Math Dislike CURED

by Flexible BundleNumbers short version

My Many Math Tears will not Stay – if I Bundle the Stray Away

BundleCOUNT before you ADD

T = 5 = 𝍸 I I I = 1B3 2s

T = 5 = 𝍸 𝍸 I = 2B1 2s

T = 5 = 𝍸 𝍸 𝍸 = 3B-1 2s

3 ways to BundleCount: Overload, Normal, Underload

ReCount 47 in **tens**: T = 47 = 4B7 = 3B17 = 5B-3 **tens**

NO, 4x7 is not 28, it is 4 **7s** = 2B8 = 1B18 = 3B-2 **tens**

NO, 30/6 is not 30 split by 6, but **3 tens** recounted in **6s**

BundleWriting tells **InSide Bundles** from **OutSide Singles**

• **65 + 27**	=	6B5 + 2B7 = 8B12 = 9B2 =	**92**
• **65 – 27**	=	6B5 – 2B7 = 4B-2 = 3B8 =	**38**
• **7x 48**	=	7x 4B8 = 28B56 = 33B6 =	**336**
• **336 /7**	=	33B6 /7 = 28B56 /7 = 4B8 =	**48**
• **336 /7**	=	33B6 /7 = 35B-14 /7 = 5B-2 =	**48**

MatheMatics as ManyMath - a Natural Science about Many

Makes Math Potentials Blossom in Children, Adults & Migrants

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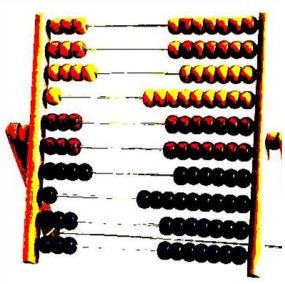

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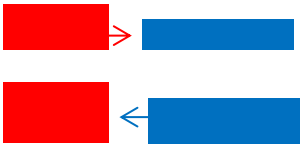
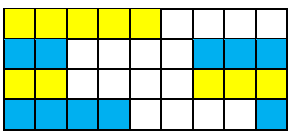
Count before you Add

MatheMatics as ManyMath

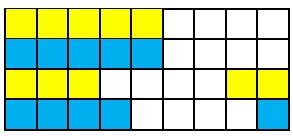
a Natural Science about MANY

Cure Math Dislike with Kid's own 2D **BlockNumbers** with **Units:** 2 **3s**

Count in ***Icons*** in ***Bundles***	1 2 3 4 5 6 7 8 9 T = IIII = 4 = 4 T = 7 = 5 II = 5 5 I = 5 5 2 = 1B4 **3s** or 2B1 **3s** or 3B-2 **3s**
ReCount in *the same* ***Unit*** in *a new* ***Unit***	**ReBundle** to create Overload or Underload T = 7 = IIIIIII = 1B4 **3s** = 2B1 **3s** = 3B-2 **3s** T = 7 = 2B1 **3s** = 1B3 **4s** = 1B2 **5s** = 3B1 **2s** = 1BB1B1 **2s** = 11B1 **2s**
ReCount in ***Tens*** from ***Tens***	3 **7s** = ? **tens** Answer: 3x7 = 21 = 2B1 **tens** ? **7s** = 3 **tens** Answer: (30/7)x7 = 4B2 **7s** 
DoubleCount in *PerNumbers* in *PerFive, 3/5* in *PerHundred, %*	With 4$ per 5kg or 4/5 $/kg, T = 20kg = (20/5) x 5kg = (20/5) x 4$ = 16$ 3/**5** = 3$/**5**$ of 200$ = ?$. 200$ = (200/5) x **5**$ gives (200/5) x 3$ = 120$ 70**%** = 70$/100$ of 300$ = ?$. 300$ = (300/100) x 100$ = gives (300/100) x 70$ = 210$
Calculations Predict with a ***RecountFormula***	T = 2 **4s** = ? **5s** = 1B3 **5s** since T = (T/**B**) x **B** = T/**B** **Bs** 2x4/5 1.some 2x4 – 1x5 3
Add *NextTo* *OnTop*	T = 2 **3s** + 4 **5s** = 3B2 **8s**  *Integration* T = 2 **3s** + 4 **5s** = 1B1 **5s** + 4 **5s** = 5B1 **5s**  *Proportionality*
Multiply, Divide Use *BundleWriting*	**7 x** 63 = **7 x** 6B3 = 42B21 = 44B1 = 441 245 **/7** = 24B5 **/7** = 21B35 **/7** = 3B5 = 35



Geometry-mode



Algebra-mode

MrAlTarp

YouTube Videos

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MATHeCADEMY.net	*Teaching Teachers to Teach MatheMatics as ManyMath* PYRAMIDeDUCATION **CATS**: **C**ount & **A**dd in **T**ime & **S**pace

Piaget: Grasping with Fingers leads to Grasping Mentally

Four as an icon built by four cars, four rhinos, four sticks, a ruler folded in four parts, four beads on an abacus, LEGO blocks, pearls on a pearl board, etc.

Seven sticks bundle-counted as 1**B**2 5s, or as 2**B**1 3s or as 3**B**1 2s

The MATHeCADEMY.net stand at the MatematikBiennale in Sweden, 2014

Contents

Preface

”How old will you be next time?” I asked the child. “Four”, he answered and showed me four fingers. “Four, you said?” I asked and showed him four fingers held together two by two. “No, that is not four, that is two twos!” the child replied. That opened my eyes. Children come to school with two-dimensional block numbers where all numbers have units. However, the school does not allow the children to count the numbers before being added. Instead the school teaches cardinality as a one-dimensional number line where numbers have different names; thus disregarding the fact that numbers are two dimensional blocks where all numbers have a unit as shown when writing out fully

T = 345 = 3 BundleBundles + 4 Bundles + 5 Singles = 3*10^2 + 4*10 + 5*1.

This booklet allows schools and parents to choose an education that accepts and develops the 2D number blocks that the children bring to school instead of forcing a 1D number line upon them. Also, the booklet allows the children to practice ‘counting before adding’ and to include bundle-counting and re-counting to different units. The booklet thus is an answer to the question ‘How to Save and Develop a Child’s Math Potential?’

To master Many we ask ‘how many?’ To answer, we count by bundling and stacking to get a total T. Once counted, first a total can be recounted in the same unit to create overload or underload, or to create a different unit; next totals can be added NextTo, or OnTop if the units are the same.

Counting a total T of 7 ones in 3s we get the result T = 7 = 2 3s & 1 = 2**B**1 3s.

We separate the *inside* bundles from the *outside* unbundled singles by a *bundle* becoming a bracket when reporting the result with *bundle-writing*: T = **III III I = II B I** = 2**B**1 **3s**

Once counted, a total can be *recounted* to create *overload* or *underload*, deficit. To create an overload, we move a stick from the inside to the outside: T = **II B I = I B III I** = 1**B**4 **3s**.

To create an underload, we borrow foreign sticks to move a bundle from the outside to the inside

T = **II B I = II B I II II = III B II** = 3**B**-2 **3s**.

Thus a given total can be *recounted* in three ways: normal, with overload and with underload.

T = 7 = 2**B**1 **3s** = 1**B**4 **3s** = 3**B**-2 **3s**.

A total of 68 can be recounted in four different ways as T = 68 = 6**B**8 **tens** = 5**B**18 **tens** = 7**B**-2 **tens**.

Recounting and bundle-writing come in handy when we add, subtract, multiply or divide numbers:

Using bundle-writing to add 65 and 27 we get an overload outside the bundle allowing us to move 10 **1s** from the outside to the inside as 1 **tens**

T = 65 + 27 = 6**B**5 + 2**B**7 = 8**B**12 = 9**B**2 = 92

Using bundle-writing to subtract 27 from 65 we get an underload outside the bundle allowing us to move a bundle of 1 **tens** from the inside to the outside as 10 **1s** to remove the underload.

