Magic with Mental Maths

By TeacherPlus | Jul 27, 2012

Children learn and understand mathematical concepts best when engaged in hands-on activities and games. Language is an important aspect in teaching mathematics and activity time is perfect for reinforcing mathematical talk. Discussions, talking out and language are an important part of a math class, often undermined. Manipulating everyday objects and playing games allows children to figure out and grasp the apparently abstract math concepts.

The activities discussed in this module can be incorporated as part of the math class through the term and serve as excellent warm ups and fillers. Math activities are not to be seen as an unnecessary drain on teaching time but an excellent supplementary exercise to instill basic mathematical skills. Small incentives and appreciation go a long way in encouraging the children.

**Duration:**
00 hours 10 mins

**Introduction:**

Sessions of 10 minutes each, spread across the term.

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**Objective:**

1. To make use of ‘mental maths’ to consolidate learning of numbers and the four basic operations.
2. To encourage students to do simple mental computations without the help of paper and pencil.
3. To reinforce mathematical concepts, develop skills and encourage collaboration and problem-solving through play.

**Activity Steps:**

**Session 1:**
Odd and even numbers
Duration of the session: 10 minutes

**Steps**

That’s Odd!
This game gets the children to practice identifying odd and even numbers and work on simple addition as well.

**Step 1:**
1. Divide the class into two groups. Name one group ‘Odd’ and the other ‘Even’.
2. Now let the Odd group pick an ‘odd’ number, say ‘5’. The Even group now has to choose a number, the addition of which would give an ‘even’ answer. So if the Odd group has picked ‘5’, the Even group can say ‘5+1 = 6’ or ‘5+5 = 10’.
3. The Odd group now has to take this ‘even’ answer and add a number to get an ‘odd’ answer. So ‘6+3 = 9’ The Even group now takes ‘9’ and tries to get an ‘even’ answer ‘9+1 = 10’ or ‘9+5 = 14’
4. Continue for 10 rounds each.
Session 2:
Mental computations
Duration of the session: 10 minutes

Steps
Headstart
This activity helps drill simple operations and make students confident about basic mental calculations before they progress to more complex computations.

Step 1:
1. The activity can be done individually or in pairs. Ask the students to have pen and paper ready.
2. Give the students a simple set of computation asking them to do the computation mentally and write only the final answer in their books. E.g. Add 3 + 11, do not write the answer, keep it in mind. Now subtract 5 from it. Students can use their fingers to count.
3. Let the students note the answer in their books. Write the correct answer on the board and ask the students to check if their answer is right.
4. Mental computations at this stage can be practiced for addition, subtraction and multiplication.

Session 3:
Duration of the session: 10 minutes
Steps
Short listing!
This activity helps not only with numbers but also with use of mathematical language.

Step 1:
1. Ask a student to come up and face the class. Give him/her a number which the other students are not aware of.
2. The class now has to guess the number. They may ask as many questions as they like. E.g. Is it divisible by 2? If it is, the students can deduce that the number is an even number. They can further ask is it greater than 10? The child in front can only answer ‘yes’ or ‘no’.
3. If a student thinks he/she knows the answer they can make a guess. If the answer is right the child scores a point, if it is wrong he/she cannot ask any more questions for that round. The student who scores the most points gets a star for the activity.

Session 4:
Duration of the session: 10 minutes
Steps
Step 1:
Operations
This game provides further exercise in using the operations.
1. Put a number; say 25, on the board.
2. Ask the children to think of operations with different numbers that give the answer 25. Award points for suggestions that use more than two operations.
3. As a variation specify which operations the students are to use. For example, if you say 25 with addition and multiplication, the children would have to come up with answers (or questions) such as 2 x 10 + 5 or 6 x 4 + 1...
4. As the students get more confident, they can choose their own numbers to compute.

Session 5:
Musical Numbers
Duration of the session: 10 minutes
Support Material: Number cards and a music player.
Steps
Step 1:
1. Make enough space for the students to move around in a circle, or if this is not possible the students can stand at their desks.
2. Shuffle the number cards and place them in a box. Ask the students to come up and pick a card at random. Now each student has a number.
3. Play the music and let the students move in a circle or continue to stand at their desks. Stop the music and call out number sets at random, e.g. all even numbers between 10 and 15; numbers divisible by 4, multiples of 3 etc. Students whose numbers fall into these categories move out of the circle or sit down at their places.
4. The game continues till a single student is left, who is the winner.

Teacher Reference
A little time for activities in a math class can go a long way in not only explaining the concepts but in making them more real, thereby reinforcing them. Games and activities allow students far more practice in math vocabulary and reasoning than a conventional textbook exercise ever can. This happens because activities ensure a multi-sensory involvement and the children pay more attention on carrying out the activity and not on how much work they have to do. Activities also allow introduction of ideas in a more concrete way.

The justifications and arguments that often go against the use of games and activities in class are:

- They are a drain on the already limited teaching time.
- They are demanding from an organizational point of view.
- They lead to loss of recordable activity produced from more formal activities.

The importance of making activities and games a regular part of a math class are rarely given weight. Games allow students to work above their normal level, as they do not define the academic limits of the work in any way, and children often devise ways of looking at the work in a manner that leads them ahead of their expected achievements. Activities and games do not make students feel that they are doing something that the teacher ‘wants’ and ‘expects’, but rather something they enjoy themselves. They therefore are enthusiastic and think freely about the situation. Activities allow students to ‘talk’ mathematics. The students are made to think and reason on their own. Activities that involve groups and pairs enhance discussions as the students have to verbalize their ideas and the pairing technique provides a more conducive atmosphere for students to participate as they feel confident that there is help from their partners to make decisions or explain. As a group children are always eager to make suggestions, advice and prompt their peers when they are stuck. As activities and games do not define the way in which a problem is to be solved or worked out, they allow students to participate with skill or perception depending on their competence. Students can stay back until they feel confident and it is seen that children who often play quietly for a while suddenly join in and make suggestions. Children also learn and develop their understanding of concepts by watching and listening to their peers. A game situation gives them the freedom to assess the situation without pressure until they feel they have things sorted out and then contribute in a more positive and confident manner.

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