DPEP

जिला प्राथमिक शिक्षा कार्यक्रम
DISTRICT PRIMARY EDUCATION PROGRAMME

ISSUES IN PRIMARY EDUCATION

Contents

VOL. 1 No.4. March 1999 A Despatch on Primary Education

From the Editor's Desk

Dear Friend,

You must have so far received three issues of our newsletter 'Issues in Primary Education'. It has been a pleasure to receive your letters in response; your feedback is continuously helping us to improve the quality of this newsletter. But we are still waiting for your suggestions regarding an appropriate name for the newsletter.

We are working on the next issue. Meanwhile, we would like to share some reading material before the next issue reaches you. We are enclosing the following:

- An Extract from the PROBE report:- This report has been prepared by the PROBE team which consists of Anuradha De, Jean Dreze, Shiva Kumar, Claire Noronha, Pushpendra, Anita Rampal, Meera Samson and Amarjeet Sinha. It has been published by Oxford University Press.

- Suggested list of books on education for resource persons and teachers:- This has been compiled by us at TSG.

- Activity Pool:- This time, we are sending addition games that can be played if a set of number cards are prepared. These activities have been borrowed from the series 'Maths games in the Classroom' by Dave Kirkby.

We hope that enclosed material proves useful in your interaction with teachers, friends and children.

Looking forward to your response.

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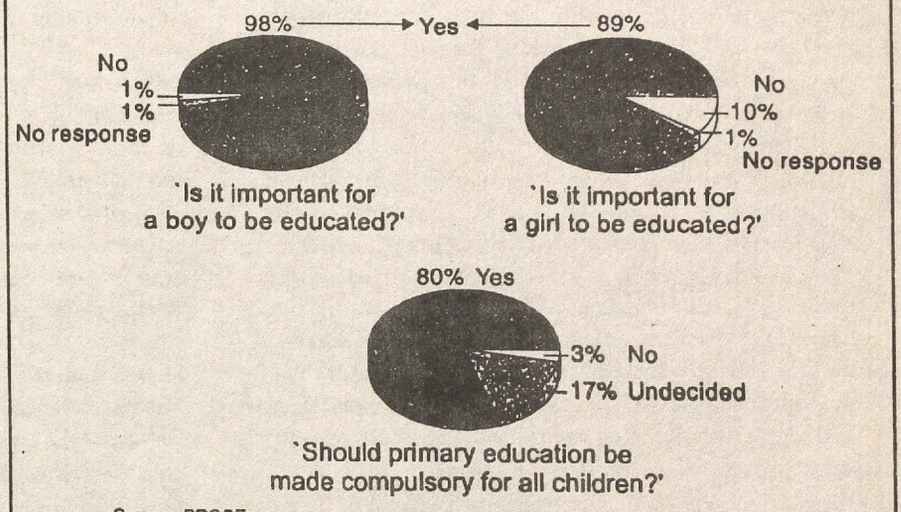
PROBE REPORT - AN EXTRACT

INTRODUCTION

We bring to you an extract from the Public Report on Basic Education (PROBE). This report has been prepared by a team of professional researchers from different disciplines. It is a detailed field survey carried out from September to December 1996. This survey covered all schooling facilities, and a sample of 1376 households, in 234 randomly selected villages of Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and Himachal Pradesh.

CHART 2.7

Parents' Attitudes to Education



Source: *PROBE survey.*

2.2. Some Myths

The reasons why so many children are out of school, as suggested by the PROBE survey, will be examined in the next chapter. Meanwhile, it may be helpful to debunk a few myths that have clouded clear thinking on this subject. Each of these myths contains a grain of truth, but this grain of truth has often been bloated out of proportion in public debates, leading to much confusion.

Myth 1: Parents are not interested

One common myth is that most Indian parents have little interest in their children's education. This myth of parental indifference remains astonishingly widespread (especially in official circles, where it provides a convenient rationalization for India's low schooling levels). To illustrate, in its golden-jubilee analysis of India's failure to achieve universal elementary education, *The Times of India* (15 August 1997) confidently asserts — without evidence — that 'illiterate and semi-literate parents see no reason to send their children to school'. On the same day, a similar article in *Indian Express* (written by a leading expert on the sociology of education) states: 'Although there is general awareness that literacy is a basic need and right of every person, it is not perceived as such by every individual. The vast majority of adult illiterates belonging to the poor economic stratum are not convinced of it.'

In contrast to this supposed indifference, we find that even in the PROBE states (where parental apathy is likely to be most widespread) most parents attach importance to their children's education. For instance, in response to the question 'Is it important for a boy to be educated?', the proportion of parents who answer 'Yes' is as high as 98 per cent (Chart 2.7). This is not to deny that parental indifference does exist in specific cases — this is the 'grain of truth' in the myth of parental indifference. Parental motivation for the education of girls, in particular, is lacking in a significant proportion of families. But the general pattern is not one of parental indifference. On the contrary, the 'typical' father and mother are very keen that their children should receive a good education. It is another matter that they do not always have much faith in the schooling system's ability to impart such education — we shall return to this problem.

