Objectives:

- Students will represent numbers using base 10 blocks as place values, as evidenced by their completion of a "Base 10 Manipulatives" packet.
- Students will use base 10 blocks to "carry" when adding two integers, as evidenced by their completion of a "Base 10 Manipulatives" packet.
- Students will use base 10 blocks to "borrow" when subtracting two integers, as evidenced by their completion of a "Base 10 Manipulatives" packet.

Materials:

- "Warm-up" with "Entering the Classroom Checklist" on the back
- "Subtracting Integers Homework" answer key and gradebook sheet for TA
- Base 10 blocks
- "Base 10 Manipulatives" Packets

Time	Activity
Before Bell	**DO NOW** **Seating Chart** Put the seating chart transparency on the overhead projector. **Materials for Today** Put the following materials up on the board so that students know what they need for class today: • Homework Log • Homework Checker • Subtracting Integers Homework • Readiness Checker • Binder Paper • Pencils **Homework** Write the following homework assignment on the board so that students can copy it onto their homework logs: • ALEKS **Do Now** Write the following "Do Now" on the dry erase board: • Entering the Classroom Checklist • Warm-up **Greeting** Meet students outside, and give each student a copy of the "Warm-up" (with "Entering the Classroom Checklist" on the back).
5 min	**READINESS CHECK** **Stamp Readiness Checkers** Once students are in the classroom, go around and stamp the readiness checkers of students who are working on the "Do Now." **Teacher's Aide (TA) Grading** Give the TA the "Subtracting Integers Homework" assignments, the answer key, and a gradebook sheet. **Attendance** Take attendance and submit it via PowerTeacher.
30 min	**LESSON: ADDING & SUBTRACTING BIG INTEGERS** **Notes & Base 10 Blocks**

	Follow the handwritten Cornell Notes. For the place value, adding, and subtracting sections, use base 10 blocks on the overhead projector to explain what's going on. Then, write the Cornell Notes for it. **Homework** Explain that the requirement for ALEKS this semester is 1 hour a week. That means 20 minutes every time we have class. For tonight's homework, students will have time to work on ALEKS instead of having a paper assignment. Students who get over 1 hour a week will get extra credit, although I haven't decided how much.
1 min	**STRETCH BREAK** Lead the students through some exercises to refresh them.
Rest of lesson 5 and lesson 6	**BASE 10 MANIPULATIVES PACKET & ALEKS** **Base 10 Manipulatives Packet** Pass out the "Base 10 Manipulatives" packet. Students will have the rest of lesson 5, plus lesson 6, to do it. **ALEKS** Students who finish the base 10 exercises will work on ALEKS for the remainder of the time.

Numeracy Warm-up

Lesson 1-5

1 a. 9 + 9 = _____	1 b. 21 + 83 = _____	1 c. 57 + 21 = _____
2 a. 4 + 71 = _____	2 b. 8 + 87 = _____	2 c. 93 + 65 = _____
3 a. 43 + 52 = _____	3 b. 63 + 62 = _____	3 c. 48 + 87 = _____
4 a. 43 + 68 = _____	4 b. 31 + 95 = _____	4 c. 79 + 74 = _____
5 a. 47 + 81 = _____	5 b. 60 + 84 = _____	5 c. 71 + 82 = _____
6 a. 80 + 35 = _____	6 b. 50 + 23 = _____	6 c. 85 + 59 = _____
7 a. 65 – 19 = _____	7 b. 75 – 40 = _____	7 c. 99 – 14 = _____
8 a. 54 – 86 = _____	8 b. 58 – 95 = _____	8 c. 58 – 90 = _____
9 a. 14 – 60 = _____	9 b. 63 – 5 = _____	9 c. 18 – 1 = _____
10 a. 22 – 95 = _____	10 b. 59 – 42 = _____	10 c. 18 – 32 = _____
11 a. 59 – 35 = _____	11 b. 96 – 35 = _____	11 c. 40 – 66 = _____
12 a. 13 – 58 = _____	12 b. 71 – 23 = _____	12 c. 61 – 74 = _____

