

**LANGUAGE AND MATHS ACHIEVEMENT LEVELS:
COMPARISON OF SPK AND NON-SPK COHORTS IN 5
BLOCKS (2010-2012)**

Eklavya
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INTRODUCTION

A substantial obstacle faced by children from under-privileged backgrounds is the weakness of family and community support for their school learning. The parents may earnestly want their children to go to school but find themselves lost when it comes to reinforcing their learning at home or in providing them with a suitable environment. Eklavya has been running community-based learning centres called Shiksha Protsahan Kendras (SPKs) for such children. Starting from the largely tribal Shahpur block in Betul district in 1999, the SPKs have now spread into four more districts - Pipariya, Hoshangabad, Harda and Dewas.

An SPK is set up through consultations with and the support of the local community. It is the community that appoints a facilitator there and bears part of the cost of running the centre through contributions in cash or kind. These may be supplemented by Eklavya, which also takes up the responsibility of training the facilitator and monitoring a cluster of such centres. Children come to the SPK centres for a couple of hours before school opens or after school ends.

A previous study of the SPK programme in Shahpur had found it to be improving the learning levels of the children who came to it (Madan and Tiwari 2010). This was seen to be particularly beneficial for children from more disadvantaged occupational and community backgrounds. The present study now seeks to examine the four districts where SPKs have been set up relatively recently.

METHODOLOGY

The present study designed a test instrument to assess Maths and Language achievement levels and implemented it with the children who were in grade 3 in 2010. The children tested were those who were coming regularly to SPKs. A control of children which was not coming to SPKs was also tested. These were from the same or adjoining village and a total of 45 villages were thus covered in the study. Children were tested in the government schools which they were attending. The children in those government schools were tested again after a gap of two years in 2012. The data of the same cohort was separated from the rest and was used as the basis of the analysis presented below.

The data thus corresponds to the same children who were in grade 3 at the time of the first test after they had entered grade 5. Some children were in schools where an activity-based learning (ABL) programme was being run. They were registered in grade 4 there, whereas they would have been in grade 5 if they had been in the usual schools. They have been considered as grade 5 children for the purpose of this report.

The numbers of the children enrolled in the schools and tested respectively are as follows:

| SPK | | | | Non-SPK | | | |
|----------|-------------|--------------|---------------------|----------|-------------|--------------|---------------------|
| Enrolled | In Pre-Test | In Post-Test | Absent in Post-Test | Enrolled | In Pre-Test | In Post-Test | Absent in Post-Test |
| 450 | 282 | 208 | 80 | 533 | 246 | 182 | 64 |

The children who were common in both the pre-test and the post-test were 390 in number. The breakup of this cohort which could effectively be followed over two years is as follows:

| | |
|-----|---------|
| SPK | Non-SPK |
| 208 | 182 |

The children were tested in Language and Maths, using a similar instrument in both grade 3 as well as in grade 5. The instrument was designed so that it had a mix of questions that were of the levels of grade 3, 4 and 5, respectively. This gave a score that reflected how much a child had improved over two years. In Language there were 12 questions, with several sub-questions in each, totalling to 56 items across them. In Maths there were 12 questions, again with several sub-question in each, totalling to 64 items across them.

The response by a child to each item was marked – Not Done (when the child did not attempt a question), Correct and Incorrect. The results of the test were summarized by counting the total number of Not Dones, Corrects and Incorrects for each child. So for each child a total like the below would be obtained for, say, Language in grade 3 and then Language in grade 5, using a very similar test instrument in both grades:

| Pre-test (grade 3) | | | Post-test (grade 5) | | |
|--------------------|---------|-----------|---------------------|---------|-----------|
| Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| 28 | 21 | 4 | 6 | 37 | 10 |

Average scores and medians were calculated for SPK and Non-SPK children, respectively, counting the items which were “Not Done”, “Correct” and “Incorrect”.

A point of interest was where children stood at the end of at least two years in an SPK. However, children from different villages and SPK and control groups could be at different starting points two years ago. Therefore another focus of inquiry was on the **growth** which took place over the two years separating the pre-test and the post-test, not just the present performance. This was believed to be a better indicator of how much of a contribution was being made by SPKs, than just the final scores of children.

COMPARISON OF LANGUAGE SCORES

The pre-test Language scores of SPK children were higher to begin with than the pre-test scores of the control children. They had on average 22.2 items out of 56 correct in class 3. The control children had on average 14.3 items out of 56 correct in class 3. The post-test scores show a jump in the correct scores of both the SPK as well as the control. The SPK children are now doing an

average of 39.6 items correct out of 56. The control is doing on average 28.5 items out of 56 correct.

| SPK LANGUAGE | Pre-test (class 3) | | | Post-test (class 5) | | |
|---------------------|--------------------|---------|-----------|---------------------|---------|-----------|
| | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Average Score | 24.0 | 22.2 | 6.1 | 5.4 | 39.6 | 8.0 |
| Median Score | 23.0 | 23.0 | 5.0 | 2.0 | 44.0 | 5.0 |
| Standard Deviation | 12.0 | 13.0 | 5.3 | 9.1 | 13.2 | 8.7 |

| CONTROL NON-SPK LANGUAGE | Pre-test (class 3) | | | Post-test (class 5) | | |
|---|--------------------|---------|-----------|---------------------|---------|-----------|
| | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Average Score | 29.7 | 14.3 | 9.0 | 9.7 | 28.5 | 14.8 |
| Median score | 28.0 | 13.0 | 8.5 | 7.0 | 28.0 | 14.0 |
| Standard Deviation | 12.2 | 11.0 | 6.0 | 10.3 | 14.5 | 10.7 |

Comparing the growth in both SPK and non-SPK children, there is a similar drop in the average number of items which were not done. Both increase the average number of items correctly done, though the SPK children's increase in average Language items correctly done is more than amongst the non-SPK children. The number of average incorrect items also increases, with it being a greater increase in the non-SPK children than the SPK children.

| CHANGES IN LANGUAGE AVERAGE SCORES | Not Done | Correct | Incorrect |
|---|----------|---------|-----------|
| SPK | -19.6 | +17.4 | +1.9 |
| Non-SPK Control | -19.8 | +14.2 | +5.8 |

| CHANGES IN LANGUAGE MEDIAN SCORES | Not Done | Correct | Incorrect |
|--|----------|----------------|----------------|
| SPK | -21.0 | +21.0 | 0 |
| Non-SPK Control | -21.0 | +15.0 | +5.5 |
| Probability of difference due to random factors (p) Significance is at less than p=0.05 Wilcoxon Mann-Whitney Test | 0.610 | 0.002 Sign. | 0.000 Sign. |

The median scores show a similar pattern as the average scores, with only a small difference in the two. A comparison of the increase in correct scores between the SPK and the non-SPK through the Wilcoxon Mann-Whitney test shows that difference between the two is quite significant. There is only a .002 probability that the difference could have been due to random factors. The change in incorrect scores also appears to be significant and because of a real difference in the two groups. However, the change in the median scores of “not done” does not appear to reveal a significant difference in the two groups.

COMPARISON OF MATHS SCORES

Like in Language, the pre-test scores of SPK children were higher than the pre-test scores of the control children in Maths, too. The SPK children have on average 21.9 correct item responses out of 64 in grade 3 and on average 41.6 correct item responses in grade 5. The control children start lower, with only on average 12.6 correct item responses out of 64 in grade 3 and are still behind with an average of 30.1 correct item responses out of 64 in grade 5.

| SPK MATHS | Pre-test (class 3) | | | Post-test (class 5) | | |
|--------------------|--------------------|---------|-----------|---------------------|---------|-----------|
| | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Average Score | 21.2 | 21.9 | 19.0 | 5.5 | 41.6 | 15.0 |
| Median Score | 19.0 | 19.0 | 18.0 | 1.0 | 46.0 | 12.0 |
| Standard Deviation | 13.7 | 14.8 | 9.8 | 9.4 | 16.7 | 11.7 |

| CONTROL NON-SPK MATHS | Pre-test (class 3) | | | Post-test (class 5) | | |
|------------------------------|--------------------|---------|-----------|---------------------|---------|-----------|
| | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Average Score | 27.6 | 12.6 | 21.8 | 10.8 | 30.1 | 21.2 |
| Median Score | 25.0 | 11.0 | 21.0 | 7.0 | 29.5 | 19.0 |
| Standard Deviation | 13.0 | 10.2 | 8.9 | 12.1 | 14.6 | 11.0 |