T = 65 – 27 = 6**B**5 – 2**B**7 = 4**B**-2 = 3**B**8 = 38

Alternatively, before subtracting we can create an overload outside by moving 1 **tens** from the inside to the outside as 10 **1s**

T = 65 – 27 = 6**B**5 – 2**B**7 = 5**B**15 – 2**B**7 = 3**B**8 = 38

Using bundle-writing to multiply 48 with 7 we get an overload outside the bundle allowing us to move 50 **1s** from the outside to the inside as 5 **tens**

T = 7* 48 = 7* 4**B**8 = 28**B**56 = 33**B**6 = 336

Alternatively, before multiplying we can create an underload outside by borrowing 2 **1s**. Later the underload can be removed by moving 2 **tens** outside as 20 **1s**

T = 7* 48 = 7* 4**B**8 = 7* 5**B**-2 = 35**B**-14 = 33**B**6 = 336

Using bundle-writing to divide 336 with 7 we prefer to have 28 instead of 33 inside the bundle, so we create an overload outside by moving 5 bundles outside as 50 **1s**

T = 336 = 33**B**6 = 28**B**56; so T /7 = 4**B**8 = 48

Alternatively, we can create an underload outside before dividing

T = 336 = 33**B**6 = 35**B**-14; so T /7 = 5**B**-2 = 4**B**8 = 48

To divide 338 by 7 we get 2 single leftovers that counted in 7s becomes a fraction 2/7

T = 338 = 33**B**8 = 28**B**58 = 28**B**56 + 2; so T /7 = 4**B**8 + 2/7 = 48 2/7

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Introduction to the Chapters

Chapter 01, From Sticks to Icons, shows how rearranging four sticks creates a 4-icon with as many sticks as it represents; likewise with the other icons until ten having a name but no icon.

Chapter 02, Counting-sequences in Icons, shows that when counting by bundling, the bundle-icon is not used. Hence, when counting in tens, ten does not need an icon. A natural counting sequence will report both the bundles and the unbundled: 01, 02, …, 10, 11; or 0.1, 0.2, …, 1.0, 1.1 always including the bundle-name as the unit. Each bundle-size has its own counting sequence, but the standard is ten-counting in a sloppy version leaving out the unit and misplacing the decimal point by saying 23 instead of 2.3 tens.

Chapter 03, BundleCount in Icons, shows how a total T can be recounted in icon-bundles. Thus a total of nine things, represented by a line of sticks or beads on an abacus, can be counted in fours by a counting sequence. Also, they can be represented by a stack of bundles placed with one stick per bundle in a bundle that can written as a bracket (bundle-writing) and reported as a decimal number with a unit where the decimal point separates the bundles from the unbundled singles, T = 9 = 2**B**1 4s = 2.1 4s. Alternatively, a calculator can be asked to predict the counting result. Entering '9/4', we ask 'from 9, taking away 4s can be done how many times?' The calculator answers '2.some' so by entering '9 – 2x4' we ask 'from 9, once taking away 2 4s leaves what?' The answer '1' gives the calculator prediction T = 9 = 2.1 4s. Thus also operations are icons: /4 shows the broom wiping away 4 many times, – 4 shows the trace left when dragging away 4 only once, 2x shows the lifting needed to create a stack of 2 bundles, and +3 shows the juxtaposition of 3 singles left next to a stack of bundles. Moving 1 stick outside the bundle creates an overload T = 1**B**5 4s; and moving an extra stick in gives an underload, a deficit, T = 3**B**-3 4s. Thus by recounting, a total T of nine can be recounted in 4 different ways: T = nine = 9 1s = 2**B**1 4s = 1**B**5 4s = 3**B**-3 4s. This comes in handy when totals are added, subtracted, multiplied or divided. A good calculator says 2+3*4 = 14; a bad says 2+3*4 = 20.

Chapter 04, BundleCount with dices, shows how a total T can be recounted in icon-bundles where the total is shown on two similar dices and the icon-number is shown on a third dice.

Chapter 05, ReCount in the same Unit, shows how to recount a total T in the same unit by unbundling a bundle to singles thus creating an overload, or by borrowing extra singles that then has be counted for as a deficit. Thus a total of 2.1 5s can be written with overload as T = 1**B**6 5s or as T = 1.6 5s, or with borrowing as T = 3**B**-4 5s or as T = 3.-4 5s

Chapter 06, ReCount in a new Unit, shows how once counted in one unit, a total T can be recounted in another unit. Thus a total of 2 9s can be recounted in 6s as in chapter 3, again by lining, counting, bundling, stacking, bundle-writing and answering; and again checked by a calculator prediction using two formulas. The ReCount formula **T = (T/B)*B** saying that 'from T, T/B times Bs can be taken away'; and the ReStack formula **T = (T–B)+B** saying that 'From T, T–B is left when B is placed next to'. To change a unit is also called **proportionality**.

Chapter 07, ReCount in BundleBundles, shows how an overload in a bundle can be removed by an extra bundle for bundles-of-bundles. Thus counting a total T of 4 8s in 5s gives T = 6**B**2 5s. However, with 5 as the bundle-size, 5 bundles can be recounted as 1 bundle-of-bundles of 5s so that
T = 6**B**2 5s = B1**B**2 5s = 1**B**1**B**2 5s or T = 6.2 5s = 11.2 5s.

Chapter 08, ReCount in Tens on Squared Paper or an Abacus, shows how easy totals counted in icon-bundles can be recounted in tens since the calculator is programmed to give the answer directly in its sloppy version. Thus to recount 3 8s in tens we enter 3*8 and get the answer 24, so T = 3 8s = 2.4 tens. Recounting icon-numbers in tens systematically will provide the multiplication tables showing individual patterns in a ten by ten square or on an abacus.

Chapter 09, ReCount from Tens, shows, as in chapter 3, that we can get the answer through a calculator prediction or through lining, rebundling, and bundle-writing. Only this time we shorten the line by using Roman numbers as icons. Recounting large numbers from tens, we save time by using a multiplication table. Thus to recount a total T of 253 in 7s we use bundle-writing to create overloads guide by the table:
T = 253 = 25**B**3 = 21**B**43 = 21**B** 42+1 = 3**B**6 *7 +1, so T = 253 = 36 7s + 1.

Chapter 10, ReCount Large Numbers in Tens, show how bundle-writing may be used to create overloads later to be removed to get the final answer. Thus to recount 7 43s in tens gives a total
T = 7 43s = 7*43 = 7*4**B**3 = 28**B**21 = 30**B**1 = 301 as confirmed by a calculator.

Chapter 11, DoubleCount with PerNumbers, shows that counting a quantity in two different physical units will provide a per-number to be used as a bridge connecting the two units. Thus counting a quantity as 4$ and as 5 kg gives the per-number 4$/5kg or 4/5 $/kg. Asking '8$ = ? kg', the answer comes from recounting the 8s in 4s to be able to use the per-number as a bridge between the two units:
T = 8$ = (8/4)*4$ = (8/4)*5kg = 10kg. Likewise when asking e.g.'?$ = 12kg'

Chapter 12, DoubleCount with Fractions and Percentages, shows that fractions and percentages can be treated as per-numbers. Thus asking '3/5 of 200$' is the same as asking '3 per 5 of 200$ gives ?'. So we recount the 200 in 5s to get the answer: T = 200$ = (200/5)*5$ giving (200/5)*3$ = 120$. And asking '3% of 250$' is the same as asking '3 per 100 of 250$'. So we recount the 250 in 100s to get the answer:
T = 250$ = (250/100)*100$ gives (250/100)*3$ = 7.5$ as confirmed by writing '3/100*250' on a calculator.

Chapter13, ReCount PerNumbers, Fractions, shows how changing unit transforms per-numbers.

Chapter 14, Adding OnTop, shows that to add two totals T1 and T2 OnTop the units must be the same so recounting may be needed to change a unit. Thus adding 2 3s and 4 5s as 3s, the 4 5s must be recounted as 3s to give a total of 8.2 3s as confirmed by a calculator.