Myth 2: Child labour is the main obstacle

Another myth is that most out-of-school children are unable to study because they have to work. This widespread belief has been fuelled by shocking cases of full-time child labour in specific areas and occupations, such as carpet-weaving in Mirzapur or bangle-making in Firozabad. Some organizations claim that 65 million children in India are 'forced to work for more than eight hours a day' (Bandhua Mukti Morcha), or even that India has 70 to 80 million child labourers, working 12 hours a day on average (Coalition Against Child Labour). Following on that, the question is often asked: 'How can we make our country fully literate when 60 million of our children are engaged in full-time jobs as child labourers?' (*National Herald*, 2 January 1997).

The plight of full-time child labour is indeed distressing, and the above statements may have some shock value in helping to draw attention to this issue. However, as a factual description of the problem of child labour and its relation to schooling, these statements are misleading in three respects. First, they vastly exaggerate the *magnitude* of the problem.

CHILD LABOUR IN FIROZABAD

A member of the PROBE team visited Firozabad. His account :

'We can't survive without children. They run much faster than adults and therefore production goes up,' the owner of a glass factory is reported to have said during a survey in 1986 — the same year in which The Child Labour (Prohibition and Regulation) Act came into force. Children were found carrying molten glass, and working at furnaces in which the temperatures ranged from 800-1100° C. Curious to know if child labour was still a problem, I visited Firozabad in 1996. Firozabad city is clearly a land of glass and bangles: Every road is sprinkled with colourful fragments of glass and bits of bangles. But even more clearly Firozabad looks like a city of the poor and the wretched, with its abominable roads full of pot-holes and garbage, knee-deep water in some places, glass and bangle factories, gloomy residential areas dotted with small *bhattis* and *chimnis*, and most people living on the roadside in small *kholis*. And, of course, islands of riches.

The Deputy Labour Commissioner, Mr Uday Pal Singh was very helpful, and even turned out to be a committed administrator, known for his transparent dealings. Firozabad apparently is still plagued with hard-core child labour. One reason, says Mr Singh, is the attitude of the courts: their verdict often goes against the Labour Department. Another is bureaucratic apathy and corruption. Mr Singh told us of a senior IAS officer whose wife had ordered glass items worth more than Rs 10,000 when the two of them had visited Firozabad. The cost, he said, was borne by the labour inspectors who, in turn, connive with the factory owners and other defaulters. Mr Singh himself was a man under pressure. Threat to life is a problem which officers like him often faced. In fact, he had sought a transfer from Firozabad.

According to Mr Singh, his own predecessor had been suitably rewarded by factory owners for his inaction. It was only after the intervention of the National Human Rights Commission that the authorities were compelled to do something. A survey revealed that glass factories alone employed some 1,200 children in Firozabad. After the authorities intervened, and due to Mr Singh's firm attitude, the number of children working in glass factories (i.e. in the organized sector) had dwindled to a negligible level.

When I made unannounced visits to two glass factories, I found no children there. Two contractors marketing finished glass and bangle products confirmed that child labour in glass factories had declined and added that child labour had simply shifted to cottage and household industries. Mr Singh agreed, and observed that this made application of the Child Labour Act difficult since restrictions on child labour apply only to factories and industrial premises.

I also visited special schools for erstwhile child labourers. It was encouraging to find that these were full-time day schools. Uniforms and mid-day meals were provided, as well as books and stationery. In the first school, 176 children (almost half of them girls) were enrolled, though only 90 were present. Three teachers were present. They said that pupil attendance had been low for a few days due to the *raksha bandhan* festival. Similar patterns were observed in two other schools.

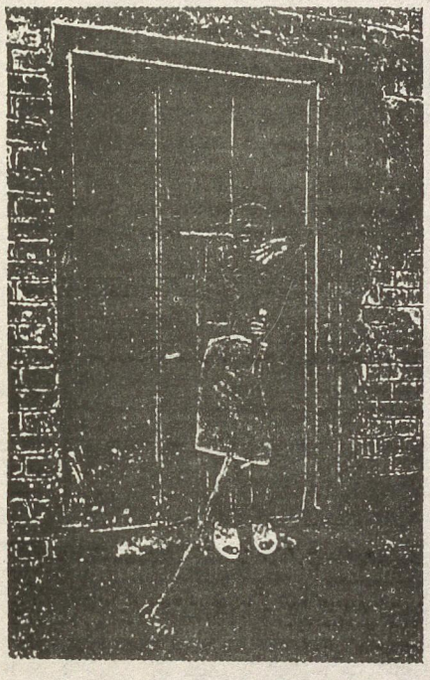
I talked with many people about the problem of child labour. The most interesting discussion was with the caretaker of the Dak Bungalow, who had three sons. The first two had studied until class 8, and were working as skilled *jari* workers in bangle factories, earning up to Rs 250-300 per day. The youngest son dropped out of class 3 and was now working in a nearby bangle factory. When I asked the father why the child had dropped out so early, he replied that there was no point sending the child to school when his brothers were earning handsome wages. The eldest son, he said, planned to open his own bangle unit, and would need more hands. The small boy would learn the skill at a young age and become productive. After all, he had acquired basic literacy. Further study was meant for earning, which the boy could do from a tender age anyway.

