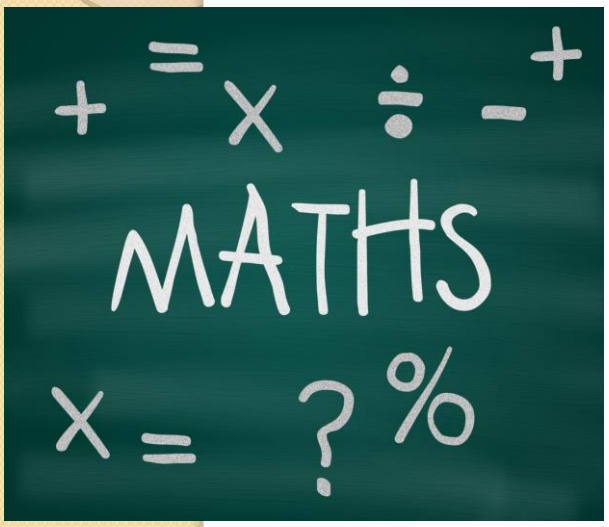
Narva Kesklinna Gümnaasium



Sharing Good Practices 2:

"How to improve underachievement in Maths among pupils from disadvantaged backgrounds"

Portugal, november 2016

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Let me introduce myself

My name is Vladislava Avramenko.
I am 47 years old. I graduated from Leningrad State University, the Faculty of Mathematics.

I have been working as a mathematics teacher for 26 years (7 years in Narva Kesklinna gümnaasium)

ladavr69@gmail.com

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Our team of mathematicians

Teaching Mathematics in Estonia

The education in Estonia consists of 4 stages, 3 years in each. It's compulsory to finish 3 of them (9 classes).

The control of mathematical knowledge is carried out in the 3rd and the 6th classes in the form of a level test. During the last two years, these tests have been carried out digitally, on the Internet.

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The level test in mathematics in class 6

Students receive the test and they have 45 minutes to complete 10-12 tasks in the web environment. The students must either write a solution or choose the right answer. Calculator use is not permitted. Various examples of the tasks are presented on the following slides.

