Math Foundations

Toolkit

THE learning STUDIO

Number Words

1	one
2	two
3	three
4	four
5	five
6	six
7	seven
8	eight
9	nine
10	ten

11	eleven
12	twelve
13	thirteen
14	fourteen
15	fifteen
16	sixteen
17	seventeen
18	eighteen
19	nineteen
20	twenty

30	thirty
40	forty
50	fifty
60	sixty
70	seventy
80	eighty
90	ninety
100	one hundred
1,000	one thousand
1,000,000	one million
1,000,000,000	one billion

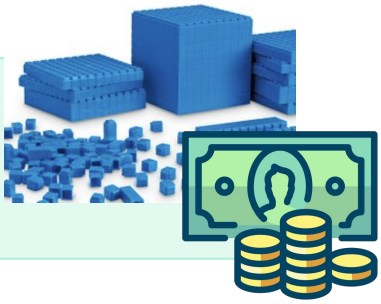
Place Value Chart

Millions			Thousands			Ones		
Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones

Target Number:

Build it!

Use concrete material to model the target number



Put it in a place-value chart!

Place each digit of the target number in the proper column of a place value chart.

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones

Write it!

Write the target number in different forms.

Word Form:	
Expanded Form:	

Break it down!

Write the target number as the sum or difference of other numbers.

+10=

-10 =

+100=

-100 =

How many 1s ?

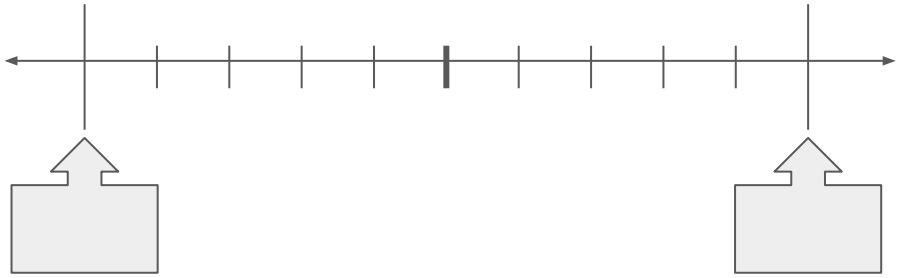
How many 10s ?

How many 100s ?

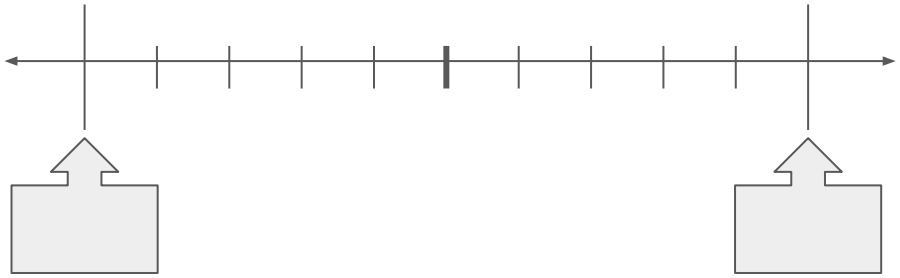
How many 1000s ?

