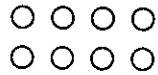


A Ray of Fun



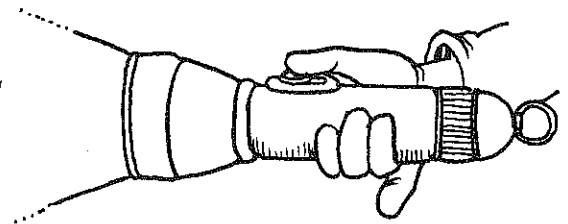
An **array** demonstrates a multiplication sentence.
 The first **factor** tells how many rows there are.
 The second **factor** tells how many there are in each row. The answer of a multiplication sentence is called the **product**.

$2 \times 4 = 8$

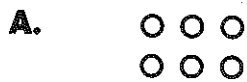


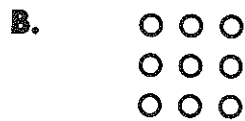
2 rows

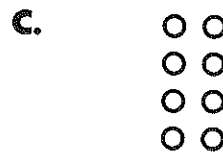
4 in each row

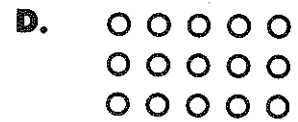


Write the multiplication sentence for each array.

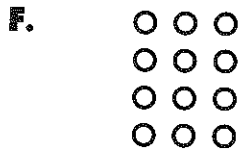


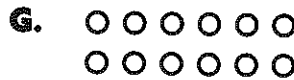


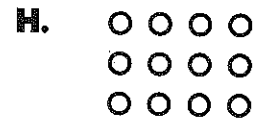


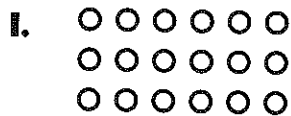


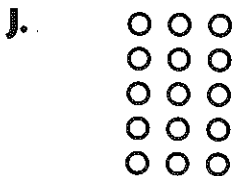


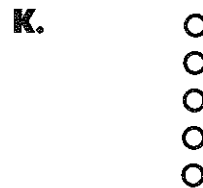


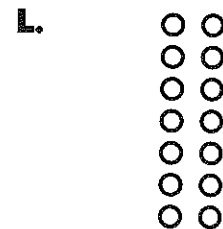














It was time for our family photo. The photographer arranged us into four rows. There were six people in each row. How many people in all were in the photo? On another piece of paper, draw an array to solve this problem.



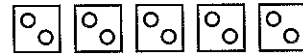
Time to Group



The multiplication symbol (x) can be thought of as meaning "groups of."

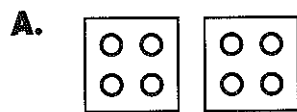


3 "groups of" 4 equals 12
 $3 \times 4 = 12$

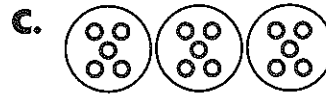


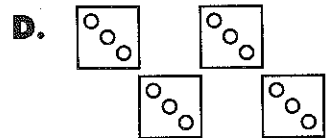
5 "groups of" 2 equals 10.
 $5 \times 2 = 10$

Write the multiplication sentence for each diagram.

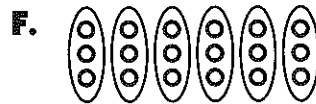


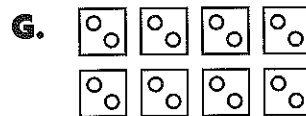


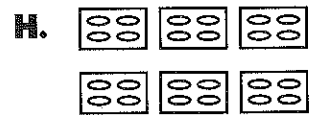


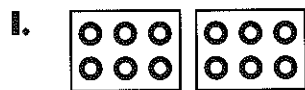


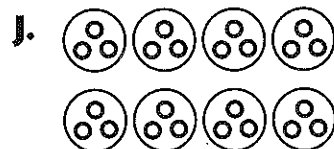


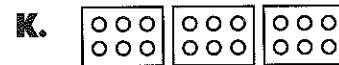


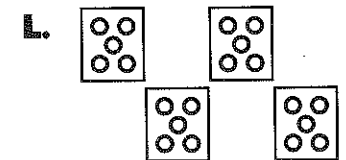


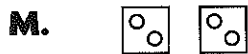


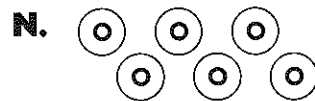


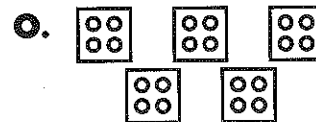


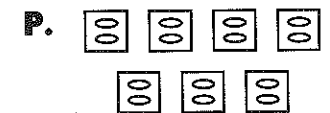






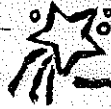








William has five bags of hamburgers. There are seven hamburgers in each bag. On another piece of paper, show the total number of hamburgers.



Adding Quickly



The addition sentence $4 + 4 + 4 + 4 + 4 = 20$ can be written as a multiplication sentence. Count how many times 4 is being added together. The answer is 5. So, $4 + 4 + 4 + 4 + 4 = 20$ can be written as $5 \times 4 = 20$. Multiplication is a quick way to add.

Write a multiplication sentence for each addition sentence.

