Multiplication Matching Application

A search based memory tool

Opening Screen

Select your game and press Start!

One Minute Drill

Three Minute Drill

Five Minute Drill

I just want to learn

Start!

Opening Screen

Select your game and press Start!

One Minute Drill

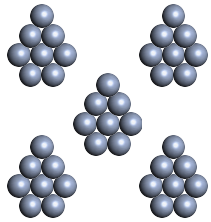
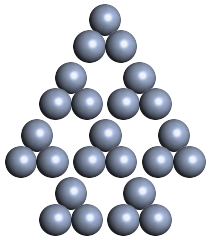
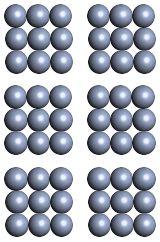
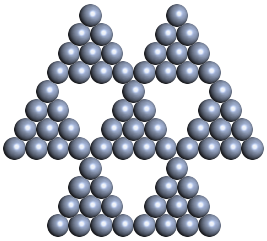
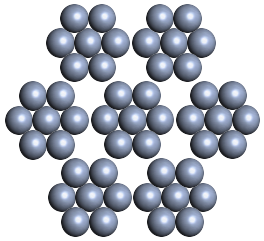
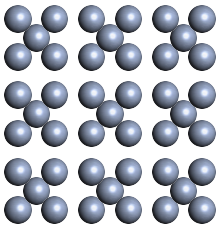
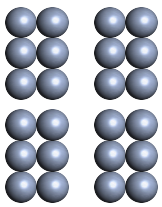
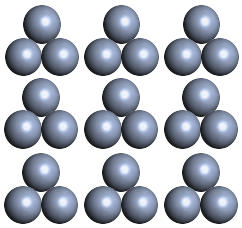
Three Minute Drill

Five Minute Drill

I just want to learn

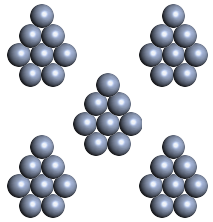
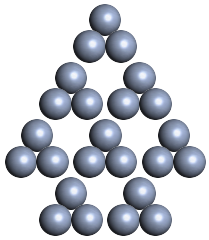
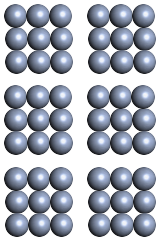
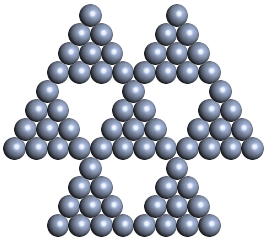
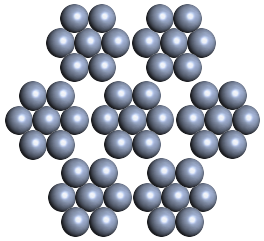
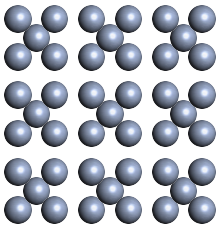
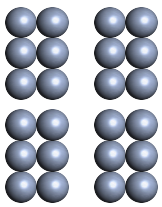
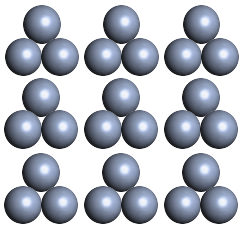
Start!

There are 15 tiles in a 5x3 arrangement. Eight of them are pictures.

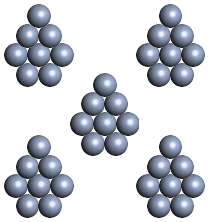
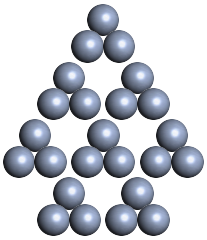
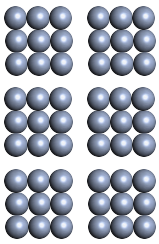
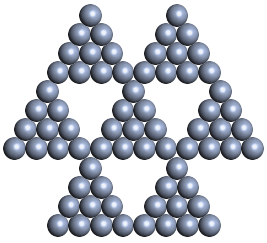
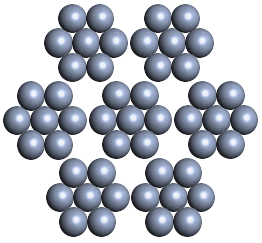
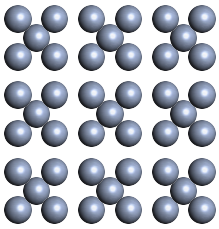
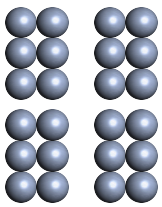
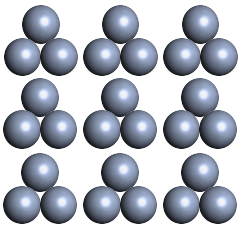
Descriptor		
	5 x 9	
3 x 8		6 x 4
	8 x 5	
9 x 6		10 x 7
	7 x 7	

All seven equations will have a match among the eight pictures. There will be one picture that has no equation match.

