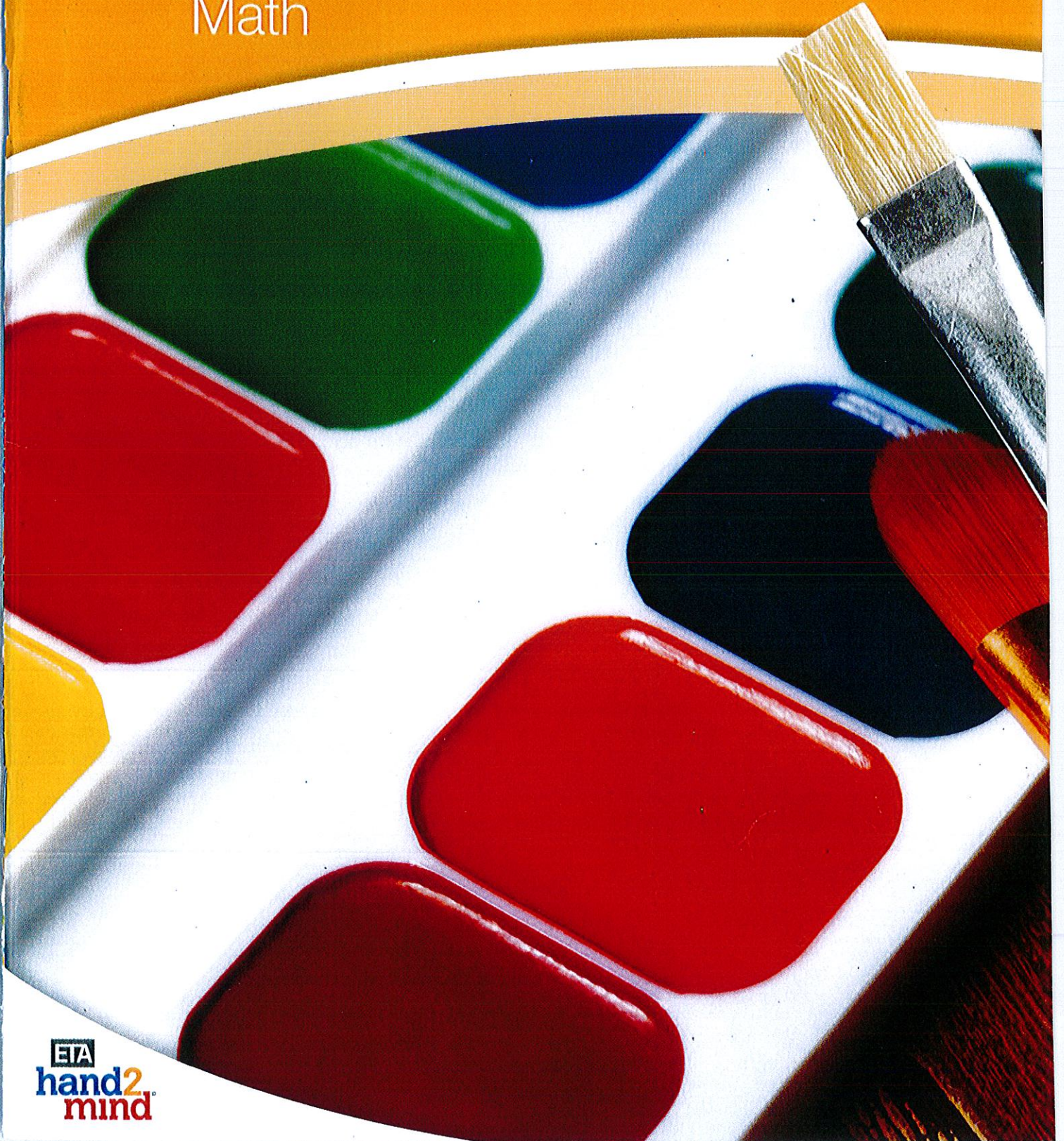


Versa  
Tiles

Math

Foundations of Multiplication

# Equal Groups and Arrays





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VersaTiles® Foundations of Multiplication: Equal Groups and Arrays, Grade 2

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**EA hand2mind**

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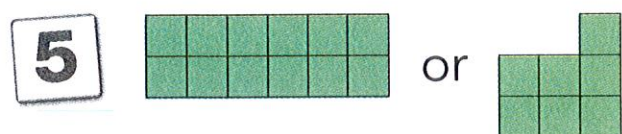
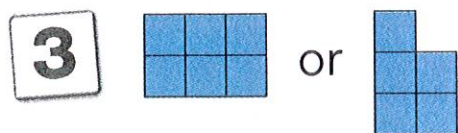
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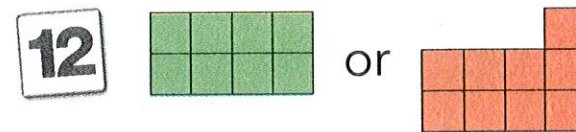
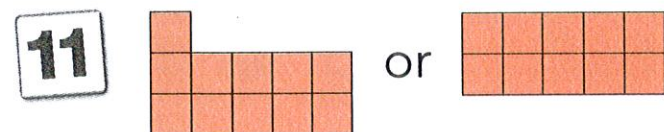
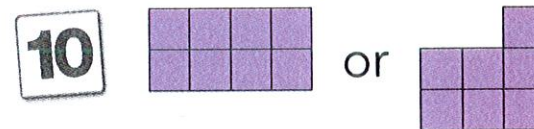
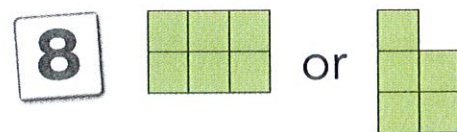


# That's Odd

Choose the even number.



Choose the odd number.



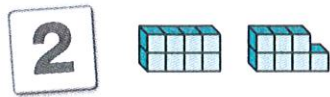
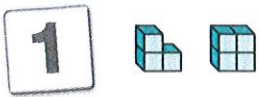
A	B	C	D	E	F
12	1	3	4	9	10
6	11	8	7	2	5
G	H	I	J	K	L

**Objective:** Identify an odd or even number using a model.



# Another Oddity

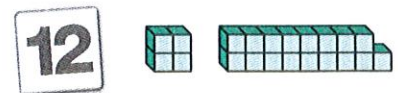
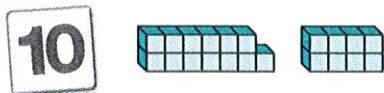
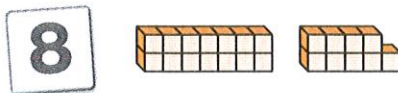
Name the even number.



**Tip**

Even means you can make pairs. Odd means there is one left over when you make pairs.

Name the odd number.