Chapter 15, Reversed Adding OnTop, shows that to reverse OnTop addition, the known total must be taken away before counting the rest in the unit of the second total. Thus asking '2 3s + ? 5s total 5 3s, we take away the 2 3s from the 5 3s before recounting the rest, T – T1, in 5s by saying (T–T1)/5 = ΔT/5 = 1.4 5s as confirmed by a calculator. Subtraction followed by division is called differentiation.

Chapter 16, Adding NextTo, shows that adding two totals T1 and T2 NextTo means adding their areas, also called integration. Thus adding 2 3s and 4 5s NextTo each other as 8s on a ten by ten square or on an abacus gives 3.2 8s as confirmed by a calculator.

Chapter 17, Reversed Adding NextTo, shows that to reverse NextTo addition, the known total must be taken away before counting the rest in the unit of the second total. Thus asking '2 3s + ? 5s total 3 8s, we take away the 2 3s from the 3 8s before recounting the rest, T – T1, in 5s by saying (T–T1)/5 = ΔT/5 = 3.3 5s as confirmed by a calculator. Together, integration and differentiation is called **calculus**.

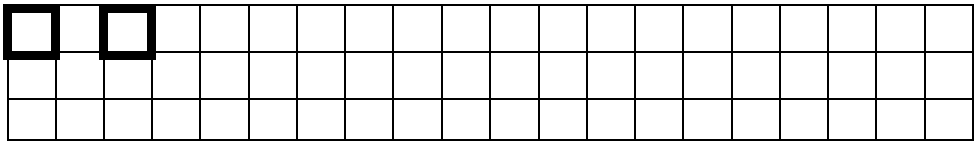
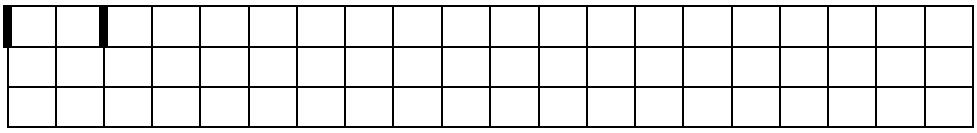
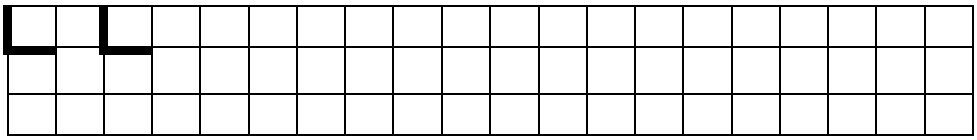
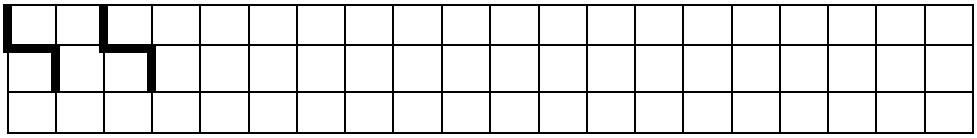
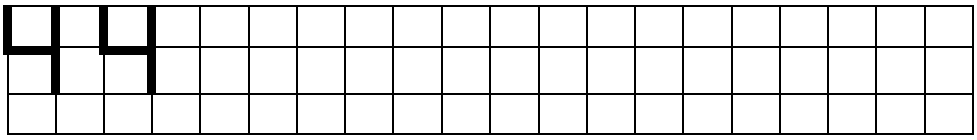
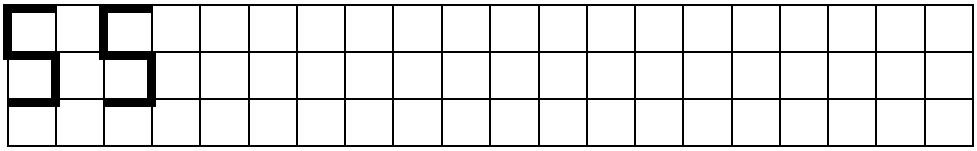
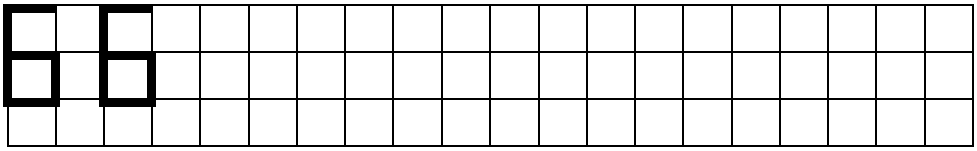
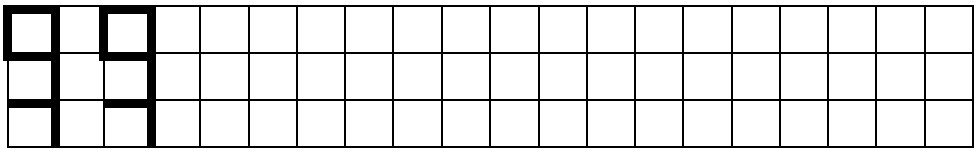
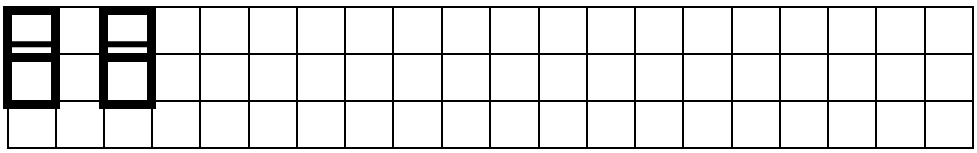
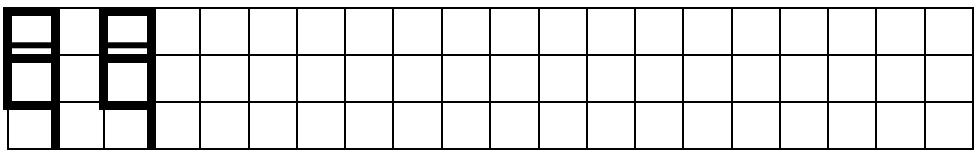
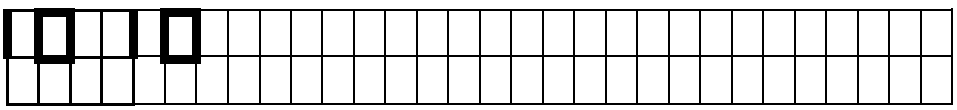
Chapter 18, Adding Tens, shows that when adding tens, bundle-writing can be used to create and remove overloads. Thus adding totals as 27 and 85 creates an overload that can be removed by bundle-writing,
T = 27 + 85 = 2**B**7 + 8**B**5 = 10**B**12 = 11**B**2 = 112 as confirmed by a calculator.

Chapter 19, Reversed Adding Tens, the number added must be taken away which might result in a deficit calling for a unbundling a bundle, unless this is done first resulting in an overload that allows taking the number away without creating a deficit. Thus asking '? + 27 = 85' or '85 – 27', bundle-writing is used to remove the deficit, 85 – 27 = 8**B**5 – 2**B**7 = 6**B**-2 = 5**B**8 = 58; or used to create an overload,
85 – 27 = 8**B**5 – 2**B**7 = 7**B**15 – 2**B**7 = 5**B**8 = 58, both confirmed by a calculator.