When an equation tile is selected, it's border will be highlighted and it's contents will appear in the descriptor.

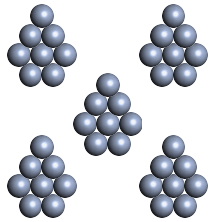
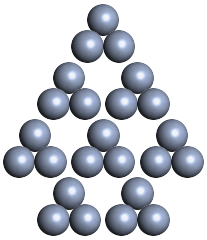
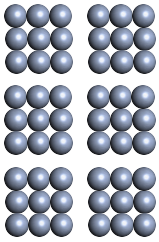
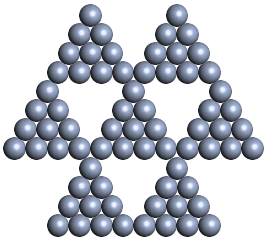
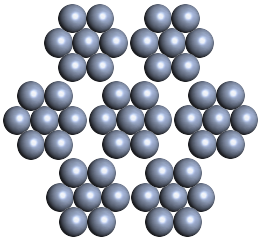
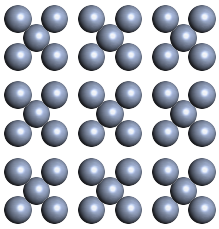
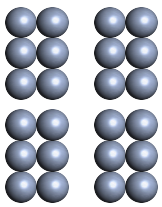
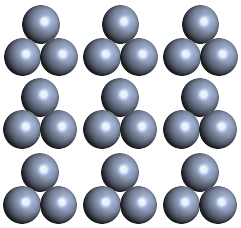
7 x 7		
	5 x 9	
3 x 8		6 x 4
	8 x 5	
9 x 6		10 x 7
	7 x 7	

When a picture tile is selected, it's border will be highlighted and the value of it's contents will appear in the descriptor.

49		
	5 x 9	
3 x 8		6 x 4
	8 x 5	
9 x 6		10 x 7
	7 x 7	

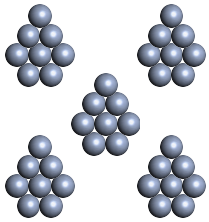
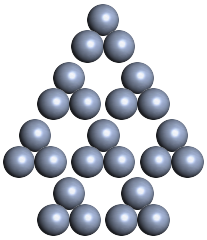
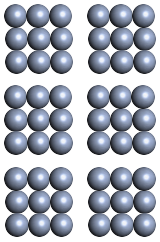
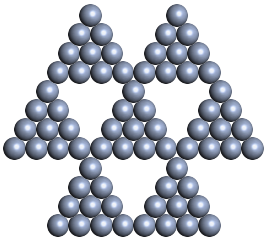
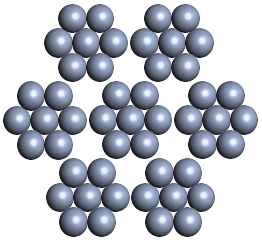
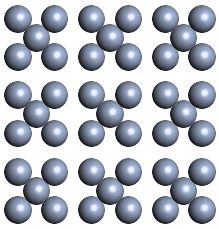
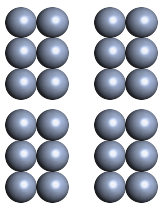
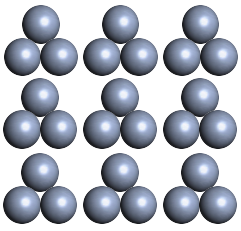
Touch any tile to select, de-select or transfer selection. The user may not select two picture tiles at once nor can they select two equation tiles simultaneously.