Numeracy Warm-up

Lesson 1-6

1 a. 47 + 58 = _____	1 b. 94 + 33 = _____	1 c. 34 + 57 = _____
2 a. 41 + 79 = _____	2 b. 74 + 8 = _____	2 c. 69 + 16 = _____
3 a. 59 + 15 = _____	3 b. 15 + 13 = _____	3 c. 53 + 86 = _____
4 a. 73 + 2 = _____	4 b. 87 + 86 = _____	4 c. 25 + 95 = _____
5 a. 43 + 4 = _____	5 b. 64 + 2 = _____	5 c. 54 + 29 = _____
6 a. 55 + 92 = _____	6 b. 59 + 72 = _____	6 c. 27 + 77 = _____
7 a. 17 − 88 = _____	7 b. 1 − 33 = _____	7 c. 85 − 17 = _____
8 a. 78 − 93 = _____	8 b. 22 − 1 = _____	8 c. 7 − 14 = _____
9 a. 14 − 34 = _____	9 b. 16 − 83 = _____	9 c. 56 − 60 = _____
10 a. 84 − 26 = _____	10 b. 65 − 94 = _____	10 c. 83 − 48 = _____
11 a. 12 − 8 = _____	11 b. 52 − 61 = _____	11 c. 71 − 12 = _____
12 a. 52 − 55 = _____	12 b. 20 − 32 = _____	12 c. 3 − 45 = _____

Lesson 5
Numeracy

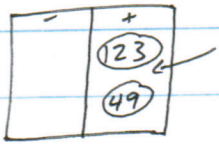
Tom Wong
9/8/08 Per. 3
Mr. Wong

Adding and Subtracting Big Integers

Section → Intro

Integer mats help us understand why add'n and sub'n act the way they do. But, they are hard to use for big integers.

Ex: 123 + 49 = ?



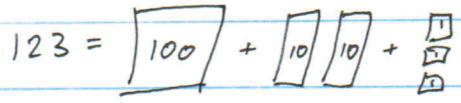
It would take a long time to write and count these blocks!

Instead, we add and sub by "place value" using "carrying" and "borrowing."

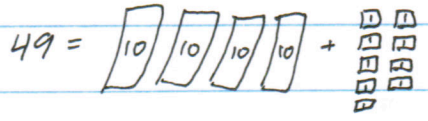
Section → Place Value

these are called place values

Ex: 123 means we have 1 hundred, 2 tens, and 3 ones.



Ex: 49 means we have 4 tens and 9 ones.



Section → Adding and Carrying

Ex: 123 + 49 = ?

$$\begin{array}{r} 123 \\ +\,49 \\ \hline \end{array} = \text{[100]} + \square\square + \square\square + \square\square\square\square + \square\square\square\square\square\square\square\square + \square\square$$

carry

10 ones carried and became 1 ten.

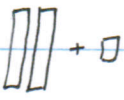
$$= 172$$

So, $123 + 49 = 172$

Section → Subtracting and Borrowing

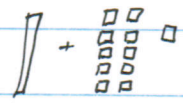
Ex: $21 - 13 = ?$

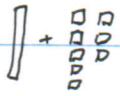
I start with

$21 =$ 

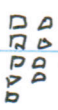
To remove 13, I must remove 3 ones and 1 ten.

borrow To remove 3 ones from 21, we must borrow from the tens:

$21 =$ 

$21 - 3 =$ 

Now, remove a ten:

$21 - 13 =$  $= 8$

So, $21 - 13 = 8$.

Base 10 Manipulatives

Numeracy • 2008-2009
Mr. Wong

Name: _____ Period: _____

Addition

#	Task	Stamp
1	Hands Activities (0-9)	
2	Getting Ready for Addition with Regrouping	
3	Across and Down Boxes (0-9)	
4	Across and Down Boxes (0-99)	
5	Addition of Whole Numbers (0-999) Transition to Paper and Pencil	

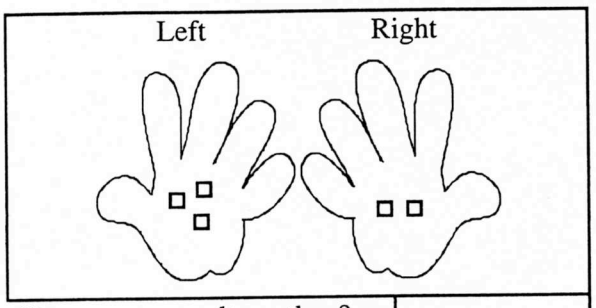
Subtraction

#	Task	Stamp
1	Hand Activities (0-9)	
2	Getting Ready for Subtraction with Regrouping	
3	Subtraction Stories Whole Numbers 0-99	
4	Hand Activities (0-99)	
5	Subtraction of Whole Numbers (0-999) Transition to Paper and Pencil	