I talked to other parents too. In general they opined that what we call 'child labour' is, to them, a responsible working child — a self-employed child. An early start helps them to master the work at a young age, and to shoulder more household responsibilities. If employers were willing to employ a child, no parent in their condition of penury would want to renounce this opportunity. Some parents cited low wages as a reason for being compelled to let their children work. Household industries are low paymasters, constraining the family to complete as much work as possible to survive. They recognized this vicious cycle of low wages and child labour, but saw no way out of it.

I think of the deep poverty of ordinary people here; of the lure of easy employment in the glass industry, whether 'organized' or not; of the loopholes in the laws which govern child labour, of the many corrupt officials and the few honest and vulnerable ones. I am not surprised that the glass industry and the lives of children are still deeply intertwined in Firozabad. A few special schools do not seem to be enough.

Available data on labour force participation (from the census, the National Sample Survey, the PROBE survey, and related sources) clearly indicate that only a small minority of Indian children are full-time labourers. Second, these statements misrepresent the *nature* of the work performed by child labourers. The vast majority of child labourers work as family labourers at home or in the fields, not as wage labourers (see Chart 2.9). This distinction has a bearing on the relation between child labour and schooling; for instance, the scope for adjustment in working hours is usually greater in family labour than in hired labour. Third, the above statements involve a simplistic reading of the *causes* of child labour and educational deprivation. Specifically, they suggest that full-time child labourers are unable to go to school because they have to work, rather than the reverse (i.e. that children work because they have dropped out of school). In practice, both patterns are possible.

Below : Out-of-school but not at work.



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Here again, the myth in question contains an element of truth, which must not be overlooked. The phenomenon of full-time child labour, though confined, is a disgrace (see p.15). Even for part-time child workers engaged in family labour, work is not always compatible with schooling. At times of peak agricultural activity, for instance, poor families may be under great pressure to mobilize children as full-time labourers. And that may be enough to exclude them from the schooling system altogether. These qualifications become more and more serious as the focus moves to progressively older age groups. The time utilization of children will be discussed in more detail in the next chapter.

CHART 2.8

Estimates of Child Labour
(All-India, Rural)

Proportion (%) of children aged 5-14 who are in the workforce:

	Female	Male
Census of India, 1981	8.8	10.0
National Sample Survey, 1993	7.8	6.9
NCAER Survey, 1994	3.5	4.4

For definitions and sources, see Explanatory Notes.

Myth 3: Elementary education is free

Another myth is that elementary education in India is free, as directed by the Constitution. It may well be free, or nearly free, in the restricted sense that admission fees in government schools are negligible. But that does not mean that education is free in the more relevant sense that it involves no expenditure for the parents. Recent surveys indicate that the cash costs of education play a major role in discouraging poor families from sending children to school, especially when the quality of schooling is low.

The PROBE survey suggests that north Indian parents spend about Rs 318 per year (on fees, books, slates, clothes, etc.), on average, to send a child to a government primary school (chart 2.10). This is a major financial burden, especially for poor families with several children of school-going age. Thus, an agricultural labourer in Bihar with three such children would have to work for about 40 days in the year just to send them to primary school. Note also that, even at Rs 318 per year, the average child goes to school with scanty clothes and a depleted schoolbag. Only a minority of children, for instance, were found to be in possession of all the textbooks corresponding to their grade. The average expenditure of Rs 318 per year is well below real needs.

CHART 2.9

Work Patterns of Out-of-School Children
(PROBE States)

	Boys	Girls
Proportion who worked more than 8 hours on the day preceding the survey	20%	22%
Proportion who performed wage labour on the day preceding the survey	5%	1%
Average time of work on the day preceding the survey*	4.2 hours (3.3 hours)	5.1 hours (4.8 hours)
Extra time of work, compared with children who are attending school	2.1 hours	2.2 hours

* Median in brackets

Source: *PROBE survey (random sub-sample of 333 out-of-school children in the 6-12 age group).*

Myth 4: Schools are available

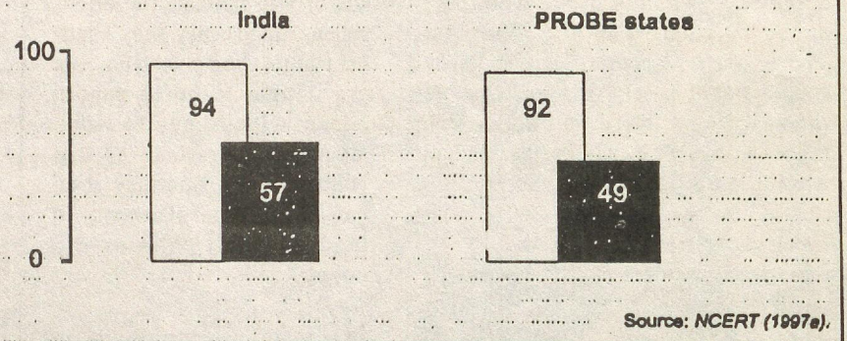
Much progress has been made, since independence, in the provision of schooling facilities. For instance, the number of primary schools has nearly tripled. In 1993, 94 per cent of the rural population lived within one kilometre of a primary school. Clearly, physical distance between home and school is much less of a problem than it used to be. Some go so far as to conclude that the problem has by and large been solved. According to the Department of Education's latest (1997-8) annual report, for instance, 'accessibility of schooling facilities is no longer a major problem' (p.30). This is another myth, for several reasons.

