





Courses with fragments of the DynaMat materials and Dissemination

The BG team: Oleg, Neli, Toni, Jenny

DynaMat materials within various courses and seminars

- In the frames of the Fibonacci project
 - With primary school teachers
 - With secondary school teachers
 - Mixed groups
 - International workshops
- National seminar on math education
- Seminars in IMI (experimenting new technology)
- UBM spring conference

Teachers in primary school

- Recent 2-day course on inquiry-based learning of mathematics in the primary school based on GG – June 2012
- They made the Napoleon problem construction for 10 min. and they spent 10 more min. to make an appropriate design

Some comments:

• They paid attention to the orientation of the triangle when built by the polygon button (the half-plane in which the triangle is depends on the order of selecting the vertices). In some cases they generalized the original condition and let the triangle be inside instead.

The exploration they did was related to the length of the sides only – no suggestions for exploring the areas or the angles...

- Various ideas for constructing the centers of the triangles were discussed, including a command from the command center
- The orientation was discussed also when working with circles and arcs. The eggs were shown as ready made files to be explored.

- Workshop with international participation:
- Give the talent a chance 20.10.2012
- •
- Master science program "math education at school level" Plovdiv University, 10.11.2012
- •
- National seminar on education" Inquiry based mathematics education" 19.12.2012 r., IMI-BAS, Sofia
- The project was presented by N. Dimitrova, O. Mushkarov, E. Sendova, T. Chehlarova: After landing dynamic flights in mathematics: the european projects : Math2Earth u DynaMath

The primary teachers





Unity and variety







Creativity



Enjoyment

The group in Blagoevgrad (September 2011)



Blagoevgrad

- •Primary -8
- Mathematics 3
- •Art -2
- •History and geography 1
- •IT 1
- •4-34 years as teachers



Паркетиране

 Запълване на пространството с единтични фигури







ЖИВОТЪТ Е ПРЕКРАСЕН

























Seminars with teachers at IMI





















ET- Term

24 .

See. 1

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Workshop In Bayreuth











The students



European night of scientists – September 2011



17

24



Visits to Stara Zagora



The UBM Spring conference – April 2012



Teachers in art in 10th school in Sofia





The BG team's dissemination activities in 2013

Spring Conference of the Union of Bulgarian Mathematicians Neli – invited talk





apparentime Come and space (Hings's discuss) Правилата са правлена стала Валирия Пиновар и Инанимита са правлениет от Клифира Пиновар и произувани в инстати му Закос в страната на чудесата- $\begin{array}{rcl} x_{n+2} & = & \sin(b)x_n\} + c & \sin(b)x_n\\ y_{n+2} & = & \sin(a)x_n\} + d' \sin(a)x_n\}, & n = 0, 1, 2, \cdots \end{array}$



 Discussions with the members of the High School Students' Institute of Mathematics and Informatics and their mentors about possible extensions of the DynaMat materials.

International Conference "Science Education in School" Galati, Romania. 19.04.2013 in the frame of the national research project "Inquiry-Based Science and Technology Education – i-BEST" coordinated by Dr. Adelina Sporea

- **110** teachers and students participated to the **conference**
- 136 teachers participated in 6 workshops

Toni and Jenny –invited papers and a workshop for teachers







The audience in Galati







Teacher training in Gabrovo , 15-17.02.2013



Teacher training in Gabrovo , 23-24 March 2013



Teacher training in Stara Zagora, 16-17 March, 2013







Workshop with teachers, 23-24.03.2013



Open doors of IMI-BAS, October, 2013







Uzana – 22-25.08.2013 Summer school of HSSI

Presentation of materials related to mathematics and art to the members of HSSI (students and teachers) and discussion on possible extensions



Referring to the project in:

 Чехларова, Т., Н. Чехларова. Динамични композиции в стил Анди Уорхол. В: Педагогически форум. Тракийски университет, ДИПКУ, Стара Загора, бр.2. 2013.c. 56-62 ISSN 1314-7986