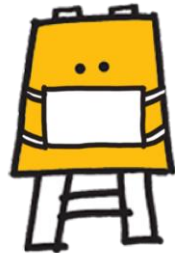


Satna Madhya Pradesh STRIPES 2.0

“Deep Dive”: Changes in Children’s Learning

December 2020



Pratham

	Section
1	Overview of Activities in Satna
2	Overview of Current Learning Levels
3	Learning Change Compared to Baseline Assessment - Reading
4	Learning Change Compared to Baseline Assessment – Number Recognition
5	Next Steps

Overview of Activities in Satna

Timeline of Activities in Satna

1

Pre COVID: Classes with children

Classes at Satna started off in two phases:

1. Phase 1:

- 114 PIs started classes between October to December 2019.
- The **Baseline assessment for 1,642 children** under these PIs happened between **December 4th to 6th 2019**

2. Phase 2:

- 42 PIs started classes between Jan to Feb 2020.
- **These PIs did not conduct any baseline assessment for children.**

2

Post COVID

Daily Messages

1. In **mid-August 2020**, PIs started sending **daily messages to children who were attending classes pre-COVID**
2. In **mid-September 2020**, those **children who were enumerated but did not attend classes, also began to receive daily messages**
3. Daily messages were coupled with daily follow-ups by PIs

कोमल के पास 20लाल, 13नीली व 5हरी गेंदे है। बताएँ कोमल के पास कितनी गेंदे है? ऐसे और सवाल पूछें।

अगरआपको स्कूल मे टीचर बनने का मौका मिले तो आप क्या-क्या करना चाहेंगे? 6:30 A

घर के कामों में आप सबकी क्या-क्या मदद करते हैं? चित्र बनाएं व लिखें।
बर्तनो से पैटर्न बनाएँ जैसे-एक गिलास, दो कप, एक गिलास, दो कप...

Home Visits - Round 1

1. In **November 2020**, PIs conducted the first round of **home visits** with children
2. During home visits PIs:
 - Had discussions with parents to understand the general situation at home, their expectations related to teaching and learning, and their feedback on daily messages
 - Assessed children on their current learning levels**



Home Visit Assessment

- PIs conducted **Home Visits** during the month of November 2020, during which children were **assessed on their current learning levels** – specifically for **Reading, Number Recognition and Math Word Problems**
- During the Home Visits, **143 PIs assessed a total of ~2,440 children.** Out of these children, **~2,020 were attending classes prior to COVID (enrolled children) and 420 were not attending classes (additional children)**
- In addition to learning levels, PIs also captured data on:
 - The **Child's Profile** – Grade, Age, Sex, School Type
 - **Whether the child received daily messages**
 - **Parents feedback towards daily messages** – Parent were asked
 - 1) Are daily messages according to the child's level? (Yes/No)
 - 2) Does the child learn anything from the daily messages? (Yes/No)
- Furthermore, out of these 2,440 children, **child-wise Baseline (Dec 2019) assessment data was collected for ~1,495* children**

Using the child-wise data, we can understand the following:

1. Current Learning Levels – 2,440 children

- a) Current leaning levels of enrolled children compared to additional children

2. Learning Change Compared to Baseline – 1,495 children

- a) Learning loss/gain that has occurred over the course of ~1 year
- b) Relationship between learning changes and the child's profile, inputs and feedback towards daily messages

**Note: There were ~150 children who were assessed during Baseline, but were not assessed during home visits*

Assessment Tool used during Home Visits

Language (Reading)

Q.1 Reading: पढ़ना

कहानी

नगमा समझदार लड़की थी। मगर उसका छोटा भाई अमन बहुत नटखट था। एक दिन दोनों बाज़ार में घूम रहे थे। अमन ने रास्ते में पकौड़े देखे। उसे पकौड़े बहुत पसंद थे। माँ उसके लिए पकौड़े बनाती थी। नगमा ने कहा यह पकौड़े तीखे होंगे। मगर अमन नहीं माना। अमन ने पकौड़े खाए और उसकी आँखों से आँसू निकलने लगे।