A	B	C	D	E	F
13	3	7	10	9	17
12	4	6	11	14	8
G	H	I	J	K	L

**Objective:** Identify a number as even or odd, given a model.

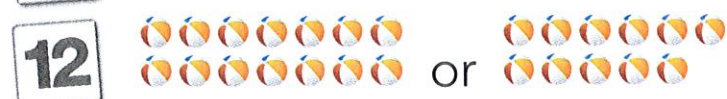
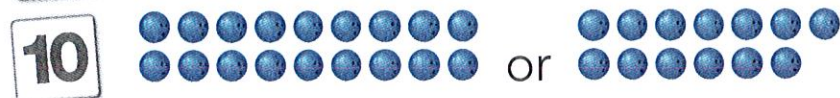
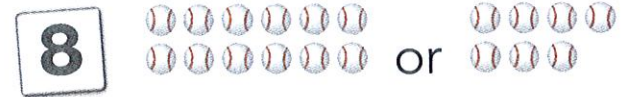


# Even More

Name the odd number.

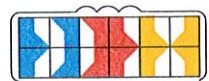


Name the even number.



A	B	C	D	E	F
12	19	9	20	18	10
11	14	17	16	13	15
G	H	I	J	K	L

**Objective:** Identify a number as even or odd by pairing the number of objects.



# Even Pairs

Pair objects to decide if the number is odd or even.


Example

Example: 

8 is an **even** number.

Which number is odd?

1  or

2  or

3  or

4  or

5  or

6  or





Which number is even?

**7**  or 

**8**  or 

**9**  or 

**10**  or 

**11**  or 

**12**  or 

A	B	C	D	E	F
17	7	20	11	5	3
12	1	14	9	16	4
G	H	I	J	K	L

Objective: Pair objects to determine if a number is odd or even.



# Even Steven

Choose the odd number.

**1** 3 or 6

**2** 4 or 7

**3** 5 or 12

**4** 1 or 10

**5** 9 or 8

**6** 10 or 11

Tip

You can count by 2's to find even numbers.

Choose the even number.

**7** 5 or 6

**8** 4 or 11

**9** 9 or 8

**10** 3 or 12

**11** 2 or 7

**12** 10 or 1



A	B	C	D	E	F
12	6	11	4	2	9
1	3	10	7	5	8
G	H	I	J	K	L

Objective: Identify a number as odd or even.



# Equal Star Groups

Find the missing number.



■ groups of 2



■ groups of 2



■ groups of 7



■ groups of 1



■ groups of 3



■ groups of 2



■ groups of 3



■ groups of 2



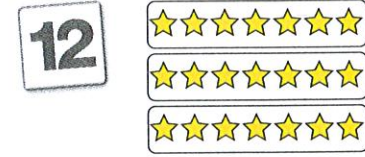
■ group of 8



■ groups of 1



■ groups of 2



■ groups of 7

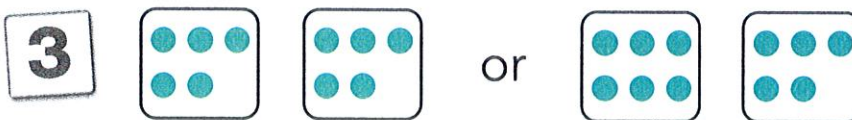
A	B	C	D	E	F
4	8	6	7	1	2
5	12	3	10	9	11
G	H	I	J	K	L

**Objective:** Find the number of equal groups, given the total and the number in each group.



# Seeing Double

Name the odd number.



Tip

The sum of doubles is always an even number.



Name the even number.

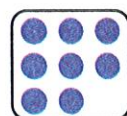
7   or  

8   or  

9   or  

10   or  

11   or  

12   or  

A	B	C	D	E	F
9	12	18	8	13	6
2	5	15	7	11	14
G	H	I	J	K	L

**Objective:** Determine if the sum of equal addends is even or odd.



# Double It Up

Which has a sum that is even?

**1**  $1 + 1$  or  $1 + 2$

**2**  $7 + 7$  or  $7 + 8$

**3**  $2 + 3$  or  $3 + 3$

**4**  $3 + 4$  or  $4 + 4$

**5**  $9 + 9$  or  $9 + 8$

**6**  $5 + 6$  or  $6 + 6$

Tip

An even number can always be split into 2 equal groups.



Which has a sum that is odd?

**7**  $6 + 7$  or  $6 + 6$

**8**  $1 + 2$  or  $2 + 2$

**9**  $7 + 8$  or  $7 + 7$

**10**  $8 + 8$  or  $8 + 9$

**11**  $4 + 5$  or  $5 + 5$

**12**  $9 + 10$  or  $10 + 10$



A	B	C	D	E	F
15	18	17	13	3	12
9	6	8	2	14	19
G	H	I	J	K	L

Objective: Determine if the sum is even or odd.



# Even Sums

Find the sums.

**1**  $8 + 8$

**2**  $5 + 5$

**3**  $2 + 2$

**4**  $9 + 9$

**5**  $6 + 6$

**6**  $1 + 1$

**7**  $10 + 10$

**8**  $3 + 3$

**9**  $7 + 7$

**10**  $4 + 4$

**Tip**

If you add doubles, the sum is always even.

Solve.

**11** Alice found 3 pens, George found 3 more. Is the number they have together odd or even?

**12** Tahari saw 8 turtles and Maria saw 7 more. Is the number they saw together odd or even?


A	B	C	D	E	F
2	10	16	18	14	4
G	H	I	J	K	L
6	odd	8	20	12	even


**Objective:** Find the sum of two addends, using doubles or doubles strategy.







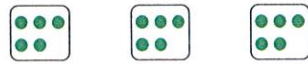
# Adding Equal Groups


**1**   
 $2 + 2 + 2$


**2**   
 $1 + 1 + 1$


**3**   
 $4 + 4 + 4$


**4**   
 $2 + 2 + 2 + 2$


**5**   
 $5 + 5 + 5$


**6**   
 $3 + 3 + 3$


**7**   
 $4 + 4 + 4 + 4$

**8**   
 $6 + 6 + 6$

**9**   
 $5 + 5 + 5 + 5$

**10**   
 $6 + 6 + 6 + 6$

**11**   
 $7 + 7 + 7$

**12**   
 $9 + 9 + 9$

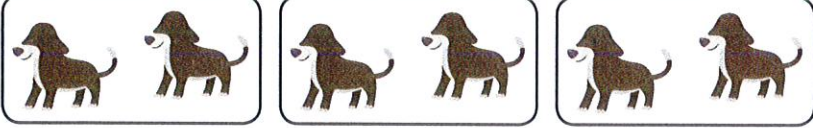
A	B	C	D	E	F
9	18	8	24	12	21
27	3	16	6	15	20
G	H	I	J	K	L

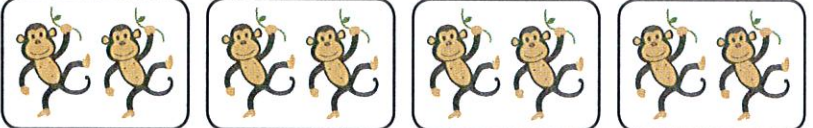
**Objective:** Use repeated addition of equal groups to find the total.

