



Learning phase

Testing phase

**1.** In the initial phase, for group A and B, 2 pictures of equations should be presented, showing an incorrect form of equation and also how it can be corrected (by strategy A or B according to an experimental group). For group AB, 4 pictures should be presented (2 from group A and 2 from group B). For group O, none of the pictures should be presented.

**2.** In the training phase. Groups A and B should solve 2 equations where only strategy they have learned leads to a solution. Groups AB and O should solve 4 tasks (2 from group A and 2 from group B). The instruction in these tasks should be like: "Correct the equation by moving ONLY ONE MATCHSTICK". Such instruction will force participants from group A and B to apply their learned strategy. For group AB and O, they will be forced to twice apply strategy A and twice strategy B.

**3.** In the first testing phase, all participants should solve 2 equations in which both strategies A and B will lead to optimal solution. The instruction in these tasks should be like: "Correct the equation by using THE LEAST NUMBER OF MOVES".

**4.** In the second testing phase, there should be 4 equations – in two equations, strategy A leads to an optimal solution and strategy B leads to suboptimal solutions. In other two equations, strategy B leads to an optimal solution and strategy A lead to suboptimal solutions. Each group should solve all these four tasks. For group A and B, there will be two equations in which their learned strategy is optimal, and two equations in which it is not optimal. For group AB they should recognize which strategy to choose. In these tasks there should be instruction: "Correct the equation by using THE LEAST NUMBER OF MOVES".

**5.** In the third testing phase, there should be also 4 equations – in two equations, strategy A leads to an optimal solution and strategy B is not applicable. In other two equations, strategy B leads to an optimal solution and strategy A is not applicable. Each group should solve all these four tasks. In these tasks there should be instruction: "Correct the equation by MOVING ONLY ONE MATCHSTICK".