When we compare the growth rate through the average scores, it appears as if the difference between SPK and non-SPK increases very slightly between grade 3 and grade 5. The number of correct responses by SPK children increase on average by 19.7, with them increasing in the control by 17.5. Interestingly, whereas the number of incorrect responses decrease among the SPK children by an average of 4, they decrease only by an average of 0.6 amongst the non-SPK.

| CHANGES IN MATHS AVERAGE SCORES | Not Done | Correct | Incorrect |
|--|----------|---------|-----------|
| SPK | -15.7 | +19.7 | -4.0 |
| Non-SPK Control | -16.8 | +17.5 | -0.6 |

The changes in the median scores of “not done” are similar to what we see in the average scores, with the two groups showing a very similar pattern. The median scores of “correct” however show a bigger difference than is apparent with the average scores. The difference was computed to correspond to a .045 probability that it was due to random factors, rather than corresponding to a real difference between the two groups. This is just across the conventional boundary of considering a .05 p value as indicative of a real difference. The difference between the two groups in the medians of correct Maths scores can therefore be considered as significant. The difference between the changes in “incorrect” median scores is also significant.

| CHANGES IN MATHS MEDIAN SCORES | Not Done | Correct | Incorrect |
|--|----------|----------------|----------------|
| SPK | -18.0 | +27.0 | -6.0 |
| Non-SPK Control | -18.0 | +18.5 | -2.0 |
| Probability of difference due to random factors (p) Significance is at less than p=0.05 Wilcoxon Mann-Whitney Test | 0.296 | 0.045 Sign. | 0.005 Sign. |

SOCIAL INEQUALITY AND ACHIEVEMENT LEVELS

| Gender | SPK | | | Non-SPK | | |
|---------------|--------|-------------------------|----------------------|---------|-------------------------|----------------------|
| | Number | Mean Growth in Language | Mean Growth in Maths | Number | Mean Growth in Language | Mean Growth in Maths |
| Boys | 101 | 17.7 | 18.5 | 87 | 13.9 | 19.0 |
| Girls | 107 | 17.2 | 20.8 | 95 | 14.5 | 16.1 |

While there is a difference between the SPK and non-SPK cohorts, the difference between boys and girls in each cohort is not much. Among all the children, both boys and girls are growing at a similar rate in Language. In the SPK programme girls seem to be doing slightly better in Maths, though, while amongst the non-SPK children, it is the boys who are growing slightly faster.

| Castes in SPK | ST | SC | OBC | Others |
|----------------------|-------|-------|-------|--------|
| Number | 28 | 74 | 101 | 5 |
| Percent | 13.46 | 35.58 | 48.56 | 2.4 |

| Castes in Non-SPK | ST | SC | OBC | Others |
|--------------------------|-------|-------|-------|--------|
| Number | 19 | 59 | 98 | 6 |
| Percent | 10.44 | 32.42 | 53.85 | 3.3 |

The SPK and non-SPK cohorts have a very similar distribution of castes amongst them. They are mainly SC and OBC, with a small number of STs and a very few other castes.

Growth Across Various Castes

| | SPK | | | Non-SPK | | |
|--------|-----------|-------------------------|----------------------|----------|-------------------------|----------------------|
| | Number | Mean Growth in Language | Mean Growth in Maths | Number | Mean Growth in Language | Mean Growth in Maths |
| ST | 28 (13%) | 14.3 | 16.4 | 19 (10%) | 13.3 | 16.0 |
| SC | 74 (36%) | 18.7 | 21.5 | 59 (32%) | 14.3 | 15.9 |
| OBC | 101 (59%) | 17.6 | 19.0 | 98 (54%) | 14.6 | 13.8 |
| OTHERS | 5 (2%) | 13.2 | 24.2 | 6 (3%) | 10.2 | 15.8 |

In both the cohorts, the SC and the OBC are improving the most in Language. In Maths, the SPK cohort shows a considerably higher growth in the SC, the OBC and the Others. The ST lag behind the other caste groups in the SPK cohort, even while doing slightly better than all the other caste groups in the non-SPK. Amongst the non-SPK the growth pattern is quite similar across the various caste groups. The OBC are slightly behind the rest.

Growth Across Various Father Occupations

| | SPK | | | Non-SPK | | |
|---------------------|-----------|-------------------------|----------------------|--------------|-------------------------|----------------------|
| | Number | Mean Growth in Language | Mean Growth in Maths | Number | Mean Growth in Language | Mean Growth in Maths |
| Agricultural Labour | 45 (22%) | 15.8 | 21.6 | 59 (32%) | 14.2 | 19.2 |
| Marginal farmer | 13 (6%) | 22.5 | 24.5 | 4 (2%) | 8.5 | 8.3 |
| Farmer | 140 (67%) | 17.5 | 18.5 | Farmer (60%) | 13.6 | 16.6 |
| Others | 10 (5%) | | | 9 (6%) | | |

SPK cohort children of marginal farmers are showing the greatest improvement in Language, followed by children of farmers and agricultural labour, respectively. There is not much difference in the non-SPK cohort between children of farmers and agricultural labour in Language. The children of marginal farmers appear to be lagging behind, but the number of children with that class background is quite small, too.

SPK children of marginal farmers are doing best in Maths, too. In Maths the agricultural labour show a greater improvement of scores than the children of farmers. Non-SPK children, too show a greater improvement amongst the agricultural labour than amongst farmers.

Overall it appears there is a small effect of the SPK programme in increasing the growth rates of the more under-privileged. This is important since it reverses the conventional trend of the more advantaged improving faster than the others, even after the provision of schooling to all. At the same time the SPK facilitated improvements in the under-privileged learning rates are not very dramatic. Where present, they are only a little more than what one sees in the non-SPK cohorts.

CONCLUSIONS:

The children in the SPK programmes seem to be increasing the gap between themselves and the control group in Language. In Maths, too, the gap seems to be widening, but by a relatively smaller amount. The growth in average scores of SPK and the control are rather close in Maths, but the growth in median scores in Maths is comparable to that in Language. The changes in “correct” scores are statistically significant in both Maths and Language, implying that there is probably a real difference in the growth taking place in the SPK and the Non-SPK groups.

This trend is quite similar to the trend observed in Shahpur in the study done in 2009. At that time one lesson drawn had been that Maths needs more effort from the SPK team. Perhaps that message has been reinforced here, though to a smaller extent.

The SPK programme also appears to benefit more disadvantaged social categories to a small extent.

However this is not very pronounced and is quite uneven. This too may need more attention from the SPK team.

FUTURE WORK:

An element by element comparison of pre and post samples can be done, across each ability being tested by the questions. Maybe a workshop with the group members can be done. They could together calculate what growth took place in each question and what kind of common errors are being made. This could give feedback into what aspects of Maths and Language abilities need more emphasis from the SPK teachers. A workshop would perhaps be more effective in drawing lessons than reading a report. The workshop participants can be shown how to tabulate and write reports on different questionnaire elements. This can be put together into a consolidated report across all the different elements.

A qualitative study could be done of the various activities done by various SPK facilitators. This could help in identifying constructive practices and also in identifying what may benefit with improvement. This could examine across several centres what is done to teach the questionnaire elements which are showing good as well as not so good results.

The present quantitative study could also benefit with a larger sample, including children from more diverse social backgrounds, including urban communities. This would throw into sharper relief how the SPK processes work across a fabric of social inequality.

APPENDICES

Appendix I: Pre-test questionnaire

Appendix II: Post-test questionnaire

Appendix III: Numbers of children across both cohorts who did not attempt, correctly answered and incorrectly answered each question in the Language questionnaire.

Appendix IV: Numbers of children across both cohorts who did not attempt, correctly answered and incorrectly answered each question in the Maths questionnaire.

Appendix V: Change in numbers of children across both cohorts who did not attempt, correctly answered or incorrectly answered each question in Maths and Language.