Rounding

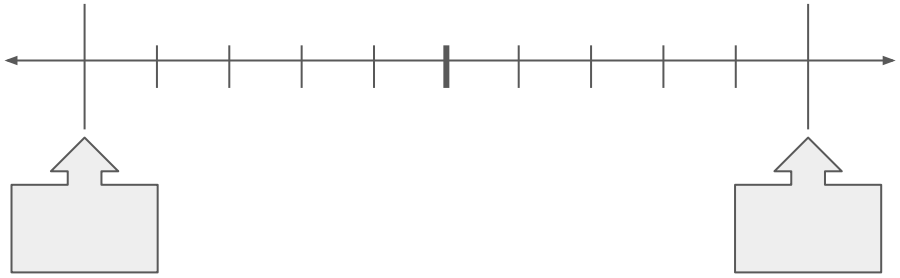
Nearest ten=



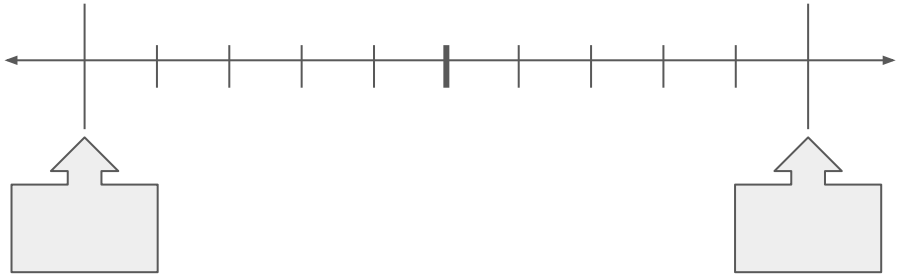
Nearest hundred=



Nearest thousand=

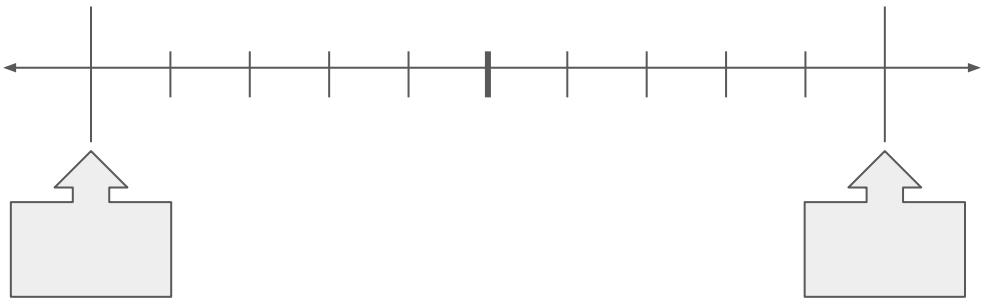


Nearest ten thousand=



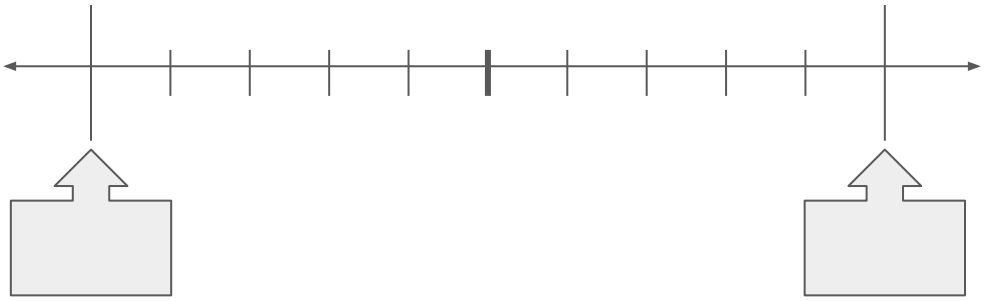
