

Book 4
Textbook in
Mathematics
for Class IV

MATH - MAGIC



0425



एन सी ई आर टी
NCERT

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FOREWORD

The National Curriculum Framework (NCF), 2005, recommends that children's life at school must be linked to their life outside the school. This principle marks a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home and community. The syllabi and textbooks developed on the basis of NCF signify an attempt to implement this basic idea. They also attempt to discourage rote learning and the maintenance of sharp boundaries between different subject areas. We hope these measures will take us significantly further in the direction of a child-centred system of education outlined in the National Policy on Education (1986).

The success of this effort depends on the steps that school principals and teachers will take to encourage children to reflect on their own learning and to pursue imaginative activities and questions. We must recognise that given space, time and freedom, children generate new knowledge by engaging with the information passed on to them by adults. Treating the prescribed textbook as the sole basis of examination is one of the key reasons why other resources and sites of learning are ignored. Inculcating creativity and initiative is possible if we perceive and treat children as participants in learning, not as receivers of a fixed body of knowledge.

These aims imply considerable change in school routines and mode of functioning. Flexibility in the daily time-table is as necessary as rigour in implementing the annual calendar so that the required number of teaching days are actually devoted to teaching. The methods used for teaching and evaluation will also determine how effective this textbook proves for making children's life at school a happy experience, rather than a source of stress or boredom. Syllabus designers have tried to address the problem of curricular burden by restructuring and reorienting knowledge at different stages with greater consideration for child psychology and the time available for teaching. The textbook attempts to enhance this endeavour by giving higher priority and space to opportunities for contemplation and wondering, discussion in small groups, and activities requiring hands-on experience.

National Council of Educational Research and Training (NCERT) appreciates the hard work done by the Textbook Development Committee responsible for this book. We wish to thank the Chairperson of the Advisory Committee, Professor Anita Rampal and the Chief Advisor for this book, Professor Amitabha Mukherjee for guiding the work of this committee. Several teachers contributed to the development of this textbook; we are grateful to their principals for making this possible. We are indebted to the institutions and organisations which have generously permitted us to draw upon their resources, material and personnel. We are especially grateful to the members of the National Monitoring Committee, appointed by the Department of Secondary and Higher Education, Ministry of Human Resource Development under the Chairpersonship of Professor Mrinal Miri and Professor G.P. Deshpande, for their valuable time and contribution. As an organisation committed to the systemic reform and continuous improvement in the quality of its products, NCERT welcomes comments and suggestions which will enable us to undertake further revision and refinement.

New Delhi
20 November 2006

Director
National Council of Educational
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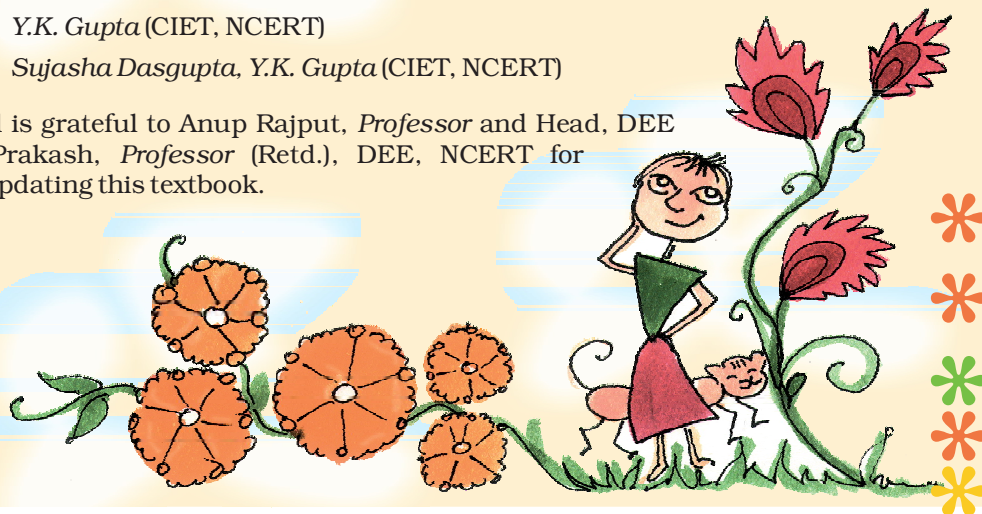
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MATH-MAGIC

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Building with Bricks



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Brick Patterns for Jagriti School

This is the true story of Jagriti School in Murshidabad (West Bengal). When its building was being made, there was a plan to make brick patterns on the floor and walls. Jamaal, Kaalu and Piyaar were the masons for the brick work. They wanted to get new ideas for the school building. So they took their other friends to see the old tomb of Murshid Kuli Khan. (See photos.)