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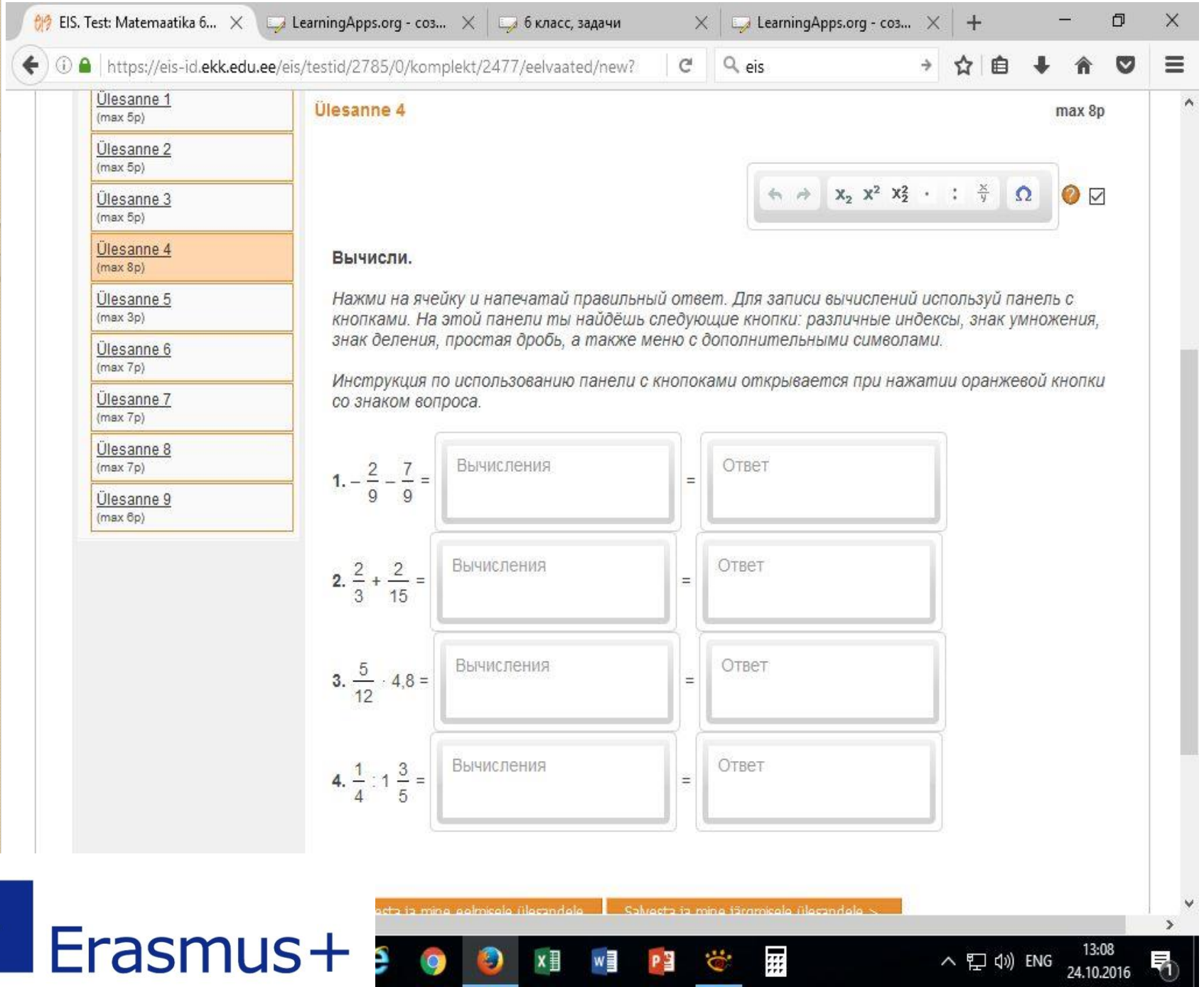
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6 класс, задачи
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eis
Ülesanne 1 (max 5p)
Ülesanne 2 (max 5p)
Ülesanne 3 (max 5p)
Ülesanne 4 (max 8p)
Ülesanne 5 (max 3p)
Ülesanne 6 (max 7p)
Ülesanne 7 (max 7p)
Ülesanne 8 (max 7p)
Ülesanne 9 (max 6p)
Ülesanne 4
max 8p
Вычисли.
Нажми на ячейку и напечатай правильный ответ. Для записи вычислений используй панель с кнопками. На этой панели ты найдёшь следующие кнопки: различные индексы, знак умножения, знак деления, простая дробь, а также меню с дополнительными символами.
Инструкция по использованию панели с кнопоками открывается при нажатии оранжевой кнопки со знаком вопроса.
1. $-\frac{2}{9}-\frac{7}{9}=$ Вычисления = Ответ
2. $\frac{2}{3}+\frac{2}{15}=$ Вычисления = Ответ
3. $\frac{5}{12}\cdot 4{,}8=$ Вычисления = Ответ
4. $\frac{1}{4}:1\frac{3}{5}=$ Вычисления = Ответ
ENG
13:08
24.10.2016

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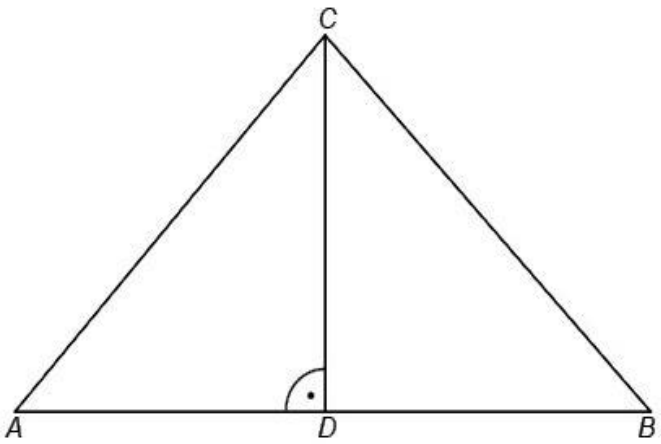
EIS. Test: Matemaatika 6... | LearningApps.org - соз... | 6 класс, задачи | LearningApps.org - соз...

https://eis-id.ekk.edu.ee/eis/testid/2785/0/komplekt/2477/eelvaated/new?

eis

На рисунке дан равнобедренный треугольник *ABC*. Основание треугольника равно 18 см и ∠ *ACD* = 41°.



Нажми мышкой на ячейку с выбором ответов и выбери правильный ответ или нажми на ячейку и напечатай правильный ответ.

Если сторона *AB* треугольника *ABC* является основанием, то стороны *AC* и *BC* треугольника – это [-- Vali --].