A. $5 + 5 + 5 = 15$

B. $6 + 6 + 6 + 6 = 24$

C. $8 + 8 = 16$

D. $2 + 2 + 2 + 2 = 8$



E. $7 + 7 + 7 = 21$

F. $4 + 4 + 4 + 4 = 16$

G. $9 + 9 + 9 = 27$

H. $5 + 5 + 5 + 5 + 5 = 25$

I. $3 + 3 + 3 + 3 + 3 = 15$

J. $10 + 10 + 10 + 10 = 40$

K. $1 + 1 + 1 + 1 + 1 = 5$

L. $11 + 11 + 11 = 33$

M. $8 + 8 + 8 + 8 = 32$

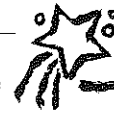
N. $0 + 0 + 0 + 0 = 0$

O. $12 + 12 + 12 + 12 = 48$

P. $9 + 9 + 9 + 9 = 36$



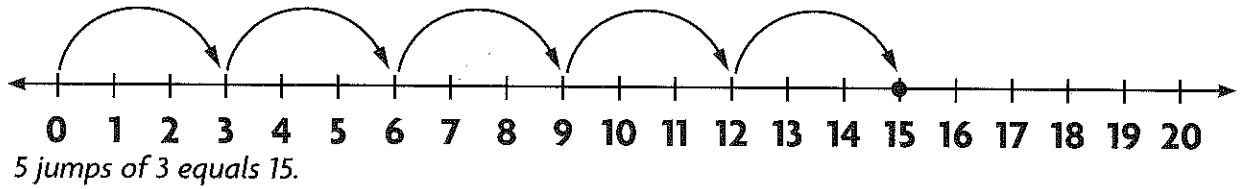
Today, we are going to the beach. Mom packed the picnic basket with six sandwiches, six water bottles, six candy bars, and six apples. How many items did she pack in all?



What's My Line?

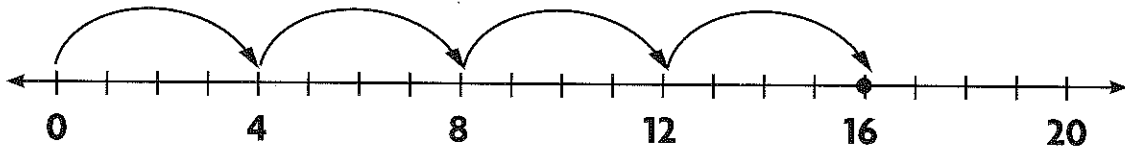


$5 \times 3 = 15$ can be demonstrated on a number line.

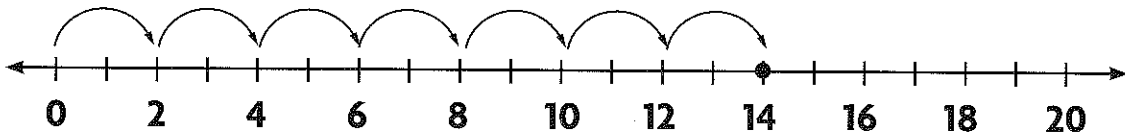


Write the multiplication sentence demonstrated on each number line.

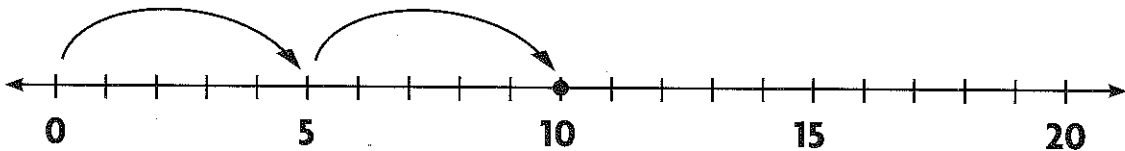
A.



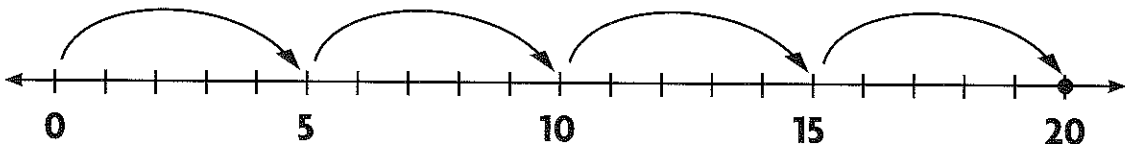
B.



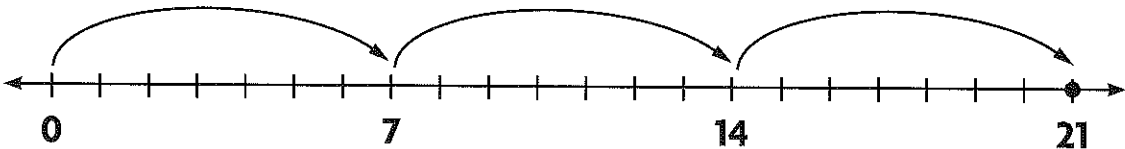
C.



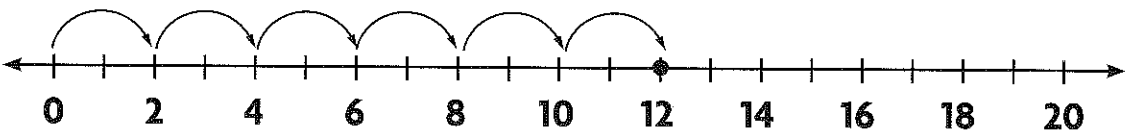
D.



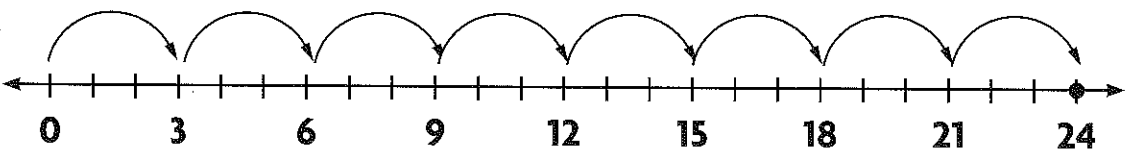
E.



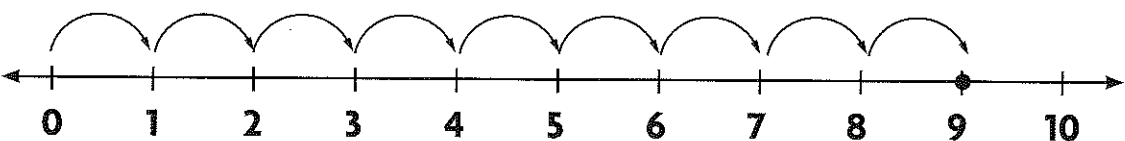
F.

