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Ref.: 2017-09-D-32-en-2

Orig.: EN

Maths Software for the Primary Cycle in the European Schools

**Approved by the Joint Teaching Committee on 12 and 13 October 2017 in Brussels**

**Introduction**

Currently the Working Group Mathematics Primary updates *Intermath*, the mandatory Maths programme for the Primary Cycle in the European Schools[[1]](#footnote-1). The update covers the Syllabus, the Pupils Books and the Teacher Handbooks. Since September, the new books for year 1, 2 and 3 have been implemented. In the school year 2019-2020 the third edition of Intermath, covering the whole Primary cycle from P1 to P5 will be completed.

Even though Intermath has improved a lot over the years and the new books are generally well-received by teachers and (external) experts, nowadays even good books are not enough to meet all different (pedagogical-didactical) needs. Especially digital resources have become essential in contemporary education. For that reason, the WG Mathematics Primary picked up the gauntlet and started to look for ways to integrate software into the Intermath program to ensure that all teachers have sufficient and alternative resources to deliver the Maths curriculum. Because this goes beyond the (technical) expertise of the WG that develops Intermath and beyond the (pedagogical-didactical) expertise of most regular ICT-experts, an external group of specialists must be called in.

After a positive experimental phase of two years, it is time for further professionalizing our approach to realise a structural integration of software in Intermath. This implies a serious investment in time and money and implementation that can only be successful if everybody is fully committed: all ES-schools, all (deputy-) directors, all teachers, all inspectors, ICT-support staff, parents and pupils.

**Proposal**

In the light of the foregoing considerations,
the **BIP** is asked for a favourable opinion,
the **JTC** is asked for approval,
regarding the following matters:

Syllabus related:

1. The development of software as an integral, mandatory part of Intermath to supplement the core Books, entering into force from September 2018 onwards;

From a positive response to 1 follows:

1. The launch of a call for tender to contract a party to develop and/or adapt software to the needs of Intermath and the European Schools;
2. Adjustment of the price of the current Intermath books to include the software.

**Explanation**

1. *Software as an integral, mandatory part of Intermath*

All teachers in all language sections need extra resources to supplement the core Intermath material for: reinforcement, extra practice, reviewing topics, alternative ways to introduce a concept, differentiated material for pupils that need extra support and others that need additional challenges.

Software has the advantage of:

* encouraging independent learning, providing instant feedback to the pupil;
* allowing an environment that encourages pupils to work together;
* enabling students to continue working outside the classroom, e.g. at home, with a support teacher;
* providing a fun/enjoyable environment that encourages learning;
* providing a ready pool of teaching and learning resources for the teachers.

If the software is really integrated in Intermath, it is equally accessible for all pupils and we avoid differences in opportunities regarding Maths e-learning.

*2 Call for tender*

The development of software that meets contemporary pedagogical-didactical and subject-specific standards, demands for a group of specialists. The ideal Maths software :

* has a proven track record and sound pedagogical-didactical basis;
* covers as much of the EU Maths Primary Curriculum as possible;
* can complement the content of the Intermath Pupils Books as much as possible;
* can provide extra differentiated material, linked to previous items;
* provides feedback to the teacher so that (s)he can monitor the progress of his pupils;
* provides motivating feedback to the pupils to encourage them to practice more or to continue at a higher level;
* is available in the languages of all language sections of the European Schools to ensure maximum possible equal opportunity and access for all students.

With a call for tender that contains the above specifications, a solid partner can be contracted.

Assuming that a partner can be contracted in Spring 2018 and we can work on existing software, the use of the software can be phased in from September 2018 onwards.

1. *Adjustment of price*

Intermath Pupils Books are bought by the parents. The price of a set of books (Star Book and Sun Book) is 18 euro per year. This price has stayed the same seventeen years. The income is used for development of the syllabus, development and design of the Pupils Books, development of the Teachers Handbook, external expertise, translation of the Pupils Books into 19 languages, translation of the Teachers Handbook into the vehicular languages, printing, storage, distribution, centralised training of Maths Coordinators, decentralised training of teachers etcetera. Intermath/Mathematics Primary has been completely self-supporting and will continue to be so, employing the same sound fiscal management that has enable it to be financially independent for so long.

The inclusion of software aimed at raising the quality of mathematical education across all language sections in the Primary Schools, provided and wholly supported by an external partner / company will require a price adjustment.

Only after the call for tender will be concluded, an exact amount can be established, but we consider a raise of 7 or 8 euros per year (total of 25/26 euro) to be a good approximation based on current market prices.

