

UNCOVER COUNTING

9 Times Table

Picture Puzzles

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This Picture Puzzle is based on
... Uncover Counting from Calculating Changes
Teaching Notes
... mathematicscentre.com/picturepuzzles/teachingnotes.htm

Picture Puzzles

To Do

1. Look for many ways to count rows of nine.
2. Record nine times tables facts.
3. Calculate using the nine times tables.

You Need

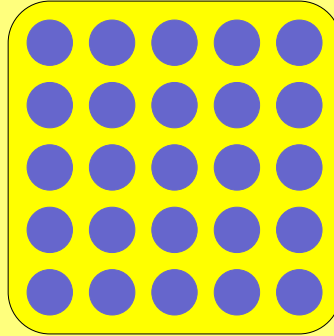
- One Poly Plug each



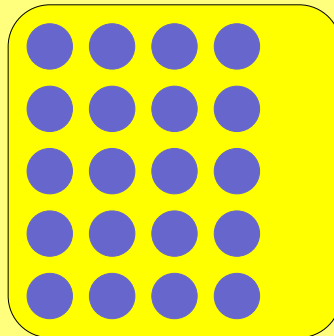
Poly Plug

Picture Puzzles

One of you make rows of 5 blue plugs.



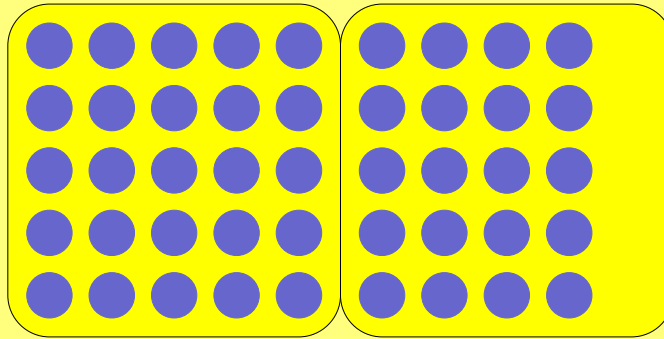
One of you make rows of 4 blue plugs.



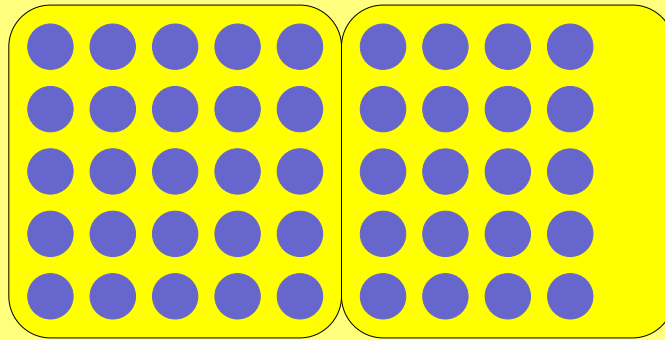
Picture Puzzles

Put your boards together to make rows of 9.

Like this.



Picture Puzzles



Now use something to cover all the boards.

Like this.



How many blue plugs can you see?



Picture Puzzles

In a minute you will slide the cover down one row. How many blue plugs will you see?

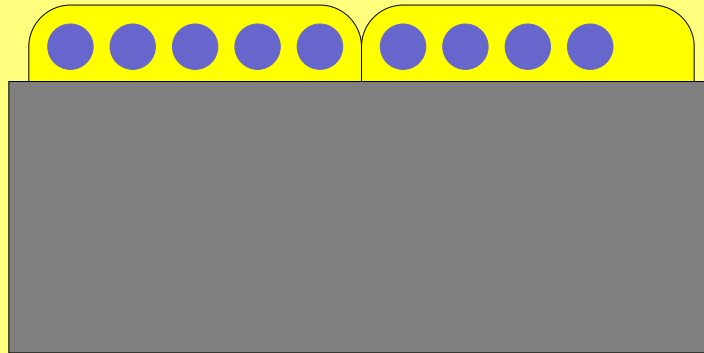


Write your prediction in your journal.