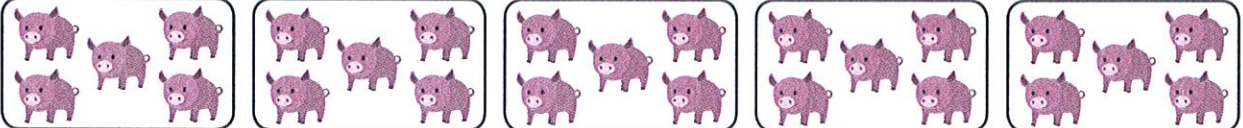


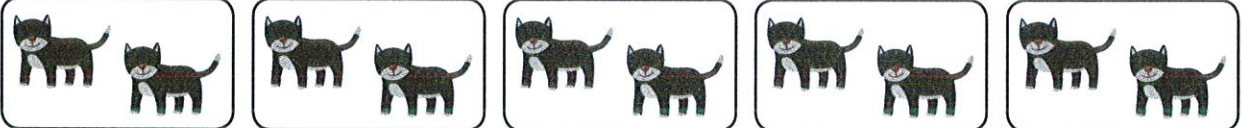
# Add Equal Groups


Add to find the total.


**1**   
 $2 + 2 + 2$


**2**   
 $2 + 2 + 2 + 2$

**3**   
 $5 + 5 + 5 + 5 + 5$

**4**   
 $2 + 2 + 2 + 2 + 2 + 2$

**5**   
 $5 + 5 + 5 + 5$

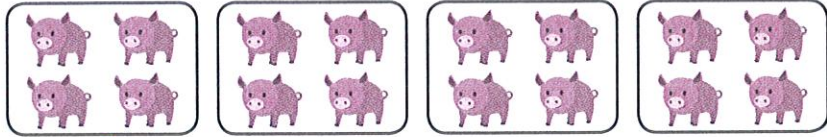
**6**   
 $5 + 5 + 5$

**7**   
 $1 + 1 + 1 + 1 + 1 + 1 + 1$

Tip

You can skip count to find the total.

8



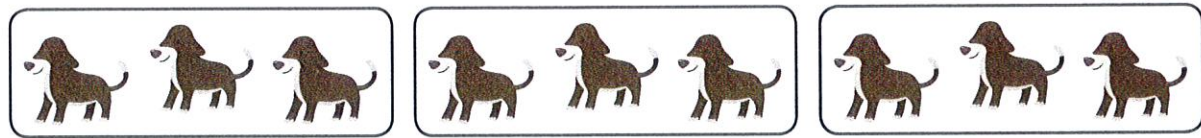
4 + 4 + 4 + 4

9



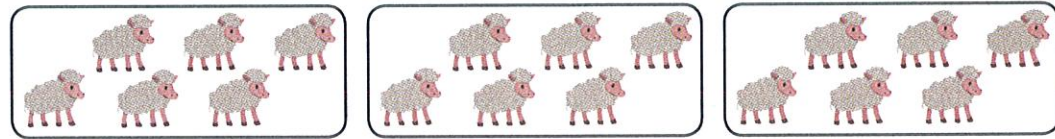
7 + 7

10



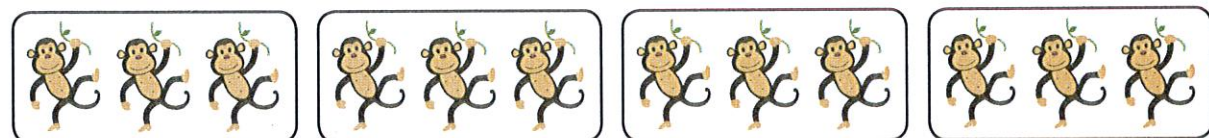
3 + 3 + 3

11



6 + 6 + 6

12



3 + 3 + 3 + 3

A

B

C

D

E

F

15

8

20

14

10

6

12

16

25

18

7

9

G

H

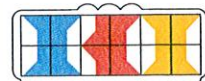
I

J

K


L


Objective: Use repeated addition of equal groups to find the total.





# Repeated Addition


Find the total.


**1**   
 $5 + 5 + 5 + 5 + 5$


**2**   
 $4 + 4 + 4 + 4 + 4 + 4$


**3**   
 $2 + 2 + 2 + 2 + 2$


**4**   
 $9 + 9 + 9$


**5**   
 $6 + 6 + 6 + 6 + 6$


**6**   
 $3 + 3 + 3$


**7**   
 $2 + 2 + 2 + 2$

**8**   
 $7 + 7 + 7 + 7$

**9**   
 $4 + 4 + 4 + 4 + 4$

**10**   
 $3 + 3 + 3 + 3 + 3$

**11**   
 $1 + 1 + 1 + 1$

**12**   
 $3 + 3 + 3 + 3 + 3 + 3$

A	B	C	D	E	F
25	27	28	18	10	20
8	15	24	9	4	30
G	H	I	J	K	L

**Objective:** Use repeated addition of equal groups to find the total.



# At Odds

Choose the even number.

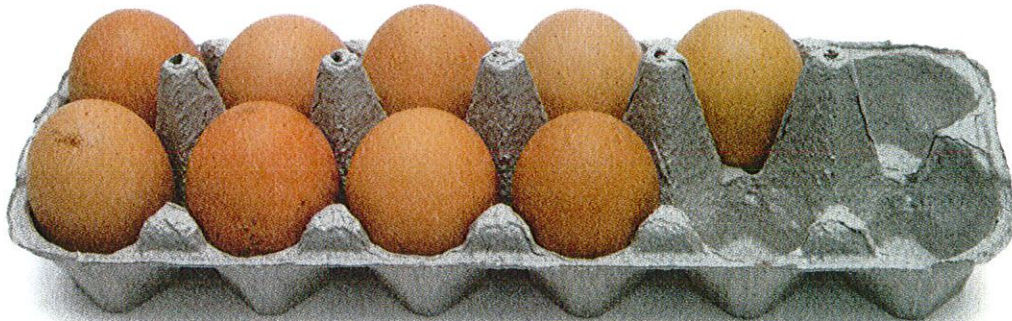
**1** 14 or 15      **2** 18 or 13      **3** 12 or 11

**4** 20 or 15      **5** 19 or 16      **6** 10 or 17

Choose the odd number.