REFERENCES

Madan, Amman and Ghanshyam Tiwari (2010). "Educational Achievement Through the Lens of Social Inequality: A Tribal Belt of Madhya Pradesh". Hoshangabad: Eklavya.

http://www.eklavya.in/pdfs/reports/social_inequality_and_educational_achievement_spk-2010.pdf

APPENDIX I
Pre-Test Questionnaire

नाम

पिता का नाम -----

कक्षा --

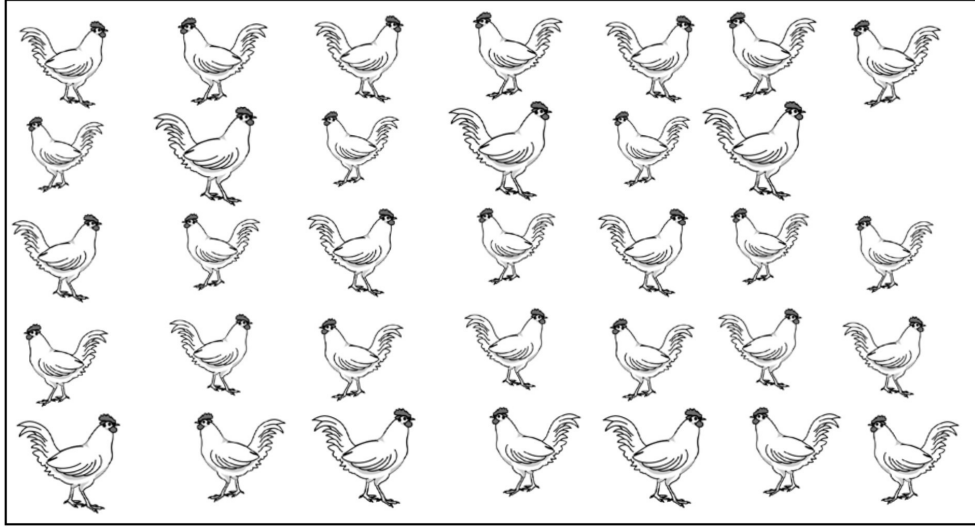
प्रश्न-1.(क) कुल कितने मुरगे हैं गिनकर लिखो।

(ख) 10-10 मुरगों के समूह बनाओ और गिनकर लिखो कितने समूह बने।

(ग) 10-10 के समूह बनाने के बाद कितने मुरगे बच गए लिखो।

Date

S.P.K.
NON SPK



प्रश्न -2. नीचे बने खाली डिब्बे में बीच की, बाद की तथा पहले की संख्या लिखो।

| | | |
|----|--|----|
| 34 | | 36 |
|----|--|----|

| | |
|-----|--|
| 199 | |
|-----|--|

| | |
|--|-----|
| | 446 |
|--|-----|

प्रश्न -3. जोड़कर लिखो।

$$\begin{array}{r} 35 \\ + 24 \\ \hline \end{array}$$
$$\begin{array}{r} 379 \\ + 632 \\ \hline \end{array}$$
$$\begin{array}{r} 1023 \\ + 1983 \\ \hline \end{array}$$

$123 + 26 =$

$132 + 14 + 403 =$

प्रश्न -4. घटाकर लिखो।

$$\begin{array}{r} 28 \\ - 17 \\ \hline \end{array}$$
$$\begin{array}{r} 902 \\ - 336 \\ \hline \end{array}$$
$$\begin{array}{r} 4016 \\ - 1327 \\ \hline \end{array}$$

1

प्रश्न -5. निम्न संख्याओं को छोटे से बढ़ते क्रम में जमाओ।

29, 7, 5, 82, 3, 19, 15

| | | | | | | |
|--|--|--|--|--|--|--|
| | | | | | | |
|--|--|--|--|--|--|--|

प्रश्न -6 भाग करो।

(1) $35 \div 5 =$

(2) $28 \div 8 =$

प्रश्न -7 गुणा करो।

(1) $8 \times 3 =$

(2) $29 \times 3 =$

| |
|--|
| |
|--|

प्रश्न -8 इबारती सवाल हल करो।

(1) एक पेंसिल 3 रुपये में आती है। तो 23 पेंसिल कितने रुपये में आयेगी?

(2) 18 चॉकलेट को 6 बच्चों में बराबर-बराबर बाँटना है, एक बच्चे को कितनी चॉकलेट मिलेंगी?

(3) आज पहली कक्षा में 27, दूसरी में 35, तीसरी में 18, चौथी में 28 और पाँचवी

में 19 बच्चे आए। बताओ आज स्कूल में कुल कितने बच्चे आए?

(4) कमला के पास 34 रुपये थे। उसने 5 रुपये मीना को दे दिये। अब उसके पास कितने रुपये बचे?

(5) एक डिब्बे में 10 पेंसिल आती है। बताओ 14 डिब्बे में कितनी पेंसिल आयेगी?

(6) राजू ने एक गाय 2801 रुपये में खरीदी, और उसे 2765 रुपये में बेच दी। बताओ गाय बेचने पर राजू को लाभ हुआ या हानि, व कितने रुपये का हुआ?

प्रश्न-9. संख्याओं का श्रुतिलेखन करो?

| | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| (क) | (ख) | (ग) | (घ) | (च) | (छ) |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

प्रश्न-10 दी गई संख्या को पढ़ो व उसके बराबर नोट निकाल कर बताओ?

| संख्या | 1 के नोट | 10 के नोट | 100 के नोट |
|--------|----------|-----------|------------|
| 5 6 | | | |
| 2 9 9 | | | |
| 8 7 | | | |
| 5 6 0 | | | |

प्रश्न-11. मौखिक इबारती सवाल हल करो।

- (1) रानी ने 18 रोटी बनाई। बच्चों ने 14 रोटी खा ली। अब रानी के पास कितनी रोटी बची ?
- (2) रमेश ने 40 लड्डू बनाए और ममता ने 60 लड्डू बनाए। दोनों ने कुल कितने लड्डू बनाए ?
- (3) 15 जलेबी थी, 4 बंदर ले गया और 3 बिल्ली खा गई, अब कितनी जलेबी बची ?
- (4) 7 आम 30 रूपए में मिलते हैं तो 90 रूपए में कितने आम मिलेंगे?

प्रश्न-12. अंक कार्ड द्वारा 12, 3, 25, 37, 81, 90, 100 को बड़े से छोटे क्रम में जमाओ।

(अंक कार्ड से बच्चे द्वारा जमाया क्रम को गुरुजी नीचे बने डिब्बों में लिखें।)

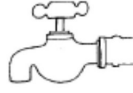
| | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|

प्रश्न -1.

नाम ----- पिता का नाम ----- कक्षा -----
माता का नाम ----- गाँव का नाम -----

प्रश्न-2. नीचे बने चित्रों के नाम लिखो।

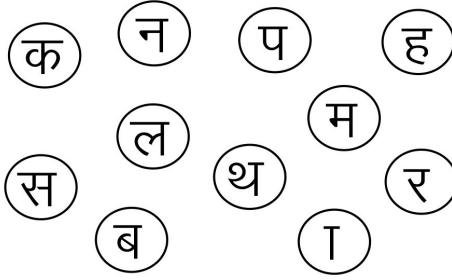








प्रश्न-3. दिए गए अक्षर मात्रा से 10 शब्द बनाओ।



(1)----- (2)----- (3)----- (4)----- (5)-----

(6)----- (7)----- (8)----- (9)----- (10)-----

प्रश्न-4. नीचे लिखे पदों के नाम लिखो। (3) वाक्य बनाओ। (4)-----

(1) हाथी (2) स्कूल (3) ईंट (4) बाजार (5) भूत

(1) -----

(2) -----

(3) -----

(4) -----

(5) -----

प्रश्न-6. कहानी पढ़कर सवालों के जवाब लिखो।

एक सेठ था। उसके घर एक सफेद गाय थी। गाय के चार सींग थे। पूरे गाँव में चर्चा थी कि जिसके पास चार सींग वाली गाय होती है वह धनवान होता है। एक रात सेठ सो रहा था तभी चार चोर सेठ के घर घुसे। चोर गाय चुराकर ले जाना चाहते थे। पहला चोर जैसे ही गाय के पास पहुँचा, गाय ने सींग हिलाए तो वह एक सींग में फंस गया। वह जोर-जोर से चिल्लाने लगा ... बचाओ..बचाओ।

(1) गाय के कितने सींग थे ?

(2) धनवान किसे कहते हैं ?

(3) जब चोर घर में घुसे तो सेठ क्या कर रहा था ?