CHART 2.11

School Availability (1993)

Proportion(%) of rural population living within 1 km of:

- ☐ A primary school / section
- ■ An upper-primary school / section



Source: *NCERT (1997e).*

First, what needs to be considered is not just physical distance but also 'social distance', taking into account various barriers that may prevent a willing child from reaching the local school. In many areas, for instance, villages are divided into separate hamlets, and children from one hamlet may be reluctant or unable to go to school in another hamlet, e.g. due to caste tensions. Only half of all hamlets in rural India have a primary school, and in states like Uttar Pradesh, the proportion of such hamlets is as low as 30 per cent. For girls, restricted freedom of movement further enhances the problem of social distance.

Second, in assessing the physical adequacy of schooling facilities, it is crucial not to lose sight of the constitutional objective of universal education *until the age of fourteen*. This calls for the convenient availability not only of primary schools, but also of 'middle' (sometimes called upper-primary) schools with classes up to grade eight. Once the attention shifts to middle schools, the inadequacy of the schooling infrastructure re-emerges as a major problem. Only 29 per cent of the PROBE survey villages, for instance, have a middle school. And in rural India as a whole, 43 per cent of the population lives more than 1 kilometre away from the nearest upper-primary school. Here again, girls are the main victims, because many parents are reluctant to allow their daughters to attend school in other villages.

Third, even the basic problem of physical distance from primary schools persists for a significant minority of families. The most obvious aspect of this problem is the absence of any school in some villages. In addition, adverse terrain is sometimes a major obstacle (especially for small children) even when a school is available within the village. In the Himalayan region, for instance, primary-school children often have to walk long distances uphill, or through forests and across streams, to reach the village school. These hurdles are no joke, particularly in the winter. If schooling is an inalienable right of all citizens, these outstanding problems of physical distance have to be resolved.

It should also be borne in mind that even when school facilities are *available* at a convenient distance, they are often *inadequate*, in terms of both quality and quantity. It is little use living within one kilometre of a primary school if the school is already overcrowded, or if it has a single teacher, or if the school is deprived of basic facilities such as a blackboard. As we shall see, these circumstances are far from unusual.

CHART 2.10

Average Cost of Sending a Child to School

(Rs/year at constant 1996-7 prices)

Primary Level	
NSS estimate, 1986-7*	212
PROBE estimate, 1996	318
Elementary Level	
NCAER estimate, 1994	478

* Excluding clothing expenses

Source: *NSSO, 1993; NCAER, 1996a; PROBE survey.*

ANIL SHAH

BOOK LIST

We bring to you a suggested list of books and publishers in English. This is a useful collection of reading and reference material for teachers as well as resource persons on general issues in education, science teaching and materials.Prices have been indicated wherever possible.

General Reading

Divasvapna
Gijubhai Badeka/Kashinath Trivedi
National Book Trust
Price Rs. 19.00/-

How Children Fail
John Holt
Penguin
Price Rs. 360.00/- (Approx.)

How Children Learn
John Holt
Penguin
Price Rs. 360.00/- (Approx.)

Teacher
Sylvia Ashton Warner
Arvind Gupta
C-7/169, SDA
New Delhi - 110016
Price Rs. 50.00/-

The Blackboard Book
Eleanor Watts
Orient Longman
Price Rs. 125.00/-

What is Worth Teaching
Krishna Kumar
Orient Longman
Price Rs. 115.00/-

Learning From Conflict (Tracts for the Times/ Series)
Krishna Kumar
Orient Longman
Price Rs. 50.00/-

Prashika: Eklavya's Innovative Experiment in Primary Education
R.K. Agnihotri & A.L. Shukla
Ekalavya, Kothi Bazaar
Hoshangabad
Madhya Pradesh - 461001
Price Rs. 90.00/-

Danger-School!
The Other India Book Store
Above Mapusa Clinic
Mapusa, Goa - 403508

The Hindu Speaks on Education
A Collection of Articles & Editorials on Education (1994-96)
The Hindu
Price Rs. 125.00/-

Preparation of Teaching Materials

Low Cost, No cost Teaching Aids
Mary Ann Das Gupta
National Book Trust
Price Rs. 35.00/-

The Joy of Making Indian Toys
Sudarshan Khanna
National Book Trust
Price Rs. 60.00/-

Science Teaching

UNESCO Source Book for Science in the Primary Schools
National Book Trust
Price Rs. 60.00/-

UNESCO Source Book for Science Teaching
Oxford University Press

Small Science - Class III
Jaishree Ramdas
Textbook *(Rs. 11.00/-)*
Workbook *(Rs. 13.00/-)* &
Teacher's Book *(Rs. 34.00/-)*
Homibhabha - Centre for Science Education
Tata Institute of Fundamental Research
V.N. Puran Marg, Mankhurd
Mumbai - 400 088

ACTIVITY POOL

ADDITION GAMES

These games are presented in three parts with increasing complexity from Part I to Part III.