**7** 17 or 18      **8** 13 or 16      **9** 15 or 12

**10** 11 or 10      **11** 9 or 8      **12** 10 or 19



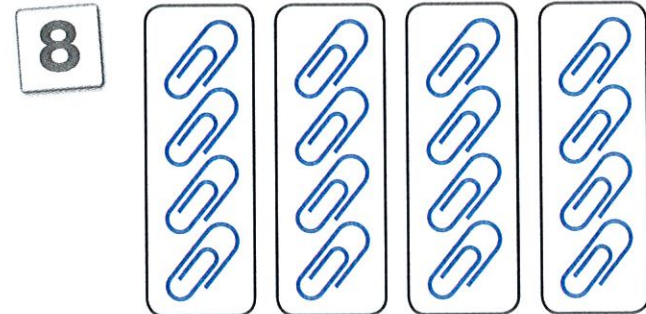
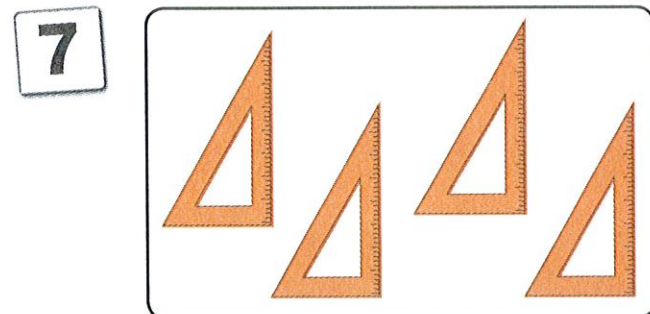
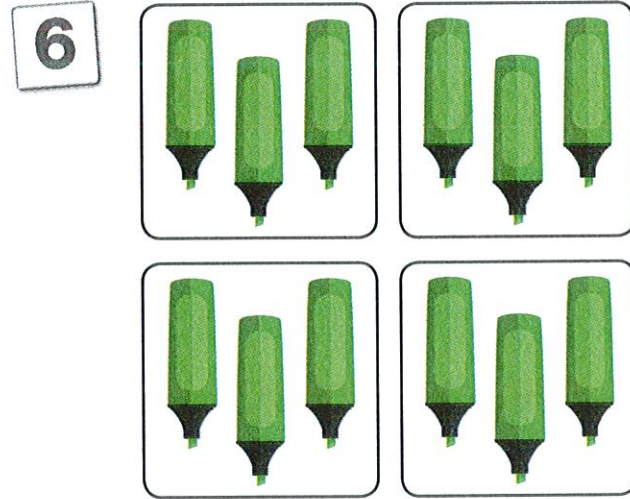
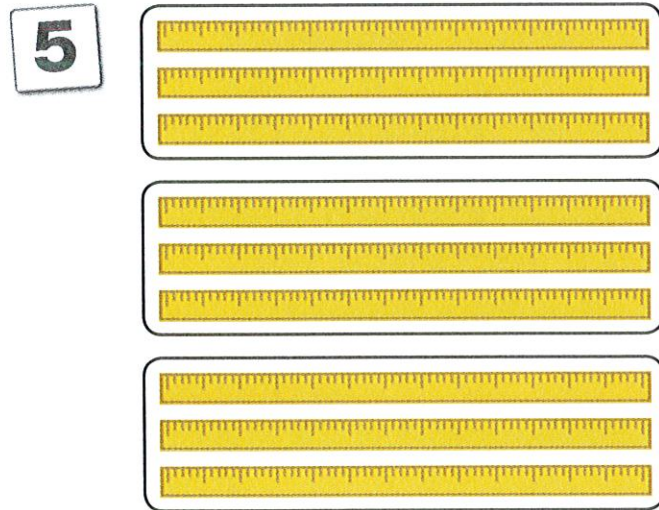
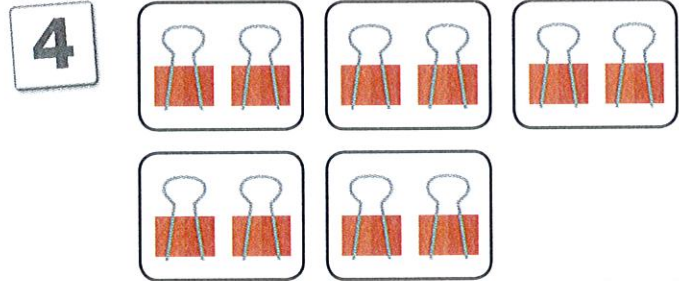
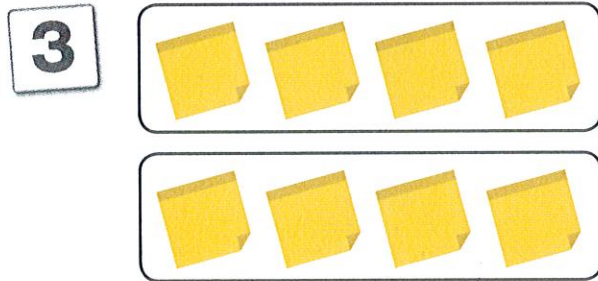
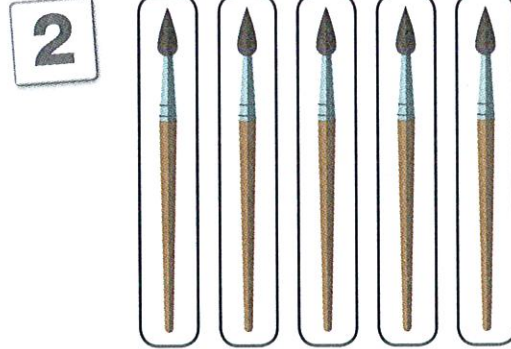
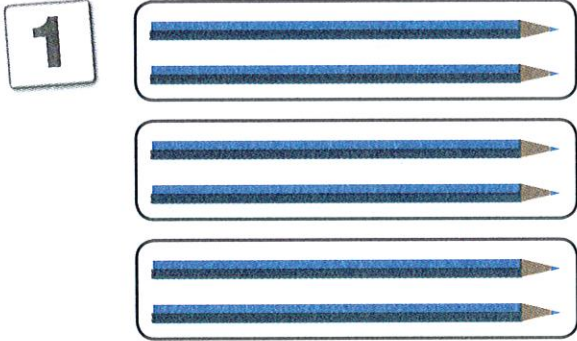
A	B	C	D	E	F
11	17	10	13	9	16
14	20	19	18	15	12
G	H	I	J	K	L