(4) सेठ और चोर में दो समानता और दो अंतर बताओ।

समानता

अंतर

(1) _____ (1) _____

(1) _____ (1) _____

(5) इस कहानी के लिए कोई चित्र बनाओ ?

| | | |
|----|----|----|
| 12 | 3 | 25 |
| 37 | 81 | 90 |
| | | |
| 12 | 3 | 25 |
| 37 | 81 | 90 |

APPENDIX II
POST-TEST QUESTIONNAIRE

नाम

पिता का नाम -----

कक्षा --

प्रश्न-1.(क) कुल कितनी साइकिलें हैं गिनकर लिखो।

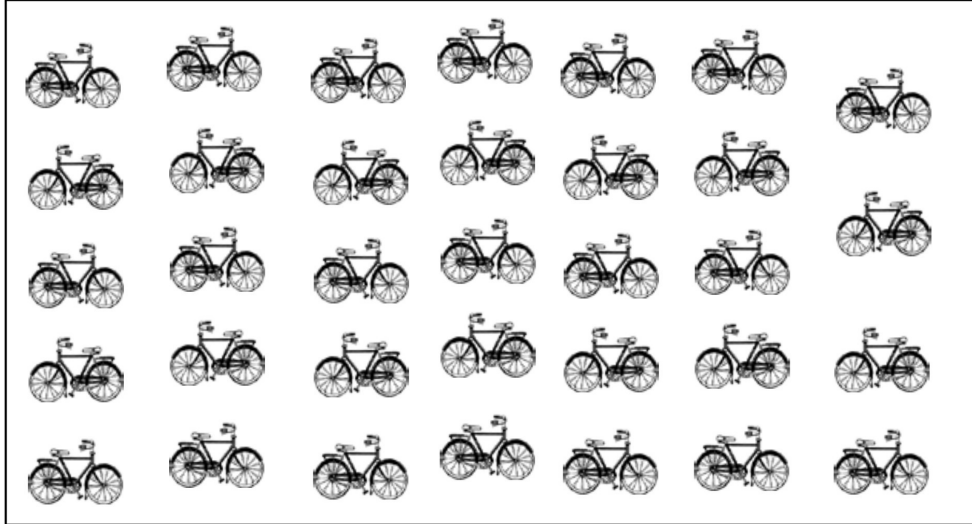
(ख) 10-10 साइकिलों के समूह बनाओ और गिनकर लिखो कितने समूह बने।

(ग) 10-10 के समूह बनाने के बाद कितनी साइकिलें बची, लिखो।

Date

S.P.K.

NON SPK



प्रश्न -2. नीचे बने खाली डिब्बे में बीच की, बाद की तथा पहले की संख्या लिखो।

| | | |
|----|--|----|
| 32 | | 34 |
|----|--|----|

| | |
|-----|--|
| 199 | |
|-----|--|

| | |
|--|-----|
| | 446 |
|--|-----|

प्रश्न -3. जोड़कर लिखो।

$$\begin{array}{r} 43 \\ + 35 \\ \hline \end{array}$$

$$\begin{array}{r} 379 \\ + 632 \\ \hline \end{array}$$

$$\begin{array}{r} 1023 \\ + 1983 \\ \hline \end{array}$$

$123 + 26 = \boxed{}$

$132 + 14 + 403 = \boxed{}$

प्रश्न -4. घटाकर लिखो।

$$\begin{array}{r} 27 \\ - 15 \\ \hline \end{array}$$

$$\begin{array}{r} 902 \\ - 336 \\ \hline \end{array}$$

$$\begin{array}{r} 4016 \\ - 1327 \\ \hline \end{array}$$

प्रश्न -5. निम्न संख्याओं को छोटे से बढ़ते क्रम में जमाओ।

39, 17, 5, 92, 3, 19, 15

| | | | | | | |
|--|--|--|--|--|--|--|
| | | | | | | |
|--|--|--|--|--|--|--|

प्रश्न -6 भाग करो।

(1) $45 \div 5 =$

(2) $2 \times 8 =$

प्रश्न -7 गुणा करो।

(1) $8 \times 3 =$

(2) $29 \times 3 =$

| |
|--|
| |
|--|

प्रश्न -8 इबारती सवाल हल करो।

(1) एक पेंसिल 3 रुपये में आती है। तो 32 पेंसिल कितने रुपये में आयेगी?

(2) 18 चॉकलेट को 6 बच्चों में बराबर-बराबर बाँटना है, एक बच्चे को कितनी चॉकलेट मिलेंगी?

(3) आज पहली कक्षा में 27, दूसरी में 35, तीसरी में 18, चौथी में 28 और पाँचवी

में 19 बच्चे आए। बताओ आज स्कूल में कुल कितने बच्चे आए?

(4) कमला के पास 34 रुपये थे। उसने 5 रुपये मीना को दे दिये। अब उसके पास कितने रुपये बचे?

(5) एक डिब्बे में 10 पेंसिल आती है। बताओ 14 डिब्बे में कितनी पेंसिल आयेगी?

(6) राजू ने एक गाय 2801 रुपये में खरीदी, और उसे 2765 रुपये में बेच दी। बताओ गाय बेचने पर राजू को लाभ हुआ या हानि कितने रुपये?

प्रश्न-9. संख्याओं का श्रुतिलेखन करो?

| | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| (क) | (ख) | (ग) | (घ) | (च) | (छ) |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

प्रश्न-10 दी गई संख्या को पढ़ो व उसके बराबर नोट निकाल कर बताओ?

| संख्या | 1 के नोट | 10 के नोट | 100 के नोट |
|--------|----------|-----------|------------|
| 5 6 | | | |
| 2 9 9 | | | |
| 8 7 | | | |
| 5 6 0 | | | |

प्रश्न-11. मौखिक इबारती सवाल हल करो।

- (1) रानी ने 17 रोटी बनाई। बच्चों ने 12 रोटी खा ली। अब रानी के पास कितनी रोटी बची ?
- (2) रमेश ने 60 लड्डू बनाए और ममता ने 40 लड्डू बनाए। दोनों ने कुल कितने लड्डू बनाए ?
- (3) 15 जलेबी थी, 4 बंदर ले गया और 3 बिल्ली खा गई, अब कितनी जलेबी बची ?
- (4) 30 रूपए में 7 आम मिलते हैं तो 90 रूपए में कितने आम मिलेंगे?

प्रश्न-12. अंक कार्ड द्वारा 12, 3, 25, 37, 81, 90, 100 को बड़े से छोटे क्रम में जमाओ।

(अंक कार्ड से बच्चे द्वारा जमाया क्रम को गुरुजी नीचे बने डिब्बों में लिखें।)

| | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|

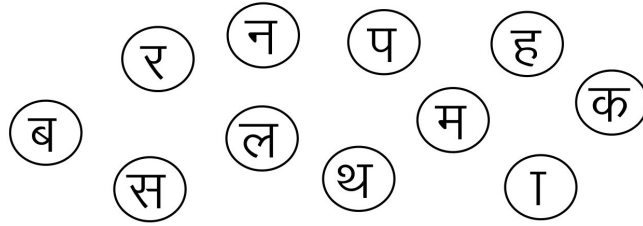
प्रश्न -1.

नाम ----- पिता का नाम ----- कक्षा -----
माता का नाम ----- गाँव का नाम -----

प्रश्न-2. नीचे बने चित्रों के नाम लिखो।



प्रश्न-3. दिए गए अक्षर मात्रा से 10 शब्द बनाओ।



(1)----- (2)----- (3)----- (4)----- (5)-----
(6)----- (7)----- (8)----- (9)----- (10)-----

प्रश्न-4. (1) ~~कोई चार फलों~~ के नाम लिखो। (2) _____ (3) _____ (4) _____

प्रश्न-5. नीचे लिखे शब्दों को शामिल कर वाक्य बनाओ।

(1) घोड़ा (2) शाला (3) पत्थर (4) शहर (5) सपना

(1) -----
(2) -----
(3) -----
(4) -----
(5) -----

प्रश्न-6. कहानी पढ़कर सवालों के जवाब लिखो।

एक सेठ था। उसके घर एक सफेद गाय थी। गाय के चार सींग थे। पूरे गाँव में चर्चा थी कि जिसके पास चार सींग वाली गाय होती है वह धनवान होता है। एक रात सेठ सो रहा था तभी चार चोर सेठ के घर घुसे। चोर गाय चुराकर ले जाना चाहते थे। पहला चोर जैसे ही गाय के पास पहुँचा, गाय ने सींग हिलाए तो वह एक सींग में फँस गया। वह जोर-जोर से चिल्लाने लगा ... बचाओ..बचाओ।

(1) गाय के कितने सींग थे ?