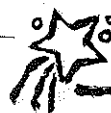


G.



H.





Code Zero! Code One!



When a number is multiplied by 0, the product is always 0.

When a number is multiplied by 1, the product is always the number being multiplied.

Multiply. Shade all products of 0 yellow. Shade all other products green.

1 x 6 = _____

10 x 1 = _____

6 x 1 = _____

1 x 3 = _____

0 x 12 = _____

11 x 1 = _____

0 x 6 = _____

0 x 5 = _____

1 x 9 = _____

0 x 2 = _____

0 x 8 = _____

0 x 9 = _____

0 x 1 = _____

1 x 3 = _____

7 x 1 = _____

8 x 1 = _____

3 x 1 = _____

1 x 10 = _____

3 x 0 = _____

0 x 11 = _____

1 x 6 = _____

7 x 0 = _____

9 x 0 = _____

0 x 4 = _____

5 x 1 = _____

0 x 7 = _____

0 x 4 = _____

5 x 0 = _____

0 x 8 = _____

10 x 0 = _____

2 x 1 = _____

2 x 1 = _____

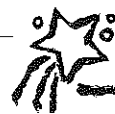
4 x 0 = _____

5 x 0 = _____

12 x 0 = _____

5 x 1 = _____

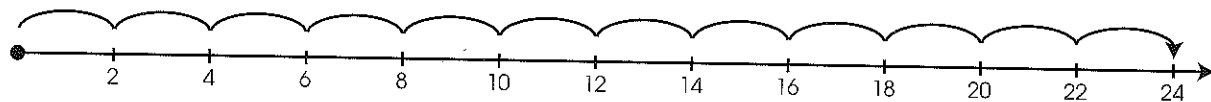
1 x 11 = _____



Two, Four, Six, Eight, Who Do We Appreciate?



When multiplying by 2, skip count by 2, or think of number line jumping!



Multiply.

A. $2 \times 3 =$ _____ $2 \times 8 =$ _____ $11 \times 2 =$ _____ $2 \times 7 =$ _____

B. $8 \times 2 =$ _____ $4 \times 2 =$ _____ $2 \times 2 =$ _____ $2 \times 4 =$ _____

C. $12 \times 2 =$ _____ $5 \times 2 =$ _____ $10 \times 2 =$ _____ $2 \times 12 =$ _____

D. $9 \times 2 =$ _____ $2 \times 1 =$ _____ $2 \times 10 =$ _____ $7 \times 2 =$ _____

E. $2 \times 0 =$ _____ $2 \times 6 =$ _____ $3 \times 2 =$ _____ $0 \times 2 =$ _____

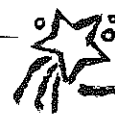
F. $2 \times 5 =$ _____ $2 \times 9 =$ _____

G. $6 \times 2 =$ _____ $1 \times 2 =$ _____

H. $2 \times 11 =$ _____ $2 \times 2 =$ _____

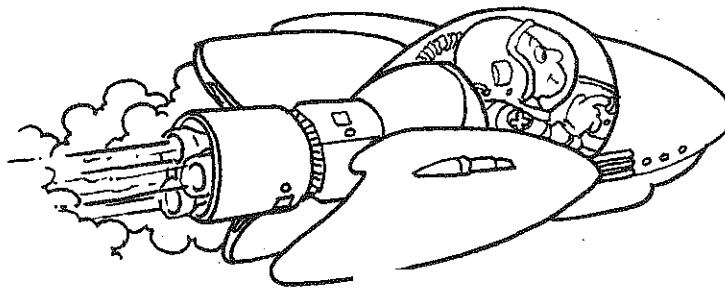


On another piece of paper, write a rhyme to go with each multiplication fact for 2.
Examples: "2 x 4 = 8, I love math. Can you relate?" Or, "2 x 4 = 8, I've got to go, and shut the gate!"



Aim for the Stars

Color each cloud with a correct multiplication sentence to show the path to the space station.