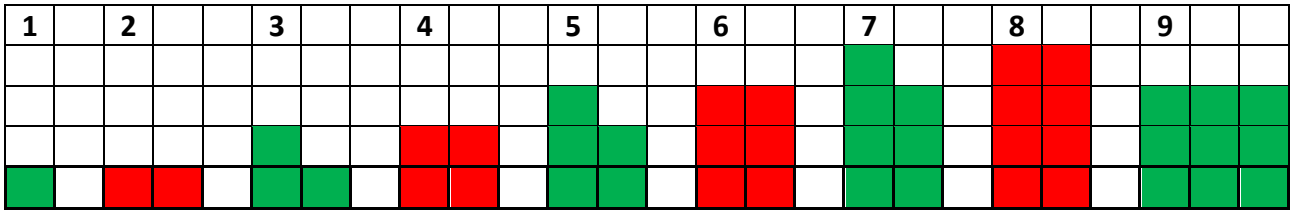
Chapter 20, Recounting Solves Equations, shows that equations expressing a reversed calculation can be solved by recounting and restacking. Thus to solve the equation u*2 = 8, 8 is recounted in 2s as 8 = (8/2)*2 = 4*2, so that u = 4, checked by a calculator by entering 4*2. With u*2 = 8 solved by u = 8/2 we get a shortcut for solving equations: *Move to the opposite side with the opposite sign.*

u*2 = 8 = (8/2)*2 = 4*2	Here we recount 8 in 2s as 8 = (8/2)*2 = 4*2	**u = 4**
u+2 = 9 = (9-2)+2 = 7+2	Here we restack 9 to 9-2+2 = 7+2	**u = 7**
u/3 = 2	Here we recount 2 in 3s as 2 = (2/3)*3 = 2*3/3 = 6/3	**u = 6**
u-2 = 6	Here we restack 6 to 6-2+2 = 6+2-2 = 8-2	**u = 8**
2*u+3 = 15	Here we restack 15 to 15-3+3 = 12+3, and 2*u = 12 = 12/2*2 = 6*2	**u = 6**
2*u-3 = 15	Here we restack 15 to 15-3+3 = 15+3-3 = 18-3, and 2*u = 18 = 18/2*2 = 9*2	**u = 9**
u/2+3 = 15	Here we restack 15 to 15-3+3 = 12+3, and u/2 = 12 = 12/2*2 = 12*2/2 = 24/2	**u = 24**
2/u-3 = 15	Here we restack 15 to 15-3+3 = 15+3-3 = 18-3, and 2/u = 18 = 18/2*2 = 18*2/2 = 36/2	**u = 36**

01. From Sticks to Icons

Job	Do
	
I	
II	
III	
IIII	
IIIII	
IIIII I	
IIIII II	
IIIII III	
IIIII IIII	
IIIII IIIII	

Count & Color Squares, Odd & Even



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2			4			6			8			1		3			5			7			9		

1		2			4			8			3			5			9				6			7	

3			6			9				8			5			4			7			1		2	

1		3			5			7			9				8			6			4			2	

5			3			1		2			4			7			9				8			6	

02. Counting-sequences in Icons

	I	I	I	I	I	I	I	I	I	I	I	I	I	I
ten	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ten	01	02	03	04	05	06	07	08	09	1B	1B1	1B2	1B3	1B4
ten	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.	1.1	1.2	1.3	1.4
9	01	02	03	04	05	06	07	08	1B	1B1	1B2	1B3	1B4	1B5
9	.1	.2	.3	.4	.5	.6	.7	.8	1.	1.1	1.2	1.3	1.4	1.5
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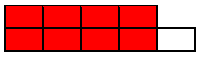
2														
2														
11	1	2	3	4	5	6	7	8	9	X	1B	1B1	1B2	1B3
11	01													
11	.1													

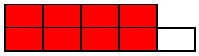
	II	II	II	II	II	II	II	II	II	II	II	II	II	II
ten	02				1B							2B2		
ten														
9														
9														
8														
8														
7														
7														
6														
6														
5														
5														
4														
3														
3														

	III	III	III	III	III	III	III	III	III	III	III	III	III	III
ten														
9														
8														
7														
6														
5														
4														
3														
2														

03. BundleCount in Icons

Job		Do	Calculator
9 in 5s	Line Count Bundle Stack B-write Answer	T = I I I I I I I I I 1, 2, 3, 4, B, 1B1, 1B2, 1B3, **1B4** T = ~~I I I I I~~ I I I I  T = 1**B**4 5s = 0**B**9 5s = 2**B**-1 5s T = 9 = 1.4 5s	9/5 1.some 9 – 1*5 4 *9 – 0*5 9* *9 – 2*5 -1*
9 in 4s	Line Count Bundle B-write Stack Answer	T = I I I I I I I I I 1, 2, 3, B, 1B1, 1B2, 1B3, 2B, **2B1** T = ~~I I I I~~ ~~I I I I~~ I T = 2**B**1 4s = 1**B**5 4s = 3**B**-3 4s  T = 9 = 2.1 4s	9/4 2.some 9 – 2*4 1 *9 – 1*4 5* *9 – 3*4 -3*
9 in 3s	Line Count Bundle B-write Stack Answer		9/ 9 –
8 in 4s	Line Count Bundle B-write Stack Answer		8 8
8 in 3s	Line Count Bundle B-write Stack Answer		8 8

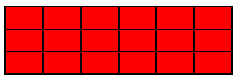
04. BundleCount with Dices

Job		Do	Calculator
 9 i 4s	Line Count Bundle B-write Stack Answer	T = I I I I I I I I I 1, 2, 3, B, 1B1, 1B2, 1B3, 2B, 2B1 T = IIII IIII I T = 2**B**1 4s = 1**B**5 4s = 3**B**-3 4s  T = 9 = 2.1 4s	9/4 2.some 9 – 2*4 1 *9 – 1*4* *5* *9 – 3*4* *-3*
	Line Count Bundle B-write Stack Answer		9/ 9 –
	Line Count Bundle B-write Stack Answer		9 9
	Line Count Bundle B-write Stack Answer		7 7
	Line Count Bundle B-write Stack Answer		7 7

05. ReCount in the Same Unit

Job		Do	Bundle	Answer
2.1 5s in 5s	Line UnBundle Embezzle	T = IIIII IIIII I T = IIIII I I I I I I T = IIIII IIIII IIIII	2**B**1 1**B**6 3**B**-4	T = 2.1 **5s** T = 1.6 **5s** T = 3.-4 **5s**
2.1 4s in 4s	Line UnBundle Embezzle			
2.1 3s in 3s	Line UnBundle Embezzle			
2.1 6s in 6s	Line UnBundle Embezzle			
2.1 7s in 7s	Line UnBundle Embezzle			
3.2 7s in 7s	Line UnBundle Embezzle			
3.2 6s in 6s	Line UnBundle Embezzle			
3.2 5s in 5s	Line UnBundle Embezzle			
3.2 4s in 4s	Line UnBundle Embezzle			
3.2 3s in 3s	Line UnBundle Embezzle			

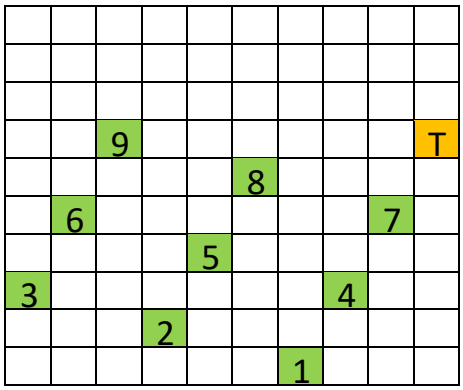
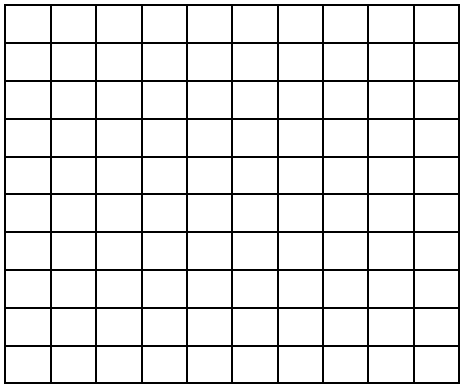
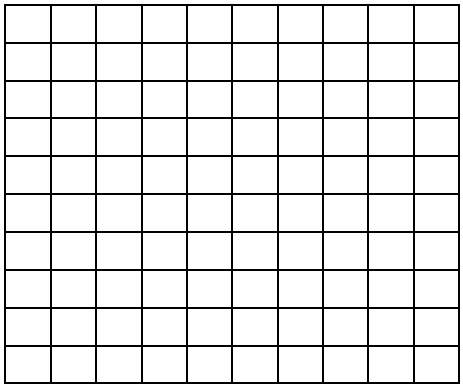
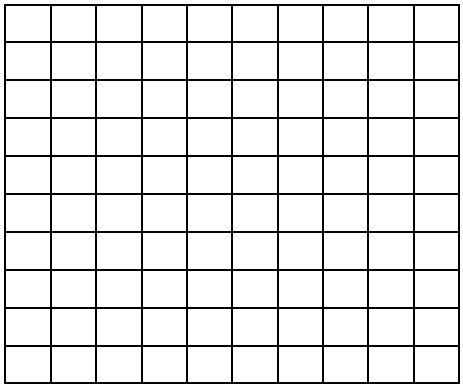
06. ReCount in a New Unit