CD - это [-- Vali --] треугольника *ABC*, и она делит пополам [-- Vali --]. *AD* = [ ] см и ∠ *ACB* = [ ]

В равнобедренном треугольнике [-- Vali --] равны, следовательно, ∠ *CAB* = ∠ *CBA* = [ ] °.

< Salvesta ja mine eelmisele ülesandele | Salvesta ja mine järgmisele ülesandele >

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24.10.2016

EIS. Test: Matemaatika 6... | LearningApps.org - соз... | 6 класс, задачи | LearningApps.org - соз...

https://eis-id.ekk.edu.ee/eis/testid/2785/0/komplekt/2477/eelvaated/new?

eis

Ülesanne 2 (max 5p)

Ülesanne 3 (max 5p)

Ülesanne 4 (max 8p)

Ülesanne 5 (max 3p)

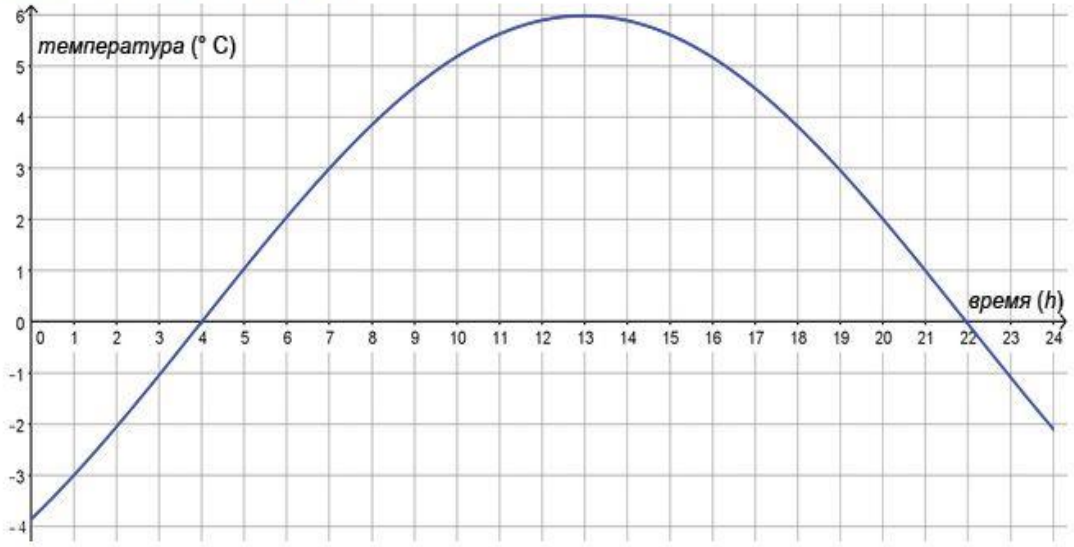
Ülesanne 6 (max 7p)

Ülesanne 7 (max 7p)

Ülesanne 8 (max 7p)

Ülesanne 9 (max 6p)

На рисунке дан график изменения температуры воздуха в течение одних суток. Заполни пропуски с помощью графика.



Нажми на ячейку и напечатай правильный ответ.

В 7 часов температура воздуха была [ ] ° C.

Температура воздуха –3° C была в [ ].

В [ ] часов температура воздуха была самой высокой. Она равнялась [ ] ° C.

Выше 0° C температура воздуха была в промежуток времени [ ] - [ ].

Температура воздуха понижалась в промежуток времени [ ] - [ ].

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ENG 13:09 24.10.2016

Evaluation system in Estonian schools

Knowledge and skills of students are assessed on a five-point scale:

"5"- "very good " 90-100% of the work performed
"4" - "good" 75-89%
"3" - "satisfactory" 50-74%
"2" - "unsatisfactory" 20-49%
"1" - "weak" 0-19%

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ekool

Exams in mathematics in the end of the basic schools

An exam in Mathematics takes place in the 9th class.

It consists of 7 tasks, 5 of which are mandatory ones and 1 task of the two remaining is for the students to choose from.

The exam checks not only the knowledge and the skills in the subject, but also functional reading skills.

The exam is considered to be passed if a student scores at least 50% of the total number of points.

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Peculiarities of teaching Mathematics in our school

Starting from the 7th class, we divide our students into groups according to the level of mastering the subject. There are usually 3-4 groups, depending on the number of the students in the 7th classes.