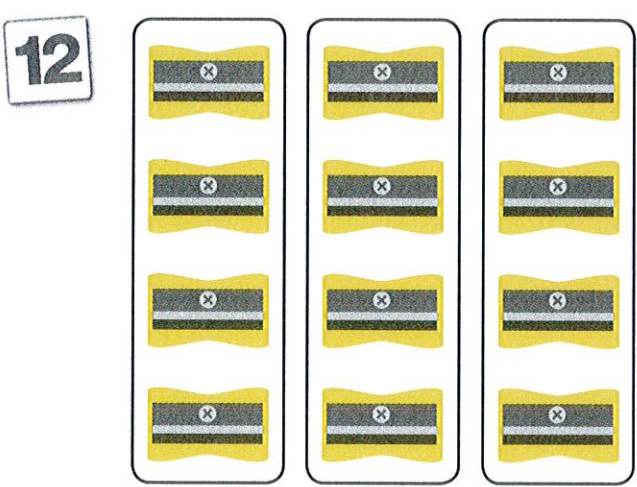
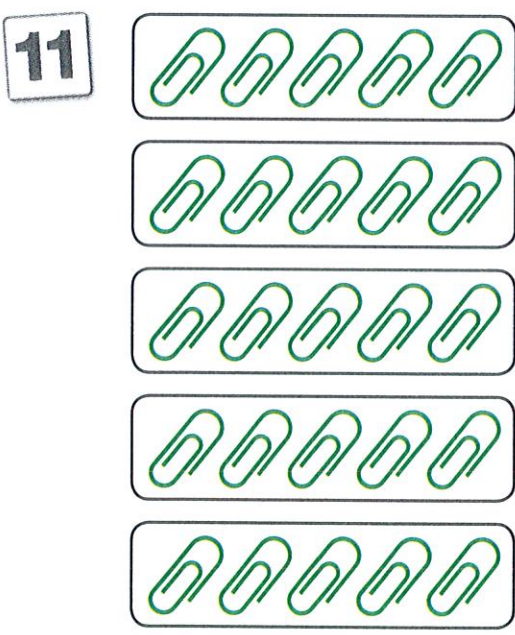
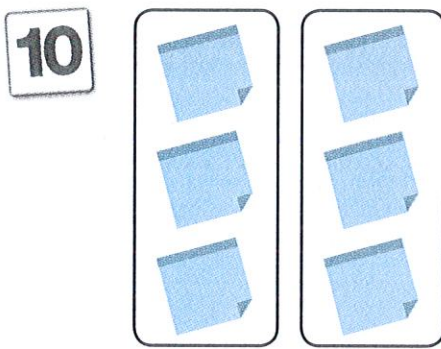
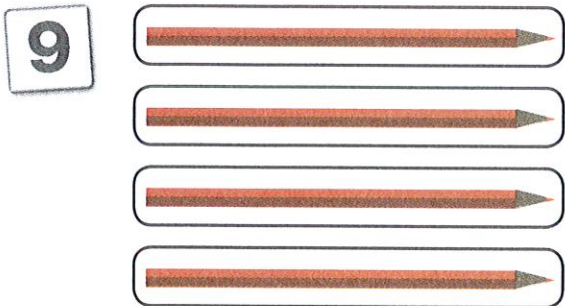
**Objective:** Identify a number as odd or even within 20.



# Describe Equal Groups

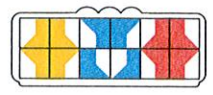
Tell about the equal groups.





A	B	C	D	E	F
1 group of 4	2 groups of 3	5 groups of 1	4 groups of 3	3 groups of 3	5 groups of 5
5 groups of 2	3 groups of 2	3 groups of 4	4 groups of 4	2 groups of 4	4 groups of 1
G	H	I	J	K	L

**Objective:** Use numbers and words to describe equal groups of objects.



# Grouping Triangles

Find the equal groups.

- |                         |                         |
|-------------------------|-------------------------|
| <b>1</b> 2 groups of 5  | <b>2</b> 2 groups of 10 |
| <b>3</b> 2 groups of 3  | <b>4</b> 6 groups of 2  |
| <b>5</b> 7 groups of 1  | <b>6</b> 1 group of 12  |
| <b>7</b> 2 groups of 9  | <b>8</b> 1 group of 7   |
| <b>9</b> 3 groups of 4  | <b>10</b> 3 groups of 2 |
| <b>11</b> 5 groups of 2 | <b>12</b> 7 groups of 2 |

**Tip**

There are rings around equal groups.

A	B	C	D	E	F
G	H	I	J	K	L


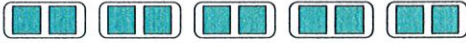




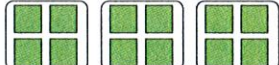





**Objective:** Use numbers and words to describe equal groups of objects.





# Great Groups

Find the missing number.

- 1**    
 ■ groups of 3
- 2**    
 ■ groups of 2
- 3**    
 6 groups of ■
- 4**    
 2 groups of ■
- 5**    
 3 groups of ■
- 6**    
 ■ groups of 2
- 7**    
 ■ groups of 4
- 8**    
 2 groups of ■
- 9**    
 ■ groups of 1
- 10**    
 2 groups of ■
- 11**    
 3 groups of ■
- 12**    
 1 group of ■

A	B	C	D	E	F
1	12	8	10	2	4
9	6	7	5	3	11
G	H	I	J	K	L

**Objective:** Name the number of equal groups or the number in each group.



# How Many Groups?

Find the number of equal groups.

**1**

**2**

**3**

**4**

**5**

**6**

**7**

**8**

**9**

**10**

**11**

**12**

A	B	C	D	E	F
6	4	1	3	11	8
12	7	2	5	9	10
G	H	I	J	K	L

**Objective:** Find the number of equal groups, given the total and the number in each group.



# Addends, Totals, and Arrays

Find the matching pattern.

**1**  $2 + 2 = 4$

**2**  $4 + 4 + 4 = 12$

**3**  $1 + 1 = 2$

**4**  $5 + 5 = 10$

**5**  $2 + 2 + 2 = 6$

**6**  $5 + 5 + 5 = 15$

**7**  $4 + 4 + 4 + 4 = 16$













**8**  $5 + 5 + 5 + 5 = 20$

**9**  $3 + 3 + 3 = 9$

**10**  $4 + 4 = 8$

**11**  $1 + 1 + 1 = 3$

**12** 5

A	B	C	D	E	F
					
					
G	H	I	J	K	L

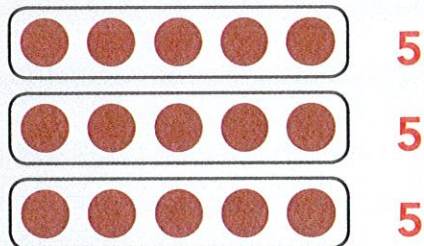
Objective: Represent repeated addition as an array.



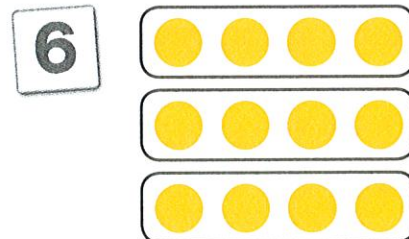
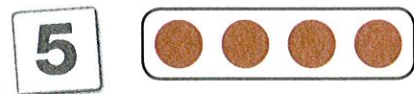
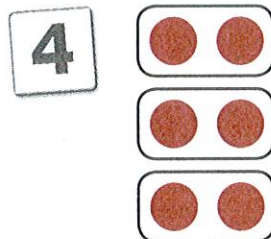
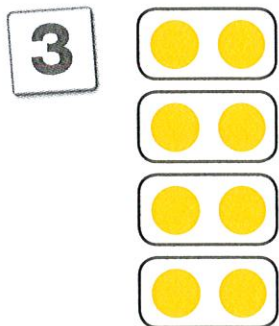
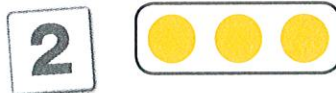
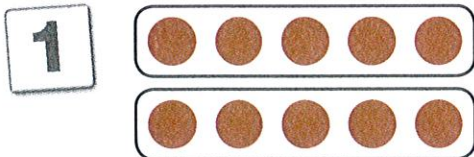
# Arrays of Counters

Example

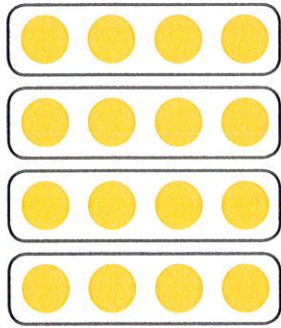
To find the total number of counters, add the number in each row.