Rounding

Nearest whole number=

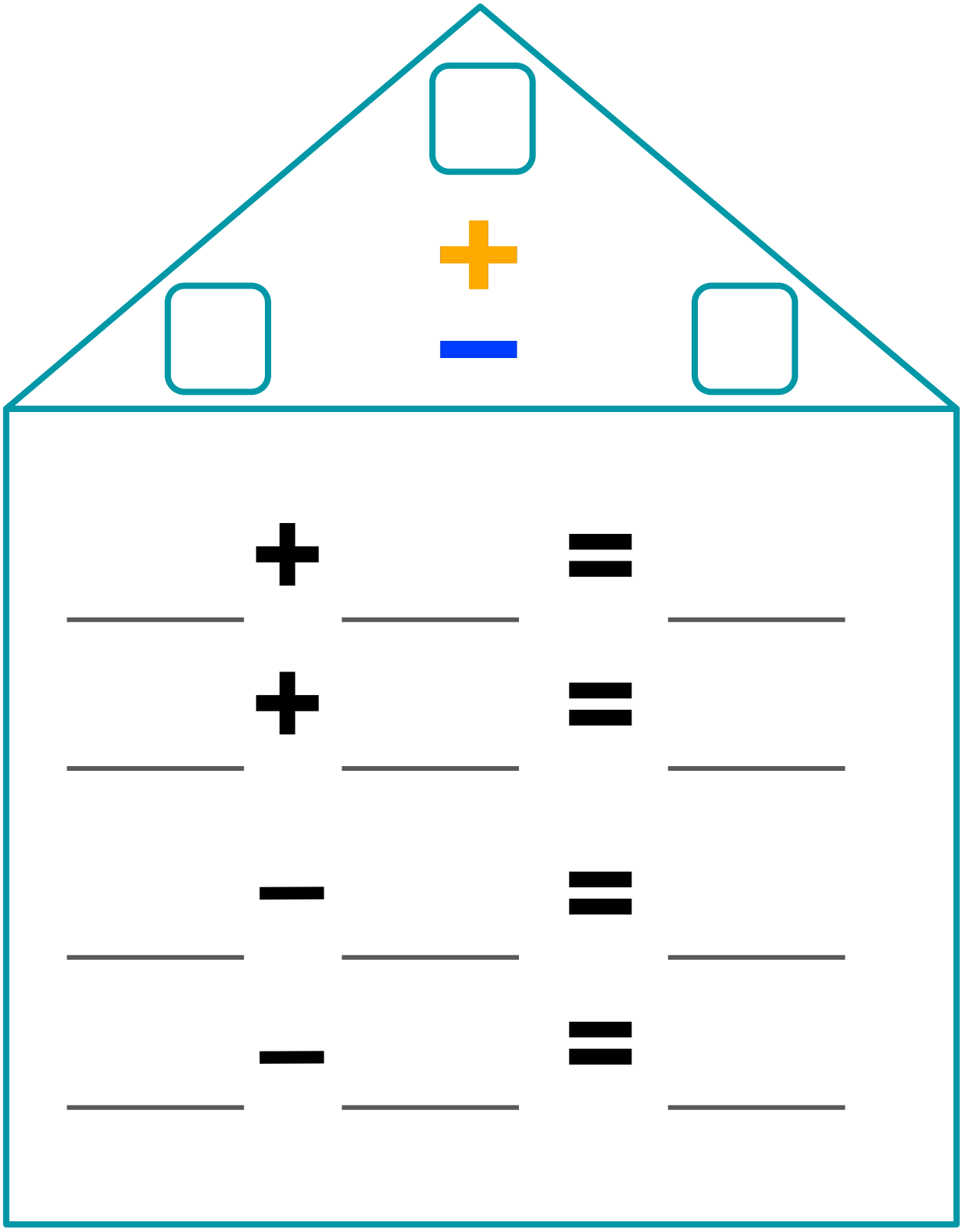


Nearest tenth=

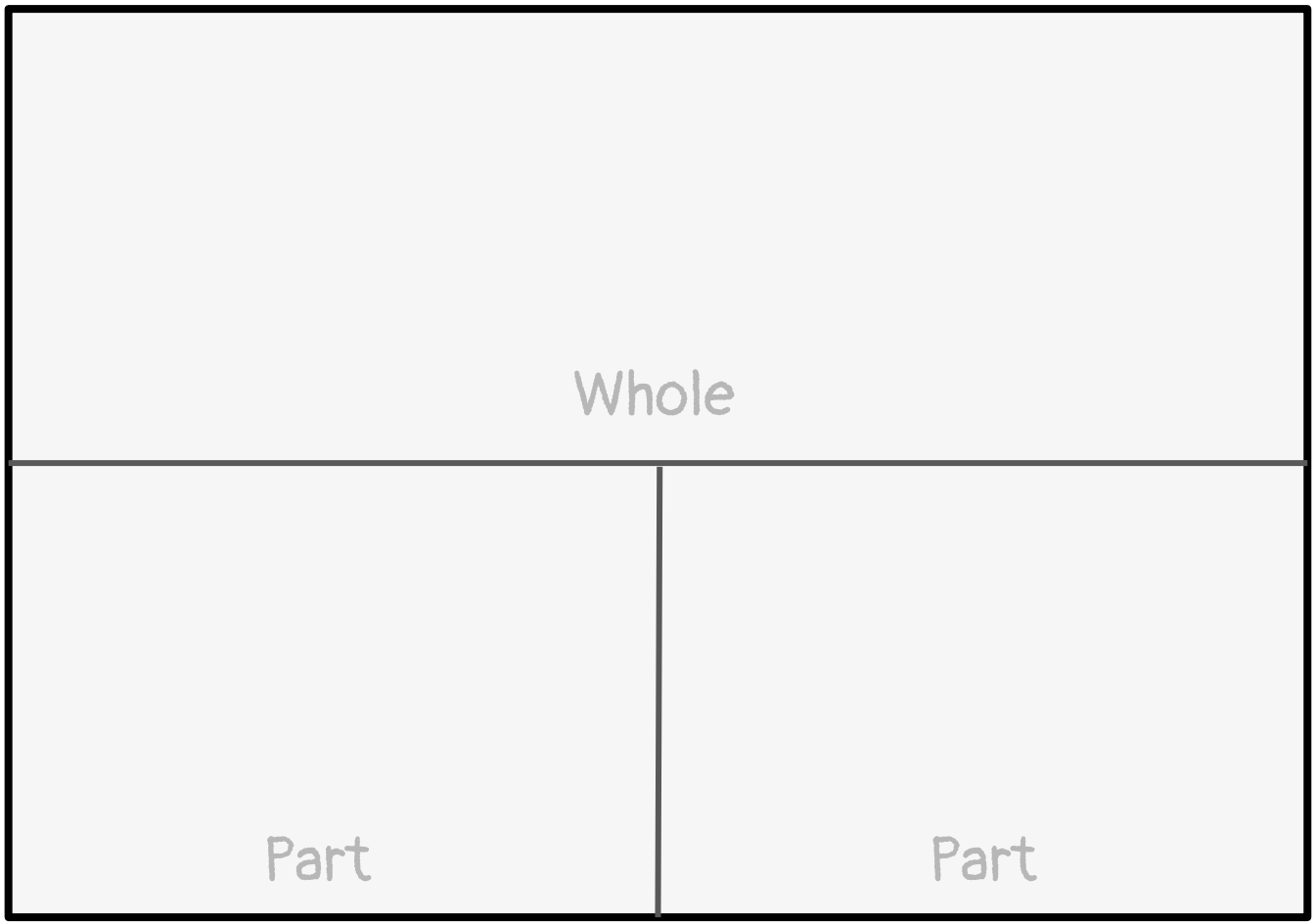
Nearest hundredth=



FACT FAMILIES
Addition and Subtraction

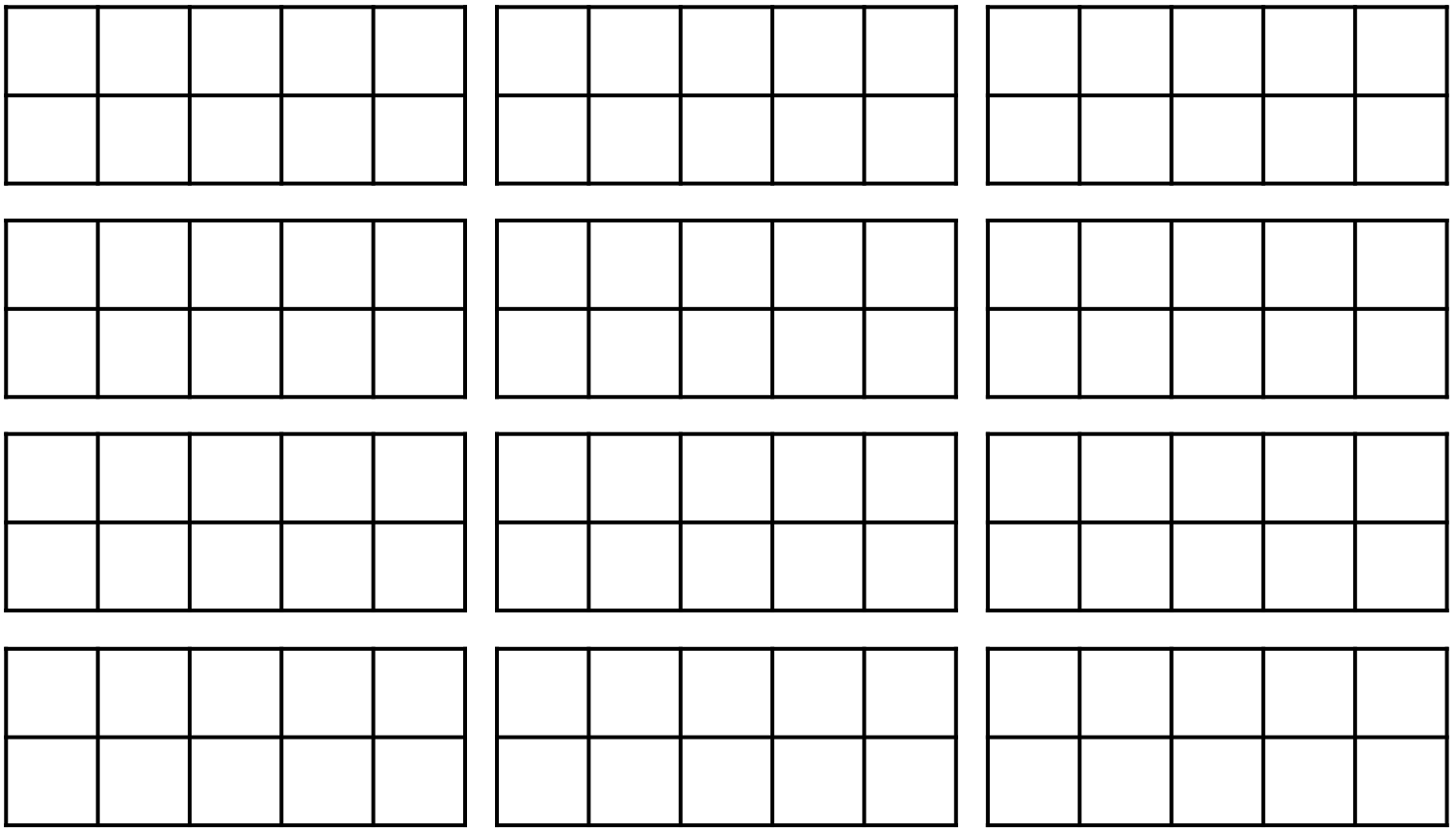