While studying a student can change the group during these three years, if a teacher considers it appropriate.

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Leveled groups in the 7th class

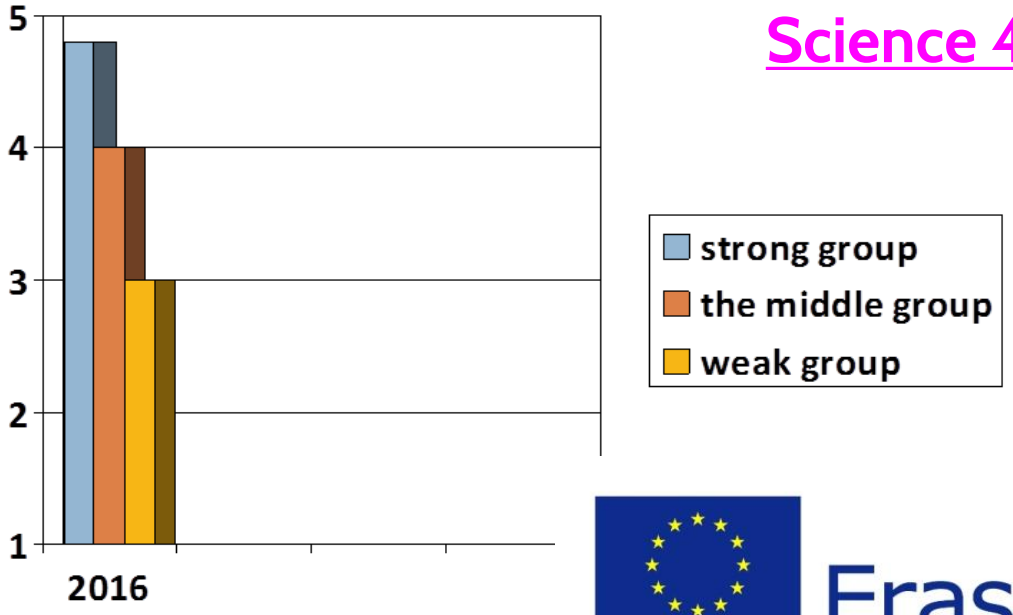
Students are motivated to study and they're going to continue their studies in the upper-secondary school

Students experience some difficulties, but have not lost interest in the subject. Some of them may continue their education in the upper-secondary school

Students are not motivated, the basic level of skills is low, they're are going to enter a vocational school after the 9th class.

The results of examinations in the end of the basic school (class 9)

- In the 2015/16 school year, we released the 9th classes divided into groups according to this new system for the first time. The results were quite good:



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Upper-secondary school 10-12 grade

- **A narrow Maths course**
- 8 courses for 3 years
- The narrow course Exam
- Cannot select the wide course

- **A wide Maths course**
- 14 courses for 3 years
- The wide course Exam
- Can choose the narrow course exam