Job		Do	Calculator
2 9s in 6s	Line Count Bundle Stack B-write Answer	T = I I I I I I I I I I I I I I I I I I 1, 2, 3, 4, B, 1B1, 1B2, 1B3, 1B4, …, **3B** T = 𝍸 𝍸 𝍸  T = 3**B** T = 2 9s = 3 6s	2*9/6 3 2*9 – 3*6 0
2 9s in 5s	Line Count Bundle Stack B-write Answer		2*9/ 2*9 –
2 8s in 6s	Line Count Bundle Stack B-write Answer		2*8 2*8
2 8s in 5s	Line Count Bundle Stack B-write Answer		2*8 2*8
2 7s in 6s	Line Count Bundle Stack B-write Answer		2*7 2*7

07. Recount in BundleBundles

Job		Do	Calculator
4 8s in 5s	B-write Answer	T = 4 **8s** = 6**B**2 = B1**B**2 **5s** = 1**B**1**B**2 T = 4 **8s** = 6.2 **5s** = 11.2 **5s** = 12.-3 **5s**	4*8/5 6.some 4*8 – 6*5 2
5 8s in 6s	B-write Answer		
6 9s in 7s	B-write Answer		
9 9s in 8s	B-write Answer		
3 9s in 4s	B-write Answer		
4 5s in 3s	B-write Answer		
6 8s in 5s	B-write Answer		
6 8s in 4s	B-write Answer		
7 8s in 5s	B-write Answer		
7 8s in 4s	B-write Answer		
8 8s in 5s	B-write Answer		
8 8s in 4s	B-write Answer		

08. ReCount in Tens on Squared Paper or an Abacus

Job		Do	Calculator
7s in tens			10 * 7 = 70 9 * 7 = 63 8 * 7 = 56 7 * 7 = 49 6 * 7 = 42 5 * 7 = 35 4 * 7 = 28 3 * 7 = 21 2 * 7 = 14 1 * 7 = 7
8s in tens			10 * 8 = 9 * 8 = 8 * 8 = 7 * 8 = 6 * 8 = 5 * 8 = 4 * 8 = 3 * 8 = 2 * 8 = 1 * 8 =
9s in tens			10 * 9 = 9 * 9 = 8 * 9 = 7 * 9 = 6 * 9 = 5 * 9 = 4 * 9 = 3 * 9 = 2 * 9 = 1 * 9 =
6s in tens			10 * 6 = 9 * 6 = 8 * 6 = 7 * 6 = 6 * 6 = 5 * 6 = 4 * 6 = 3 * 6 = 2 * 6 = 1 * 6 =

09. Recount From Tens

Job		Do	Calculator
37 in 9s	Line ReBundle B-write Answer	X X X V II 9I 9I 9I V II -> 9 9 9 X -> 9 9 9 9 1 3**B** 7 = **B**37 = **B**36 + 1 = **B**4*9 + 1 T = 37 = 4*9 + 1 = 4.1 **9s** = 4 1/9 **9s**	37/9 4.some 37 – 4*9 1
37 in 7s	Line ReBundle B-write Answer		
37 in 5s	Line ReBundle B-write Answer		
42 in 7s	Line ReBundle B-write Answer		
42 in 5s	Line ReBundle B-write Answer		
26 in 7s	Line ReBundle B-write Answer		
26 in 5s	Line ReBundle B-write Answer		

253 in 7s	B-write Answer	T = 2**B**5**B**3 = 25**B**3 = 21**B**43 = 21**B**42 + 1 T = 3**B**6 * 7 + 1 = 36 * 7 + 1 = <u>36 1/7 **7s**</u>	253/7 36.some 253 – 36*7 1
253 in 9s	B-write Answer		
253 in 5s	B-write Answer		
253 in 3s	B-write Answer		
842 in 7s	B-write Answer		
842 in 5s	B-write Answer		
842 in 4s	B-write Answer		
842 in 2s	B-write Answer		
904 in 8s	B-write Answer		
904 in 7s	B-write Answer		
904 in 5s	B-write Answer		
904 in 3s	B-write Answer		
789 in 8s	B-write Answer		
789 in 7s	B-write Answer		
789 in 5s	B-write Answer		
789 in 4s	B-write Answer		

10. Recount Large Numbers in Tens

Job		Do	Calculator
7 43s	B-write Answer	T = 7 * 4**B**3 = 28**B**21 = 30**B**1 = 301 T = 7 **43s** = 30.1 **tens** = 301	7*43 301
8 43s	B-write Answer		
9 43s	B-write Answer		
6 43s	B-write Answer		
5 62s	B-write Answer		
4 62s	B-write Answer		
3 62s	B-write Answer		
2 62s	B-write Answer		
27 436s	B-write Answer		
3 436s	B-write Answer		
4 436s	B-write Answer		
5 436s	B-write Answer		
6 436s	B-write Answer		
7 436s	B-write Answer		
8 436s	B-write Answer		

17 43s	B-write Answer	T = 17 * 4**B**3 = 68**B**51 = 73**B**1 = 731 T = 17 **43s** = 73.1 **tens** = 731	17*43 731
27 43s	B-write Answer		
37 43s	B-write Answer		
47 43s	B-write Answer		
57 43s	B-write Answer		
67 43s	B-write Answer		
77 43s	B-write Answer		
87 43s	B-write Answer		
32 243s	B-write Answer	T = 32 * 2**B**4**B**3 = 64**B**128**B**96 = 64**B**137**B**6 = 77**B**7**B**6 = 777.6 **tens** = 7776	32*243 7776
35 413s	B-write Answer		
43 343s	B-write Answer		
56 453s	B-write Answer		
62 637s	B-write Answer		
74 843s	B-write Answer		
87 543s	B-write Answer		
92 493s	B-write Answer		

11. DoubleCount with PerNumbers

Job	Do	Formula
With 4 $ per 5 kg **8$ = ?kg** **?$ = 12 kg**	8$ = (8/4)*4$ = (8/4)*5kg = 10kg 12kg = (12/5)*5kg = (12/5)*4$ = 9.6$	Kg = (kg/$)*$ Kg = (5/4)*8 = 10 $ = ($/kg)*kg $ = (4/5)*12 = 9.6
With 3 $ per 5 kg **8$ = ?kg** **?$ = 12 kg**		
With 4 $ per 6 kg **8$ = ?kg** **?$ = 12 kg**		
With 4 $ per 8 kg **8$ = ?kg** **?$ = 12 kg**		
With 4 $ per 5 kg **8$ = ?kg** **?$ = 12 kg**		
With 3 $ per 5 kg **8$ = ?kg** **?$ = 12 kg**		
With 4 $ per 6 kg **8$ = ?kg** **?$ = 12 kg**		
With 4 $ per 8 kg **8$ = ?kg** **?$ = 12 kg**		
With 2 $ per 5 kg **8$ = ?kg** **?$ = 12 kg**		
With 2 $ per 7 kg **8$ = ?kg** **?$ = 12 kg**		

