Multiplication

Models for multiplication

4·5

0   5   10   15   20
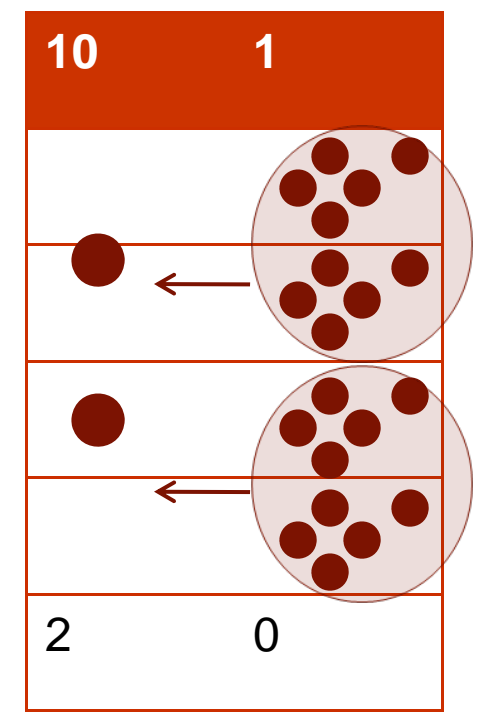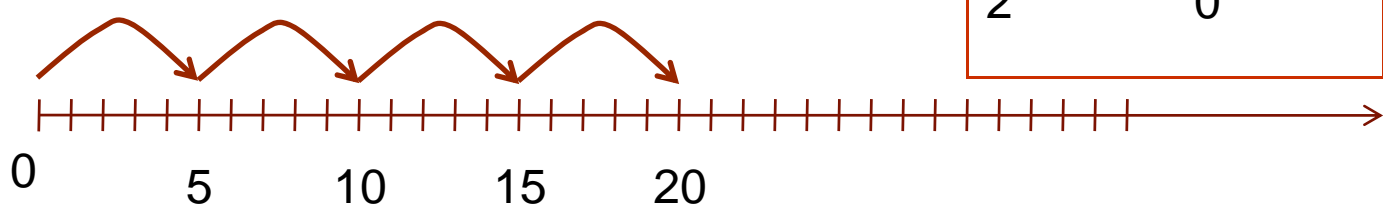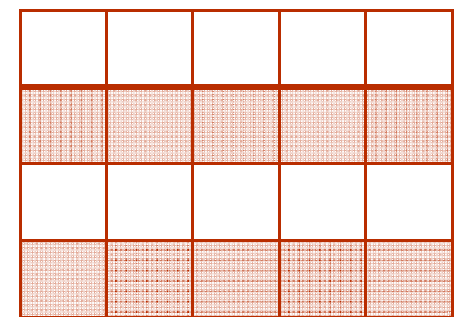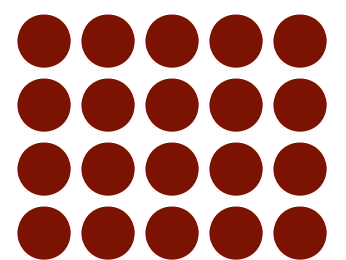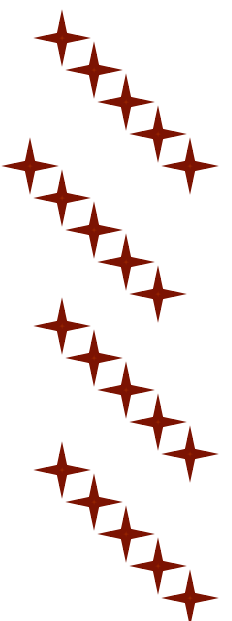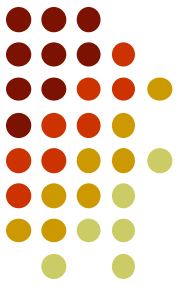
Explanation #1

- Is 6·(7·3) equal to (6·7)·(6·3)?

  - Use one of the models for multiplication to model each of the products.

Problem #3

- Andrew and Bert met on the street and had the following conversation:
  - A: How old are your three children?
  - B: The product of their ages is 36.
  - A: That's not enough information.
  - B: The sum of their ages is your house number.
  - A: That's still not enough information.
  - B: The oldest child plays piano.
  - A: Now I know.
- Assume that the ages are whole numbers and that twins have the same age. What was Andrew's house number?

