Assessment toolkit
of primary school subject competences

First READ Global Conference «Developing a Vision for Assessment Systems»
September 30 – October 2, 2009
Moscow, Russia
Monitoring Achievements of School Students (MASS) in subject competencies assessment system

<table>
<thead>
<tr>
<th>Primary school</th>
<th>Lower secondary school</th>
<th>Upper secondary school</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TIMSS (IEA)</strong>&lt;br&gt;math and science&lt;br&gt;4th grade</td>
<td><strong>TIMSS (IEA)</strong>&lt;br&gt;math and science&lt;br&gt;8th grade</td>
<td><strong>PIRLS (IEA)</strong>&lt;br&gt;reading literacy&lt;br&gt;4th grade</td>
</tr>
<tr>
<td><strong>PIRLS (IEA)</strong>&lt;br&gt;reading literacy&lt;br&gt;4th grade</td>
<td><strong>MASS (CICED)</strong>&lt;br&gt;math, science, native language, and reading literacy&lt;br&gt;4th grade</td>
<td><strong>PISA (OECD)</strong>&lt;br&gt;math, science, and reading literacy&lt;br&gt;15-year-olds in schools</td>
</tr>
</tbody>
</table>
Three categories of key competencies (DeSeCo)

- Use tools interactively (e.g. language, symbols, texts, technology)
- Interact in heterogeneous groups
- Act autonomously
Academic content assimilation levels

construction
(free action – focus on method options field, going beyond it)

reflection
(action with understanding – focus on principle, on substantial aspect of a task situation)

reproduction
(actions per sample – normally, focus on rule, algorithm)

curriculum studied
<table>
<thead>
<tr>
<th><strong>B. Bloom</strong></th>
<th><strong>I.Y Lerner</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong>&lt;br&gt;Recollecting or recognizing information approximately in the form it was presented ...</td>
<td><strong>Knowledge</strong>&lt;br&gt;Recognition of a perceived object or reproduction of knowledge about it</td>
</tr>
<tr>
<td><strong>Comprehension</strong>&lt;br&gt;Translation, explanation, summarizing, interpretation … of mastered information...</td>
<td></td>
</tr>
<tr>
<td><strong>Application</strong>&lt;br&gt;Use of mastered information in new contexts...</td>
<td><strong>Application</strong>&lt;br&gt;Reproduction of activity methods and application of knowledge in a familiar environment per sample, including easily identifiable variations</td>
</tr>
</tbody>
</table>
| **Analysis**<br>Subdivision of the material, categorization of elements, establishment of interrelations, identification of a unit structure principle... | **Creative application**<br>Creative application of mastered information in new unfamiliar environment (transfer, identification of a problem, identification of an alternative solution, combination of earlier mastered methods…)
| **Synthesis**<br>Integration of mastered information for development of new concepts, action plans, generalizations and schemes... |  |
| **Evaluation**<br>Formulation of evaluation judgments based on existing facts and preset criteria... |  |
Samples of problems for maths monitoring

I. How many square centimeters are there in the area of rectangle $ABCD$?

II. Measure the shaded area of the figure shown in Fig. 1 using the shaded figure shown in Fig.2 as a unit area. Write down the resulting number.

III. Measure the area of the big triangle using the small triangle as a unit area. Write down the resulting number.
Academic content assimilation profile

- construction
- reflection
- reproduction
- curriculum studied
Natural science class profile

- Class A
- Class B

levels:
1. 100%
2. 80%
3. 60%
4. 40%
5. 20%
6. 0%
## Testing coverage of the survey toolkit

<table>
<thead>
<tr>
<th>Number of participants of testing</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects of the Russian Federation</td>
<td>1</td>
<td>9</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Schools</td>
<td>5</td>
<td>40</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Students, persons</td>
<td>150</td>
<td>1150</td>
<td>300</td>
<td>500</td>
</tr>
</tbody>
</table>
Potential users of the sample frame

- Students and their parents;
- Teachers;
- Methodologists;
- School administration;
- Federal and regional executive authorities in charge of education
Thank you for your attention!