PART I

***GAME 1* (2 or more players)**

A pack of playing cards without the picture cards is needed.

RULES

1. The cards are shuffled and placed face down in the centre of the table.
2. Players take turns to reveal two cards, find the sum and record this as their score. Players keep a running total, checking each other's calculations.
3. When all the cards have been used, the player with the greatest total is the winner.

***GAME 2* (2 players)**

You need a set of 36 cards as overleaf

4	4	4	4	4	4	5	5	5
5	5	5	6	6	6	6	6	6
7	7	7	7	7	7	8	8	8
8	8	8	9	9	9	9	9	9

You also need a set of counters(*) for each player, and a board -

10	17	10	11	16
15	18	12	10	11
14	11	13	14	12
13	15	17	13	16
16	12	18	15	14

RULES

1. Shuffle the cards and place them face down in a pile.

(*) *The word 'counter' here could also stand for any object that can be placed in any square of the grid. For example, stones, seeds, paper etc. can be used as counters.*

2. Players take turns to take two cards, find the sum and if possible place a counter on a square on the board which corresponds to the answer.
3. The first player to obtain four counters in a line, horizontally, vertically or diagonally, wins.

***GAME 3* (2 players)**

You need a set of 25 cards -

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25		

RULES

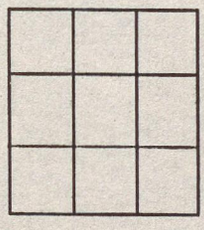
1. The cards are placed face up with the 25 in the centre of the table.
2. The first player finds two cards whose total is 25, for example 17 and 8 and places them in the centre of the table - removing the 25.
3. The next player tries to find two cards which sum to either 17 or 8, for example 3 and 5 and places them in the centre of the table - removing the 8 .
4. The game continues until one player is unable to move - he then loses.

***GAME 4* (2 players)**

You need a set of 9 cards -

1	2	3	4	5	6	7	8	9

and a board -



RULES

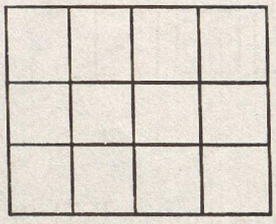
1. Player A chooses the odd number cards, player B the even number cards.
2. Players take turns to place a card in one of the spaces on the board. The winner is the first player to place a card which produces a line of three cards, horizontally, vertically, or diagonally which add up to fifteen.

VARIATION
Double the numbers on the cards i.e.

2	4	6	8	10	12	14	16	18

and double the target number i.e. 30. This time players choose any number card available on their turn.

ANOTHER VARIATION
Use a set of 16 cards numbered 1 to 16, and a board -



This time the target number is 34.

GAME 5 *(2 to 4 players)*
You need a set of 52 cards as overleaf -

1	1	1	1	2	2	2	2	3
3	3	3	4	4	4	4	5	5
5	5	6	6	6	6	7	7	7
7	8	8	8	8	9	9	9	9
10	10	10	10	11	11	11	11	12
12	12	12	13	13	13	13		

RULES
1. Shuffle the cards and deal five to each player

2. The remainder are placed in the centre of the table, face down.

3. The dealer states a target number between 20 and 30.

4. The player on the dealer's left takes a card from the blind deck. He then looks to see if he has cards which sum to the selected target number. If so, he lays these in front of him as a "book". Then he discards one card to the bottom of the blind deck, whether or not he found a book. He need not discard if all of his cards make a book.

5. The game ends when one player has no cards left.

6. The score for each player is the total value of his books less the sum in his hand.

GAME 6 (2 players)

You need two sets of 9 cards-

1	2	3	4	5	6	7	8	9

You also need six dice, each numbered 1,2,3,4,5,6.

RULES

1. Each player shuffles his set of cards and places them in a pile face down in front of him. They each then reveal the top card. The sum of these two cards is the target number.

2. Players then take turns to roll as many of the six dice they choose, aiming to make the total of the dice thrown equal to the target number. If a player achieves this he then collects the two cards involved.

3. Each player then reveals the next card in his pile and the game is repeated.

4A. When all pairs of cards have been used the winner is the player who has collected the most cards.

OR

4B. When all pairs of cards have been used, players sum the total of the cards they have collected. The winner is the player with the largest total.