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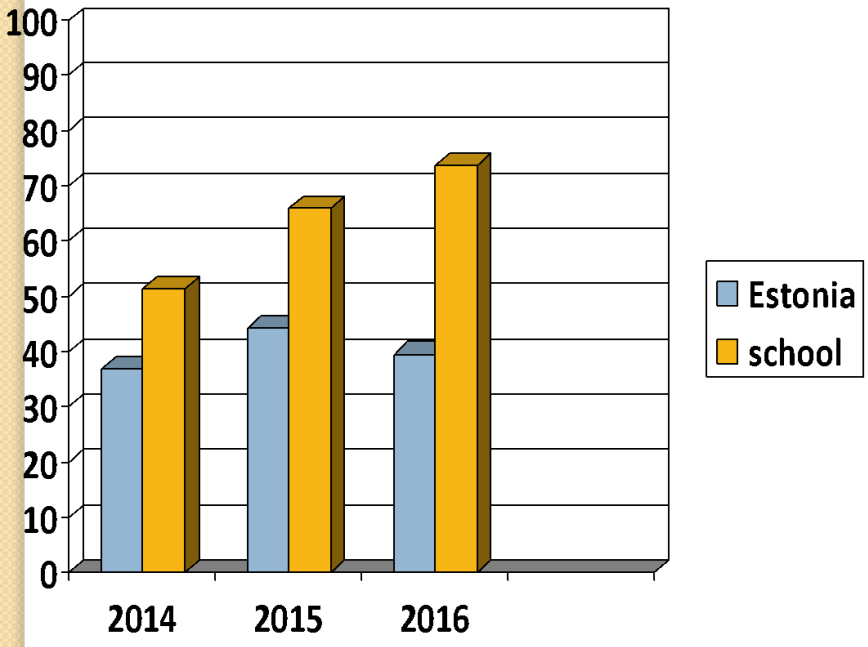
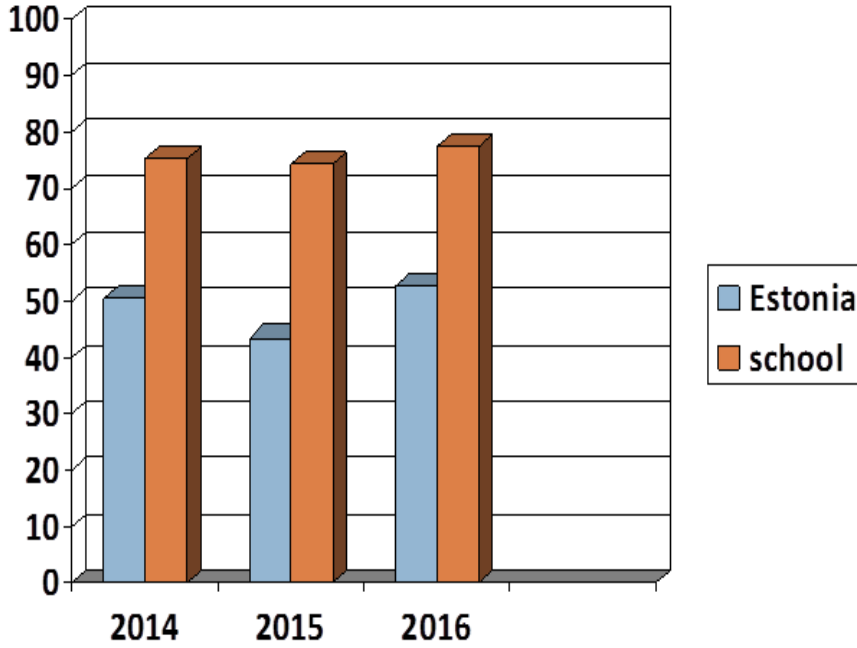
The results of the examination in mathematics at schools (max 100)

- The narrow course



- The wide course



school = Narva Kesklinna Gümnaasium

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HEV õpilased = students with special educational needs

- testing / identifying problems + searching for solution ››››

- individual plans;
- differentiated objectives and marking;
- constant psychological support

The use of different learning environments

As the mother tongue of the vast majority of the students and the teachers in Narva Kesklinna Gümnaasium is Russian, different Russian Internet resources can be used for the exam preparation. http://uztest.ru/

is a wonderful virtual environment to run tests. A teacher chooses a task from different branches of Mathematics, the programme verifies and evaluates it. The page can be used as a homework assignment.

The game-based Education

applied for 5-9 classes

The aims of the game usage:

-Interest activation

-Actualisation of the situation problem

-Solution of the problem

-Consolidation of the material learnt

A great site for gaming lessons

http://www.mathplayground.com/

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Games that I use in the classroom

- http://www.mathplayground.com/locate_aliens.html
- http://www.mathplayground.com/number_conundrum_decimals.html
- http://www.mathplayground.com/alien angles.html

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Group work

- Develops communicative competence
- Is used to revise the material
- Solves the problems of entertaining
- Activates the cognitive activity

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Web site http://learningapps.org
My application for lessons

- http://LearningApps.org/display?v=pszxwykwc16
- http://LearningApps.org/2683506
- http://LearningApps.org/2596306
- http://LearningApps.org/2610940
- http://LearningApps.org/2576624

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Printed tests for exam preparation

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PS:

But I think the most important teacher's school equipment – a piece of chalk, a cloth and a board - are still very powerful tools while teaching!

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to sum it up

How <u>we</u> improve underachievement in Maths among <u>our</u> pupils from disadvantaged backgrounds:

1. **teacher's personality;**
2. **cooperating with students and their parents via ekool;**
3. **leveled groups and narrow/wide Maths courses;**
4. **digital/game based learning**
5. **HEV (SEN) support**
6. **m-o-t-i-v-a-t-i-o-n**

Thank you for attention!

See you in Estonia!