(2) धनवान किसे कहते हैं ?

(3) जब चोर घर में घुसे तो सेठ क्या कर रहा था ?

(4) सेठ और चोर में दो समानता और दो अंतर बताओ।

समानता

अंतर

(1) _____ (1) _____

(1) _____ (1) _____

(5) इस कहानी के लिए कोई चित्र बनाओ ?

प्रश्न-7 . नीचे लिखे शब्द पढ़कर सुनाओ।

- 1- जग 2- हल 3- चल 4- हाथी
 5- पेड़ 6- लड़की 7- हवलदार 8- ग्राहक
 9- सरपंच 10- कर्तव्य

प्रश्न-8. वाक्य पढ़ो -

- (1) हाथी जंगल गया।
 (2) मछली पानी में रहती है।
 (3) गाय घास खा रही थी।

प्रश्न-9. कहानी पढ़कर सुनाओ।

चुन्नू-मुन्नू अपनी मां से बोले- आज हम भी तुम्हारे साथ चलेंगे। चिड़िया बोली - दूर तक जाने पर दाना मिलता है। तुम दोनों इतना उड़ नहीं पाओगे। मत चलो। दोनों नहीं माने। जब चिड़िया जंगल जाने लगी दोनों को साथ ले गई।

चुन्नू-मुन्नू मां के साथ बहुत खुश थे। जंगल में खूब उड़े, उछले-कूदे, मस्ती की। शाम होने लगी। चुन्नू थक कर एक पेड़ पर सो गया। चुन्नू को सोता देख मुन्नू को भी नींद आने लगी। अब चिड़िया क्या करती उसे भी पेड़ पर रात गुजारनी पड़ी।

प्रश्न -1. चिड़िया चुन्नू-मुन्नू को जंगल क्यों नहीं ले जाना चाहती थी ?

प्रश्न -2. पहले किसे नींद आई ?

प्रश्न -3. चुन्नू-मुन्नू को सोता देख चिड़िया ने क्या किया ?

प्रश्न-10. मन से या पढ़ी/सुनी कोई कहानी लिखो।

| | | |
|----|----|----|
| 12 | 3 | 25 |
| 37 | 81 | 90 |
| | | |
| 12 | 3 | 25 |
| 37 | 81 | 90 |

APPENDIX III

Numbers of children across both cohorts who did not attempt, correctly answered and incorrectly answered each question in the Language questionnaire

| LANGUAGE | | Grade 3 | | | | | | Grade 5 | | | | | |
|---------------------------|------------------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q1 Personal details | Name | 15 | 170 | 23 | 15 | 139 | 28 | 0 | 208 | 0 | 2 | 174 | 6 |
| | Father's name | 52 | 127 | 29 | 48 | 86 | 48 | 2 | 198 | 8 | 12 | 143 | 27 |
| | Class | 51 | 131 | 26 | 65 | 76 | 41 | 7 | 195 | 6 | 17 | 151 | 14 |
| | Mother's name | 83 | 92 | 33 | 79 | 58 | 45 | 14 | 175 | 19 | 25 | 131 | 26 |
| | Village | 84 | 112 | 12 | 101 | 61 | 20 | 21 | 170 | 17 | 36 | 117 | 29 |
| Q2 Write names of figures | Lock / Rabbit | 13 | 116 | 79 | 31 | 35 | 116 | 6 | 135 | 67 | 10 | 70 | 102 |
| | Tap / Bus | 15 | 149 | 44 | 32 | 65 | 85 | 1 | 192 | 15 | 8 | 124 | 50 |
| | House / Cup | 20 | 157 | 31 | 36 | 101 | 45 | 2 | 183 | 23 | 10 | 103 | 69 |
| | Fish / Butterfly | 17 | 90 | 101 | 36 | 41 | 105 | 4 | 142 | 62 | 7 | 99 | 76 |
| | Cow / Key | 19 | 112 | 77 | 33 | 58 | 91 | 3 | 157 | 48 | 6 | 80 | 96 |
| | Rabbit / Lock | 24 | 64 | 120 | 37 | 31 | 114 | 0 | 171 | 37 | 6 | 107 | 69 |

| LANGUAGE | | Grade 3 | | | | | | Grade 5 | | | | | |
|---|---------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q3 Make 10 words out of the given letters | 1 | 34 | 129 | 45 | 45 | 67 | 70 | 11 | 182 | 15 | 15 | 115 | 52 |
| | 2 | 38 | 122 | 48 | 48 | 61 | 73 | 11 | 183 | 14 | 15 | 103 | 64 |
| | 3 | 45 | 99 | 64 | 50 | 54 | 78 | 11 | 186 | 11 | 17 | 99 | 66 |
| | 4 | 48 | 95 | 65 | 51 | 61 | 70 | 13 | 184 | 11 | 19 | 100 | 63 |
| | 5 | 56 | 96 | 56 | 60 | 52 | 70 | 13 | 176 | 19 | 25 | 93 | 64 |
| | 6 | 64 | 98 | 46 | 60 | 47 | 75 | 15 | 178 | 15 | 42 | 83 | 57 |
| | 7 | 74 | 79 | 55 | 62 | 51 | 69 | 17 | 172 | 19 | 42 | 80 | 60 |
| | 8 | 78 | 77 | 53 | 67 | 36 | 79 | 24 | 168 | 16 | 45 | 74 | 63 |
| | 9 | 78 | 77 | 53 | 71 | 40 | 71 | 20 | 168 | 20 | 47 | 81 | 54 |
| | 10 | 84 | 70 | 54 | 81 | 33 | 68 | 24 | 162 | 22 | 48 | 76 | 58 |
| Q4 Write names of any four fruits | 1 | 63 | 104 | 41 | 66 | 60 | 56 | 15 | 155 | 38 | 21 | 113 | 48 |
| | 2 | 72 | 95 | 41 | 76 | 56 | 50 | 15 | 151 | 42 | 21 | 114 | 47 |
| | 3 | 88 | 85 | 35 | 93 | 53 | 36 | 17 | 150 | 41 | 24 | 105 | 53 |

| LANGUAGE | | Grade 3 | | | | | | Grade 5 | | | | | |
|--|----------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | 4 | 97 | 88 | 23 | 95 | 46 | 41 | 20 | 149 | 39 | 25 | 109 | 48 |
| Q5 Write sentences using these words | Elephant | 178 | 29 | 1 | 179 | 3 | 0 | 33 | 134 | 41 | 77 | 56 | 49 |
| | School | 185 | 22 | 1 | 179 | 3 | 0 | 40 | 131 | 37 | 91 | 53 | 38 |
| | Brick | 185 | 22 | 1 | 180 | 2 | 0 | 52 | 116 | 40 | 97 | 48 | 37 |
| | Market | 184 | 23 | 1 | 182 | 0 | 0 | 53 | 121 | 34 | 102 | 46 | 34 |
| | Ghost | 194 | 13 | 1 | 179 | 3 | 0 | 63 | 115 | 30 | 103 | 44 | 35 |
| Q6 Questions asked to test comprehension of a previously unseen passage. | 1 | 167 | 40 | 1 | 152 | 30 | 0 | 19 | 142 | 47 | 39 | 82 | 61 |
| | 2 | 201 | 6 | 1 | 172 | 10 | 0 | 33 | 122 | 53 | 55 | 73 | 54 |
| | 3 | 191 | 16 | 1 | 179 | 3 | 0 | 38 | 125 | 45 | 67 | 53 | 62 |
| | 4 | 203 | 4 | 1 | 182 | 0 | 0 | 79 | 88 | 41 | 109 | 25 | 48 |