GAME 7 - ADDITION RUMMY (2-4 players)

You need a set of 90 cards as overleaf-

1 + 1	1 + 1	1 + 2	1 + 2	1 + 3	1 + 3	1 + 4
1 + 4	1 + 5	1 + 5	1 + 6	1 + 6	1 + 7	1 + 7
1 + 8	1 + 8	1 + 9	1 + 9	2 + 1	2 + 1	2 + 2
2 + 2	2 + 3	2 + 3	2 + 4	2 + 4	2 + 5	2 + 5
2 + 6	2 + 6	2 + 7	2 + 7	2 + 8	2 + 8	3 + 1
3 + 1	3 + 2	3 + 2	3 + 3	3 + 3	3 + 4	3 + 4
3 + 5	3 + 5	3 + 6	3 + 6	3 + 7	3 + 7	4 + 1
4 + 1	4 + 2	4 + 2	4 + 3	4 + 3	4 + 4	4 + 4
4 + 5	4 + 5	4 + 6	4 + 6	5 + 1	5 + 1	5 + 2
5 + 3	5 + 3	5 + 4	5 + 4	5 + 5	5 + 5	6 + 1
6 + 1	6 + 2	6 + 2	6 + 3	6 + 3	6 + 4	6 + 4
7 + 1	7 + 1	7 + 2	7 + 2	7 + 3	7 + 3	8 + 1
8 + 1	8 + 2	8 + 2	9 + 1	9 + 1	5 + 2	

RULES

1. Shuffle the cards and deal 5 to each player.
2. The remainder are placed in the centre of the table, face down, with the top card turned up at the side of the pile.
3. The player to the left of the dealer first attempts to lay down "books" of three or more cards containing the same sum.

e.g. 4 + 2 | 3 + 3 | 1 + 5

Then he may take one card from the top of the blind deck, the top card from the turned-up pile, or a pile of cards from the top of the turned-up pile. (He can take the top five cards, or the top three cards, or even the whole pile, but he cannot, for instance, choose the third card down without taking the top two). The player may then add a card to a book if it has the same sum.

Each player finishes his turn by discarding one card to the turned-up pile.

4. The game ends when one player has no cards left.

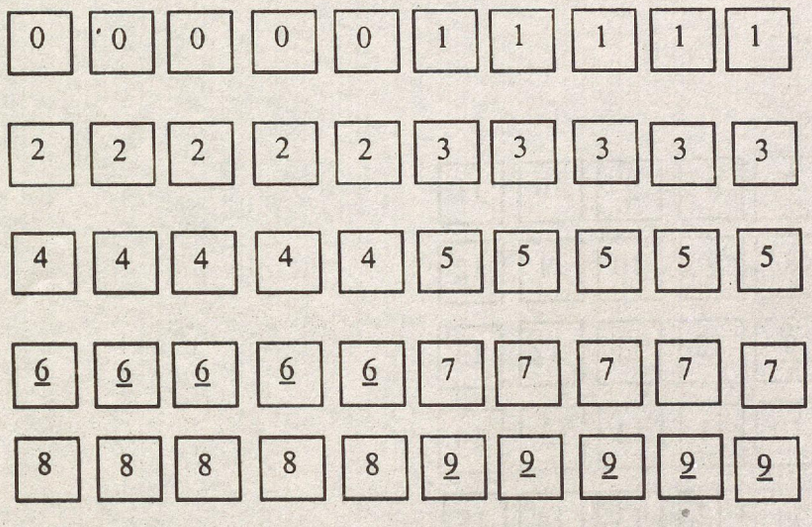
5. The winner is either

   (a) the first player to use all his cards, or

   (b) the player with the most cards in his books.

***GAME 8* (2 to 4 players)**

You need a set of 50 cards-



RULES

1. Shuffle the cards and place them face down in the centre of the table.

2. Each player, in turn, takes two cards, reveals them and states the sum.

3. The player with the largest sum collects the pairs of cards from each of the other players.

4. In the event of a tie, the players involved repeat the process for a play-off. The winner collects all the pairs of cards that have been used for that round.

5. The winner is the player with the most cards at the end.

PART II

***GAME 1* (2 players)**

You need a set of 10 cards -

11	12	13	14	15	16	17	18	19	20

RULES

1. Shuffle the cards and place them face down in a pile.
2. Choose an "addition number" - say "seven".
3. The first player takes the top card - suppose it is 14 finds the sum '7 + 14', and records his score, i.e. 21. The second player then taken the next card - suppose it is 11, finds the sum '7 + 11' and records his score, i.e. 18.
4. Players continue to do this until all the cards have been used.
5. The player with the highest total score at the end of the game wins.

***GAME 2* (2 to 4 players)**

You need a set of 104 "sum cards" -

2	3	4	5	6	7	8	9	10	11
3	4	5	6	7	8	9	10	11	12
4	5	6	7	8	9	10	11	12	13
5	6	7	8	9	10	11	12	13	14
6	7	8	9	10	11	12	13	14	15
7	8	9	10	11	12	13	14	15	16
8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17	18
10	11	12	13	14	15	16	17	18	19
11	12	13	14	15	16	17	18	19	20
WILD	WILD	WILD	WILD						

You also need a board -

+	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

RULES

1. Shuffle the cards and deal out 7 each.
2. The first player chooses one of his cards and places it in a square where it is the sum of the column and row numbers.
3. The next player must place one of his cards in the same way, BUT, it must be in a square touching the last card played - horizontally, vertically, or diagonally. If this cannot be done, he draws from the face down cards until he gets one.
4. The game continues with players playing in turns, the winner being the first person to place all of his cards.
5. If a player has a "wild" card he can use it instead of drawing another sum card. These cards are used to open play in a new part of the board. He shows the wild card to the other players and then selects one of his sum cards and puts it on the board. After a wild card has been used it is removed from the game. A player who uses a wild card must draw a replacement for it from the pile of sum cards.

