8
		32	52

The *Magic Number* is 195

45	48	66		27
	42		63	6
3				
72		18		
51	69	12	30	

The *Magic Number* is 333

63			81	24	21
			78	15	18
3		60			105
12	6	51	54		
87	93	27		48	
	90	36	30	39	42

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Who Is Who? (Part A)
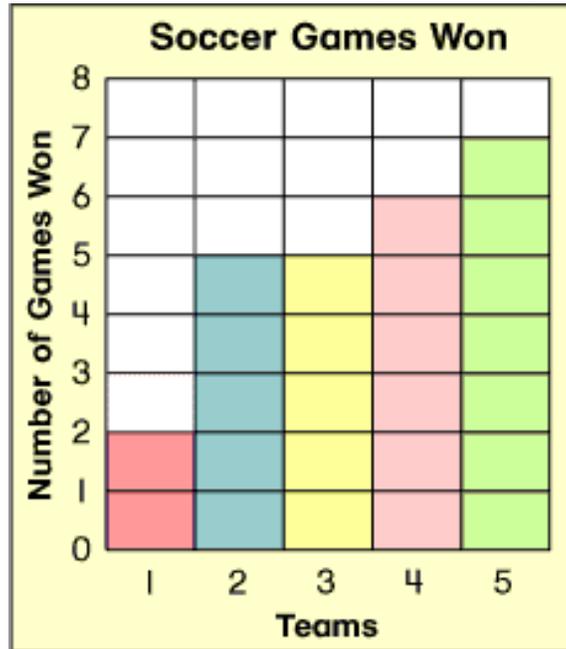
Soccer Games Won

Introduction:
The Wildcats, Pumas, Cougars, Leopards, and Bears each played 10 soccer games during the season. There were no tie games. In order to answer the questions below, use the chart above and the following information:

- The Bears and the Wildcats won the same number of games.
- The Cougars won 1 more game than the Leopards.

1. How many games did each team win?

2. How many games did all four teams win altogether?

3. How many games did each team lose?

4. How many games did all four teams lose altogether?

Who Is Who? (Part B)

Raging River Scores

563
478
437

Twinkle Town Scores

408
398
292
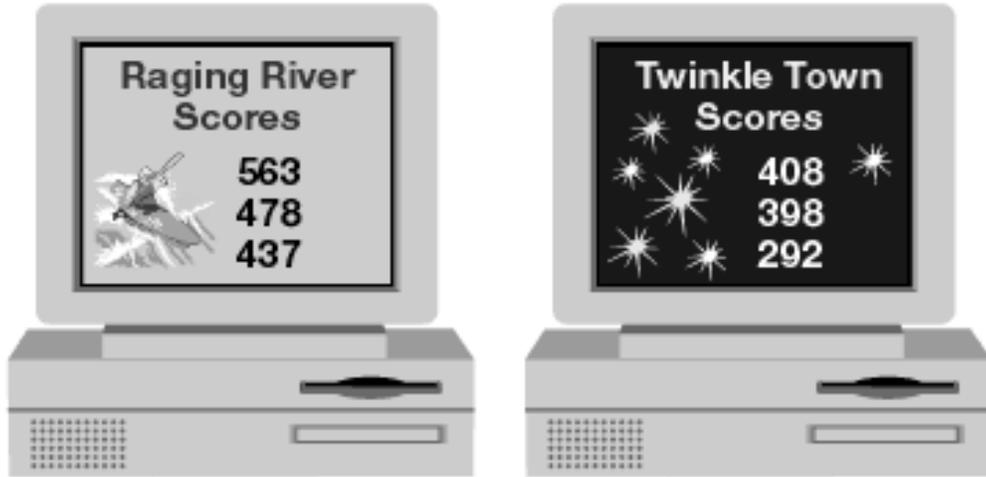
Introduction:

Blake, Kyler, and Bobby each played the two computer games Raging River and Twinkle Town. Here is some more information to help you answer the questions below:

- Kyler's score on Twinkle Town is 10 points higher than Blake's score on the same game.
- Blake's score on Raging River is more than Kyler's score.
- Bobby's score on Raging River is the highest.

1. Who's combined score is the highest?

2. Who's combined score is the lowest?

End Of Topic Task: Basic B

What Can You Buy?

Introduction:
Mia has $30 to spend on toys which she plans to donate to a local charity for needy children. This is the only store she is going to and she wants to spend all of her money here.