Hands Activities (0-9)

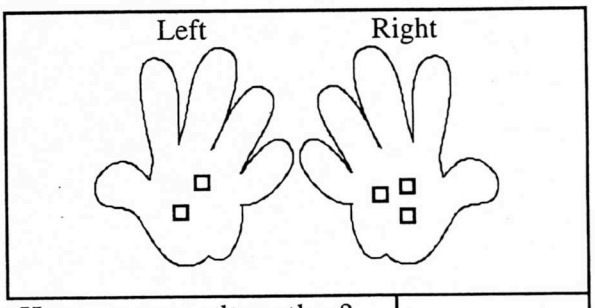
Put the blocks indicated in each hand or on a hands mat. Then combine the blocks and record the result. The first problem has been done for you.

1.



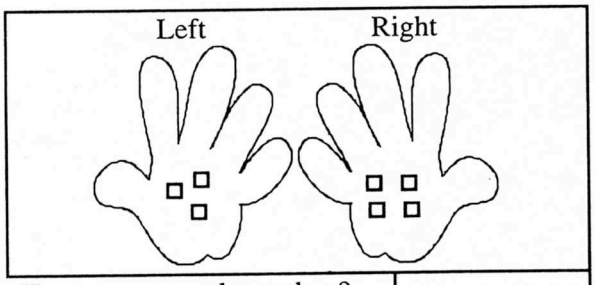
How many altogether? 5

2.



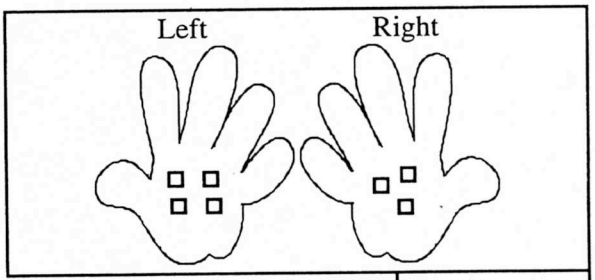
How many altogether?

3.



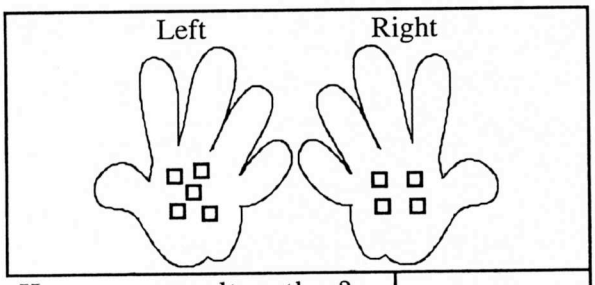
How many altogether?

4.



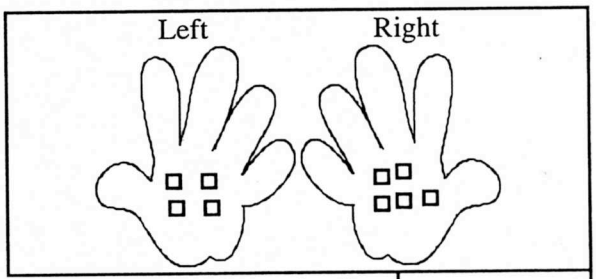
How many altogether?

5.



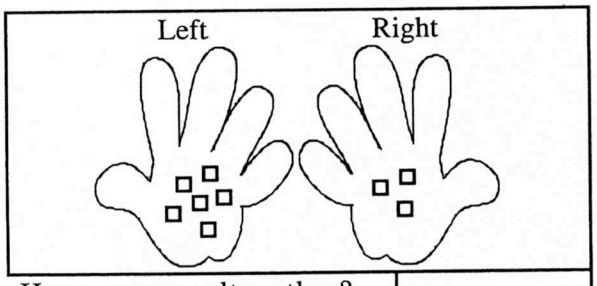
How many altogether?