Find the total number of objects.



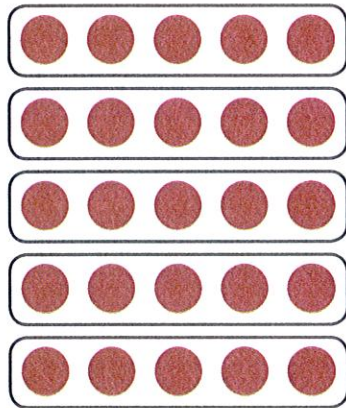
7



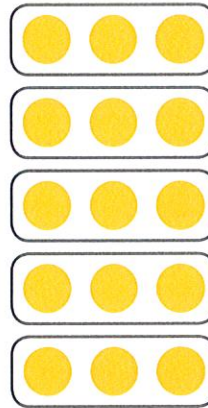
8



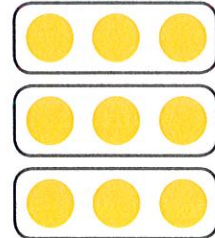
9



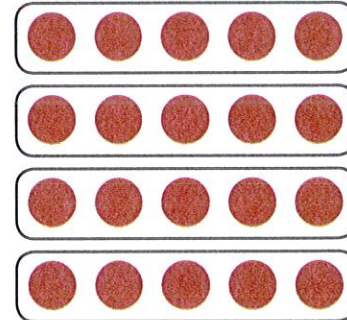
10



11

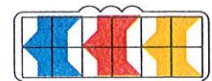


12



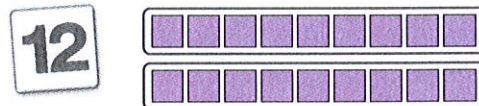
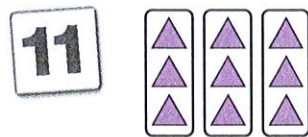
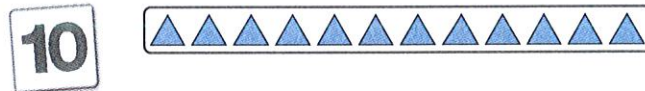
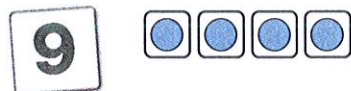
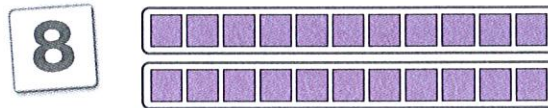
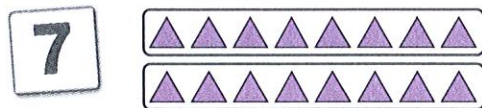
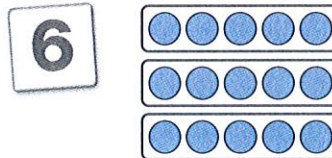
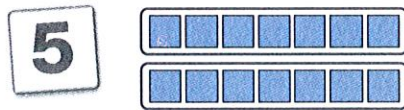
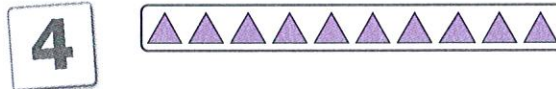
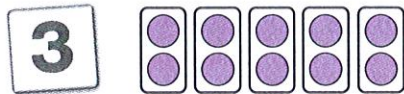
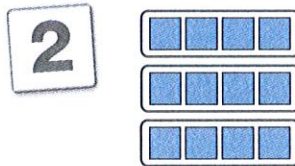
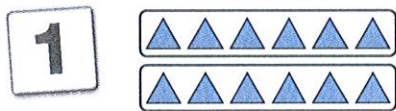
A	B	C	D	E	F
20	3	4	25	16	10
12	5	8	9	6	15
G	H	I	J	K	L

Objective: Add to find the total number of objects in an array.



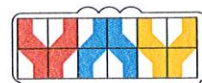
# How Many in Your Group?

Find the number in each equal group.



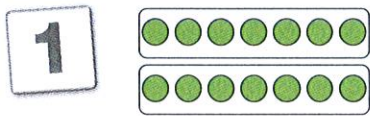
A	B	C	D	E	F
7	3	11	9	8	12
1	2	5	4	6	10
G	H	I	J	K	L

**Objective:** Find the number in each equal group.

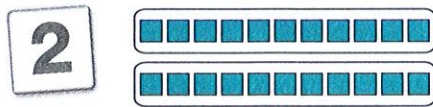


# More Fun with Equal Groups!

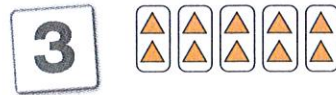
Find the missing number.