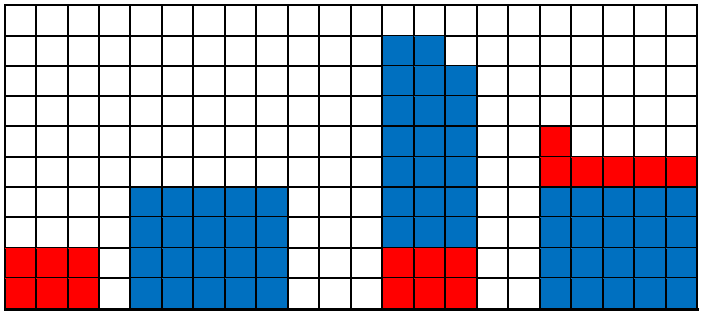
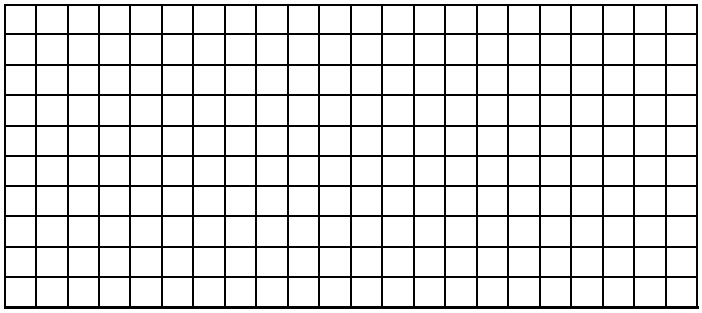
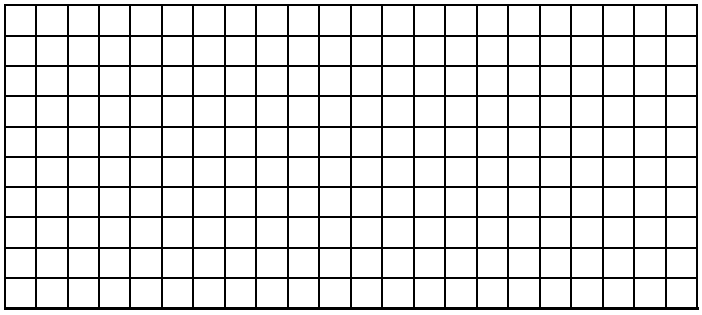
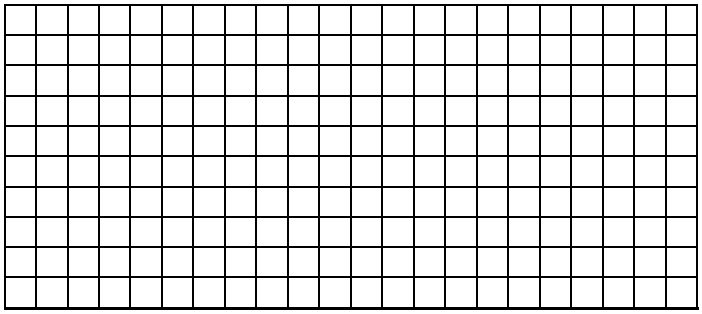
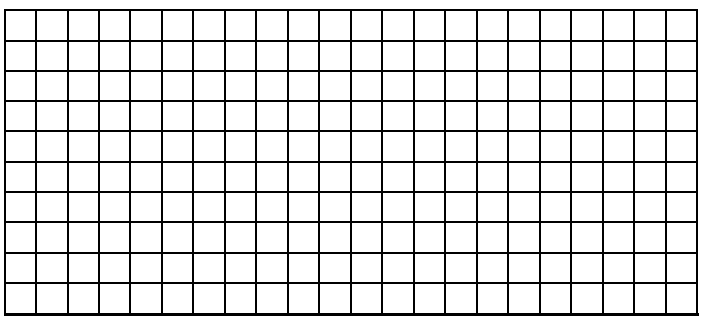
12. DoubleCount with Fractions and Percentages

Job	Do	Calculator
3 per 5 of 200$	200$ = (200/5)*5$ Giving (200/5)*3$ = 120$	3/5*200 120
3 per 5 of 400$		
2 per 5 of 200$		
1 per 5 of 200$		
3 per 6 of 240$		
2 per 6 of 240$		
5 per 6 of 300$		
3 per 100 of 250$** **or 3% of 250$	250$ = (250/100)*100$ Giving (250/100)*3$ = 7.5$	3/100*250 7.5
8 per 100 of 200$** **or 8% of 200$		
20 per 100 of 200$** **or 20% of 200$		
3 per 100 of 560$** **or 3% of 560$		
8 per 100 of 560$** **or 8% of 560$		
12 per 100 of 560$** **or 12% of 560$		
20 per 100 of 560$** **or 20% of 560$		
60 per 100 of 560$** **or 60% of 560$		

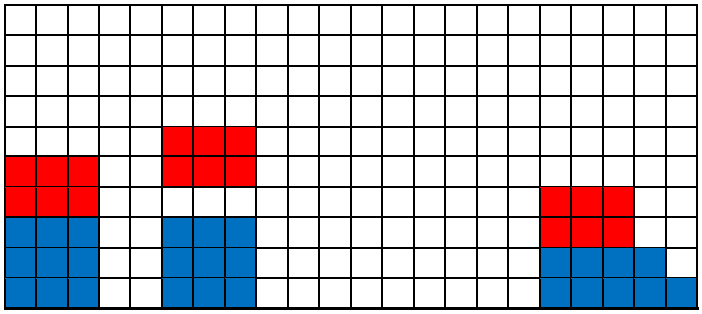
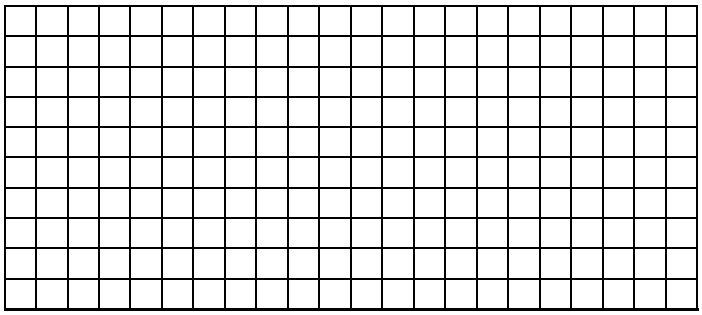
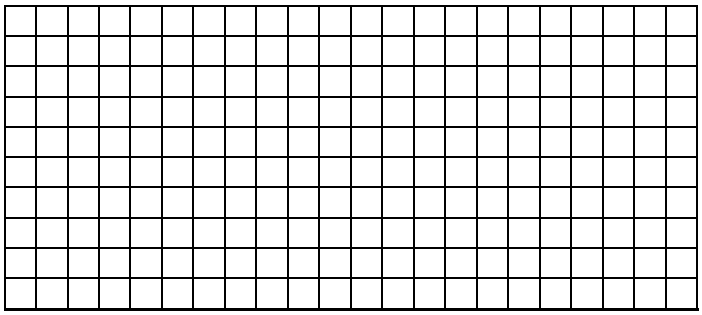
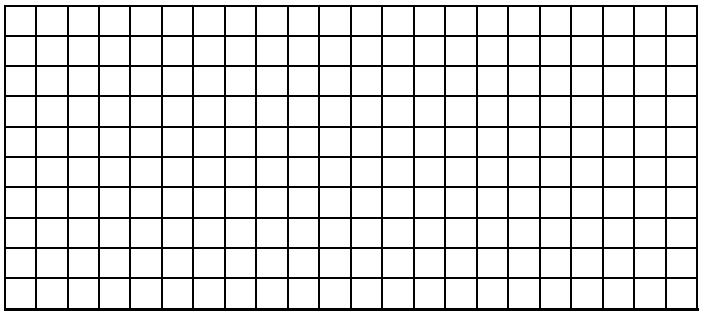
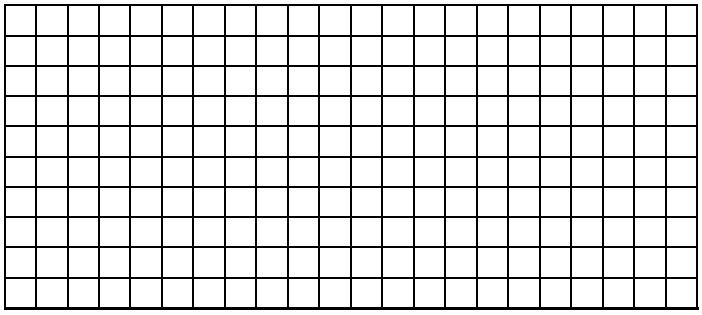
13. ReCount PerNumbers, Fractions