6.



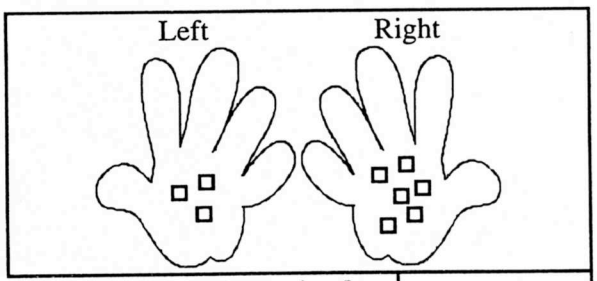
How many altogether?

7.



How many altogether?

8.



How many altogether?

Getting Ready for Addition with Regrouping

Take out each collection and put the blocks in the correct place on your place value mat. Then regroup your blocks and write the standard numeral. The first problem has been done for you.

Take out this many LONGS	Take out this many UNITS	Regroup your blocks and write the STANDARD NUMERAL
2	11	31
4	15	
7	17	
5	12	
3	12	
4	16	
6	6	
3	22	
5	14	
3	13	
6	16	
2	24	
1	12	
3	27	
8	10	

Across and Down Boxes (0-9)

Set up each problem using Base 10 Blocks on your across and down mat. Then add across and down and record your answers. The first problem shows you how this should be done.

1.

8	7	15
6	5	11
14	12	

2.

1	6	
4	3	

3.

9	4	
7	8	

4.

0	9	
8	2	

5.

5	6	
3	2	

6.

7	6	
4	1	

Across and Down Boxes (0-99)

Set up each problem using Base 10 Blocks on your across and down mat. Then add across and down and record your answers. The first problem shows you how this should be done.

1.

20	40	60
30	50	80
50	90	

2.

60	21	
10	38	

3.

33	23	
16	54	

4.

37	42	
28	19	

5.

15	11	
81	22	

6.

55	38	
15	30	

Addition of Whole Numbers (0-999)
Transition to Paper and Pencil

Do these problems using Base 10 Blocks on your addition mat. Then record each answer below. Look for patterns to make your work easier.

1. 13
+ 10

2. 33
+ 10

3. 10
+ 75

4. 647
+ 100

5. 340
+ 100

6. 270
+ 100

7. 40
+ 40

8. 500
+ 500

9. 60
+ 70

10. 70
+ 60

11. 79 + 21 = ( )

12. 32 + 68 = ( )

13. 200 + ( ) = 700

14. ( ) + 100 = 400

15. ( ) + 200 = 1100

Bonus

There are 34 boys and 21 girls in the gym. How many students are in the gym?

Andy ate 24 chocolate covered ants. Bob ate 36 peppermint coated grasshoppers. How many insects did they eat in all?

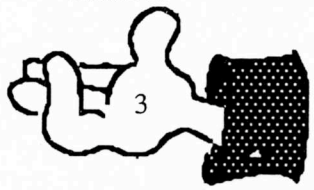
Hand Activities (0-9)

Put the blocks indicated on your chart. Then remove the amount indicated with your hand and record what's left. The first problem has been done for you.

1.

Start with

Remove

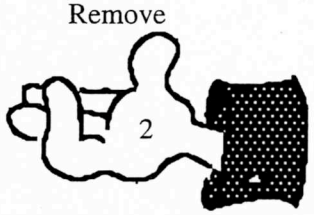


What's left? 3

2.

Start with

Remove

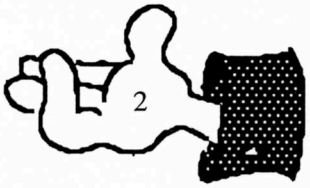


What's left?

3.

Start with

Remove

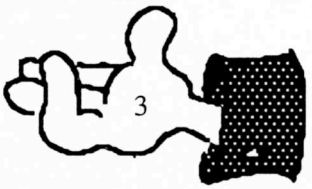


What's left?

4.

Start with

Remove

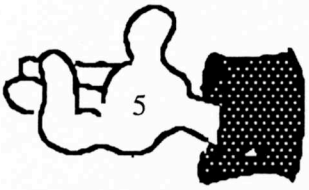


What's left?