$2 \times 3 = 6$

$12 \times 2 = 24$

$1 \times 2 = 1$

$6 \times 2 = 8$

$2 \times 9 = 11$

$8 \times 2 = 16$

$4 \times 2 = 8$

$2 \times 7 = 14$

$11 \times 2 = 22$

$2 \times 5 = 10$

$2 \times 6 = 12$

$3 \times 2 = 5$

$2 \times 8 = 14$

$7 \times 2 = 12$

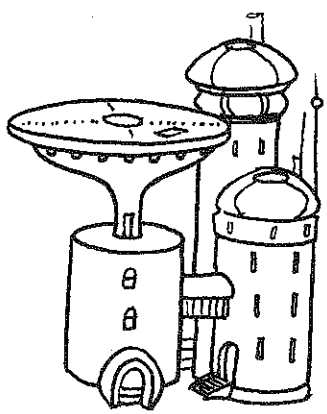
$2 \times 10 = 20$

$2 \times 2 = 4$

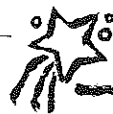
$2 \times 12 = 26$

$9 \times 2 = 18$

$2 \times 1 = 2$

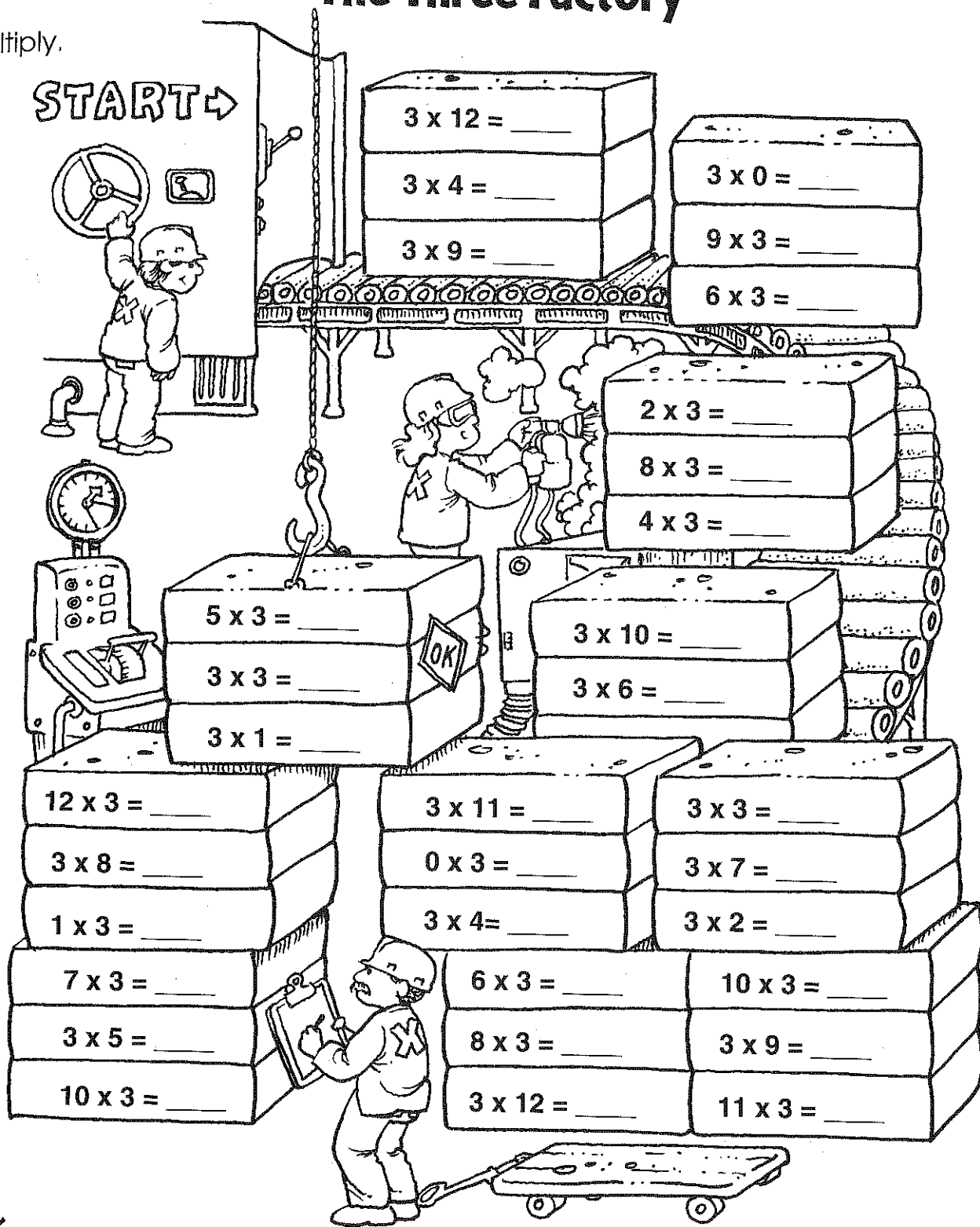


Eight pilots each flew a plane across the Atlantic Ocean. Each pilot invited one passenger to fly with her. How many people in all flew across the Atlantic Ocean?

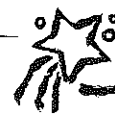


The Three Factory

Multiply.



The Three Factory paints one stack of boxes every three minutes. How many minutes does it take the factory to paint nine stacks of boxes?



Fantastic Four

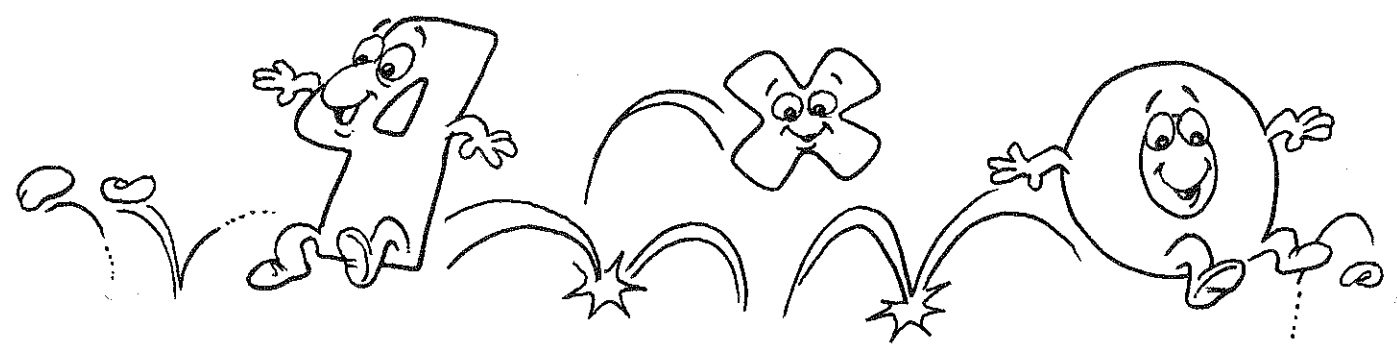
Don't you just adore the factor 4?

To answer this question, multiply. Then use the code to write the letter of each multiplication sentence on the blank above its product.

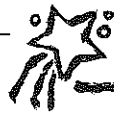
A. $4 \times 10 =$	I. $4 \times 0 =$	O. $4 \times 7 =$	T. $4 \times 8 =$
D. $4 \times 4 =$	M. $4 \times 2 =$	R. $4 \times 6 =$	Y. $4 \times 9 =$
E. $4 \times 11 =$	N. $4 \times 5 =$	S. $4 \times 3 =$! $4 \times 12 =$

36 44 12 48 0 40 16 28 24 44 0 32

8 28 24 44 40 20 16 8 28 24 44 48



On another piece of paper, write a message to a friend. Make a code using the multiplication facts for 4. Have your friend use the code to read the message.