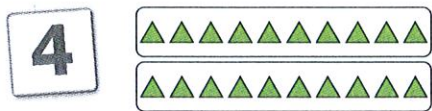
2 groups of ■



2 groups of ■



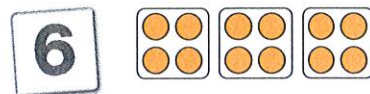
5 groups of ■



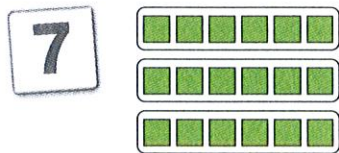
2 groups of ■



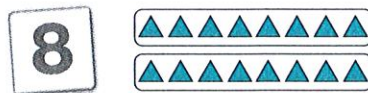
3 groups of ■



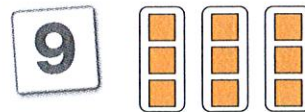
3 groups of ■



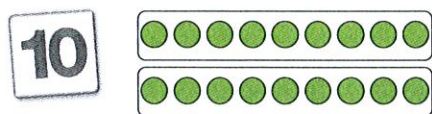
3 groups of ■



2 groups of ■



3 groups of ■



2 groups of ■



4 groups of ■



3 groups of ■

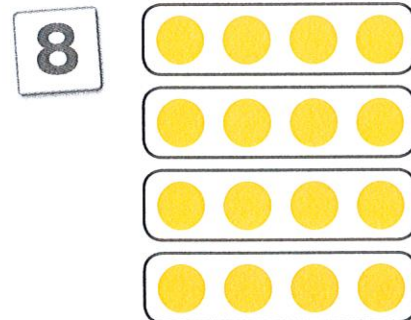
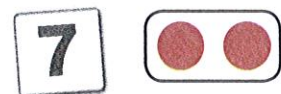
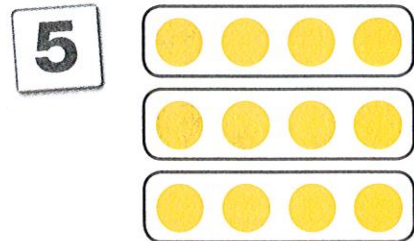
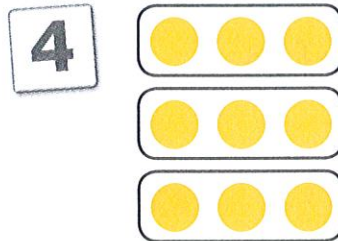
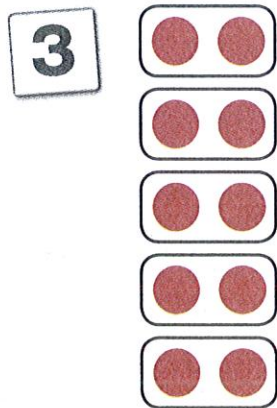
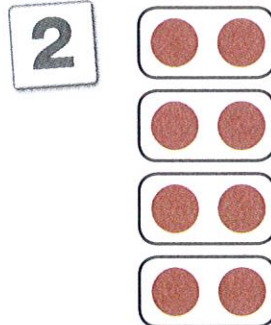
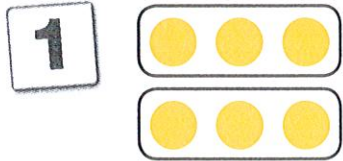
A	B	C	D	E	F
4	11	1	0	10	7
8	5	3	2	9	6
G	H	I	J	K	L

**Objective:** Find the number in each equal group, given the total and the number of groups.



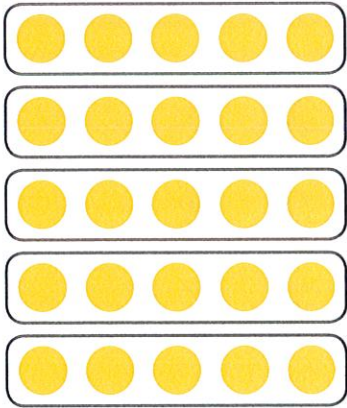
# Array Models

Use counters to make these groups.  
Add to find the total number.





9



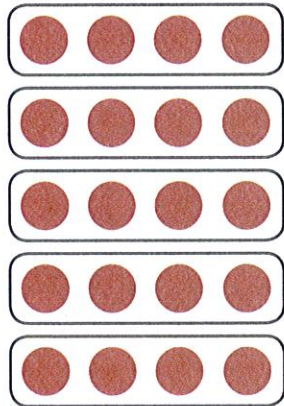
10



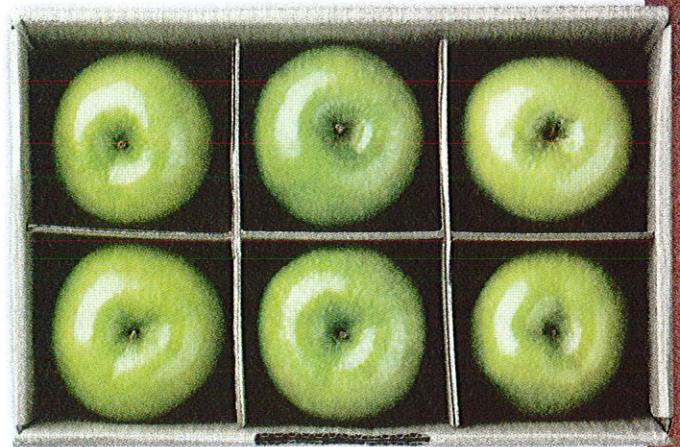
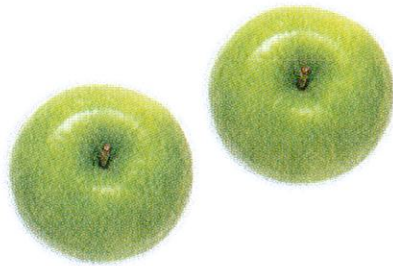
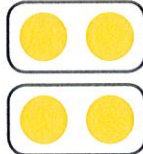
Tip

Each row has the same number of counters.

11



12



A	B	C	D	E	F
9	3	12	20	5	16
2	6	10	25	4	8
G	H	I	J	K	L

Objective: Determine the total number of objects in a rectangular array.



# Array Addition

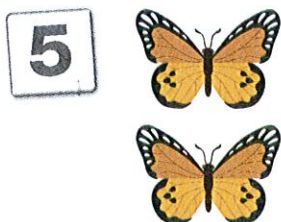
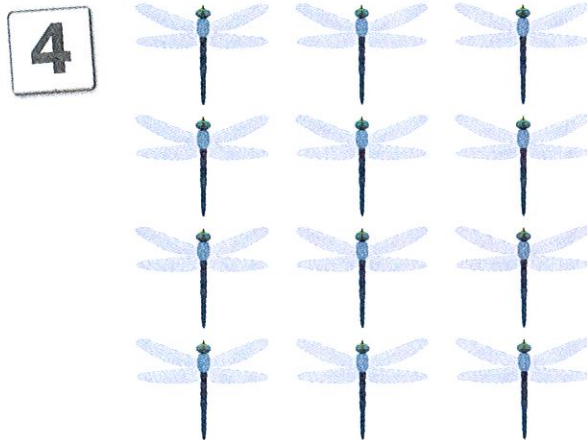
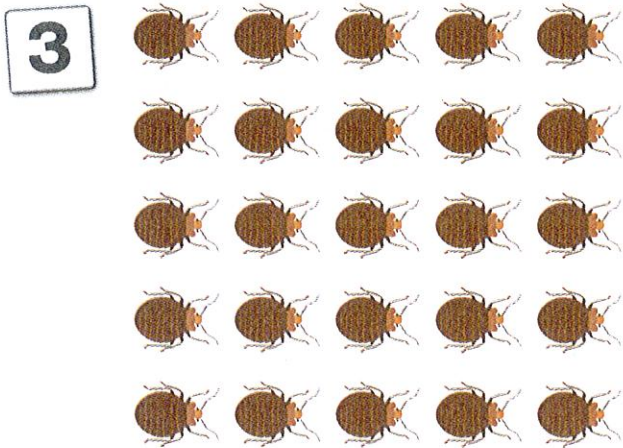
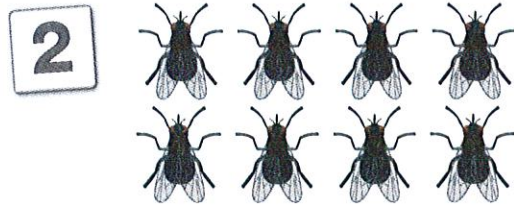
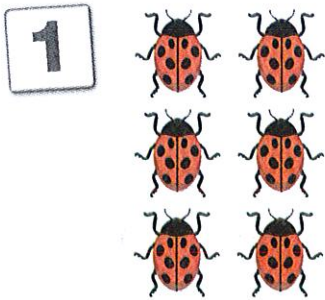
Use addition  
to find the total  
number of objects.