When there is an incorrect selection, the header tile will not be highlighted and the descriptor will indicate that the match is not correct

$8 \times 5 \neq 49$		
	5×9	
3×8		6×4
	8×5	
9×6		10×7
	7×7	

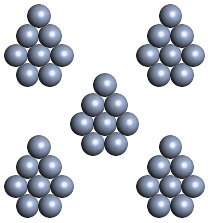
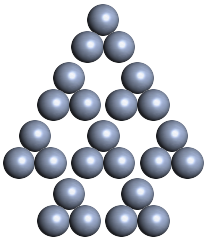
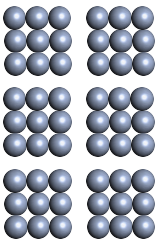
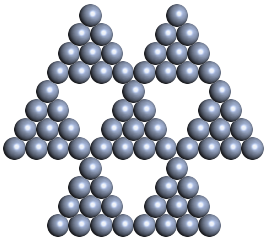
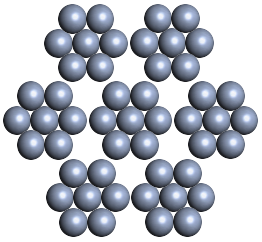
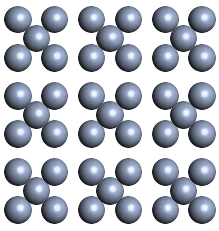
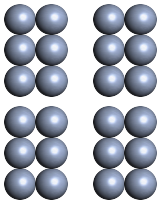
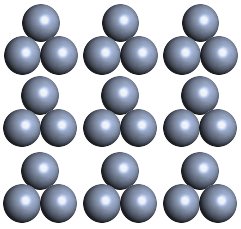
The student can correct their mistake by selecting another equation/picture tile. They will not be able to submit an incorrect match.

When a correct match is found, the user must tap the descriptor for the match to be picked up.

7 x 7 = 49		
	5 x 9	
3 x 8		6 x 4
	8 x 5	
9 x 6		10 x 7
	7 x 7	

It will be replaced by another equation and another picture in the same locations respectively.

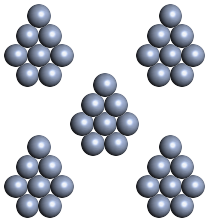
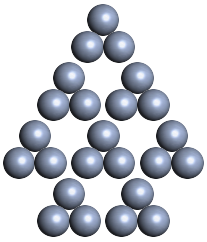
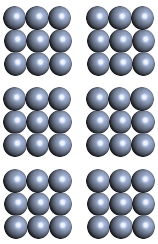
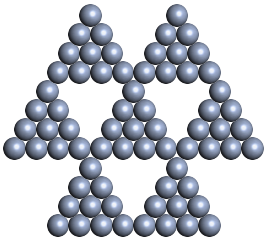
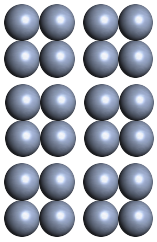
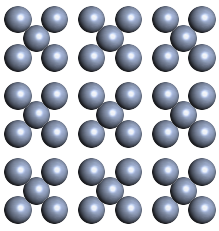
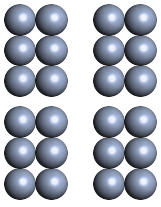
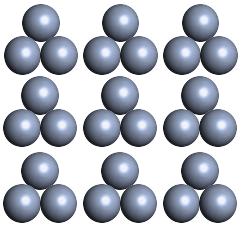
Before replacement

7 x 7 = 49		
	5 x 9	
3 x 8		6 x 4
	8 x 5	
9 x 6		10 x 7
	7 x 7	

Picture tile with no match

After replacement

The new equation will match the previously unmatched picture and the new picture will have no match.