5.

Start with

Remove

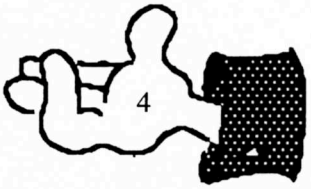


What's left?

6.

Start with

Remove

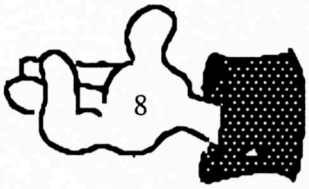


What's left?

7.

Start with

Remove

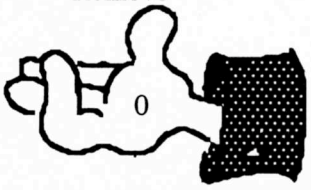


What's left?

8.

Start with

Remove



What's left?

Getting Ready for Subtraction with Regrouping

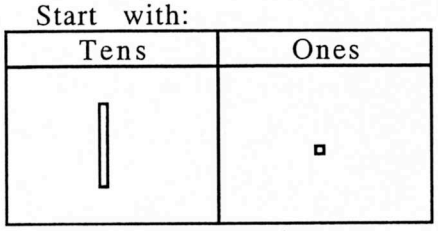
Set up each collection on your place value chart. Then regroup your blocks to show 10 more ones. Sketch the final result. The first problem has been done for you.

	Set Up			Record what you have done.	
	Tens	Ones		Tens	Ones
A	4	1	Regroup your blocks to show 10 more ones.	$^{3}\cancel{4}$	$^{11}\cancel{1}$
	Tens	Ones		Tens	Ones
B	3	4	Regroup your blocks to show 10 more ones.	3	4
	Tens	Ones		Tens	Ones
C	4	0	Regroup your blocks to show 10 more ones.	4	0
	Tens	Ones		Tens	Ones
D	5	2	Regroup your blocks to show 10 more ones.	5	2
	Tens	Ones		Tens	Ones
E	6	6	Regroup your blocks to show 10 more ones.	6	6
	Tens	Ones		Tens	Ones
F	2	0	Regroup your blocks to show 10 more ones.	2	0

Subtraction Stories
Whole Numbers 0-99

For each problem set up the blocks pictured on a place value chart. Then make up and tell a subtraction story as you remove the amount indicated. Record your answer. Partners take turns solving problems and telling stories.

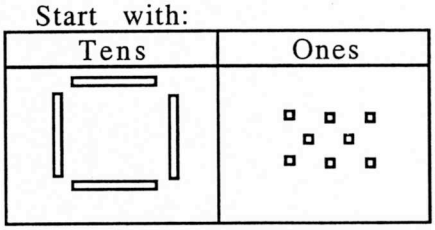
1. Start with:



Give away 5

Answer _____

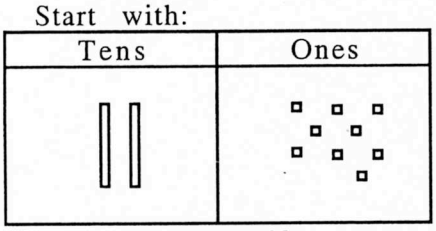
2. Start with:



Give away 36

Answer _____

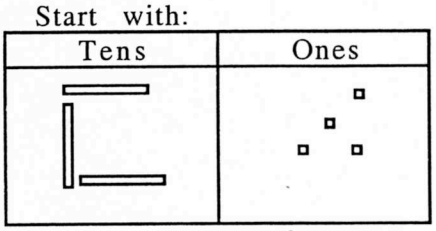
3. Start with:



Give away 19

Answer _____

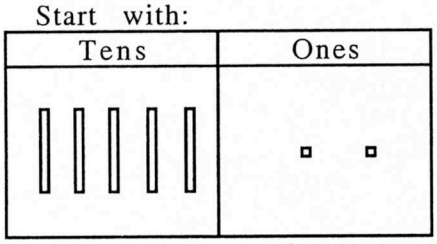
4. Start with:



Give away 26

Answer _____

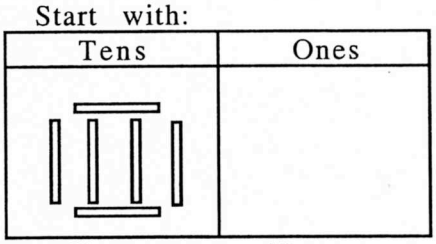
5. Start with:



Give away 15

Answer _____

6. Start with:



Give away 13

Answer _____

7. Start with:

Tens	Ones
6	8

Give away 27

Answer _____

8. Start with:

Tens	Ones
9	5

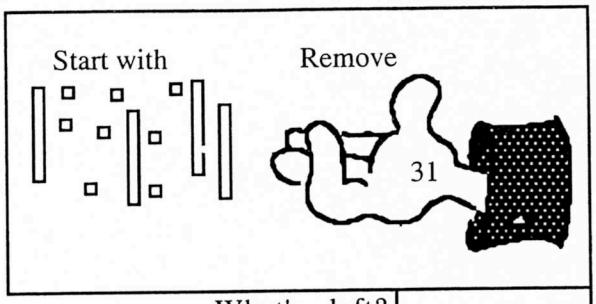
Give away 66

Answer _____

Hand Activities (0-99)

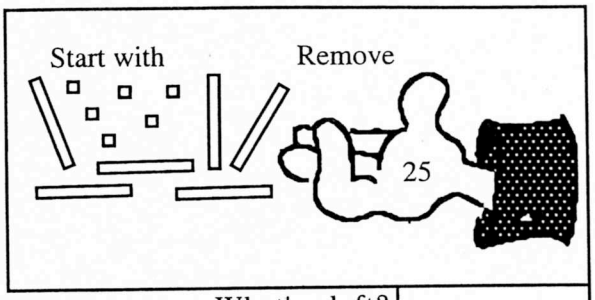
Put the blocks indicated on your chart. Then remove the amount indicated with your hand and record what's left. The first problem has been done for you.

1.



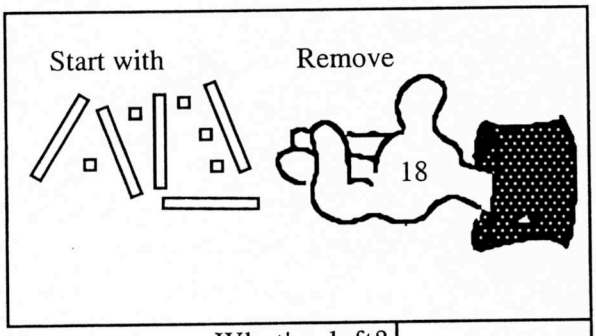
What's left? **17**

2.



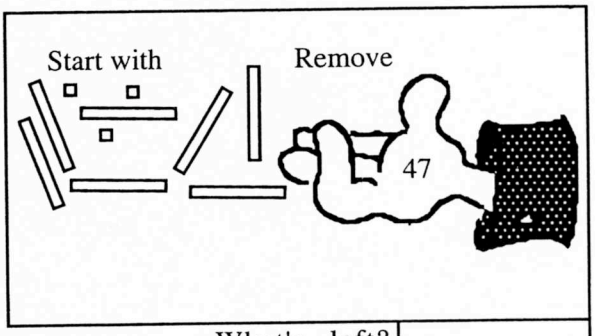
What's left?

3.



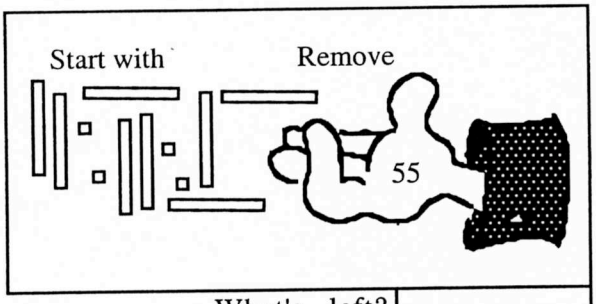
What's left?

4.



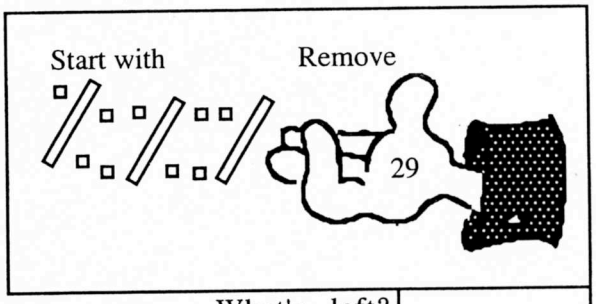
What's left?