Slide the cover down one row.



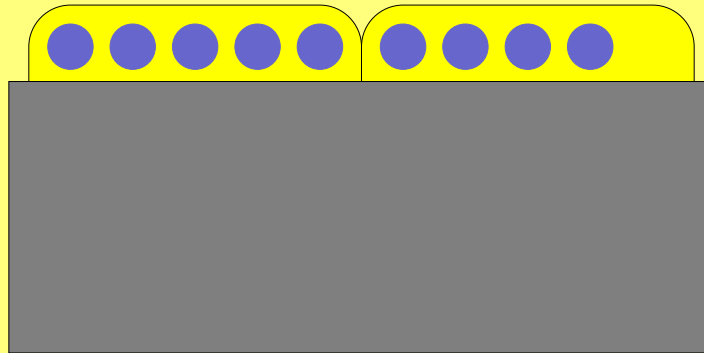
Was your guess correct?



How do you know there are 9 blue plugs?

Picture Puzzles

Draw the picture in your journal.



Write 5 ways of knowing there are 9 blue plugs.

Picture Puzzles

counting by ones

$$2 \times 4 + 1$$

Did you find any of these?

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

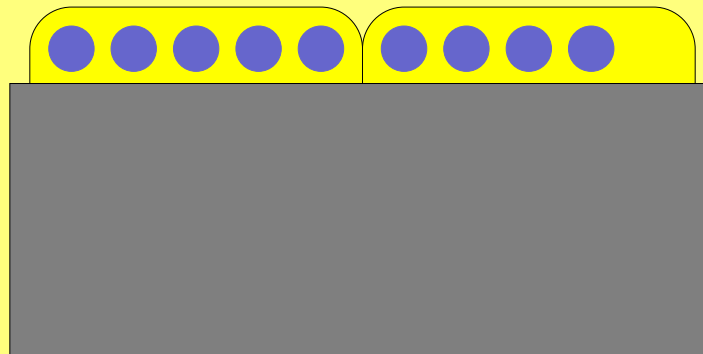
counting by fours
+ one more

$$1 \times 9$$

$$9 \times 1$$

counting by threes

$$3 \times 3$$



counting by twos
+ one more

counting by nines

$$1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$$

$$3 + 3 + 3$$

Which ones belong together?

$$5 + 4$$

$$4 \times 2 + 1$$

$$2 \times 4 + 1$$

Picture
Puzzles

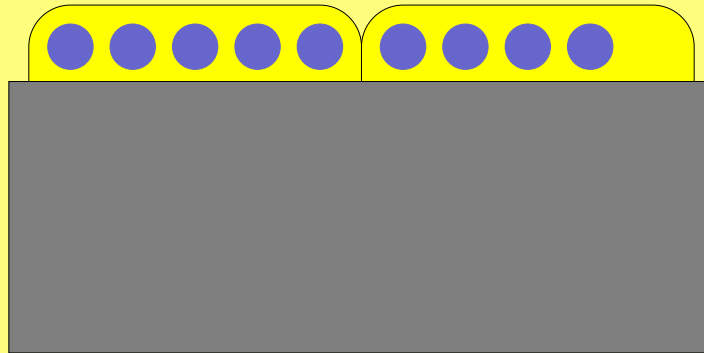
Picture Puzzles

Some children thought of these.

$$10 - 1$$

$$10 - (1 \times 1)$$

$$2 \times 5 - 1$$

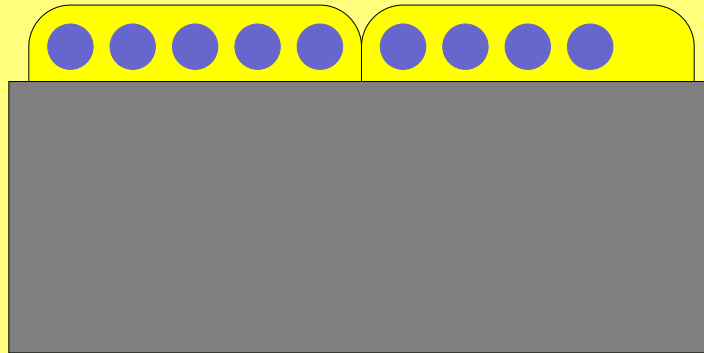


$$5 + (5 - 4)$$

Are they correct?