	5 x 9	
3 x 8		6 x 4
	8 x 5	
9 x 6		10 x 7
	3 x 9	

Equation to match the unmatched picture

New Unmatched Picture

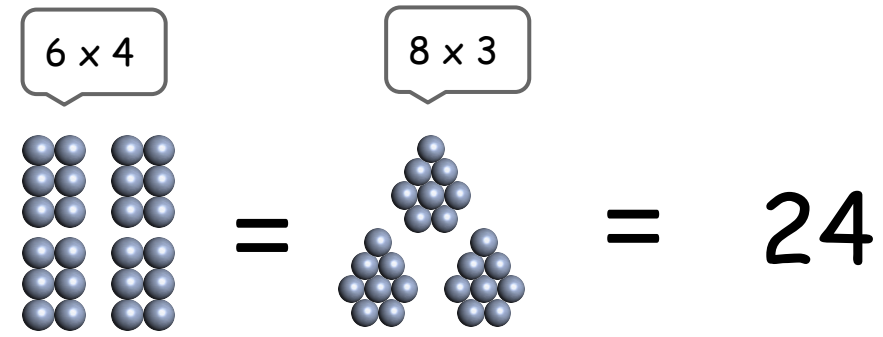
Correspondence

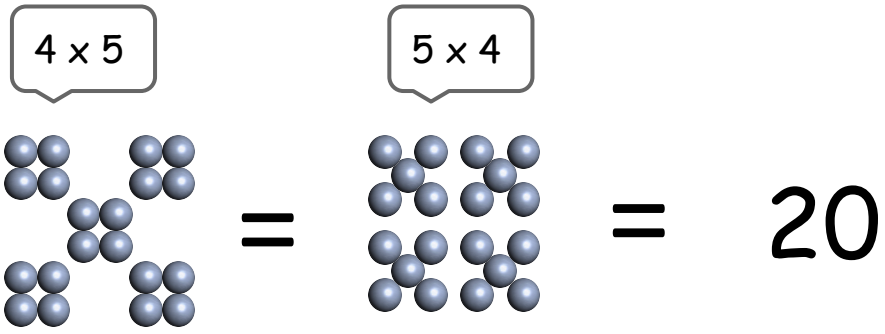
Consider the following properties:

- ❏ Equation
- ❏ Value
- ❏ Picture

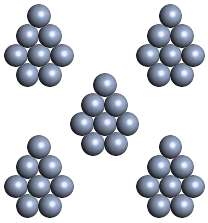
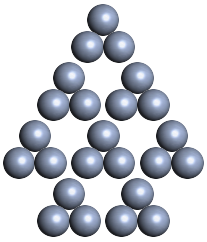
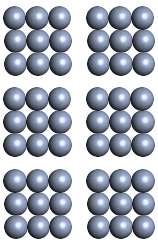
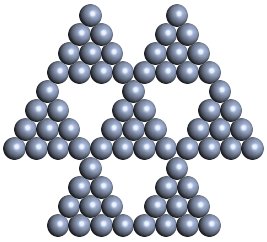
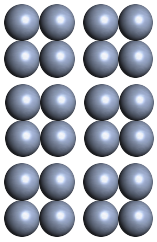
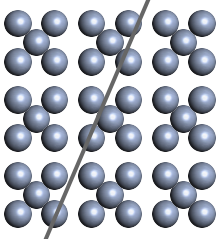
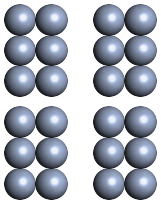
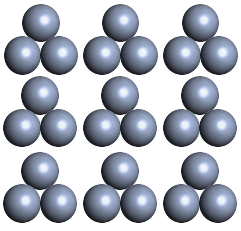
There is a one-to-one correspondence between Pictures and Equations. However, different pictures and different equations can share the same value.

For example:





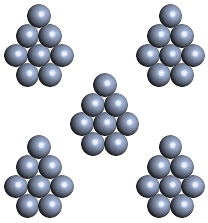
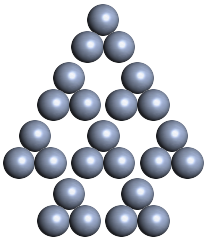
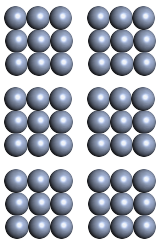
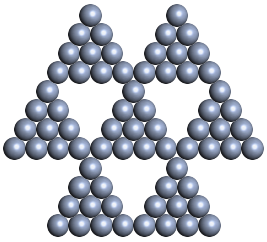
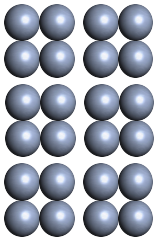
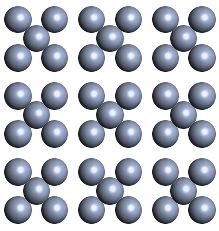
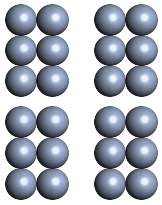
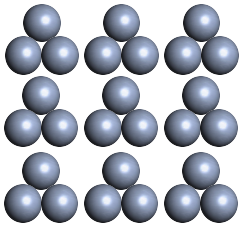
Consider the case where a user selects a connects the right value to the wrong equation.

6 x 4 = 24		
	5 x 9	
3 x 8		6 x 4
	8 x 5	
9 x 6		10 x 7
	3 x 9	

The equation is 6x4.