| LANGUAGE | | Grade 3 | | | | | | Grade 5 | | | | | |
|-------------------------|----------------------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | 5 | 201 | 6 | 1 | 182 | 0 | 0 | 82 | 98 | 28 | 121 | 23 | 38 |
| Q7 Reading out of words | Tap / Jug | 25 | 183 | 0 | 54 | 128 | 0 | 12 | 189 | 7 | 6 | 152 | 24 |
| | House / Plough | 26 | 182 | 0 | 56 | 126 | 0 | 10 | 193 | 5 | 7 | 161 | 14 |
| | Bus / Come | 34 | 174 | 0 | 66 | 116 | 0 | 10 | 193 | 5 | 9 | 160 | 13 |
| | Elephant / Elephant | 47 | 161 | 0 | 84 | 98 | 0 | 12 | 186 | 10 | 11 | 149 | 22 |
| | Tree / Tree | 56 | 152 | 0 | 89 | 93 | 0 | 11 | 183 | 14 | 13 | 145 | 24 |
| | Fish / Girl | 75 | 133 | 0 | 86 | 96 | 0 | 13 | 168 | 27 | 11 | 136 | 35 |
| | Tahsildar / Havildar | 156 | 52 | 0 | 146 | 36 | 0 | 18 | 138 | 52 | 15 | 93 | 74 |
| | Ocean / Customer | 146 | 62 | 0 | 134 | 48 | 0 | 19 | 126 | 63 | 20 | 72 | 90 |
| | Sarpanch / Sarpanch | 136 | 72 | 0 | 129 | 53 | 0 | 14 | 162 | 32 | 15 | 115 | 52 |
| | Duty / Duty | 180 | 28 | 0 | 157 | 25 | 0 | 20 | 101 | 87 | 21 | 64 | 97 |

| LANGUAGE | | Grade 3 | | | | | | Grade 5 | | | | | |
|---|--------------------------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q8 Reading out of sentences | 1 | 86 | 122 | 0 | 123 | 59 | 0 | 14 | 168 | 26 | 13 | 125 | 44 |
| | 2 | 97 | 111 | 0 | 118 | 64 | 0 | 15 | 163 | 30 | 13 | 125 | 44 |
| | 3 | 110 | 98 | 0 | 132 | 50 | 0 | 16 | 154 | 38 | 15 | 121 | 46 |
| Q9 Reading and comprehension of a previously unseen passage | Reading out of a passage | 111 | 96 | 1 | 145 | 37 | 0 | 27 | 140 | 41 | 31 | 99 | 52 |
| | Question 1 | 133 | 73 | 2 | 157 | 25 | 0 | 31 | 137 | 40 | 38 | 94 | 50 |
| | Question 2 | 145 | 62 | 1 | 163 | 19 | 0 | 27 | 153 | 28 | 37 | 112 | 33 |
| | Question 3 | 182 | 24 | 2 | 177 | 5 | 0 | 34 | 129 | 45 | 44 | 83 | 55 |

| LANGUAGE | | Grade 3 | | | | | | Grade 5 | | | | | |
|--|---------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q10 Write a story which you may have read or heard | 1 | 191 | 14 | 3 | 182 | 0 | 0 | 43 | 76 | 89 | 41 | 32 | 109 |

APPENDIX IV

Numbers of children across both cohorts who did not attempt, correctly answered and incorrectly answered each question in the Maths questionnaire.

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|----------|------------------------------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q1 | Counting discrete elements | 64 | 96 | 48 | 88 | 46 | 48 | 19 | 156 | 33 | 31 | 105 | 46 |
| | Grouping of things | 89 | 62 | 57 | 107 | 25 | 50 | 26 | 132 | 50 | 50 | 48 | 84 |
| | Counting left out things | 94 | 63 | 51 | 106 | 22 | 54 | 29 | 136 | 43 | 50 | 69 | 63 |
| Q2 | Next number in a series | 42 | 118 | 48 | 39 | 88 | 55 | 10 | 178 | 20 | 24 | 128 | 30 |
| | Next to a 3-digit number | 48 | 90 | 70 | 53 | 27 | 102 | 14 | 157 | 37 | 37 | 71 | 74 |
| | Previous to a 3-digit number | 50 | 95 | 63 | 55 | 55 | 72 | 18 | 151 | 39 | 42 | 93 | 47 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|-------------|--|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q3 Addition | 2-digit addition without carryover | 16 | 135 | 57 | 17 | 102 | 63 | 1 | 195 | 12 | 8 | 160 | 14 |
| | 3-digit addition with carryover | 16 | 49 | 143 | 24 | 25 | 133 | 0 | 163 | 45 | 10 | 108 | 64 |
| | 4-digit addition with carryover | 18 | 39 | 151 | 26 | 17 | 139 | 1 | 147 | 60 | 9 | 108 | 65 |
| | addition of 3 and 2 digits numbers, written in one line, without carryover | 69 | 28 | 111 | 48 | 2 | 132 | 20 | 110 | 78 | 31 | 58 | 93 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|----------------|--|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | addition of 3, 2 and 3 digits numbes, written in one line, without carryover | 79 | 17 | 112 | 54 | 3 | 125 | 29 | 89 | 90 | 40 | 41 | 101 |
| Q4 Subtraction | 2-digit subtraction without borrowing | 25 | 112 | 71 | 31 | 62 | 89 | 5 | 172 | 31 | 13 | 130 | 39 |
| | 3-digit subtraction with borrowing | 36 | 7 | 165 | 40 | 1 | 141 | 6 | 85 | 117 | 15 | 42 | 125 |
| | 4-digit subtraction with borrowing | 43 | 5 | 160 | 43 | 2 | 137 | 8 | 53 | 147 | 15 | 30 | 137 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|---------------------------------------|----------------------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q5 Sorting numbers in ascending order | 1st number in series | 50 | 87 | 71 | 61 | 46 | 75 | 7 | 160 | 41 | 25 | 102 | 55 |
| | 2nd number in series | 48 | 85 | 75 | 63 | 48 | 71 | 8 | 158 | 42 | 25 | 99 | 58 |
| | 3rd number in series | 46 | 85 | 77 | 61 | 45 | 76 | 8 | 156 | 44 | 26 | 99 | 57 |
| | 4th number in series | 47 | 86 | 75 | 61 | 54 | 67 | 8 | 151 | 49 | 26 | 100 | 56 |
| | 5th number in series | 50 | 70 | 88 | 62 | 39 | 81 | 8 | 142 | 58 | 27 | 97 | 58 |
| | 6th number in series | 54 | 65 | 89 | 65 | 38 | 79 | 8 | 144 | 56 | 28 | 88 | 66 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|-------------------|---|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | 7th number in series | 64 | 55 | 89 | 71 | 37 | 74 | 11 | 143 | 54 | 28 | 90 | 64 |
| Q6 Division | 2-digit number divided by 1-digit number | 163 | 13 | 32 | 157 | 3 | 22 | 60 | 116 | 32 | 75 | 59 | 48 |
| | 1-digit number divided by 1-digit, different notation | 138 | 32 | 38 | 146 | 13 | 23 | 42 | 138 | 28 | 67 | 76 | 39 |
| Q7 Multiplication | 1-digit number multiplied by 1-digit number | 61 | 80 | 67 | 70 | 36 | 76 | 14 | 162 | 32 | 31 | 103 | 48 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|------------------|---|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | 2-digit number multiplied by 1-digit number | 69 | 37 | 102 | 86 | 3 | 93 | 18 | 106 | 84 | 39 | 55 | 88 |
| Q8 Word problems | 2-digit multiplied by 1 digit | 147 | 22 | 39 | 148 | 1 | 33 | 47 | 116 | 45 | 72 | 50 | 60 |
| | 2-digit divided by 1 digit | 144 | 24 | 40 | 145 | 5 | 32 | 53 | 103 | 52 | 82 | 24 | 76 |
| | Six 2-digit numbers addition with carryover | 167 | 20 | 21 | 157 | 1 | 24 | 39 | 96 | 73 | 79 | 20 | 83 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|--------------------------------|--|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | 1-digit from 2-digit subtraction | 158 | 24 | 26 | 145 | 8 | 29 | 43 | 119 | 46 | 80 | 47 | 55 |
| | 2-digit into 2-digit multiplication | 163 | 15 | 30 | 150 | 5 | 27 | 52 | 110 | 46 | 84 | 42 | 56 |
| | 4-digit subtraction from 4-digit, with borrowing | 188 | 0 | 20 | 154 | 0 | 28 | 61 | 68 | 79 | 109 | 6 | 67 |
| Q9 Writing of dictated numbers | 17 | 18 | 161 | 29 | 14 | 126 | 42 | 4 | 191 | 13 | 5 | 154 | 23 |
| | 36 | 26 | 126 | 56 | 24 | 89 | 69 | 9 | 133 | 66 | 11 | 129 | 42 |
| | 65 | 37 | 87 | 84 | 31 | 60 | 91 | 9 | 151 | 48 | 14 | 104 | 64 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|--------------------------------------|--------------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | 87 | 35 | 69 | 104 | 37 | 35 | 110 | 13 | 131 | 64 | 15 | 86 | 81 |
| | 192 | 48 | 62 | 98 | 45 | 30 | 107 | 17 | 132 | 59 | 23 | 95 | 64 |
| | 409 | 48 | 62 | 98 | 41 | 30 | 111 | 10 | 149 | 49 | 16 | 93 | 73 |
| Q10 Counting currency notes | 56 reading | 106 | 102 | 0 | 146 | 36 | 0 | 18 | 161 | 29 | 20 | 128 | 34 |
| | Counting 1s | 53 | 107 | 48 | 99 | 39 | 44 | 16 | 153 | 39 | 28 | 106 | 48 |
| | Counting 10s | 49 | 116 | 43 | 84 | 42 | 56 | 16 | 152 | 40 | 30 | 104 | 48 |
| | 299 reading | 133 | 73 | 2 | 161 | 21 | 0 | 24 | 144 | 40 | 23 | 104 | 55 |
| | Counting 1s | 81 | 87 | 40 | 132 | 20 | 30 | 22 | 142 | 44 | 38 | 80 | 64 |
| | Counting 10s | 80 | 80 | 48 | 134 | 26 | 22 | 24 | 129 | 55 | 38 | 78 | 66 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|------------------------|---------------------------------------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | Counting 100s | 112 | 89 | 7 | 147 | 28 | 7 | 23 | 143 | 42 | 39 | 81 | 62 |
| | 87 reading | 133 | 75 | 0 | 157 | 25 | 0 | 20 | 152 | 36 | 25 | 111 | 46 |
| | Counting 1s | 79 | 81 | 48 | 119 | 30 | 33 | 20 | 145 | 43 | 36 | 95 | 51 |
| | Counting 10s | 80 | 82 | 46 | 124 | 26 | 32 | 20 | 142 | 46 | 37 | 89 | 56 |
| | 560 reading | 116 | 54 | 38 | 152 | 5 | 25 | 24 | 143 | 41 | 29 | 104 | 49 |
| | Counting 1s | 145 | 53 | 10 | 167 | 7 | 8 | 26 | 137 | 45 | 43 | 86 | 53 |
| | Counting 10s | 55 | 60 | 93 | 76 | 11 | 95 | 24 | 137 | 47 | 38 | 91 | 53 |
| | Counting 100s | 63 | 58 | 87 | 89 | 6 | 87 | 25 | 142 | 41 | 37 | 88 | 57 |
| Q11 Oral word problems | 2-digit subtraction without borrowing | 50 | 113 | 45 | 54 | 63 | 65 | 9 | 168 | 31 | 13 | 116 | 53 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|----------|---|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| | 2-digit addition without carryover | 58 | 101 | 49 | 66 | 56 | 60 | 12 | 169 | 27 | 17 | 127 | 38 |
| | Subtraction of two 1-digit numbers from a 2-digit number | 76 | 60 | 72 | 70 | 30 | 82 | 10 | 161 | 37 | 16 | 84 | 82 |
| | 2-digit by 1 digit multiplication, without carryover, using price rates | 133 | 21 | 54 | 113 | 7 | 62 | 29 | 107 | 72 | 47 | 64 | 71 |