Job	Do	Do	Calculator	Calculator
2/3 = ?	2/3 = 2 2s / 3 2s = 4/6 2/3 = 2 3s / 3 3s = 6/9	2/3 = 2 4s / 3 4s = 8/12 2/3 = 2 5s / 3 5s = 10/15	2/3 = 0.66.. 4/6 = 0.66..	8/12 = 0.66.. 10/15 = 0.66..
1/3 = ?				
1/5 = ?				
2/5 = ?				
3/5 = ?				
4/5 = ?				
4/6 **2/6** **6/8** **2/8**	4/6 = 2 2s / 3 2s = 2/3 2/6 = 1 2s / 3 2s = 1/3	6/8 = 3 2s / 4 2s = 3/4 2/8 = 1 2s / 4 2s = 1/4	4/6 = 0.66.. 2/3 = 0.66.. 2/6 = 0.33.. 1/3 = 0.33..	6/8 = 0.75 3/4 = 0.75 2/8 = 0.25 1/4 = 0.25
2/10 **4/10** **6/10** **8/10**				
2/12 **4/12** **6/12** **8/12** **10/12**				
2/14 **4/14** **6/14** **8/14** **10/14** **12/14**				
2/16 **4/16** **6/16** **8/16** **10/16** **12/16** **14/16**				

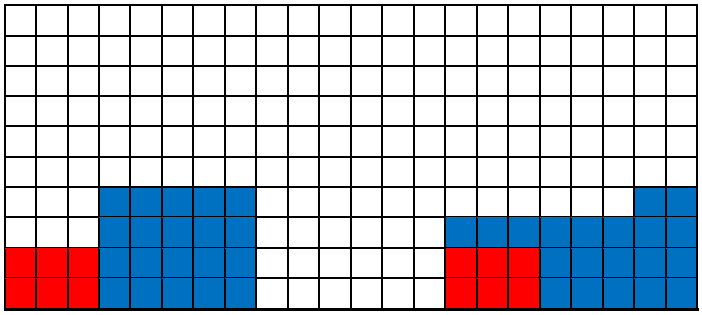
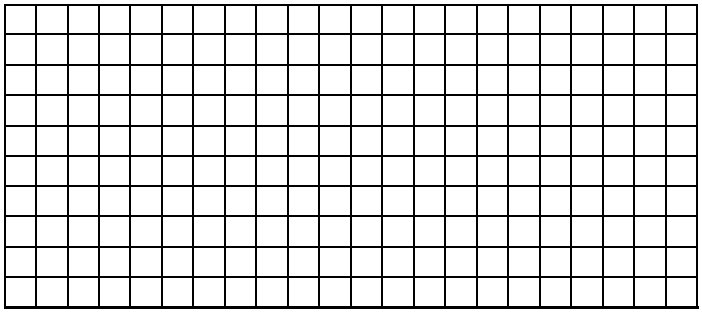
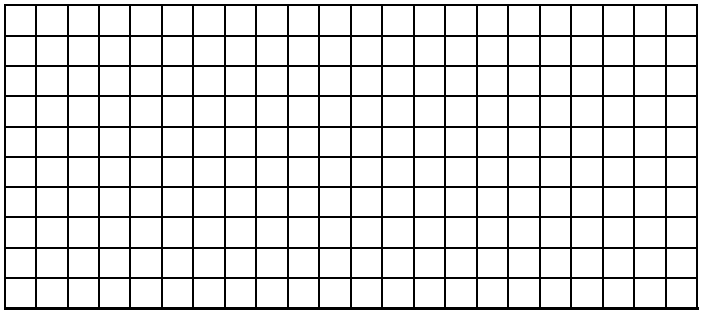
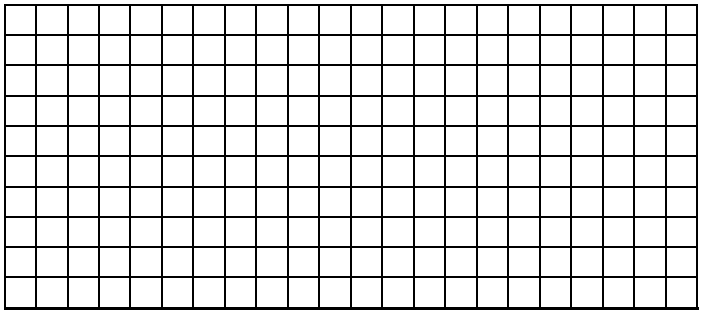
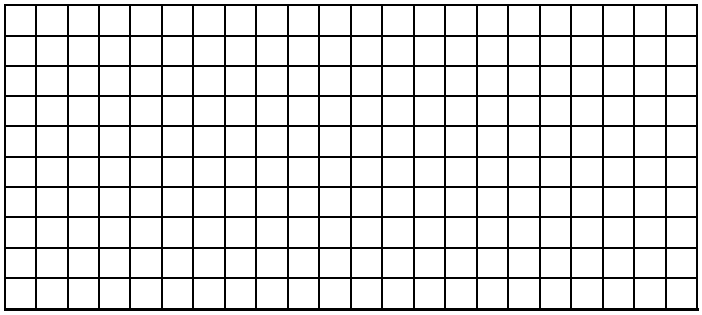
14. Add OnTop

Job	Do	Calculator
2 3s + 4 5s = ? 3s ? 5s		(2*3+4*5)/3 8.some (2*3+4*5) - 8*3 2 2 3s + 4 5s = 8.2 3s (2*3+4*5)/5 5.some (2*3+4*5) - 5*5 1 2 3s + 4 5s = 5.1 5s
2 4s + 3 5s = ? 4s ? 5s		
3 2s + 4 6s = ? 2s ? 6s		
2 5s + 4 3s = ? 5s ? 3s		
5 2s + 3 4s = ? 2s ? 4s		