5.



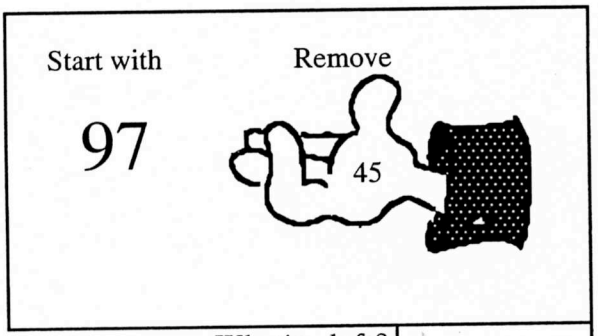
What's left?

6.



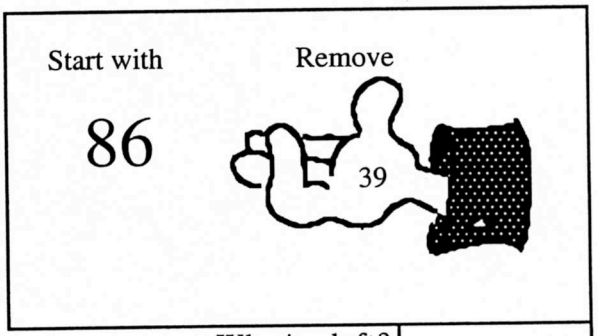
What's left?

7.



What's left?

8.



What's left?

Subtraction of Whole Numbers (0-999)
Transition to Paper and Pencil

Do these problems on your subtraction mat using Base 10 Blocks. Look for patterns to make your work easier.

1. 130 - 10 = ( )

2.
$$\begin{array}{r} 70 \\ -\ 10 \\ \hline \end{array}$$

3. 90 - 10 = ( )

4. 6 - 3 = ( )

5.
$$\begin{array}{r} 60 \\ -\ 30 \\ \hline \end{array}$$

6. 600 - 300 = ( )

7.
$$\begin{array}{r} 17 \\ -\ 5 \\ \hline \end{array}$$

8. 170 - 50 = ( )

9. 1700 - 500 = ( )

10.
$$\begin{array}{r} 20 \\ -\ 6 \\ \hline \end{array}$$

11. 200 - 60 = ( )

12.
$$\begin{array}{r} 2000 \\ -\ 600 \\ \hline \end{array}$$

13. 10 - 2 = ( )

14. ( ) - 20 = 80

15. 1000 - ( ) = 800

Bonus

Renee ran 400 meters in a track race. Sheila ran 800 meters. How much farther did Sheila run?

Numeracy Homework

Lesson 1-6

1 a. 965 + 378 = _____	1 b. 463 + 489 = _____	1 c. 860 + 541 = _____
2 a. 601 + 312 = _____	2 b. 831 + 434 = _____	2 c. 185 + 446 = _____
3 a. 791 + 497 = _____	3 b. 49 + 533 = _____	3 c. 233 + 115 = _____
4 a. 602 + 742 = _____	4 b. 100 + 252 = _____	4 c. 612 + 150 = _____
5 a. 73 + 113 = _____	5 b. 719 + 130 = _____	5 c. 597 + 687 = _____
6 a. 738 + 730 = _____	6 b. 80 + 557 = _____	6 c. 245 + 499 = _____
7 a. 877 – 64 = _____	7 b. 987 – 680 = _____	7 c. 754 – 628 = _____
8 a. 654 – 981 = _____	8 b. 998 – 873 = _____	8 c. 419 – 614 = _____
9 a. 376 – 909 = _____	9 b. 190 – 675 = _____	9 c. 459 – 834 = _____
10 a. 43 – 177 = _____	10 b. 289 – 718 = _____	10 c. 970 – 863 = _____
11 a. 401 – 20 = _____	11 b. 777 – 646 = _____	11 c. 400 – 35 = _____
12 a. 471 – 701 = _____	12 b. 695 – 848 = _____	12 c. 840 – 794 = _____