| MATHS | | Grade 3 | | | | | | Grade 5 | | | | | |
|---|---------|---------------------------|---------|-----------|---|---------|-----------|---------------------------|---------|-----------|---|---------|-----------|
| | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | | SPK (out of 208 students) | | | Control (Non-SPK) (out of 182 students) | | |
| QUESTION | ABILITY | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect | Not Done | Correct | Incorrect |
| Q12 Sort number cards into an ascending order | 3 | 18 | 141 | 49 | 25 | 119 | 38 | 6 | 163 | 39 | 5 | 133 | 44 |
| | 12 | 18 | 125 | 65 | 26 | 95 | 61 | 6 | 153 | 49 | 5 | 117 | 60 |
| | 25 | 18 | 107 | 83 | 27 | 72 | 83 | 7 | 136 | 65 | 5 | 93 | 84 |
| | 37 | 18 | 123 | 67 | 27 | 80 | 75 | 6 | 139 | 63 | 6 | 89 | 87 |
| | 81 | 21 | 107 | 80 | 30 | 74 | 78 | 6 | 137 | 65 | 6 | 89 | 87 |
| | 90 | 21 | 123 | 64 | 31 | 71 | 80 | 6 | 142 | 60 | 6 | 106 | 70 |
| | 100 | 25 | 130 | 53 | 33 | 77 | 72 | 6 | 147 | 55 | 7 | 107 | 68 |

APPENDIX V

Change in numbers of children across both cohorts who did not attempt, correctly answered or incorrectly answered each question in Maths and Language.

LANGUAGE

| QUESTION | ABILITY | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|---------------------------|------------------|--|--------------|-------------|---------------|------------------|-----------------|-------------------|
| Q1 Personal details | Name | | -15 | 38 | -23 | -13 | 35 | -22 |
| | Father's name | | -50 | 71 | -21 | -36 | 57 | -21 |
| | Class | | -44 | 64 | -20 | -48 | 75 | -27 |
| | Mother's name | | -69 | 83 | -14 | -54 | 73 | -19 |
| | Village | | -63 | 58 | 5 | -65 | 56 | 9 |
| Q2 Write names of figures | Lock / Rabbit | | -7 | 19 | -12 | -21 | 35 | -14 |
| | Tap / Bus | | -14 | 43 | -29 | -24 | 59 | -35 |
| | House / Cup | | -18 | 26 | -8 | -26 | 2 | 24 |
| | Fish / Butterfly | | -13 | 52 | -39 | -29 | 58 | -29 |
| | Cow / Key | | -16 | 45 | -29 | -27 | 22 | 5 |
| | Rabbit / Lock | | -24 | 107 | -83 | -31 | 76 | -45 |

| QUESTION | ABILITY | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|---|----------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| Q3 Make 10 words out of the given letters | 1 | | -23 | 53 | -30 | -30 | 48 | -18 |
| | 2 | | -27 | 61 | -34 | -33 | 42 | -9 |
| | 3 | | -34 | 87 | -53 | -33 | 45 | -12 |
| | 4 | | -35 | 89 | -54 | -32 | 39 | -7 |
| | 5 | | -43 | 80 | -37 | -35 | 41 | -6 |
| | 6 | | -49 | 80 | -31 | -18 | 36 | -18 |
| | 7 | | -57 | 93 | -36 | -20 | 29 | -9 |
| | 8 | | -54 | 91 | -37 | -22 | 38 | -16 |
| | 9 | | -58 | 91 | -33 | -24 | 41 | -17 |
| | 10 | | -60 | 92 | -32 | -33 | 43 | -10 |
| Q4 Write names of any four fruits | 1 | | -48 | 51 | -3 | -45 | 53 | -8 |
| | 2 | | -57 | 56 | 1 | -55 | 58 | -3 |
| | 3 | | -71 | 65 | 6 | -69 | 52 | 17 |
| | 4 | | -77 | 61 | 16 | -70 | 63 | 7 |
| Q5 Write sentences using these words | Elephant | | -145 | 105 | 40 | -102 | 53 | 49 |

| QUESTION | ABILITY | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|--|---------------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| | School | | -145 | 109 | 36 | -88 | 50 | 38 |
| | Brick | | -133 | 94 | 39 | -83 | 46 | 37 |
| | Market | | -131 | 98 | 33 | -80 | 46 | 34 |
| | Ghost | | -131 | 102 | 29 | -76 | 41 | 35 |
| Q6 Questions asked to test comprehension of a previously unseen passage. | 1 | | -148 | 102 | 46 | -113 | 52 | 61 |
| | 2 | | -168 | 116 | 52 | -117 | 63 | 54 |
| | 3 | | -153 | 109 | 44 | -112 | 50 | 62 |
| | 4 | | -124 | 84 | 40 | -73 | 25 | 48 |
| | 5 | | -119 | 92 | 27 | -61 | 23 | 38 |
| Q7 Reading out of words | Tap / Jug | | -13 | 6 | 7 | -48 | 24 | 24 |
| | House / Plough | | -16 | 11 | 5 | -49 | 35 | 14 |
| | Bus / Come | | -24 | 19 | 5 | -57 | 44 | 13 |
| | Elephant / Elephant | | -35 | 25 | 10 | -73 | 51 | 22 |