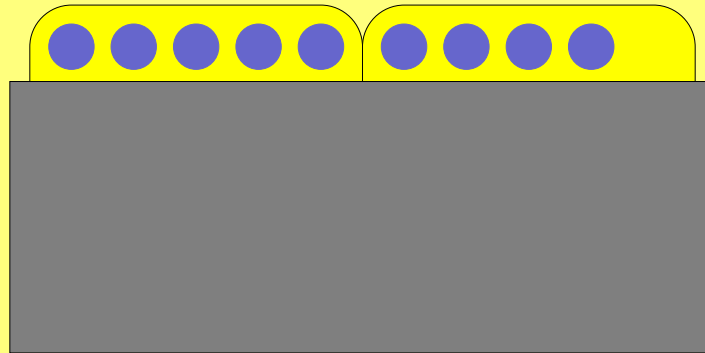
Picture Puzzles

In a minute you will slide the cover down one *more* row. How many blue plugs will you see?

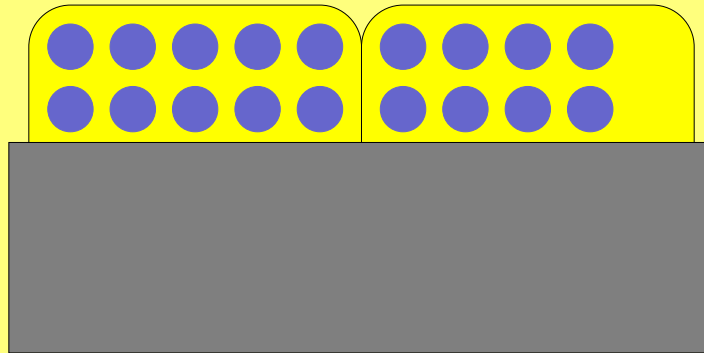


Write your prediction in your journal.

Slide the cover down one row.



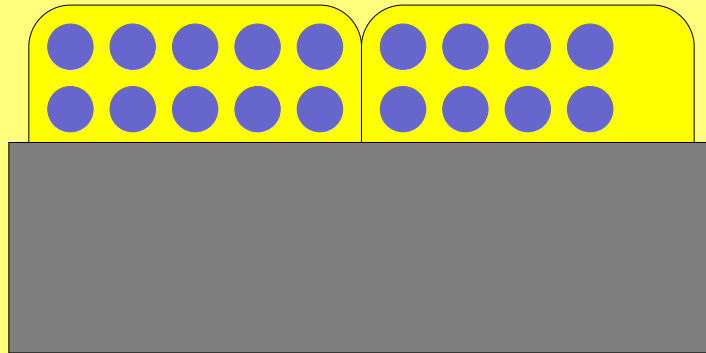
Was your guess correct?



How do you know there are 18 blue plugs?

Picture Puzzles

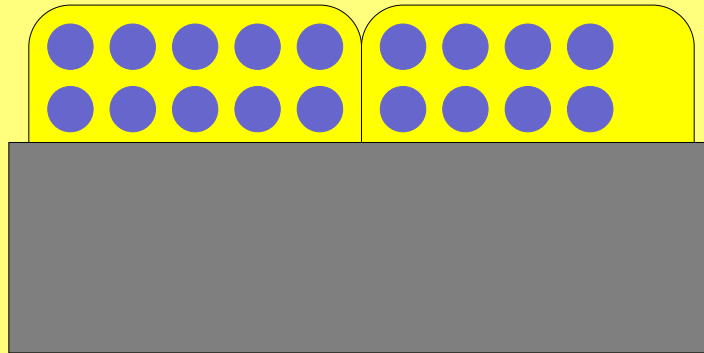
Draw the picture in your journal.