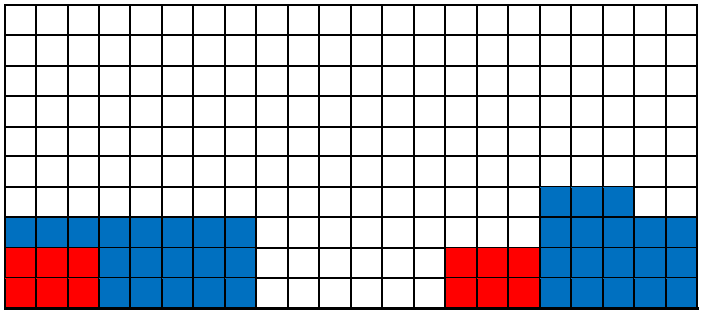
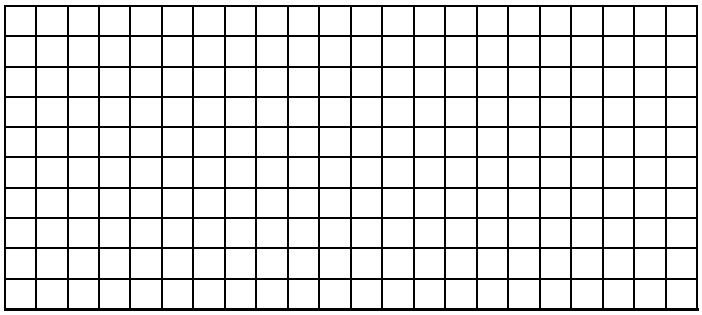
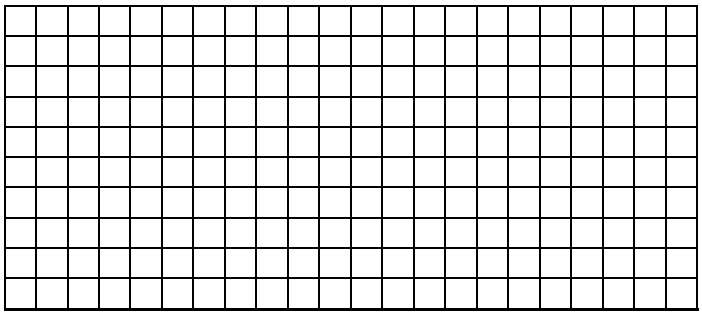
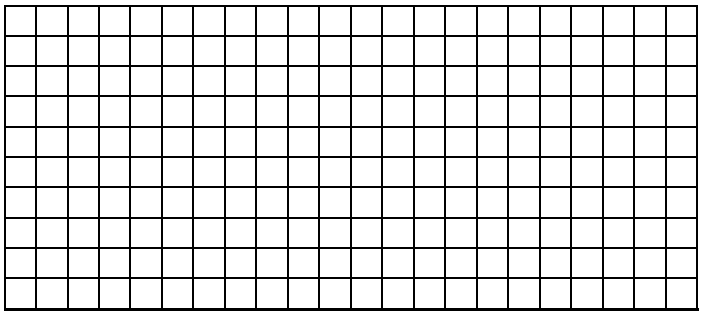
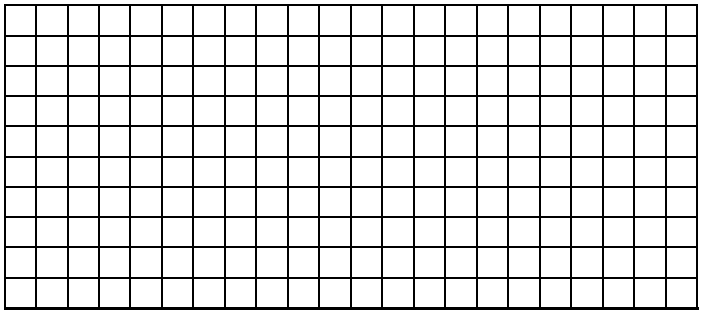
15. Reversed Adding OnTop

2 3s **+** **? 5s** **=** **5 3s**		(5*3-2*3)/5 1.some (5*3-2*3) - 1*5 4 2 3s + **1.4 5s** = 5 3s
2 4s **+** **? 5s** **=** **5 4s**		
2 6s **+** **? 5s** **=** **4 6s**		
2 7s **+** **? 5s** **=** **6 5s**		
2 6s **+** **? 5s** **=** **4 5s**		

16. Add NextTo

Job	Do	Calculator
2 3s + 4 5s = ? 8s		(2*3+4*5)/8 3.some (2*3+4*5) - 8*3 2 2 3s + 4 5s = 3.2 8s
3 2s + 4 5s = ? 7s		
2 3s + 4 6s = ? 9s		
2 4s + 4 5s = ? 9s		
4 3s + 2 4s = ? 6s		

17. Reversed Adding NextTo

2 3s **+** **? 5s** **=** **3 8s**		(3*8-2*3)/5 3.some (3*8-2*3) - 3*5 3 2 3s + **3.3 5s** = 3 8s
2 4s **+** **? 5s** **=** **3 9s**		
2 3s **+** **? 4s** **=** **3 7s**		
4 3s **+** **? 5s** **=** **3 8s**		
5 2s **+** **? 5s** **=** **3 7s**		

18. Add Tens

Job		Do	Calculator
27 + 85	B-write Answer	T = 2**B**7 + 8**B**5 = 10**B**12 = 11**B**2 = 112 T = 27 + 85 = 11.2 tens = 112	27+85 112
27 + 85	B-write Answer		
33 + 78	B-write Answer		
39 + 71	B-write Answer		
45 + 67	B-write Answer		
58 + 57	B-write Answer		
57 + 49	B-write Answer		
27 + 205	B-write Answer		
33 + 198	B-write Answer		
39 + 191	B-write Answer		
45 + 187	B-write Answer		
58 + 177	B-write Answer		
57 + 169	B-write Answer		
127 + 385	B-write Answer		
433 + 578	B-write Answer		

19. Reversed Adding Tens

Job		Do	Calculator
27 + ? = 85 **85 – 27**	B-write Answer	D = 8**B**5 – 2**B**7 = 6**B**-2 = 5**B**8 = 58 D = 8**B**5 – 2**B**7 = 7**B**15 – 2**B**7 = 5**B**8 = 58 T = 85 – 27 = 5.8 **tens** = 58	85 – 27 58
63 – 17	B-write Answer		
55 – 36	B-write Answer		
35 – 17	B-write Answer		
185 – 27	B-write Answer		
235 – 128	B-write Answer		
242 – 128	B-write Answer		
245 – 167	B-write Answer		
312 – 159	B-write Answer		
421 – 268	B-write Answer		

20. ReCounting solves Equations

Do	Equation	Calculator
ReCount Answer	**u*2 = 30** = (30/2)*2 = 15*2 u = 15	15*2 30
ReCount Answer	**u*3 = 15**	
ReCount Answer	**u*4 = 32**	
ReCount Answer	**u*5 = 40**	
ReCount Answer	**u/3 = 12** = (12/3)*3 = 12*3/3 = 36/3 u = 36	36/3 12
ReCount Answer	**u/3 = 10**	
ReCount Answer	**u/4 = 8**	
ReCount Answer	**u/5 = 6**	
ReCount Answer	**u+2 = 30** = (30-2)+2 = 28 + 2 u = 28	28+2 30
ReCount Answer	**u+3 = 24**	
ReCount Answer	**u+4 = 20**	
ReCount Answer	**u+5 = 12**	
ReCount Answer	**u-2 = 30** = (30-2)+2 = 30+2-2 = 32- 2 u = 32	32-2 30
ReCount Answer	**u-3 = 20**	
ReCount Answer	**u-5 = 10**	

ReCount ReCount Answer	**2*u+3 = 15** = (15-3)+3 = 12 + 3 2*u = 12 = (12/2)*2 = 6*2 u = 6	2*6+3 15
ReCount ReCount Answer	**3*u+4 = 19**	
ReCount ReCount Answer	**4*u+6 = 38**	
ReCount ReCount Answer	**2*u-3 = 15** = (15-3)+3 = 15+3-3 = 18 - 3 2*u = 18 = (18/2)*2 = 9*2 u = 9	2*9-3 15
ReCount ReCount Answer	**3*u-4 = 8**	
ReCount ReCount Answer	**4*u-5 = 23**	
ReCount ReCount Answer	**u/2+3 = 15** = (15-3)+3 = 12 + 3 u/2 = 12 = (12/2)*2 = (12*2)/2 = 24/2 u = 24	24/2+3 15
ReCount ReCount Answer	**u/3+4= 12**	
ReCount ReCount Answer	**u/2-3 = 15** = (15-3)+3 = (15+3)-3 = 18 - 3 u/2 = 18 = (18/2)*2 = (18*2)/2 = 36*2 u = 36	36/2-3 15
ReCount ReCount Answer	**u/4-7 = 5**	