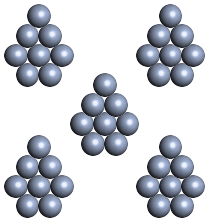
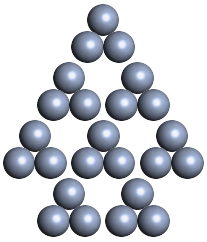
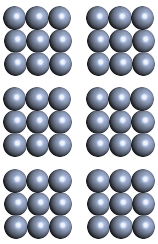
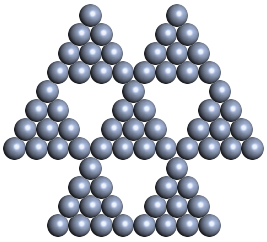
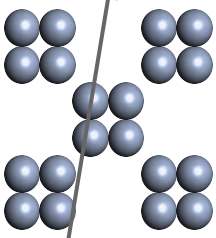
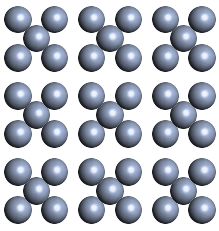
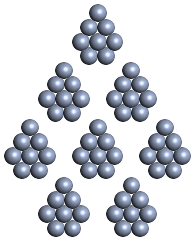
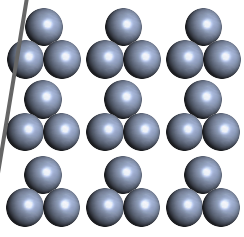
But the picture is 4x6.

The descriptor will automatically display both of the equations and indicate that they are equivalent.

$6 \times 4 = 4 \times 6 = 24$		
	5×9	
3×8		6×4
	8×5	
9×6		10×7
	3×9	

The correct match/matches will appear highlighted automatically.

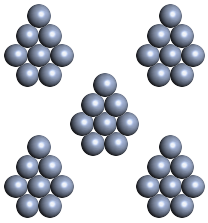
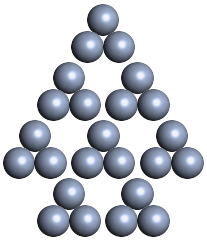
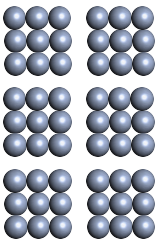
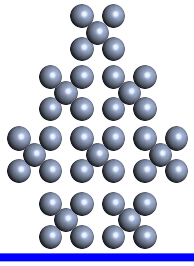
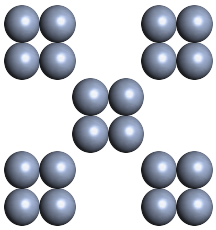
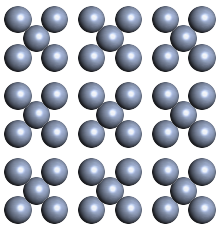
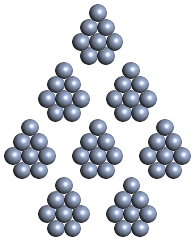
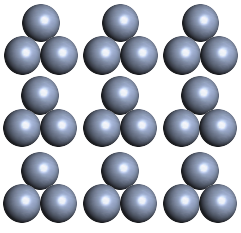
Once the matches are submitted the game will lay three more tiles to restore the gameboard.

	5 x 9	
3 x 8		4 x 5
	8 x 5	
9 x 6		10 x 7
	3 x 9	

New unmatched picture tile.

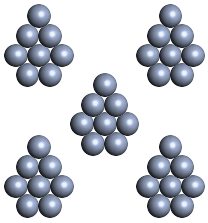
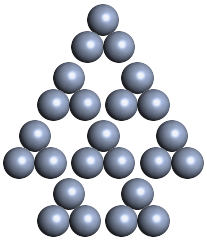
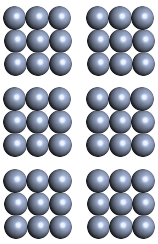
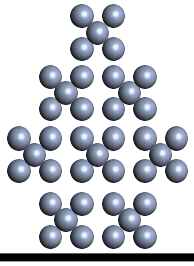
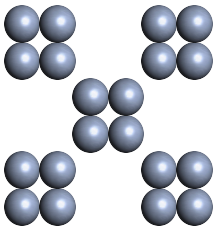
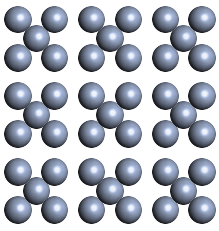
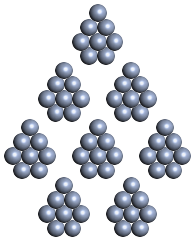
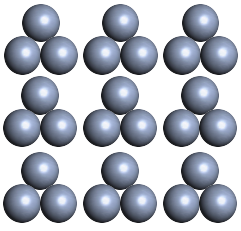
New match.