Write 5 ways of knowing there are 18 blue plugs.

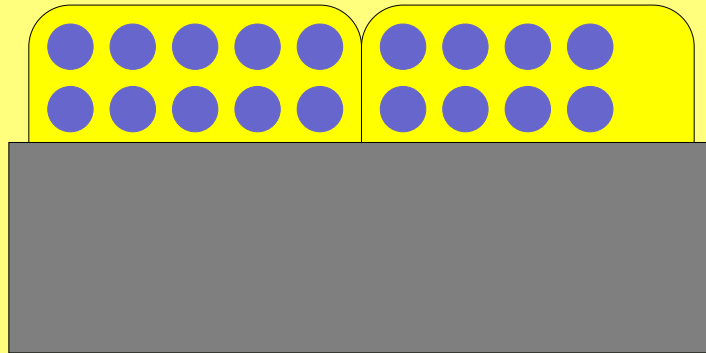
Picture Puzzles

I'll bet you can't find 5 more ways.



Picture Puzzles

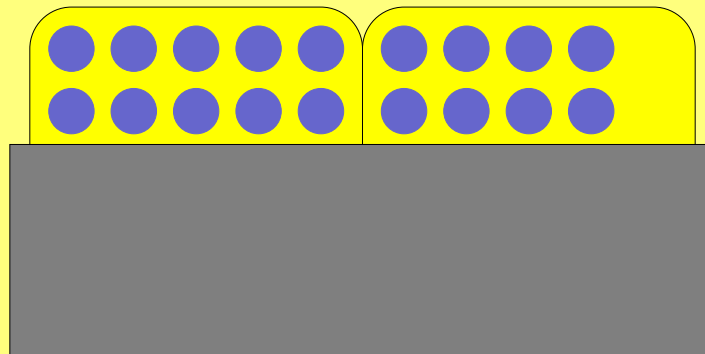
In a minute you will slide the cover down one *more* row. How many blue plugs will you see?



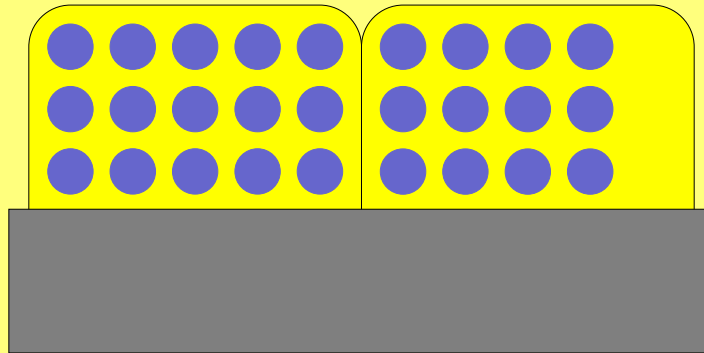
Write your prediction in your journal.

Picture Puzzles

Slide the cover down one row.



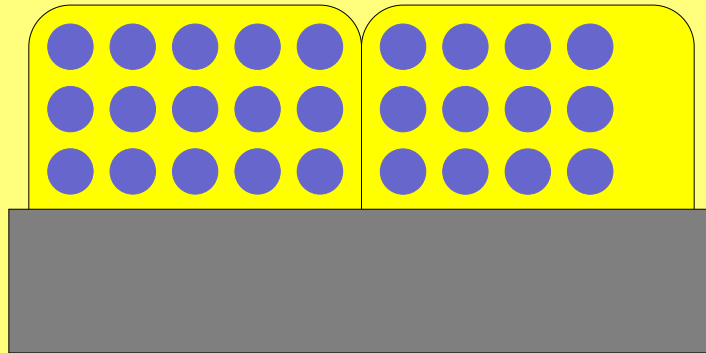
Was your guess correct?



How do you know there are 27 blue plugs?