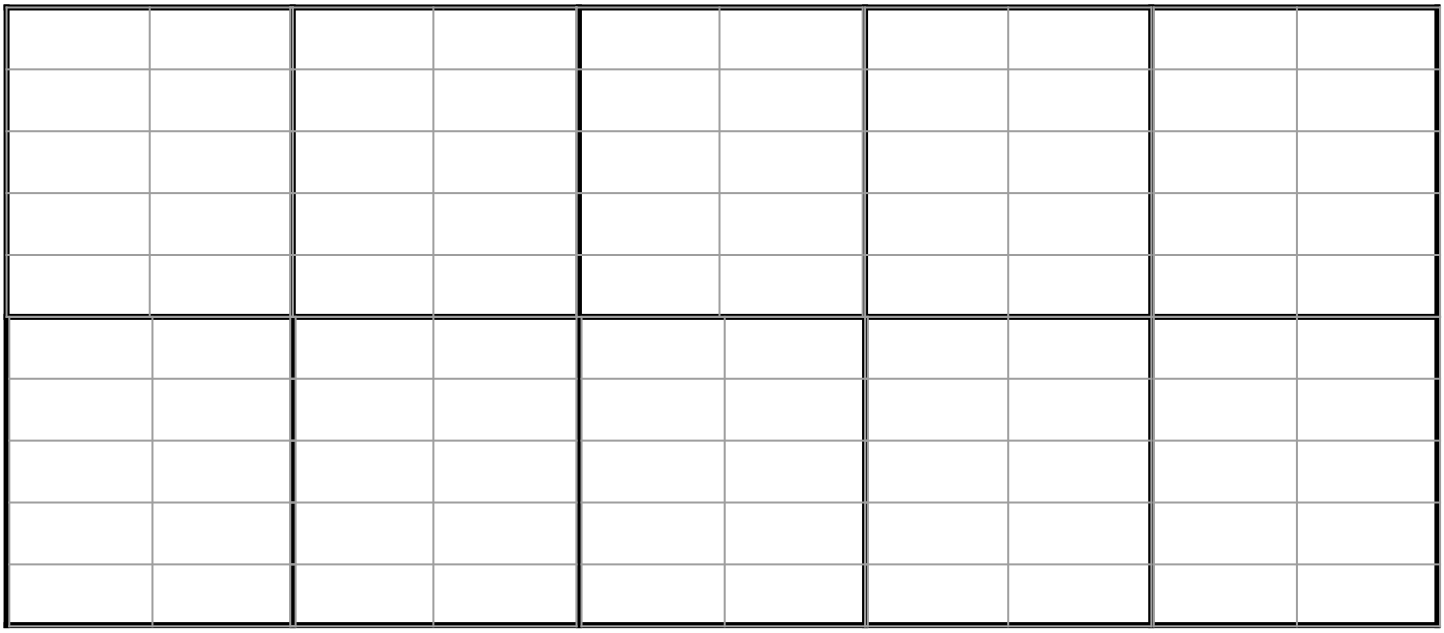
PART-PART-WHOLE
Addition & Subtraction



Number Lines

Ten Frames

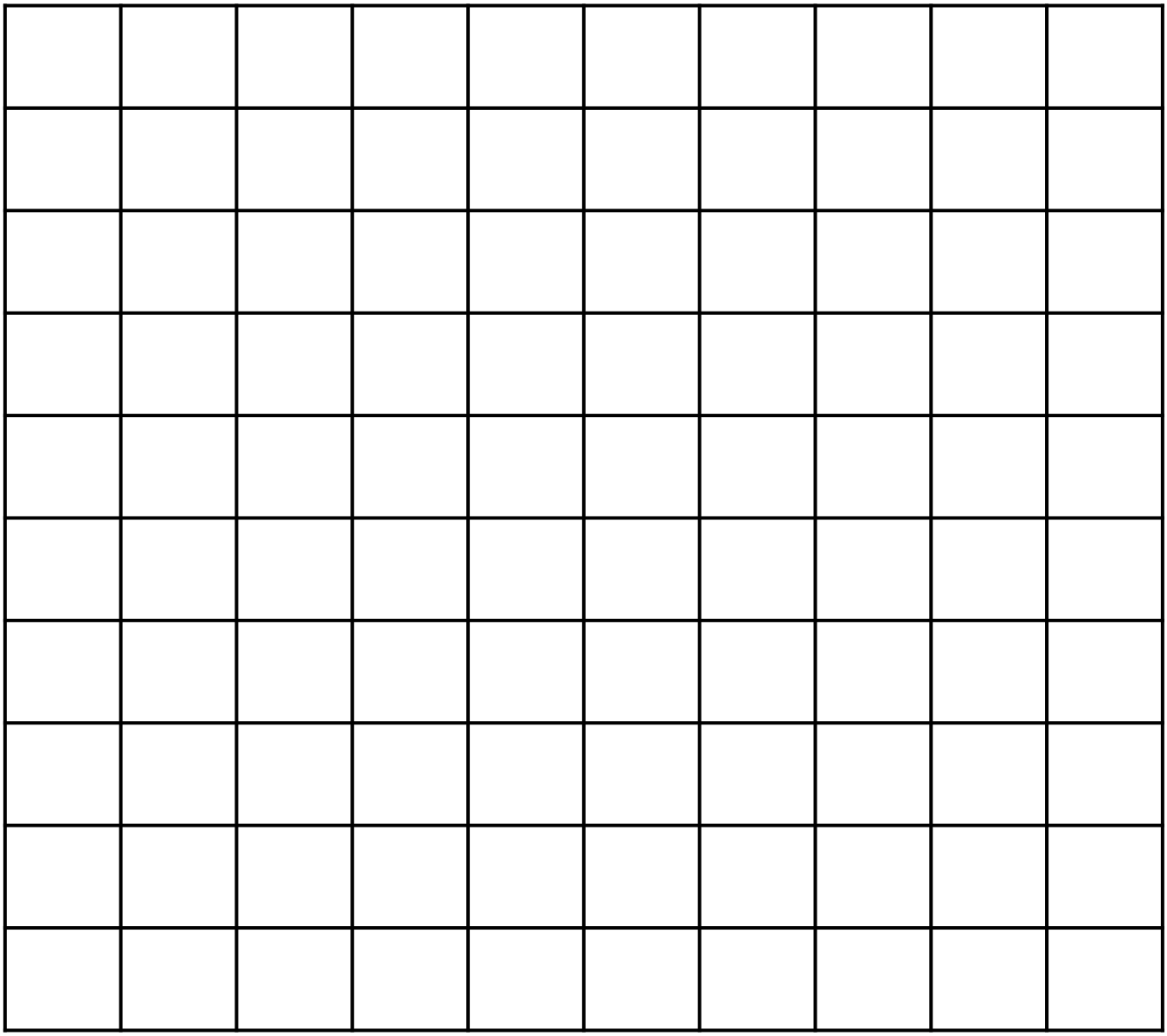




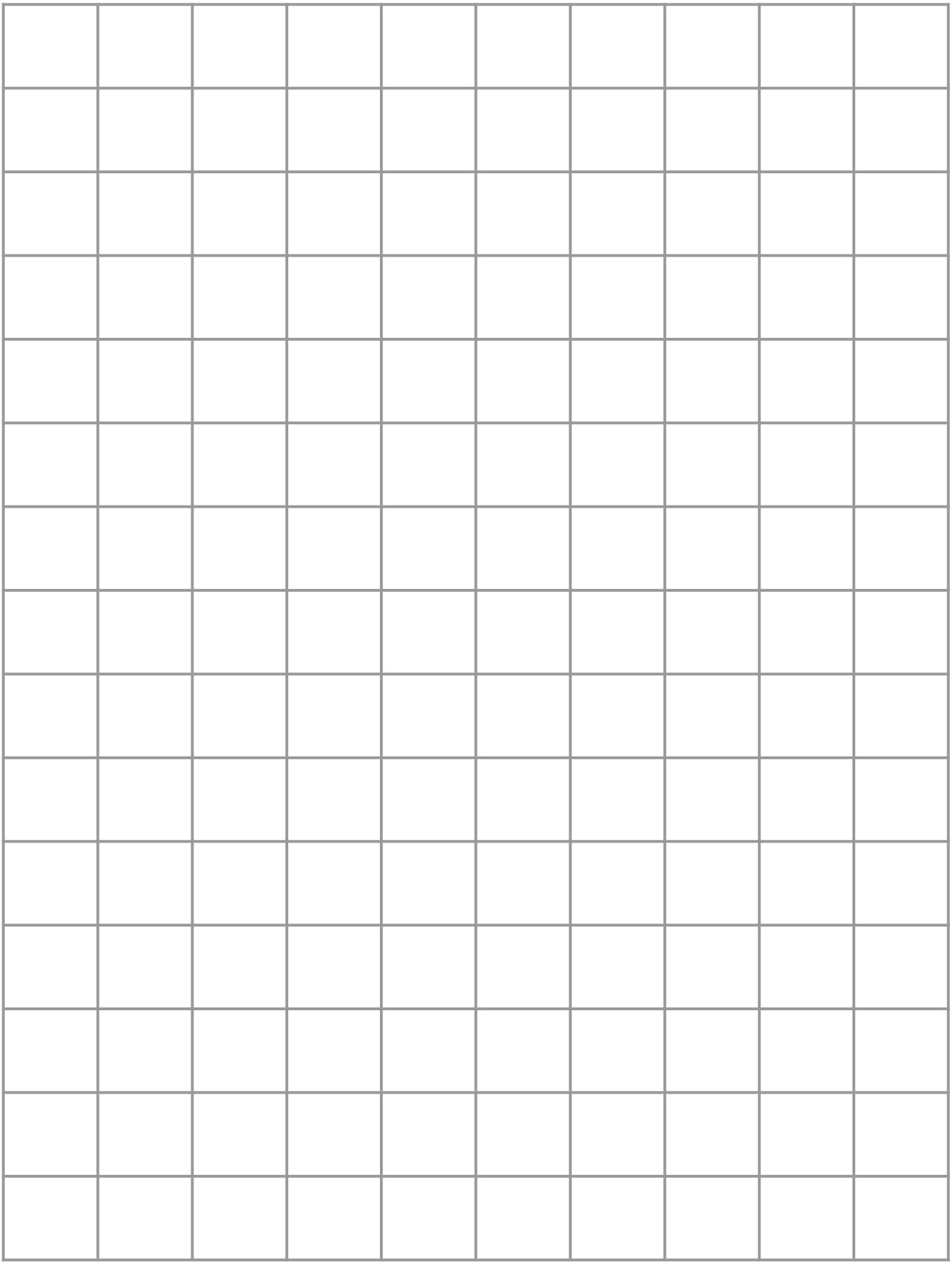
Hundreds Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Blank 100s Grid