Consider the case when the equations 8x5 and 5x8 both have picture matches on the board. (In Blue)

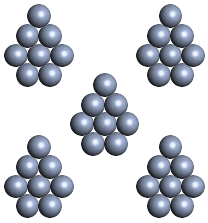
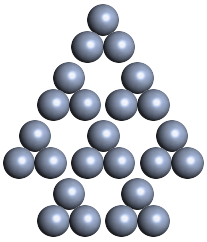
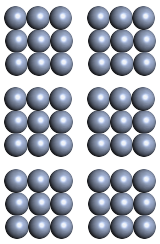
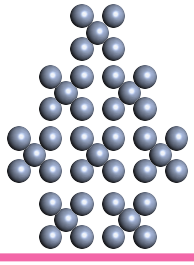
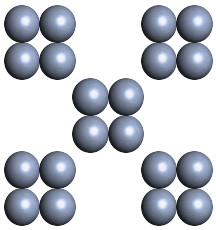
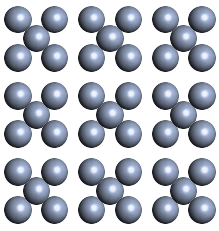
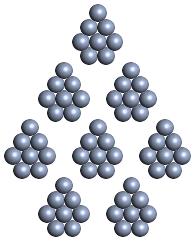
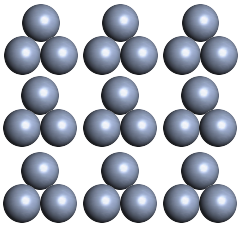
5 x 8 = 40		
	5 x 9	
3 x 8		4 x 5
	8 x 5	
9 x 6		5 x 8
	3 x 9	

*Note: Game board arrangement has been adjusted for demonstration.

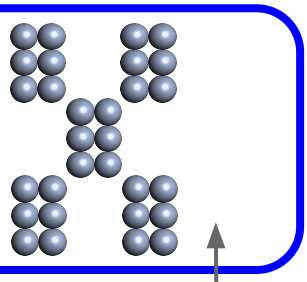
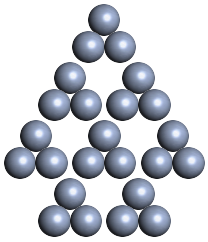
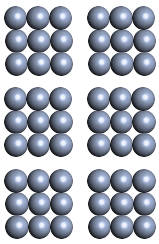
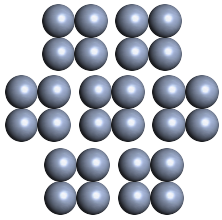
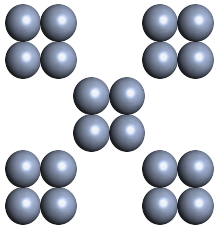
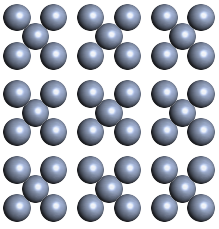
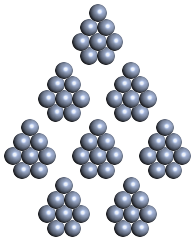
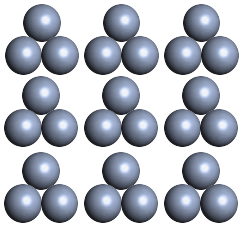
Suppose the user matches the 5x8 equation to the 8x5 picture.

5 x 8 = 40		
	5 x 9	
3 x 8		4 x 5
	8 x 5	
9 x 6		5 x 8
	3 x 9	

The correct picture and correct equation will automatically be selected and the descriptor will show that they are equivalent.

$5 \times 8 = 8 \times 5 = 40$		
	5×9	
3×8		4×5
	8×5	
9×6		5×8
	3×9	

Once the match is submitted all four cards will be picked up and the gameboard will be restored.

	5 x 9	
3 x 8		4 x 5
	4 x 7	
9 x 6		8 x 8
	3 x 9	

New picture with no match.