Example

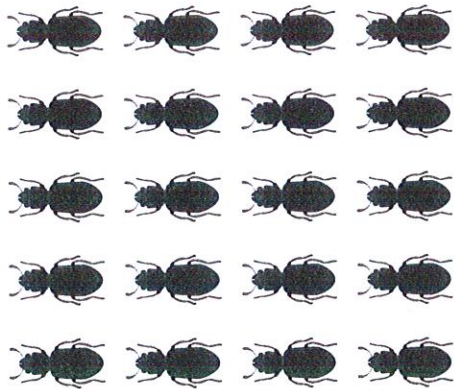
$$4 + 4 + 4 + 4 = 16$$



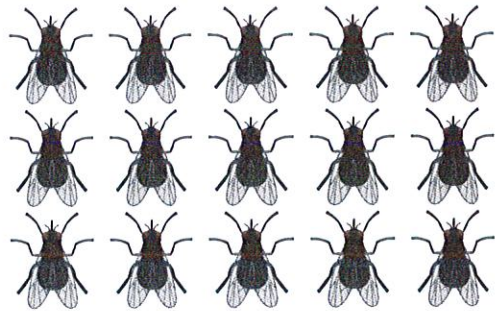
Find the total number of objects.



7



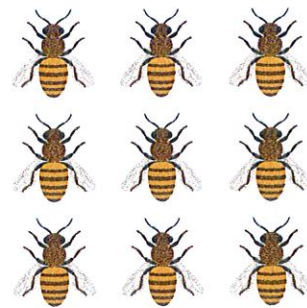
8



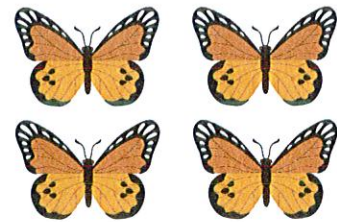
9



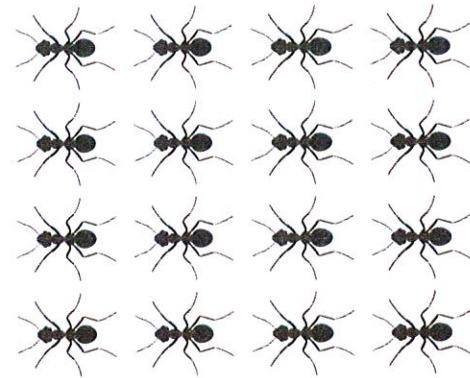
10



11



12



A

$2 + 2 = 4$

B

$1 + 1 = 2$

C

$4 + 4 = 8$

D

$5$

E

$3 + 3 + 3 = 9$

F

$4 + 4 + 4 + 4 = 20$

G

$5 + 5 = 10$

H

$5 + 5 + 5 + 5 + 5 = 25$

I

$3 + 3 + 3 + 3 + 3 = 15$

J

$4 + 4 + 4 + 4 = 16$

K

$2 + 2 + 2 = 6$

L

$3 + 3 + 3 + 3 = 12$

Objective: Express the sum of equal addends as an equation.



# Model and Array

Use counters to make a group.  
Find the sum.

**1**  $4 + 4 + 4 + 4 =$

**2**  $0 + 0 + 0 + 0 + 0 =$

**3**  $3 + 3 + 3 + 3 + 3 =$

**4**  $5 + 5 + 5 + 5 =$

**5**  $2 + 2 + 2 =$

**6**  $4 + 4 =$

**7**  $3 + 3 + 3 =$

**8**  $4 + 4 + 4 =$

**9**  $1 + 1 + 1 + 1 + 1 =$

**10**  $5 + 5 + 5 + 5 + 5 =$

**11**  $2 + 2 =$

**12**  $5 + 5 =$

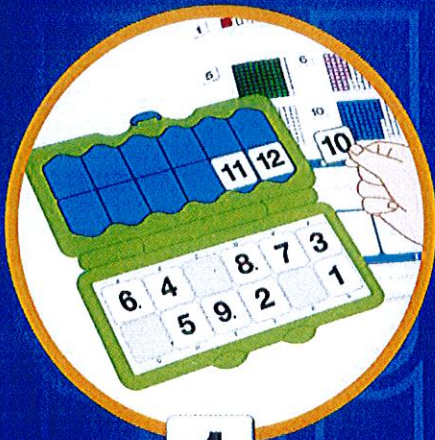


A	B	C	D	E	F
4	15	10	12	25	20
5	6	0	8	16	9
G	H	I	J	K	L

**Objective:** Find the sum of equal addends in an array.

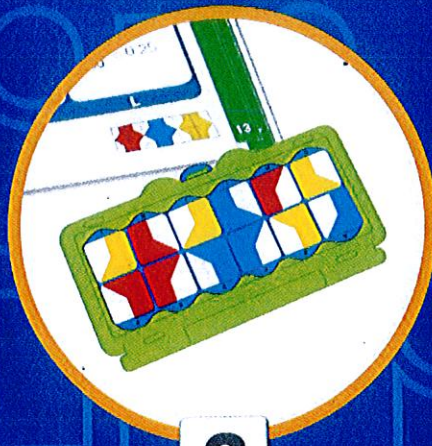


# Four simple steps to success with VersaTiles®.



1

Answer questions



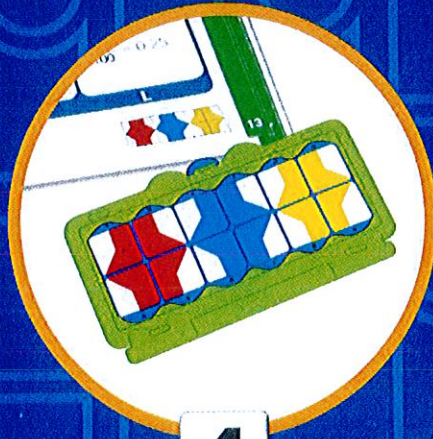
2

Flip and check



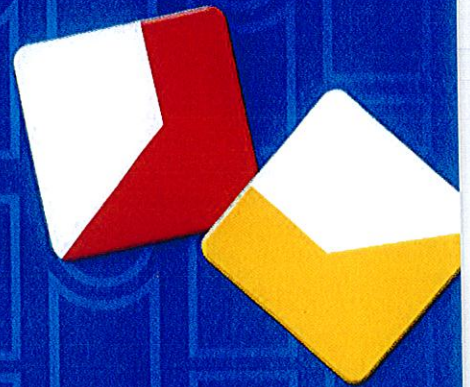
3

Open and self-correct



4

Match



## Did you know...

- There are over 2,300 different answer patterns.
- You can write your own VersaTiles activities.
- You can practice at home.