We Can Make Fives Come Alive and Thrive!

What letter stands for “math” and “multiplication”?

To find out, complete each problem. Connect the dots in order from least to greatest.

$$5 \times 1 = \bullet$$

$$5 \times 2 =$$

$$5 \times 4 =$$

$$\bullet 5 \times 5 =$$

$$5 \times 11 =$$

$$5 \times 8 =$$

$$\bullet$$

$$5 \times 3 =$$

$$5 \times 0 = \bullet \text{-----} \bullet$$

$$5 \times 12 =$$

$$5 \times 10 =$$

$$5 \times 9 =$$

$$\bullet \text{-----} \bullet$$

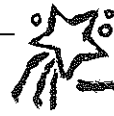
$$5 \times 7 =$$

$$\bullet 5 \times 6 =$$

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There are five children in line to buy an ice cream cone. If each child buys a cone with three scoops of ice cream, how many total scoops of ice cream will the store sell?



Can You Crack the Code?

	●	⊗	☹	↩	★	✓	▽	↙	●	☺	∩	⌘
0	1	2	3	4	5	6	7	8	9	10	11	12

Using the above code, write a multiplication sentence for each message.

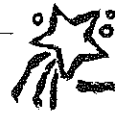
- A. ☹ x ✓ = ● ↙ B. ✓ x ★ = ☹ ⌘ C. ● x ✓ = ⊗ ↩ D. ∩ x ✓ = ✓ ✓
- _____
- E. ✓ x ⊗ = ● ⊗ F. ↩ x ✓ = ⊗ ⌘ G. ↙ x ✓ = ↩ ☹ H. ▽ x ✓ = ↩ ⊗
- _____
- I. ✓ x ⌘ = ▽ ⊗ J. ⌘ x ✓ = ⌘ K. ● x ✓ = ✓ L. ☺ x ✓ = ✓ ⌘
- _____

Multiply. Then use the above code to write each multiplication sentence.

- M. 5 x 6 = _____ N. 6 x 7 = _____ O. 6 x 9 = _____ P. 6 x 3 = _____
- _____
- Q. 6 x 8 = _____ R. 6 x 6 = _____ S. 12 x 6 = _____ T. 6 x 10 = _____
- _____

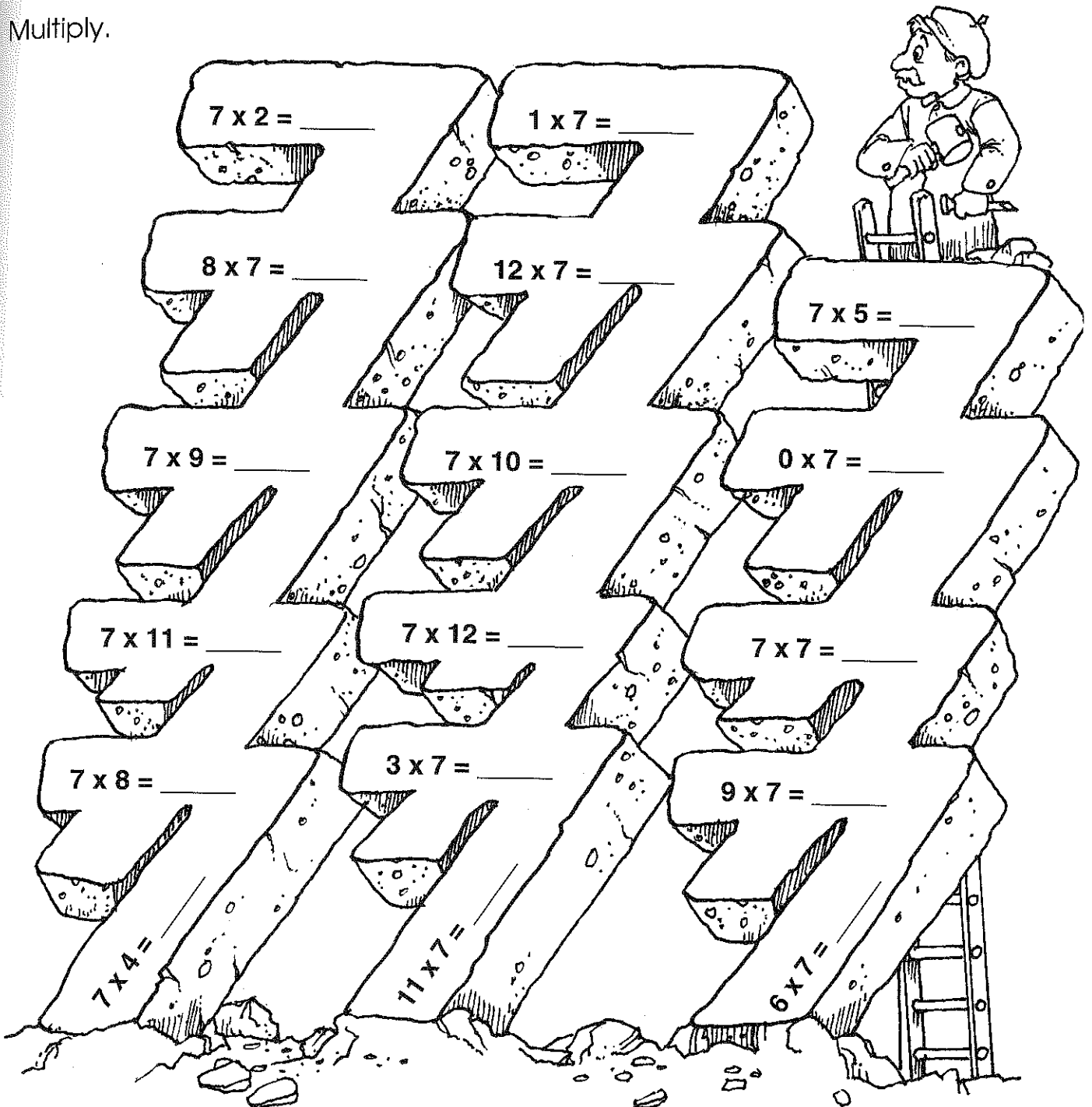


Abby wrote the same message to 6 different friends. She made a code using flower symbols for each of the 12 letters in her message. How many total flower symbols did she write?