This building has a big floor with about two thousand beautiful brick patterns. These were made by masons long back – about three hundred years ago.



Look how the bricks are arranged in these five floor patterns.





Which floor pattern do you like the most? _____

Have you seen such patterns anywhere?

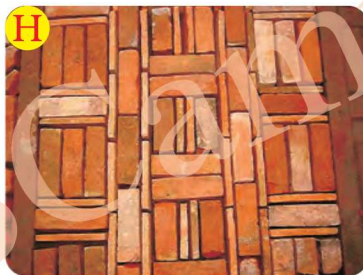
The masons came back excited. Jamaal said — Ah! In those days they had made so many interesting brick patterns. We had



forgotten these! Let us make some nice designs on the floor of this school.

Each mason made a different brick pattern. The school is proud to have such a beautiful building! Children play and sing on it and also make new patterns themselves.





- ❖ Which pattern is made in a circle?
- ❖ In which pattern can you show mirror halves? Draw a line.
- ❖ Now you draw some new floor patterns.



How to Draw a Brick?

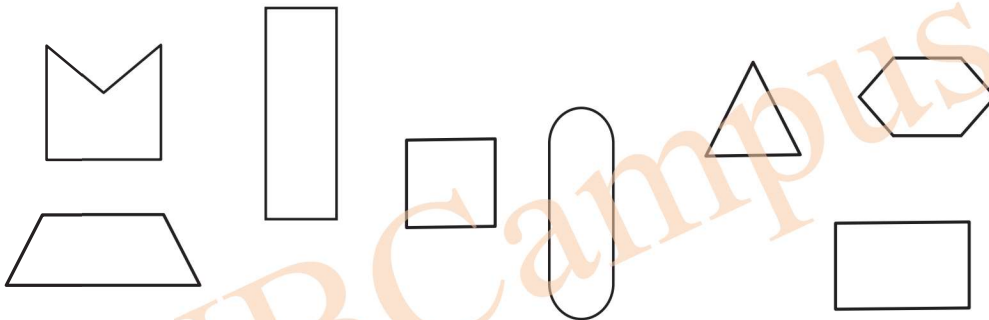
These are two photos of the same brick.

In one photo we can see only one **face** of the brick. In the other we can see three faces. Circle the photo showing three faces.

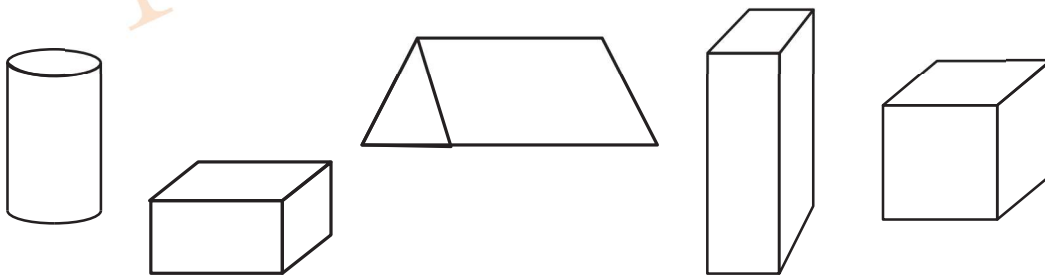


- ❖ How many faces in all does a brick have? ____
- ❖ Is any face a **square**?
- ❖ Draw the smallest face of the brick.

- ❖ Which of these are the faces of a brick? Mark a (✓).



- ❖ Which of these is a drawing of a brick? Mark a (✓).



- ❖ Make a drawing of this box to show 3 of its faces.



- ❖ Can you make a drawing of a brick which shows 4 of its faces?