Model 6 · 23

1000	100	10	1
		● ●	● ● ●
		● ●	● ● ●
		● ●	● ● ●
		● ●	● ● ●
		● ●	● ● ●
		● ●	● ● ●

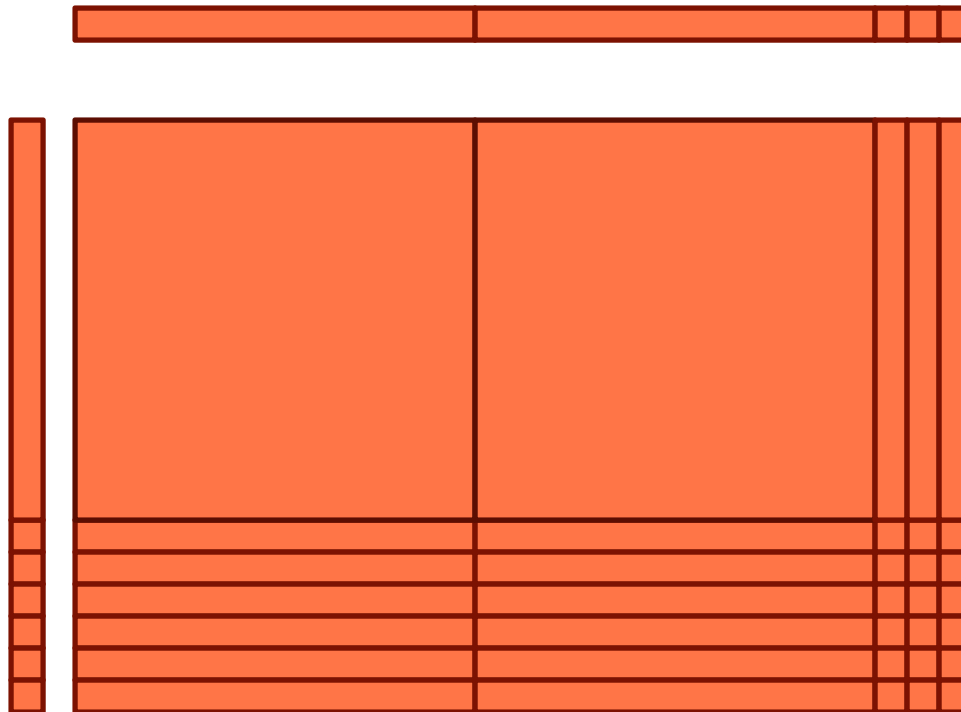# Model 6 · 23
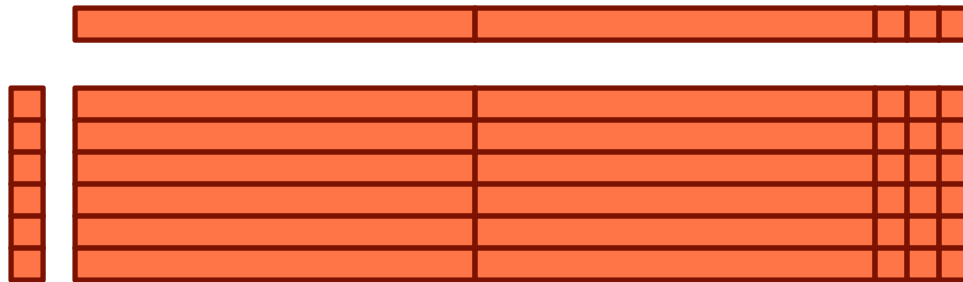
$6 \cdot 23 = 6 \cdot (20+3) = 120+18 = 138$

Knowing this can you find $16 \cdot 23$?

Model 16 · 23

$16·23=16·(20+3)=16·20+16·3=(10+6)·20+(10+6)·3=$
$=10·20+6·20+10·3+6·3=200+120+30+18=368$

Explanation #2

- Find

$$213$$
$$\times\, 28$$

Choose a person in your group who will explain their method and why it works to the rest of the group while everybody else will be carefully listening and comparing to their own method and deciding whether they would explain it differently. If you would, then share with the rest what your explanation would be.

Reading mathematics

I	II	III	IV
47	47	47	47
x 13	x 13	x 13	x 13
21	141	141	52
120	470	47	91
70	611	611	611
400			
611			

Decide how each of the 4 multiplications had been performed and whether the method would work for any two numbers.