The "Seven" Statues

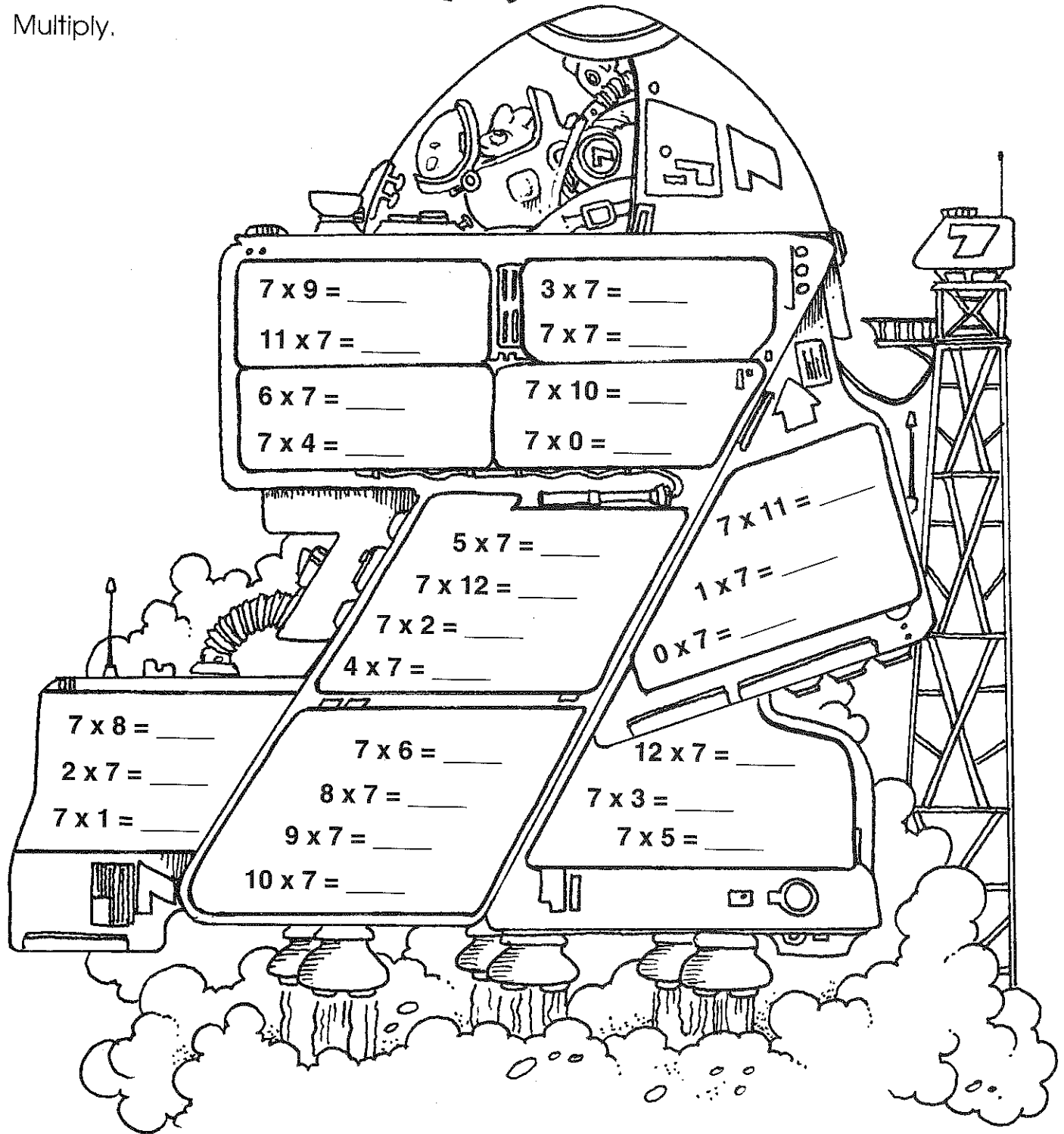
Multiply.



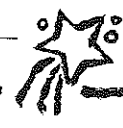
Maurice was hired to build seven statues in front of City Hall. He calculated that each statue would take him six months to finish. The statues need to be completed before the Music Festival that is scheduled to take place in exactly two years. How many months will it take Maurice to complete the statues? Will Maurice have enough time?

Flying Sevens

Multiply.



Cassandra's space mission is to orbit Earth seven times, as quickly as she can a total of seven times. How many times altogether will she orbit Earth?



The Ultimate Eight Track

Use a stopwatch to time how long it takes to multiply around the track.

4 x 8 = _____ 1 x 8 = _____

7 x 8 = _____ 11 x 8 = _____

8 x 6 = _____ 3 x 8 = _____

8 x 2 = _____ 0 x 8 = _____

8 x 0 = _____ 2 x 8 = _____

8 x 11 = _____ 8 x 10 = _____

12 x 8 = _____

8 x 8 = _____

8 x 3 = _____ 5 x 8 = _____

6 x 8 = _____ 10 x 8 = _____

9 x 8 = _____ 8 x 5 = _____

8 x 7 = _____ 8 x 12 = _____

8 x 4 = _____ 8 x 1 = _____

8 x 9 = _____

START

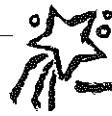
FINISH

Trophy

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Racing Ricardo rapidly raced 8 times around the Eight Track. It took him 12 seconds to rapidly race one time around the track. How many seconds did it take him to complete the race?