Picture Puzzles

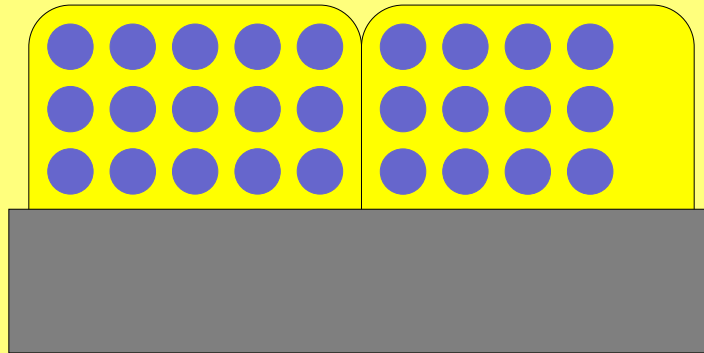
Draw the picture in your journal.



Write 5 ways of knowing there are 27 blue plugs.

Picture Puzzles

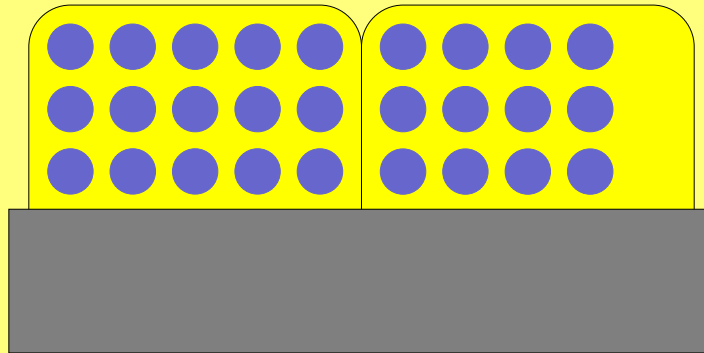
I'll bet you can't find 5 more ways.



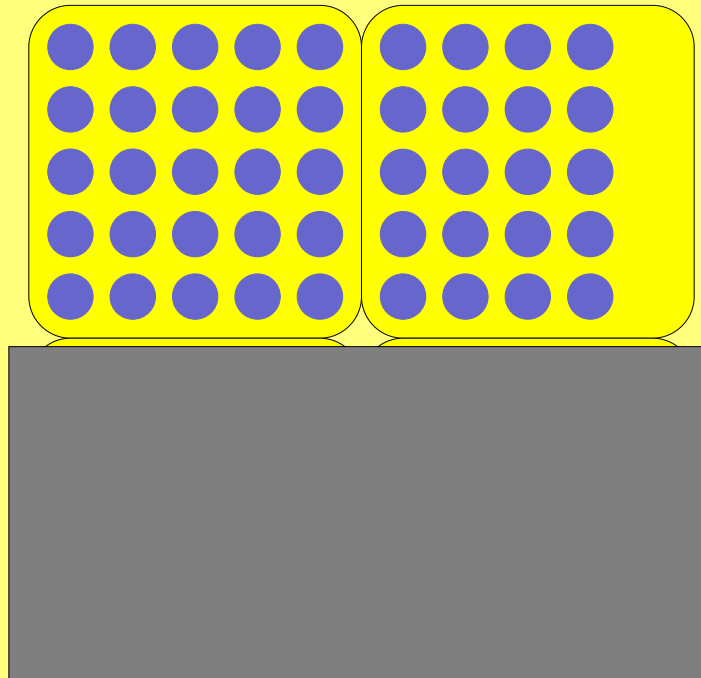
Picture Puzzles

Two rows left.

For each one, predict, slide and record lots of ways.



Calculate
 6×9 , 7×9 , 8×9 , 9×9 , 10×9
Three ways for each one.