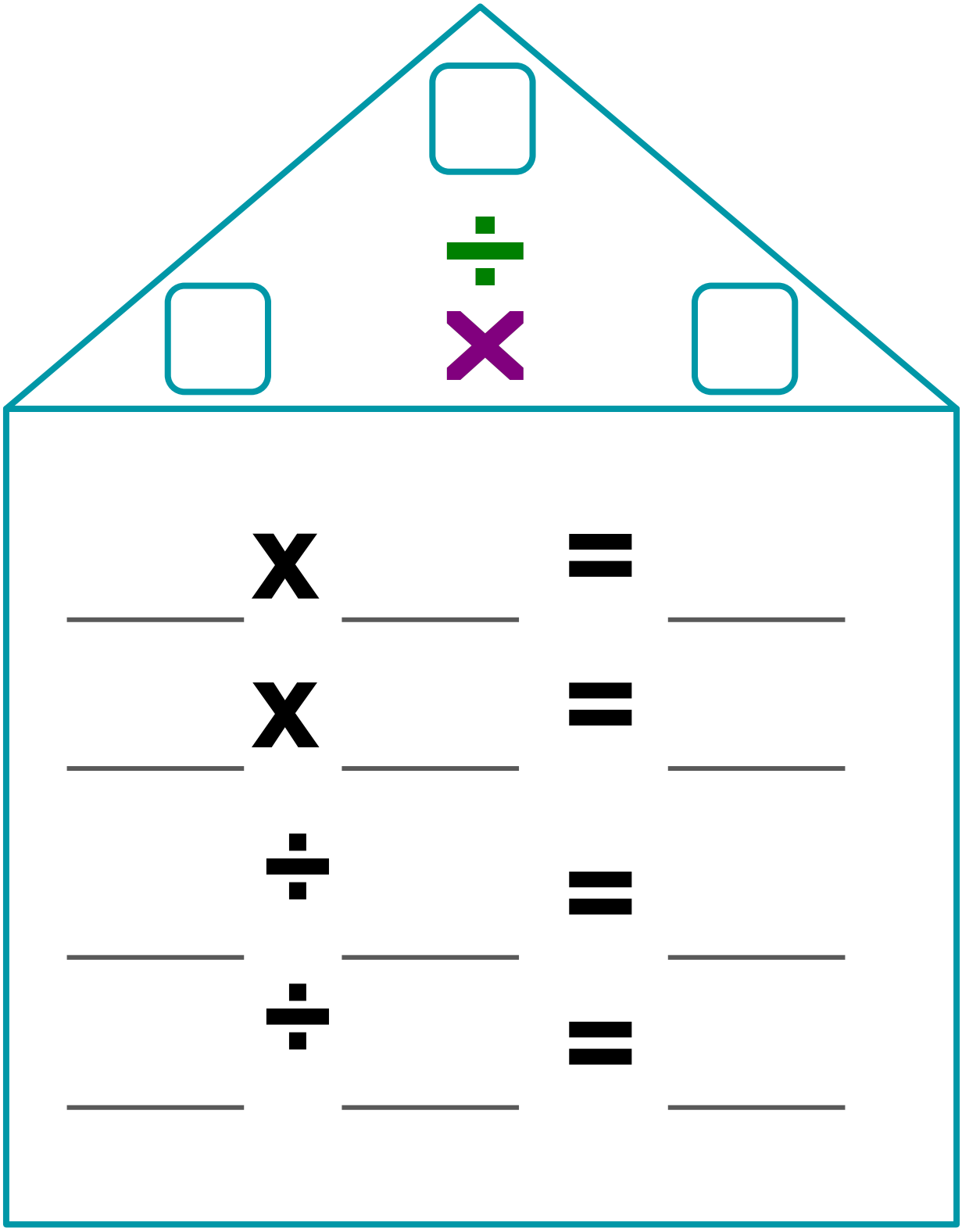


Grid Paper



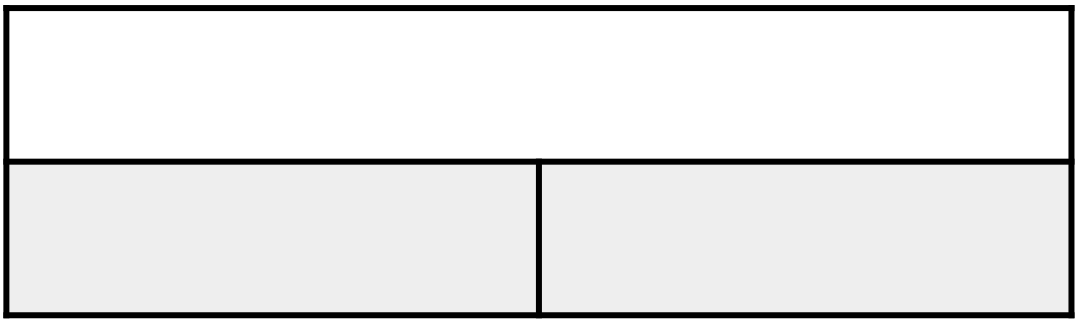
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