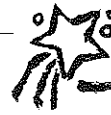


A Product Search

Multiply. Then circle the number word for each product in the puzzle. The words will go forward, backward, up, down, and diagonally. Be careful; some products appear more than once!

- | | | | | |
|-----------|----------------------|-----------------------|----------------------|-----------------------|
| A. | $8 \times 2 =$ _____ | $4 \times 8 =$ _____ | $8 \times 4 =$ _____ | $10 \times 8 =$ _____ |
| B. | $0 \times 8 =$ _____ | $5 \times 8 =$ _____ | $8 \times 6 =$ _____ | $9 \times 8 =$ _____ |
| C. | $8 \times 1 =$ _____ | $8 \times 3 =$ _____ | $2 \times 8 =$ _____ | $11 \times 8 =$ _____ |
| D. | $1 \times 8 =$ _____ | $8 \times 12 =$ _____ | $3 \times 8 =$ _____ | $6 \times 8 =$ _____ |
| E. | $8 \times 5 =$ _____ | $8 \times 8 =$ _____ | $8 \times 0 =$ _____ | |
| F. | $8 \times 9 =$ _____ | $8 \times 7 =$ _____ | $8 \times 8 =$ _____ | |

F	C	E	L	I	M	R	U	O	F	-	Y	T	N	E	W	T
O	O	F	O	R	T	Y	-	E	I	G	H	T	I	F	E	H
R	N	I	S	I	X	C	B	I	F	N	E	E	T	X	I	S
T	S	F	I	J	W	E	I	G	H	T	S	T	S	O	G	I
Y	I	T	X	T	F	H	R	H	S	Z	E	R	O	W	H	L
-	O	Y	T	W	V	O	S	T	I	U	V	W	V	T	T	R
E	W	-	E	E	U	I	R	Y	X	B	E	X	Y	-	Y	U
I	T	S	E	N	S	M	L	T	T	C	N	A	Z	Y	-	O
G	-	I	N	T	H	I	R	T	Y	-	T	W	O	T	E	F
H	Y	X	X	Y	Z	N	P	Q	-	D	Y	J	N	N	I	-
T	T	Y	Y	-	T	E	R	A	F	E	-	F	Q	E	G	Y
H	R	D	T	F	D	U	R	Z	O	G	T	K	O	V	H	T
G	I	H	R	O	F	V	Y	O	U	F	W	L	U	E	T	X
I	H	Y	O	U	E	W	X	C	R	H	O	M	W	S	T	I
E	T	L	F	R	N	I	N	E	T	Y	-	S	I	X	Z	S



Is There a Pattern?



Is there a pattern of the products when multiplying by 9? Yes! The sum of each product equals 9! There are two exceptions. One exception is $11 \times 9 = 99$; then each number in the product is 9! What is the other exception?

$0 \times 9 =$	0	0
$1 \times 9 =$	9	9
$2 \times 9 =$	18	8
$3 \times 9 =$	27	7
$4 \times 9 =$	36	6
$5 \times 9 =$	45	5
$6 \times 9 =$	54	4
$7 \times 9 =$	63	3
$8 \times 9 =$	72	2
$9 \times 9 =$	81	1
$10 \times 9 =$	90	0



Unscramble the number word for each product of the following 9s multiplication facts. Then write the 9s fact next to the number word.

- A. ENO DDHNUER TEHGI _____
- B. NYTENI-NNEI _____
- C. TINENY _____
- D. YITHEG-NOE _____
- E. EENTVSY-WOT _____
- F. YXTIS-ERETH _____
- G. TFFIY-RUOF _____
- H. YTRFO-EVIF _____
- I. YHRTTI-XIS _____