GAME 3 (2 to 4 players)

You need the same set of 104 "sum cards" and board as used in GAME 2.

You also need two sets of number "heading" cards.

1	2	3	4	5	6	7	8	9	10

These should be of convenient size to fit on top of the numbers in the row and column headings

of the playing board.

RULES

The rules are the same as for GAME 2 - except that each set of number "headings" cards are distributed randomly; one along the top of the board over the existing column headings, and the other down the left of the board over the existing row headings.

GAME 4 (1 person)

You need to remove the "wild-cards" from the set of cards used in GAME 2. You also need to use the same board, and the two sets of number "headings" cards.

RULES

1. The board is set up as for GAME 3.
2. Using a stop-watch the player times himself to see how quickly he can place the 100 cards onto their correct squares.

After re-arranging the number "headings" cards, the game can be repeated to try and produce a faster time.

GAME 5 (2 players)

You need two sets of 10 cards -

11	12	13	14	15	16	17	18	19	20

RULES

1. Each player shuffles his set of ten cards and places them face down in a pile.
2. Each player then reveals his top card; player A finds the sum and records this as his score. Players then reveal their second cards and player B finds this sum for his score.
3. Players take turns checking each other's scores until all the cards have been used.
4. The player with the highest total score at the end of the game wins.

GAME 6 - BOXES (2 players)

You need a sheet of paper containing a six by six dotty grid -

15	7	2	20	9
1	24	16	3	13
19	4	8	22	17
12	23	10	18	5
6	25	14	21	11

RULES

1. Players take turns to draw a single straight line, horizontally or vertically, joining two adjacent dots.
2. Each time a player completes a small square he can have another turn. When the player completes a square, the number inside the square counts towards his score.
3. When all the lines have been completed, the player with the largest total score is the winner.

VARIATIONS

A. Play with different numbers.

B. Play with different sized grids.

GAME 7 (2 to 4 players)

You need five dice, each numbered 1,2,3,4,5,6.

RULES

1. Players take turns to throw the five dice, and score points according to the result.

i.e.

A PAIR	3
A TRIPLE	8
A QUADRUPLE	15
A QUINTUPLE	25
TWO PAIRS	5
A TRIPLE AND A PAIR	12

2. Players keep a running total of their score and the winner is the first player to reach a total of 200.

GAME 8 (2 or more players)

You need a pack of playing cards without the picture cards. An ace counts as one.

RULES

1. Shuffle the cards and deal 5 to each player.
2. The reminder of the pack is placed face down in the centre of the table with the top card placed face-up by the side.
3. Players, in turn, pick up one card either from the pack, or the face-up pile, then discard one card on to the face-up pile. The aim is to collect a hand of five cards which total 27. The first player to do this is the winner.

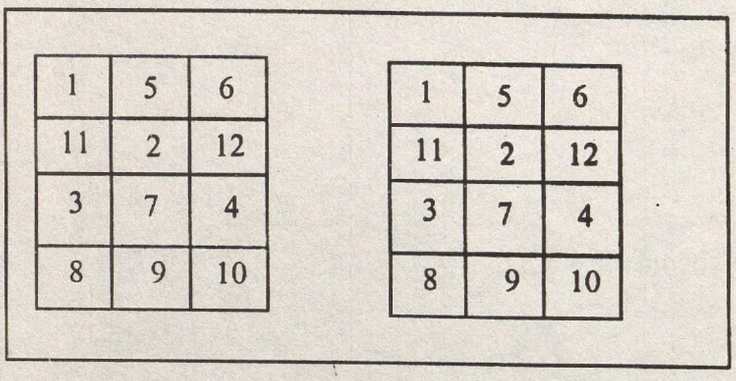
VARIATIONS

A. Change the target number.

B. Change the number of cards dealt to each player.

GAMES 9 and 10

You need two dice, each numbered 1,2,3,4,5,6, and a set of counters for each player. You also need a board as overleaf -



1	5	6
11	2	12
3	7	4
8	9	10

1	5	6
11	2	12
3	7	4
8	9	10

These are games for 2 players; one using the left-hand side of the board, the other the right-hand side.

GAME 9

RULES

1. Players take turns to roll the two dice and cover up EITHER the sum or the difference of the numbers that appear.
2. If a player cannot place a counter (i.e. both the sum and difference are already covered up) he passes the dice to the next player.
3. The first player to cover up their side of the board is the winner.

GAME 10

RULES

1. Players take turns to roll the two dice and cover up any combination of numbers whose sum equals the total he rolled.

e.g. if the sum on the dice is 8, he can cover up

8

OR 2 AND 6

OR 3 AND 5

OR 1,2 AND 5

OR 1,3 AND 4

2. If a player cannot do this EXACTLY then he must do nothing at all in that turn.
3. A player does not have to make a move even though he may be able to.
4. The winner is the first player to -

4A. Complete his board.