FACT FAMILIES
Multiplication and Division

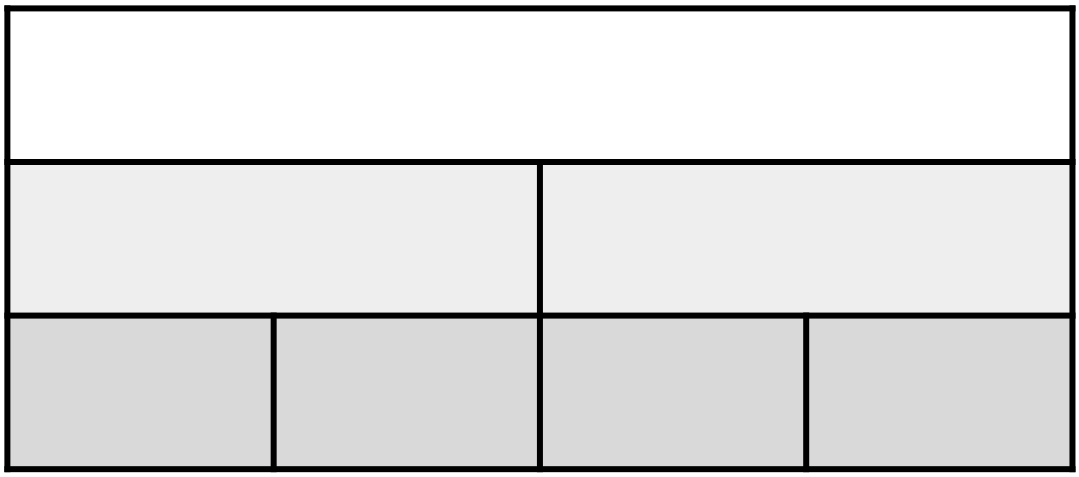


Multiplication
Using the Area Model

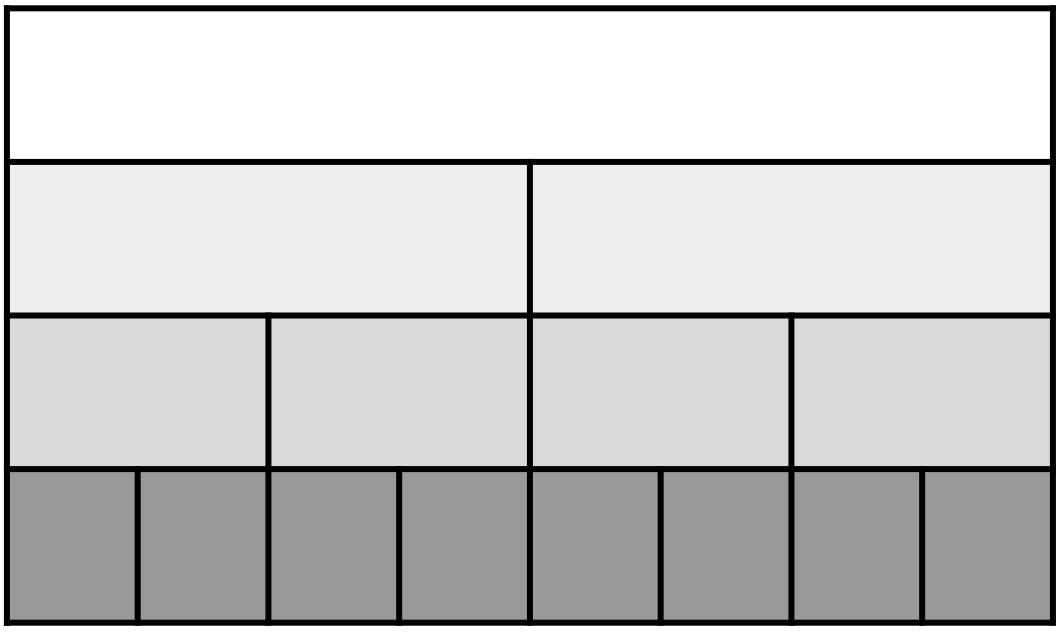
÷ 2



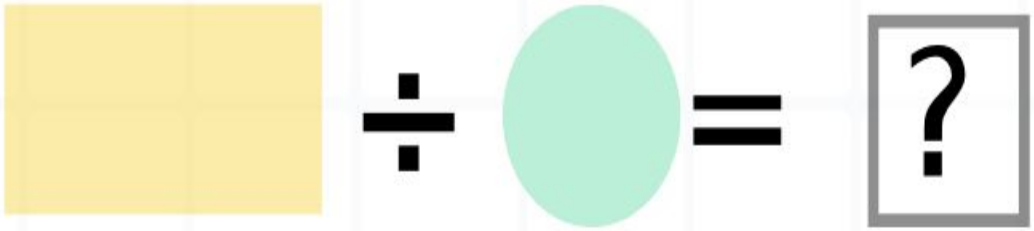
÷ 4

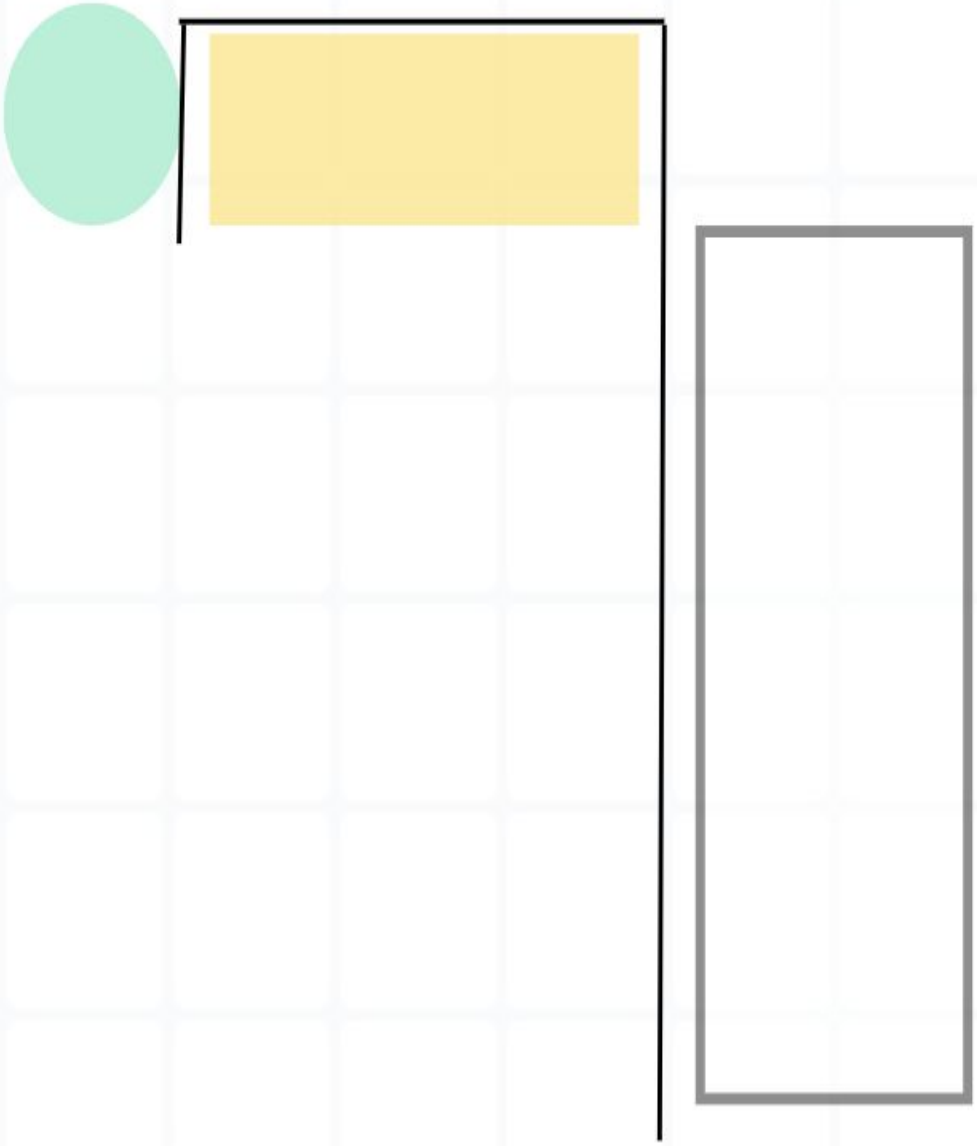


÷ 8



Partial Products





Decimal Number Words

.	Decimal point: say “and”
0.1	one **tenth**
0.01	one **hundredth**
0.001	one **thousandth**
0.0001	one **ten thousandth**
0.00001	one **hundred thousandth**
0.000001	one **millionth**

5.4

“Five and four tenths”

5.06

“Five and six hundredths”

5.015

“Five and fifteen thousandths”