**OPINION OF THE BOARD OF INSPECTORS (NURSERY AND PRIMARY)**

**The Board of Inspectors (Nursery and Primary) expressed a favourable opinion on the request to develop software as an integral and mandatory part of Intermath and to launch a call for tenders to that end. The BIP also expressed a favourable opinion on the adjustment of the price of the current Intermath books to include the software. The request would go forward to the JTC for decision-making.**

**DECISION OF THE TEACHING COMMITTEE**

**The Joint Teaching Committee approved the request to develop software that would become an integral and mandatory part of Intermath. To that end, a call for tenders would be launched. The software’s introduction would mean a price increase of €7-€8 per year. The document would be sent forward to the Board of Governors for its information.**

*To my experience the Maths Pilot Software is very useful…

Pupils practice mathematics in a playful environment as they know it from video games. And most important: they do not stop making attempts to "solve " a case even if they fail. This does not happen in the conventional way of doing mathematics, since the kids get easily frustrated form the "difficulty" of maths. They want to do more and they can take it home and gain extra time, doing their homework.*

*Teachers can rely on the approach of the software when introducing new concepts, because of the alignment with the ES-curriculum. Moreover, the concepts are implemented in real life situations. And, you can follow the progress since the software allows you to see the attempts that each individual child has made in order to complete the task.*

Teacher and Maths Coordinator, EEB3

*The Pilot software offers easy to access Maths problem that can be used via a harmonised approach across all relevant primary years. The clear links to the curriculum support lesson objectives well, and can be reinforced at home via a simple log on and easy to use platform. The great thing is that teachers and classes can tailor and use the software as much or as little as desired. At a basic level, one can just use the games on the interactive whiteboard in the classroom, or as assessment activities both inside and outside the classroom. Children will never have a problem accessing the software, due to them growing up with the technology, but for teachers, young and old, the software is easy, relevant and links directly to the objectives of the curriculum.*

Teacher and Maths coordinator AES Bad-Vilbel

*The learning contents that are offered during the Intermath lessons can be practised in another context in a challenging and funny way. The pupils are very motivated to work with the Pilot Software. The exercises can be adapted to the learning content of the lessons and to the level of individual pupils.*

Teacher and Maths coordinator Münich

*The experimental software is a great program to exercise a lot of math topics in a playful way. It is a good addition to the intermath books.*

*I use a lot of games as an introduction, offered to the whole class to explain the topic and later  they can exercise on their own.*

*The way it is presented, with the two islands and the monstercards is very motivating for the children. I like working with it.*

Teacher P1, Bergen

*The Pilot Software is very good because it follows the Intermath structure and leads to the same objectives. The Guide of the WG Intermath on the Intermath website is very helpfull for the teachers.
I asked my students (they are in P3 now and they used the software for two years) what they think about it and they gave me the following answers:
- I feel important when I have homework on the computer.
 I feel different from kids in other schools, I feel special.
- I like it because I play and I learn at the same time.
- When I’m home and I’m bored, I can play Matific and I feel
 better.*

*Students are talking between them about their achievements on (I was good at that game, I got x stars on that one, I collected x monster cards...).
For the teachers, I feel it very usefull in the first years because the students can see that* ***maths are fun****.****The basic skills on ICT*** *can be learnt by using Matific (start a computer, find a web page, write a username and a password, logg out, shut down a computer).
Also, it’s very usefull for* ***differentiation in class and for homeworks****.
It’s* ***easy to check*** *if the students worked correctly or not and to have a view of the hole class.*

Teacher P3 RO, EEB4

*Maths software is relevant because :*

*- For the children, it's a good way to do mathematics without having the impression of doing mathematics!*

*- For the teacher, it's an extra-tool that can be helpful to prepare a lesson or a sequence of lessons.*

Teacher and coordinator, Karlsruhe

*The current experimental software is a wonderful additional resource for teacher and pupils: it is an excellent aid which engages the pupils, improves their understanding and allows the teacher to deepen the mathematical literacy of their pupils.*

Teacher and EN Section leader, EEB4

*The Pilot Software is valuable because it allows the children to practice their math skills in another context and it shows them different situations in which their math skills can be used. It is also a good assessment tool and a good way to motivate the students.*

Teachers AES Brussels-Argenteuil

*The Pilot Software…*

* *gives the children the chance to approach, explore and extend the different topics covered in Intermath in an inviting and attractive way*
* *provides an excellent opportunity for differentiation, not only in the class group, but across the year levels*
* *provides an additional way to accomodate pupils' different learning styles*

Teachers AES Parma

*The current experimental software is seen by pupils as a reward and a game, but can be matched closely to and enhance current learning.*

Teacher P1-P2, AES Helsinki

1. Also most Accredited Schools use Intermath in the Primary Cycle. Accredited Schools are included in all material/activities of Intermath. [↑](#footnote-ref-1)