OR 4B. Complete a row of three.

OR 4C. Complete a column of four.

GAMES 11 and 12

These are the same as GAMES 9 and 10 except that you use three dice each numbered 1,2,3,4,5,6, and a board.

1	11	6
13	2	10
8	14	18
17	5	9
12	7	3
4	16	15

1	11	6
13	2	10
8	14	18
17	5	9
12	7	3
4	16	15

PART III

GAME I *(2 players)*

You need a set of counters for each player, and a board -

1	4	6	3	5	2	6
4	2	1	5	3	6	1
6	3	5	2	1	4	3
3	1	4	6	2	3	5
5	6	2	4	5	1	3
2	5	3	1	6	5	4
6	2	4	3	4	1	2

RULES

1. Players agree a target number, say 35.
2. The first player places a counter on any number on the board and says that number. The second player places a counter on a square adjacent (horizontally, vertically, or diagonally) to the last counter played, adding this number on to the first number and says the total.
3. The game continues this way - players placing counters alternately, adjacent to the previous counter played, and keeping the running total.
4. The player who gets the total to be exactly 35 wins.
5. If a player goes over 35 he loses.
6. A player loses if he puts down a number that doesn't leave his opponent with any possible move.

VARIATIONS

A. Change the board

B. Change the target number

GAMES 2-4

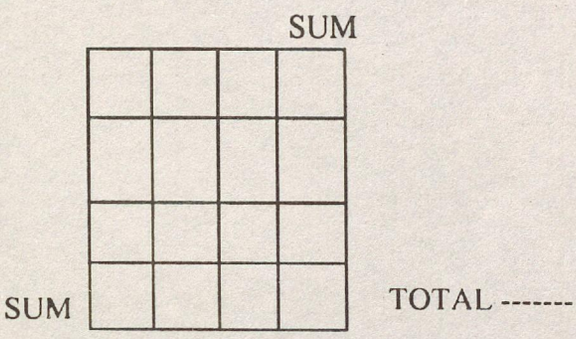
These are all games that can be played with a whole class or a small group.

GENERAL RULES

1. The teacher throws the dice and announces the resulting number.
2. Each player then places that number in one of the available boxes in the top left of the grid.
3. The teacher continues to throw the dice until all the available boxes have been filled.
4. When a number is written in a box it cannot be changed.

GAME 2

Each player draws a grid as shown:-



You need to generate nine numbers using a die numbered 1,2,3,4,5,6.

RULES

1. When all the nine boxes have been filled, find the sums of the three rows, the three columns, and the diagonal; and record them in the respective boxes.
2. Any of these seven sums that appear only once must be crossed out.
3. The TOTAL SCORE is the total of all the sums that are not crossed out.

e.g.

	3	4	2	9
	2	3	4	9
	6	3	5	~~14~~
SUM	11	~~10~~	11	11

TOTAL 51 ------

GAME 3

Each player draws the grid shown overleaf -

	11	13	9	SCORE
8				
12				
10				
SCORE				

TOTAL

You need to generate nine numbers using a die numbered 1,2,3,4,5,6.

RULES

You score 1 POINT for each time a row or column heading is the sum of the three numbers in that row or column.

e.g.

	11	13	9	SCORE
8	3	5	6	0
12	4	6	2	1
10	2	2	1	0
SCORE	0	1	1	3

TOTAL

GAME 4

Each player draws this grid.

				SCORE
SCORE				

TOTAL

RULES

The rules are the same as for GAME 3 except that each player starts by writing down his own choice of six number headings.

VARIATION

GAMES 2 and 4 can b varied by changing the numbers on the die.

GAME 5 (2 or more players)

You need two dice, each numbered 1,2,3,4,5,6.

RULES

1. Players take turns to roll the two dice, their score being the sum of the two numbers. These scores are recorded.

2. The first player to reach 50 is the winner.

VARIATIONS

A. Change the number on the dice.

B. Change the target number.

GAME 6 (2 to 4 players)

You need a die numbered 1,2,3,4,5,6.

RULES

1. Players take turns to throw the die as many times as they like, summing the total as they throw. A player may choose to stop throwing at any stage during his turn and record his total score; adding this to any previous score he may have amassed.
2. If, at any stage during his turn a player throws a 1, then his score for that round is lost, and it signals the end of his turn.
3. The winner is the first player to reach 100 points or more.

VARIATIONS

A. Change the numbers on the die.

B. Change the losing number i.e. 1.

C. Change the total required to win.

2. Play continues until all sixteen boxes have been filled.
3. If a player places the fourth number to complete a row or column then he can score points according to the sum of the numbers in that row or column.

i.e.

If the sum is odd	SCORE 1 POINT
If the sum is even	SCORE 2 POINT
If the sum is a multiple of 3	SCORE 3 POINT
If the sum is a multiple of 4	SCORE 4 POINT
If the sum is a prime number	SCORE 10 POINT

VARIATIONS

Change the numbers on the die.

Change the size of the grid.