

1. National Research Coordinator's Comments (English)

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At the beginning of every class period, the teacher should record in an official class book names of the students who are absent. After that, the teacher usually states the goal of the lesson that usually contains statement of the topic that will be covered during the period. This goal/topic is recorded in the class book as well as on the blackboard. Students write the goal of the lesson in their notebooks. Besides that, the teacher writes the lesson number and the date of the lesson. Students are copying this information into their notebooks as well. Some teachers are very particular about the form of student's notes. They direct the students to underline the goal or they explicitly state whether the date should be noted in written or numeric format, etc.

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At the beginning of the class the teacher usually calls one or two students to come up to the front of the class. The teacher is assigning the problems that are from content areas previously covered. This method of solving the problems serves two goals. First, it provides the base for assigning the grade and second, it allows the rest of the students to follow the solution of the problems. Students who are solving problems at the board are expected to provide public verbal descriptions of their solution. They are loudly describing why they are using particular steps for solving the problem. The teacher can easily notice in which content areas students have problems. If during the solution the teacher is helping the student to solve the problem, the student will get a worse grade. These verbal descriptions of the solution allow students who have problems to see and follow solution methods for a particular problem. Also, students who were absent can use these descriptions as "re-instruction" of particular problems.

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The student must publicly explain why is he/ she is considering certain steps for solving the problem. The teacher has a bigger opportunity to find out whether the student truly understands the given topic. Sometimes a student may provide correct solutions. However, the teacher may be asking additional questions to find out whether the student really understands the topics. The fact that the student speaks loudly while solving helps the student to formulate correct mathematical sentences, as well as forces students to think rather than mechanically calculate the problems.

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After the student finishes the solution, the teacher assigns a grade. Grade scale is from 1 till 5, where 1 (excellent) is best grade and 5 (failed) is worst. Sometimes the teacher states grade without providing reasons why he/she decided to assign particular grade. In most of the cases the teachers explain that they decided to assign a particular grade because "students needed help with solving part of the problem". Grades are recorded in an official grade book. With the help of the grade book, parents have an opportunity to receive information about a student's performance at school. These grade books are used to record other "notes for parents". For example, the teacher may communicate any disciplinary problems, etc.

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Teachers try very hard to make sure that all students use the correct mathematical

terminology. Students are usually not allowed to use less precise terms. The students must use correct mathematical terms to express themselves. The importance of precise formulation can be also observed in our textbooks.

- [00:10:11](#) For many teachers it is not very popular to use calculators. Teachers try very hard to encourage all students to provide arithmetical operations without use of calculators. When the students are working on a harder problem, calculators are often used to save time.
- [00:13:31](#) Teachers try to make sure that every student is graded at least once or twice in front of the class each semester. Besides that, the teachers assign many other tests and bigger half-term tests. The teachers usually consider oral grading as a very important part of assessing students' knowledge, since it requires different skills than those used in tests. Student should be able to explain procedures in a way that other students can understand it.
- [00:13:38](#) Many times, students are given assignments in order to practice a previous topic. Each student solves the problem in their notebook, on their own. Very rarely do they work on these assignments in pairs.
- [00:15:31](#) In most Czech math lessons, we can observe that teachers expect students to use correct geometric symbols while solving geometrical problems. (i.e: to mark the perimeter of any object students should use capital letter O, and to mark all three sides of a triangle, they should use small letters a, b, c, etc.). They believe that students who follow the given systems have a better orientation when solving the problem and therefore they will avoid making unnecessary mistakes. In this lesson the teacher encourages students to choose their own system for naming the objects.
- [00:16:52](#) It's not common for students to help each other. Most of the time, they're asked to work independently. They may check their solutions with the whole class only after everyone has completed their work.
- [00:17:22](#) The students that have completed their work raise their hands, and the teacher calls them up to the blackboard. Students at the board write up the problem on the back of the board so that rest of the students will not see the answer. Later on in the class, the teacher takes the opportunity to use what's on the board, so everyone can check their solutions.
- [00:18:01](#) The teacher walks around the room to see how are students doing, who is finished; or the teacher is helping the students who need assistance. Students may raise their hand to ask for help.
- [00:18:57](#) At this time, the whole class together with the teacher checks the solution method and correct solution.
- [00:19:58](#) In today's class, the teacher is focusing on going over the homework with everyone. Teachers usually don't spend too much time in class dealing with the homework.

Homework is usually collected by the teacher, corrected and returned to the students.

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In this part of the class, the teacher is not grading the students. She is trying to call up as many students as possible. This way she can see better whether the students at the board understand. At the same time the rest of the students may follow the solutions and correct their mistakes.

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At the beginning of lesson, students were solving problems on Pythagorean theorem, which was introduced to students in previous lessons. Now they moved on to the next topic - numerical expressions. It is very common in the Czech lessons that students are reviewing at the beginning of the lesson, as well going over new topics. Topics that are reviewed may be very unrelated to the topics that are being developed and introduced to students.

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When students work on simple calculations, the teachers don't want them to use a calculator. They like to see students perform calculations from their memory and practice their skills.

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The teacher assigns problems from the textbook. Students sometimes don't understand what to do. That's why the teacher explains to them in detail what they're supposed to do. The first problem is done in class and the rest of the assignments are done individually, as we saw in our example.

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The teacher assigns homework from the same exercise they've started in the class. It is quite common for students to work on certain assignments and if they don't finish it in class, the rest of the assignment becomes homework. However almost never the students are told that they are given their homework assignments and they may start working on it during the lesson.