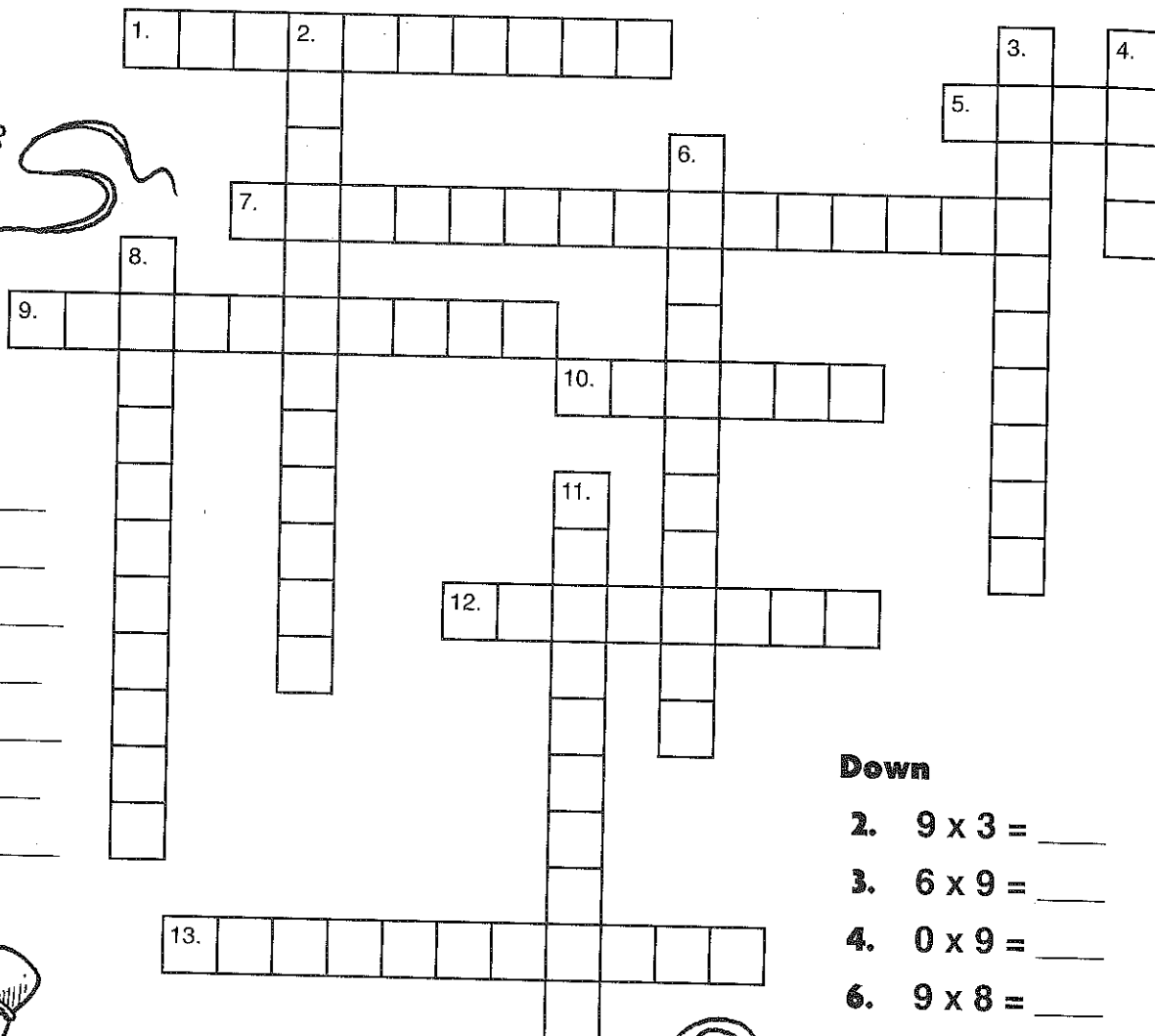
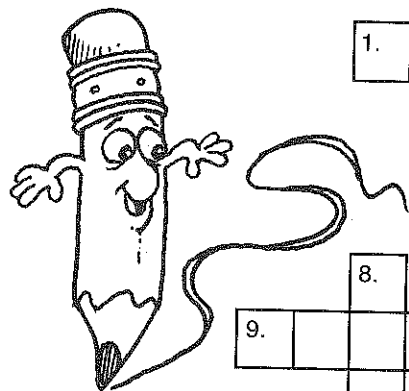


On another piece of paper, write the pattern for the above number words. Then write the remaining 9s multiplication facts to complete the pattern.



Cross-Number Puzzle

Multiply. Write the number word for each product in the puzzle. Don't forget the hyphens!

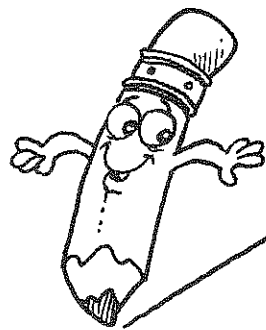


Across

1. $9 \times 5 =$ _____
5. $1 \times 9 =$ _____
7. $9 \times 12 =$ _____
9. $4 \times 9 =$ _____
10. $9 \times 10 =$ _____
12. $2 \times 9 =$ _____
13. $9 \times 11 =$ _____

Down

2. $9 \times 3 =$ _____
3. $6 \times 9 =$ _____
4. $0 \times 9 =$ _____
6. $9 \times 8 =$ _____
8. $7 \times 9 =$ _____
11. $9 \times 9 =$ _____



Justin just finished putting together a puzzle of a castle and wants to know how many pieces are in the puzzle. He knows he put together nine pieces every five minutes. If Justin worked for one hour, how many pieces does the puzzle have?



The "Ten" Flower

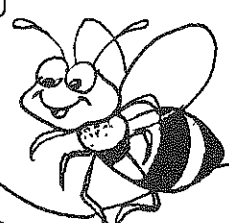


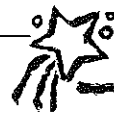
Multiplying by 10 is really easy! Multiply the factor by 1 and add a 0.

$10 \times 8 = \underline{\quad}$ (Multiply $1 \times 8 = 8$, and add a zero. The product is 80.)

$10 \times 12 = \underline{\quad}$ (Multiply $1 \times 12 = 12$, and add a zero. The product is 120.)

Multiply. Then color each space with a product less than 50 red. Color each space with a product greater than 70 orange. Color each space with a product equal to 50 yellow. Color all other spaces with a multiplication sentence green.





Cloud Ten



When multiplying by 10, the product always ends in 0.

Multiply.

$1 \times 10 = \underline{\quad}$

$10 \times 9 = \underline{\quad}$

$7 \times 10 = \underline{\quad}$

$10 \times 0 = \underline{\quad}$

$9 \times 10 = \underline{\quad}$

$10 \times 5 = \underline{\quad}$

$3 \times 10 = \underline{\quad}$

$10 \times 8 = \underline{\quad}$

HANG
TEN!

$10 \times 2 = \underline{\quad}$

$10 \times 3 = \underline{\quad}$

$10 \times 10 = \underline{\quad}$

$10 \times 4 = \underline{\quad}$

$8 \times 10 = \underline{\quad}$

$0 \times 10 = \underline{\quad}$

$4 \times 10 = \underline{\quad}$

$6 \times 10 = \underline{\quad}$

WAY
COOL!

COOL!

$10 \times 7 = \underline{\quad}$

$11 \times 10 = \underline{\quad}$

$10 \times 1 = \underline{\quad}$

$10 \times 10 = \underline{\quad}$

$10 \times 12 = \underline{\quad}$

$2 \times 10 = \underline{\quad}$

$10 \times 11 = \underline{\quad}$

$12 \times 10 = \underline{\quad}$

$5 \times 10 = \underline{\quad}$

$10 \times 6 = \underline{\quad}$



Every morning Miranda chose her favorite ten clouds in the sky. She especially liked clouds which looked like animals. If Miranda did this every morning for a week, how many clouds did she choose altogether?