Yo Yo $1	Doll $2	Duckie $1	Tractor $5	Airplane $6
Ball $2	Racecar $7	Dog $4	Jump Rope $1	Car $5
Elephant $3	Bear $4	Xylophone $7	Tank $6	Checkers $4
Boat $8	Train $6	Jacks $2	Truck $6	
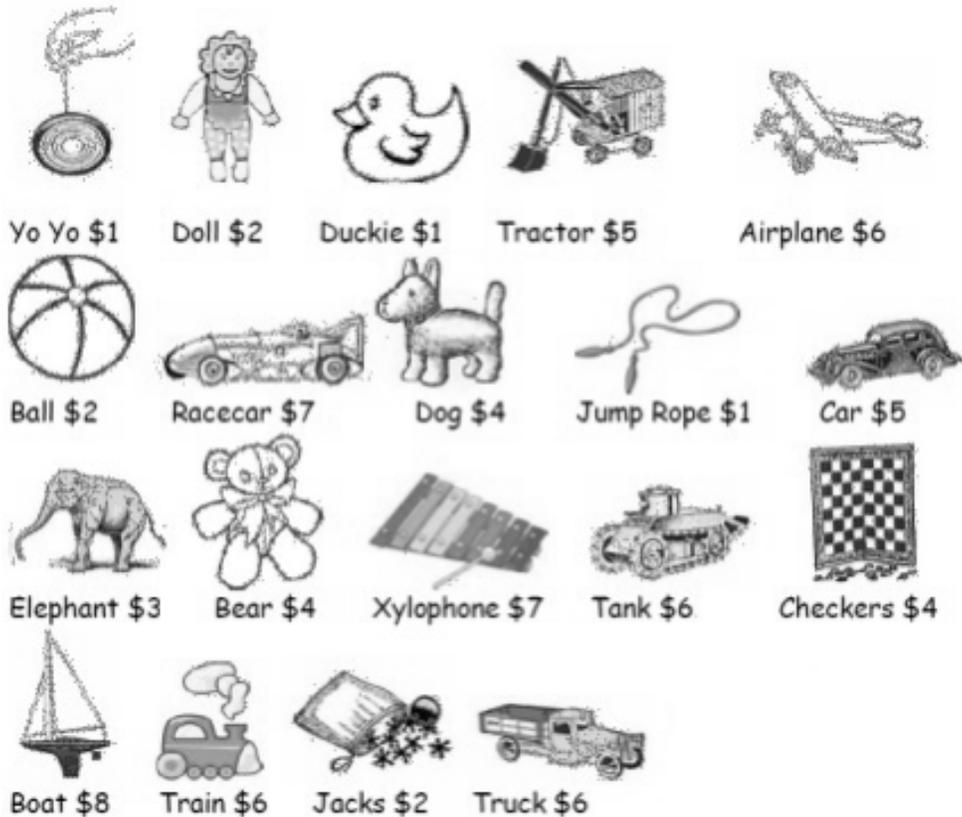
1. List 3 different groups of toys she can buy, spending exactly all of her money:

2. How many different groups of toys can she buy with her $30?

College Football Championship

Introduction:

College football is one of the most popular sports in the United States. Each college football season ends with two teams playing for the championship trophy, a crystal football. Listed below are all of the different ways a team can score in American football:

- A touchdown scores 6 points
- Only after a touchdown, a team can choose to try an extra point kick for 1 point or try a two-point conversion for 2 points
- A field goal scores 3 points
- A safety scores 2 points

1. If the final score in a football game is 30-17, what is one way the points could have been scored?

2. How many different possibilities are there for how the team with 17 points scored their points? List them all.

3. How many different possibilities are there for how the team with 30 points scored their points? List them all.

Exactly How Old Am I?

Introduction:

Calendars have been in use for thousands of years. For this task, you will use your knowledge of our modern calendar and addition to answer the questions below. If you already know an answer to one of the questions, then use addition to prove your answer to be true or false.

1. How many days are in a year? Prove it.

2. Find out how many days there are until your birthday, Christmas, Easter, New Years, your next family vacation, etc. Choose a few that you are most excited about.

3. How many days you have been alive?

Gauss: The Original Mathemagician

Introduction:

There's a popular story that Carl Friedrich Gauss, mathematician extraordinaire, had a lazy math teacher. He wanted to keep the kids busy for a while so he could take a nap so he asked the class to add the numbers 1 to 100. Before too long, actually within minutes, Gauss approached his teacher with the answer. The teacher was amazed that Gauss was able to find the sum so quickly. Gauss had found a shortcut. Now it's time for you to find a short cut of your own. Look for patterns as you answer the following questions.

1. What is the sum of the numbers 1 to 10?

2. What is the sum of the numbers 1 to 20?

3. What is the sum of the numbers 1 to 50?

4. What is the sum of the numbers 1 to 100? Try to find a way to solve this without having to add all of the numbers together.

5. Once you think you have found a shortcut, what would be the sum of the numbers 1 to 1000?

MATH INSPIRATIONS

End Of Topic Task: Advanced B

The 12 Days Of Christmas

Introduction:

According to the traditional holiday song, on the first day of Christmas, "my true love sent to me, a partridge in a pear tree." On the second day of Christmas, my true love sent to me, in addition to the initial partridge in a pear tree, "two turtle doves and another partridge in a pear tree." On the third day of Christmas, my true love sent to me, in addition to the presents on days 1 and 2, "three French hens, two more turtle doves, and another partridge in a pear tree." This continues on until the twelfth day of Christmas, when my true love sends me:

Twelve drummers drumming,
Eleven pipers piping,
Ten lords a-leaping,
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five gold rings,
Four calling birds,
Three French hens,
Two turtle doves, and
A partridge in a pear tree.

1. After the twelve days of Christmas are over, how many presents has my true love sent me altogether?

2. How many of the total gifts are music related?

3. How many of the total gifts are animals?

MATH
INSPIRATIONS