**Picture
Puzzles**

more

**Picture
Puzzles**

Picture Puzzles

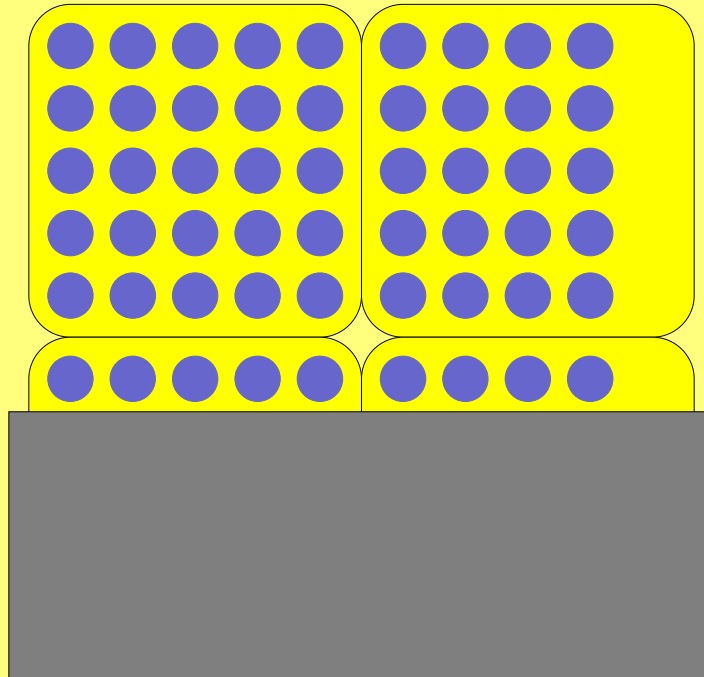
If I tell you there are 54 plugs in rows of 9,
can you tell me the number of rows?

Picture Puzzles

If I tell you there are 54 plugs in rows of 9,
can you tell me the number of rows?
Can you check it another way?

Picture Puzzles

If I tell you there are 54 plugs in rows of 9,
can you tell me the number of rows?
Can you check it another way?



Picture Puzzles

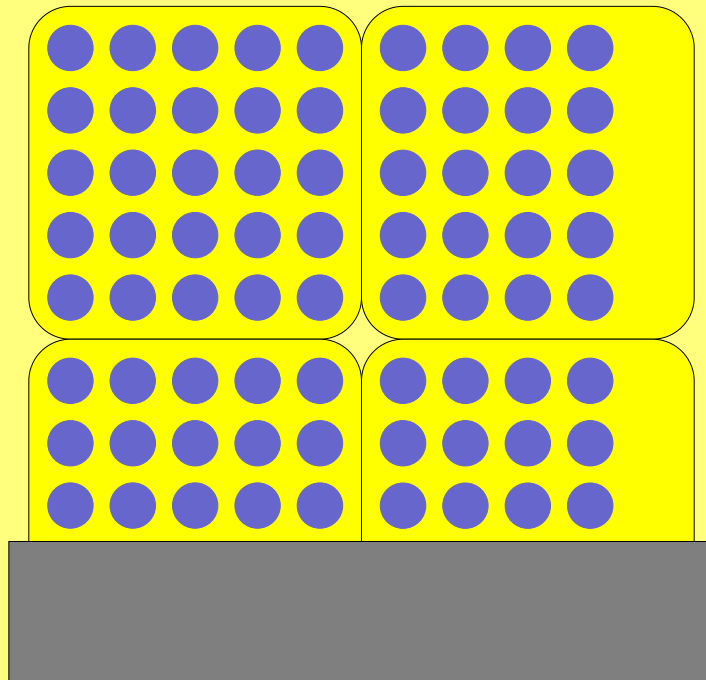
If I tell you there are 72 plugs in rows of 9,
can you tell me the number of rows?

Picture Puzzles

If I tell you there are 72 plugs in rows of 9,
can you tell me the number of rows?
Can you check it another way?

Picture Puzzles

If I tell you there are 72 plugs in rows of 9,
can you tell me the number of rows?
Can you check it another way?



even more

Picture Puzzles

If I tell you there are 225 plugs in rows of 9
and that I can see exactly 7 rows, how many
plugs are *covered*?

THE END...

...OR IS IT?