| QUESTION | ABILITY | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|---|--------------------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| | Tree / Tree | | -45 | 31 | 14 | -76 | 52 | 24 |
| | Fish / Girl | | -62 | 35 | 27 | -75 | 40 | 35 |
| | Tahsildar / Havildar | | -138 | 86 | 52 | -131 | 57 | 74 |
| | Ocean / Customer | | -127 | 64 | 63 | -114 | 24 | 90 |
| | Sarpanch / Sarpanch | | -122 | 90 | 32 | -114 | 62 | 52 |
| | Duty / Duty | | -160 | 73 | 87 | -136 | 39 | 97 |
| Q8 Reading out of sentences | 1 | | -72 | 46 | 26 | -110 | 66 | 44 |
| | 2 | | -82 | 52 | 30 | -105 | 61 | 44 |
| | 3 | | -94 | 56 | 38 | -117 | 71 | 46 |
| Q9 Reading and comprehension of a previously unseen passage | Reading out of a passage | | -84 | 44 | 40 | -114 | 62 | 52 |
| | Question 1 | | -102 | 64 | 38 | -119 | 69 | 50 |

| QUESTION | ABILITY | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|--|----------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| | Question 2 | | -118 | 91 | 27 | -126 | 93 | 33 |
| | Question 3 | | -148 | 105 | 43 | -133 | 78 | 55 |
| Q10 Write a story which you may have read or heard | 1 | | -148 | 62 | 86 | -141 | 32 | 109 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|----------------------------------|---------------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| Q1 Counting discrete elements | Counting each thing | | -45 | 60 | -15 | -57 | 59 | -2 |
| | Grouping of things | | -63 | 70 | -7 | -57 | 23 | 34 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|----------------------------|------------------------------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| | Counting left out things | | -65 | 73 | -8 | -56 | 47 | 9 |
| Q2 Next number in a series | In-between 2-digit numbers | | -32 | 60 | -28 | -15 | 40 | -25 |
| | Next to a 3-digit number | | -34 | 67 | -33 | -16 | 44 | -28 |
| | Previous to a 3-digit number | | -32 | 56 | -24 | -13 | 38 | -25 |
| Q3 Addition | 2-digit addition without carryover | | -15 | 60 | -45 | -9 | 58 | -49 |
| | 3-digit addition with carryover | | -16 | 114 | -98 | -14 | 83 | -69 |
| | 4-digit addition with carryover | | -17 | 108 | -91 | -17 | 91 | -74 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|----------------|--|--|--------------|-------------|---------------|------------------|-----------------|-------------------|
| | addition of 3 and 2 digits numbers, written in one line, without carryover | | -49 | 82 | -33 | -17 | 56 | -39 |
| | addition of 3, 2 and 3 digits numbes, written in one line, without carryover | | -50 | 72 | -22 | -14 | 38 | -24 |
| Q4 Subtraction | 2-digit subtraction without borrowing | | -20 | 60 | -40 | -18 | 68 | -50 |
| | 3-digit subtraction with borrowing | | -30 | 78 | -48 | -25 | 41 | -16 |
| | 4-digit subtraction with borrowing | | -35 | 48 | -13 | -28 | 28 | 0 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|---------------------------------------|----------------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| Q5 Sorting numbers in ascending order | 1st number in series | | -43 | 73 | -30 | -36 | 56 | -20 |
| | 2nd number in series | | -40 | 73 | -33 | -38 | 51 | -13 |
| | 3rd number in series | | -38 | 71 | -33 | -35 | 54 | -19 |
| | 4th number in series | | -39 | 65 | -26 | -35 | 46 | -11 |
| | 5th number in series | | -42 | 72 | -30 | -35 | 58 | -23 |
| | 6th number in series | | -46 | 79 | -33 | -37 | 50 | -13 |
| | 7th number in series | | -53 | 88 | -35 | -43 | 53 | -10 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|-------------------|---|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| Q6 Division | 2-digit number divided by 1-digit number | | -103 | 103 | 0 | -82 | 56 | 26 |
| | 1-digit number divided by 1-digit, different notation | | -96 | 106 | -10 | -79 | 63 | 16 |
| Q7 Multiplication | 1-digit number multiplied by 1-digit number | | -47 | 82 | -35 | -39 | 67 | -28 |
| | 2-digit number multiplied by 1-digit number | | -51 | 69 | -18 | -47 | 52 | -5 |
| Q8 Word problems | 2-digit multiplied by 1 digit | | -100 | 94 | 6 | -76 | 49 | 27 |
| | 2-digit divided by 1 digit | | -91 | 79 | 12 | -63 | 19 | 44 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|--------------------------------|--|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| | Six 2-digit numbers addition with carryover | | -128 | 76 | 52 | -78 | 19 | 59 |
| | 1-digit from 2-digit subtraction | | -115 | 95 | 20 | -65 | 39 | 26 |
| | 2-digit into 2-digit multiplication | | -111 | 95 | 16 | -66 | 37 | 29 |
| | 4-digit subtraction from 4-digit, with borrowing | | -127 | 68 | 59 | -45 | 6 | 39 |
| Q9 Writing of dictated numbers | 17 | | -14 | 30 | -16 | -9 | 28 | -19 |
| | 36 | | -17 | 7 | 10 | -13 | 40 | -27 |
| | 65 | | -28 | 64 | -36 | -17 | 44 | -27 |
| | 87 | | -22 | 62 | -40 | -22 | 51 | -29 |
| | 192 | | -31 | 70 | -39 | -22 | 65 | -43 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|--------------------------------------|------------------|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| | 409 | | -38 | 87 | -49 | -25 | 63 | -38 |
| Q10 Counting currency notes | 56 reading | | -88 | 59 | 29 | -126 | 92 | 34 |
| | Counting 1s | | -37 | 46 | -9 | -71 | 67 | 4 |
| | Counting 10s | | -33 | 36 | -3 | -54 | 62 | -8 |
| | 299 reading | | -109 | 71 | 38 | -138 | 83 | 55 |
| | Counting 1s | | -59 | 55 | 4 | -94 | 60 | 34 |
| | Counting 10s | | -56 | 49 | 7 | -96 | 52 | 44 |
| | Counting 100s | | -89 | 54 | 35 | -108 | 53 | 55 |
| | 87 reading | | -113 | 77 | 36 | -132 | 86 | 46 |
| | Counting 1s | | -59 | 64 | -5 | -83 | 65 | 18 |
| | Counting 10s | | -60 | 60 | 0 | -87 | 63 | 24 |
| | 560 reading | | -92 | 89 | 3 | -123 | 99 | 24 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|------------------------|--|--|---------------------|--------------------|----------------------|-------------------------|------------------------|--------------------------|
| | Counting 1s | | -119 | 84 | 35 | -124 | 79 | 45 |
| | Counting 10s | | -31 | 77 | -46 | -38 | 80 | -42 |
| | Counting 100s | | -38 | 84 | -46 | -52 | 82 | -30 |
| Q11 Oral word problems | 2-digit subtraction without borrowing | | -41 | 55 | -14 | -41 | 53 | -12 |
| | 2-digit addition without carryover | | -46 | 68 | -22 | -49 | 71 | -22 |
| | Subtraction of two 1-digit numbers from a 2-digit number | | -66 | 101 | -35 | -54 | 54 | 0 |

| MATHS | | | SPK Not Done | SPK Correct | SPK Incorrect | Non-SPK Not Done | Non-SPK Correct | Non-SPK Incorrect |
|---|---|--|--------------|-------------|---------------|------------------|-----------------|-------------------|
| | 2-digit by 1 digit multiplication, without carryover, using price rates | | -104 | 86 | 18 | -66 | 57 | 9 |
| Q12 Sort number cards into an ascending order | 3 | | -12 | 22 | -10 | -20 | 14 | 6 |
| | 12 | | -12 | 28 | -16 | -21 | 22 | -1 |
| | 25 | | -11 | 29 | -18 | -22 | 21 | 1 |
| | 37 | | -12 | 16 | -4 | -21 | 9 | 12 |
| | 81 | | -15 | 30 | -15 | -24 | 15 | 9 |
| | 90 | | -15 | 19 | -4 | -25 | 35 | -10 |
| | 100 | | -19 | 17 | 2 | -26 | 30 | -4 |