

Lesson 6, October 13, 2009 BMC Elementary

1. We started with short logic problems. I suggested to solve the "Weekend" problem by completing the table. Some kids solved the problem very quickly in their minds, without the table, but not all of them did it right, so I asked them to put the information in the table and to slow down a little bit.

2. The sausage problem intrigued us a lot. We tried different numbers of sausages and made cuts in different places of sausages. Many kids suggested 2 as an answer for the first problem, and we checked that it does not work. In the second group there was a discussion, how exactly the cuts are made: can you cut in different directions, or several sausages at once – but this discussion was initiated by a parent. After we found the right answers (7 and 3), and considered one more example, we tried to give some arguments for these answers and the general rule, that number of sausages and number of cuts add up to give the number of pieces. I asked, how many *new* pieces appear after each cut, and some kids quickly answered "two". I corrected that only one, but from the puzzled look of some of participants I deduce that not everyone was convinced by my explanation.



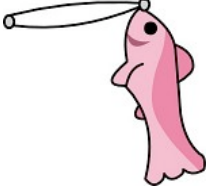

3. The problem with flowerpots surprisingly turned out to be hard. It took some time to understand, what is asked in the problem.

4. The magic triangle problem was not discussed in class.

5. We did the „triangle" part of the experiment with the triangle. The sum of angles in a convex quadrilateral is left for lesson 7.

6. We played the game with 16 points, described in the next lesson.

HANDOUT FOR BMC ELEMENTARY, FALL 2009. NR.
WEEKEND

				
MIKE				
JAMES				
JULIA				
ALICE				

Mike, James, Julia and Alice are friends. They are going to spend the weekend together, but they plan to do different things. One of them is going fishing, another one wants to draw a picture, one of them wants to play table tennis, and the last one wants to plant some flowers in the garden.

1. Alice and Mike do not like fishing.
2. The boys do not like to draw and they are not interested in flowers.
3. Julia wants to be an artist.

What will each of the kids do during the weekend?

Clip art from: <http://classroomclipart.com>

BUTCHER PROBLEM

Mister Jameson is a butcher. Today he cuts sausages for sandwiches.

1. One day he made 7 cuts and got 14 pieces. How many whole sausages were there in the beginning?

2. Another day he made 7 cuts and got 10 pieces. How many whole sausages were there in the beginning?



FLOWER POTS

Put six flowers in the pots, so that in every row and every column there would be even or zero number of flowers.



Clipart from <http://clipartlog.com>



MAGIC TRIANGLE

Put the numbers 1,2,3,4,5 and 6 in the cells of the triangle so that the sums along all the sides would be the same.

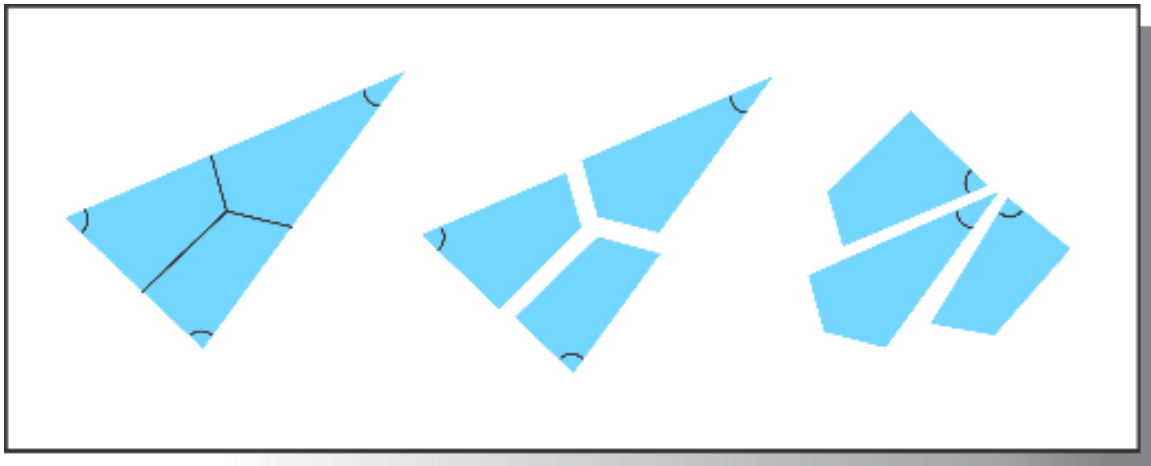
Source of the picture: www.Puzzle.com (?)

EXPERIMENT WITH A TRIANGLE

(The sum of angles in a triangle is 180 degrees)

Draw a triangle. Mark the angles (inside the triangle) with numbers 1,2 and 3. Put a point somewhere inside the triangle, connect it with the midpoints of the sides. Cut the triangle by the lines into 3 parts. Put the angles 1,2,3 together, side by side. Do you see anything special?

Repeat the same for different triangles.



(The sum of angles in a convex quadrilateral is 360 degrees)

Now draw a convex quadrilateral. Draw a diagonal of it. Do you see any triangles? How many? Using the results of our experiment with the triangle, can you guess, what happens, if we add all angles of a quadrilateral together?