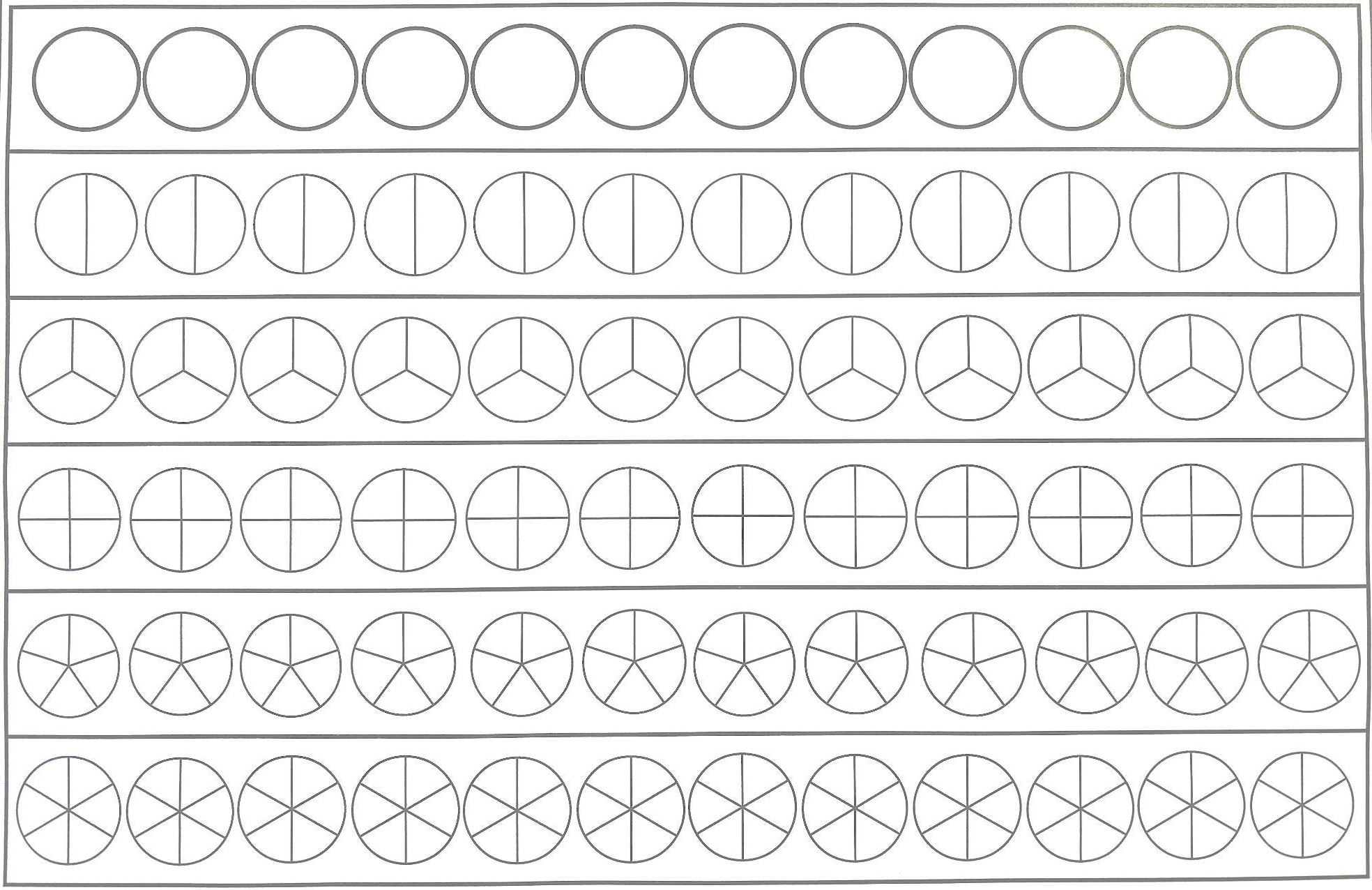
5.346

“Five and three hundred forty six thousandths”

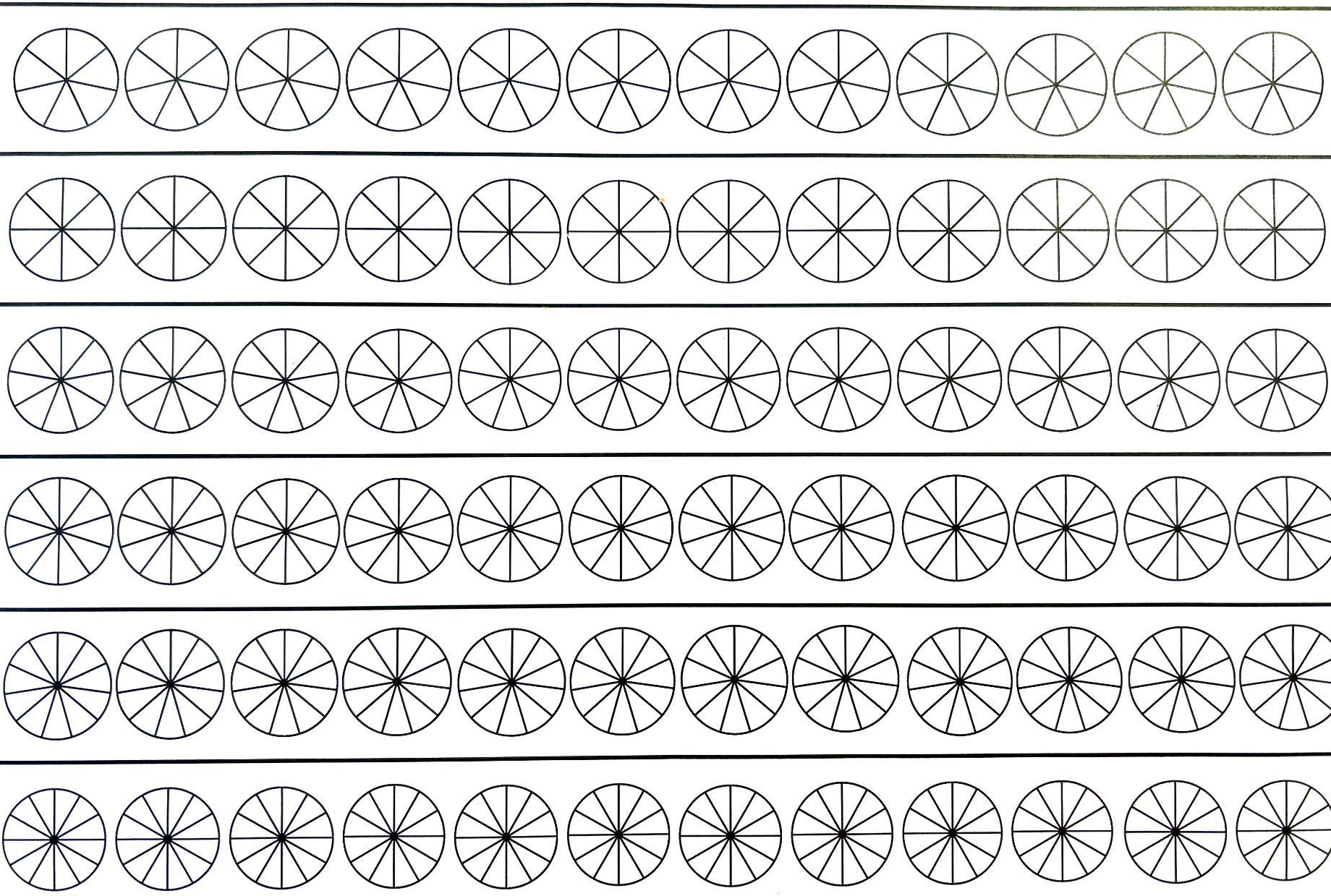
Place Value Chart

Thousands			Ones			Decimals		
Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths

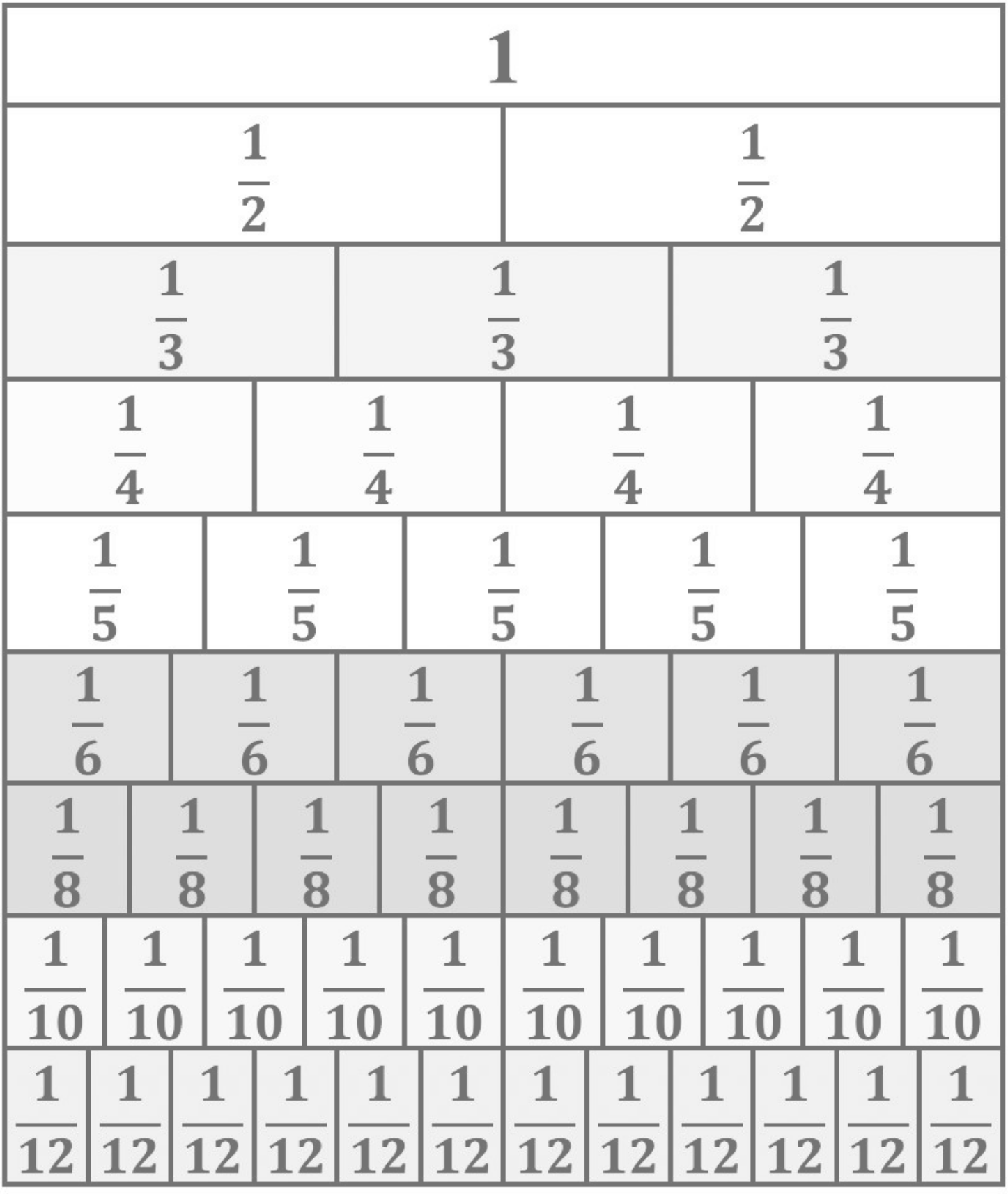
Fraction Circles



Fraction Circles



Fraction Wall



Close to 100

Deal 6 cards. Choose 4 of them to form two 2-digit numbers whose sum is as close to 100 as possible. Your score is the difference between the sum and 100. Discard the 4 cards. Add 4 new cards to your hand. Repeat.

							Sum	Score
1.	____	____	+	____	____	=	____	____
2.	____	____	+	____	____	=	____	____
3.	____	____	+	____	____	=	____	____
4.	____	____	+	____	____	=	____	____
5.	____	____	+	____	____	=	____	____

Total: ____

							Sum	Score
1.	____	____	+	____	____	=	____	____
2.	____	____	+	____	____	=	____	____
3.	____	____	+	____	____	=	____	____
4.	____	____	+	____	____	=	____	____
5.	____	____	+	____	____	=	____	____

Total: ____

Close to 1000

Deal 8 cards. Choose 6 cards whose sum is as close to 1000 as possible. Your score is the difference between the sum and 1000. Discard the 6 cards. Add 6 new cards to your hand. Repeat.

										Sum	Score
1.	____	____	____	+	____	____	____	=	____	____	
2.	____	____	____	+	____	____	____	=	____	____	
3.	____	____	____	+	____	____	____	=	____	____	
4.	____	____	____	+	____	____	____	=	____	____	
5.	____	____	____	+	____	____	____	=	____	____	

Total: ____

										Sum	Score
1.	____	____	____	+	____	____	____	=	____	____	
2.	____	____	____	+	____	____	____	=	____	____	
3.	____	____	____	+	____	____	____	=	____	____	
4.	____	____	____	+	____	____	____	=	____	____	
5.	____	____	____	+	____	____	____	=	____	____	

Total: ____

Number Roll

1. One at a time, each player rolls a die and everyone places that digit somewhere on their own place value chart (you are not allowed to erase your digit once you have written it)
2. Once all places are filled, each player takes a turn reading his/her number aloud.
3. The person with the highest number gets a point.

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones

thousands	hundreds	tens	ones	tenths	hundredths

Close to 100

Deal 6 cards. Choose 4 of them to form two 2-digit numbers whose sum is as close to 100 as possible. Your score is the difference between the sum and 100. Discard the 4 cards. Add 4 new cards to your hand. Repeat.

							Sum	Score
1.	____	____	+	____	____	=	____	____
2.	____	____	+	____	____	=	____	____
3.	____	____	+	____	____	=	____	____
4.	____	____	+	____	____	=	____	____
5.	____	____	+	____	____	=	____	____

Total: ____

							Sum	Score
1.	____	____	+	____	____	=	____	____
2.	____	____	+	____	____	=	____	____
3.	____	____	+	____	____	=	____	____
4.	____	____	+	____	____	=	____	____
5.	____	____	+	____	____	=	____	____

Total: ____

Close to 1000

Deal 8 cards. Choose 6 cards whose sum is as close to 1000 as possible. Your score is the difference between the sum and 1000. Discard the 6 cards. Add 6 new cards to your hand. Repeat.

										Sum	Score
1.	____	____	____	+	____	____	____	=	____	____	
2.	____	____	____	+	____	____	____	=	____	____	
3.	____	____	____	+	____	____	____	=	____	____	
4.	____	____	____	+	____	____	____	=	____	____	
5.	____	____	____	+	____	____	____	=	____	____	

Total: ____

										Sum	Score
1.	____	____	____	+	____	____	____	=	____	____	
2.	____	____	____	+	____	____	____	=	____	____	
3.	____	____	____	+	____	____	____	=	____	____	
4.	____	____	____	+	____	____	____	=	____	____	
5.	____	____	____	+	____	____	____	=	____	____	

Total: ____

Number Roll

1. One at a time, each player rolls a die and everyone places that digit somewhere on their own place value chart (you are not allowed to erase your digit once you have written it)
2. Once all places are filled, each player takes a turn reading his/her number aloud.
3. The person with the highest number gets a point.

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones

thousands	hundreds	tens	ones	tenths	hundredths

The Product Game!

Player 1 starts with a paperclip on one factor. Player 2 chooses to put a paperclip on a factor and claims the product of the two factor choices. Player 1 now moves only one paperclip and claims that product. Repeat.

Get four in a row to win!

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

9
8
7
6
5
4
3
2
1