अनुच्छेद

रात हो गई है।
चौंद दिख रहा है।
तारे भी चमक रहे हैं।
सब लोग सो गए हैं।

शब्द

माली	नाक	रेल
मोर		केला

अक्षर

ख	व	ह
त		च

कहानी पढ़ने समय "3" से अधिक गलतियाँ न हों।

शब्दों को अनुच्छेद पढ़ने के लिए करें। यदि बच्चा अनुच्छेद पढ़ने में "3" या "3" से कम गलतियाँ करे, तो उसे कहानी पढ़ने को दें। अन्यथा, उसे रात पढ़ने के लिए दें।

"5" में से कम से कम "4" शब्द सही होने चाहिए।

"5" में से कम से कम "4" अक्षर सही होने चाहिए।

Math (Number Recognition & Word Problems)

Q.1 Number Recognition : संख्या पहचान

स्तर-1 (1-9)	स्तर-2 (10-50)	स्तर-3 (51-100)
9 4	12 27	58 63
6	48	86
3 2	34 21	74 91
कोई भी 5 पूछें। 4 सही होने चाहिए।	कोई भी 5 पूछें। 4 सही होने चाहिए।	कोई भी 5 पूछें। 4 सही होने चाहिए।

Teacher's Tool Grade 2 One On One Assessment

Q.2 (a, b) Word Problem: शाब्दिक सवाल

Q.2a अमन के पास 9 लड्डू थे। कविता ने उसे 6 लड्डू और दे दिए। बताएँ, अमन के पास कितने लड्डू हैं?

Q.2b सुनिल के पास 18 सेब थे। उसने रमा को 9 सेब दे दिए। बताएँ, सुनिल के पास अब कितने सेब हैं?

Overview of Current Learning Levels

Characteristics of Children Assessed during Home Visits

We know the following about the 2,440 children who were assessed during Home Visits:

Age	
Less than 7 years	5%
7 years	24%
8 years	41%
9 years	21%
More 9 years	8%

Grade	
AW/LKG/UKG	4%
Std 1	14%
Std 2	38%
Std 3	39%
Std 3+	5%
Out of School	1%

School Type	
Govt	59%
Private	40%
Other	1%

Input of daily messages	
Yes, the child receives messages	88%
No, the child does not receive messages (because of no phone)	12%

For those children who receive messages:

1. Are the messages according to the child's level?	
Yes	86%
No	14%

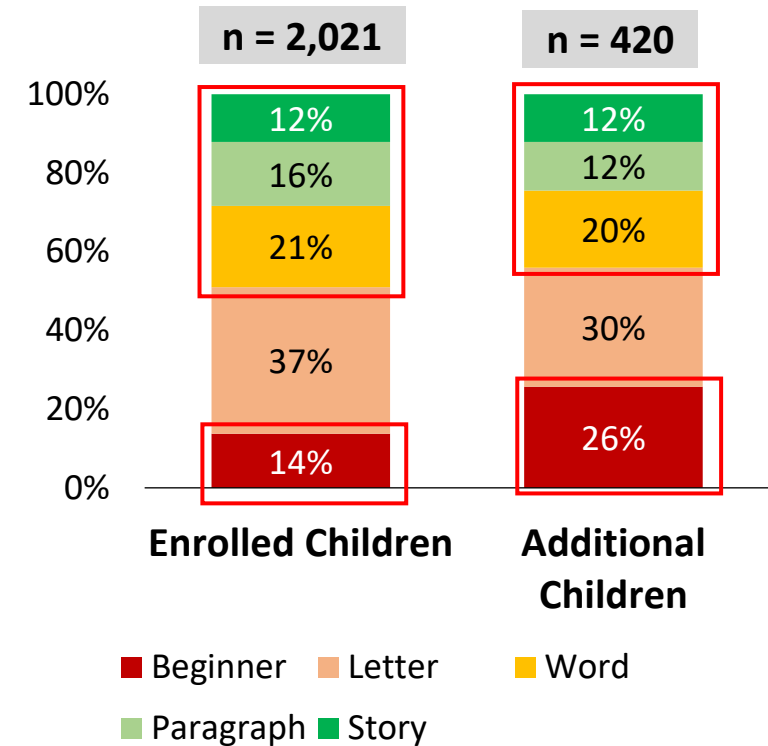
2. Does the child learn anything through the messages?	
Yes	86%
No	14%

3. Who helps the child with messages?	
Mother	40%
Father	28%
Brother	8%
Sister	15%
Other	9%

Learning Levels of Enrolled vs Additional Children

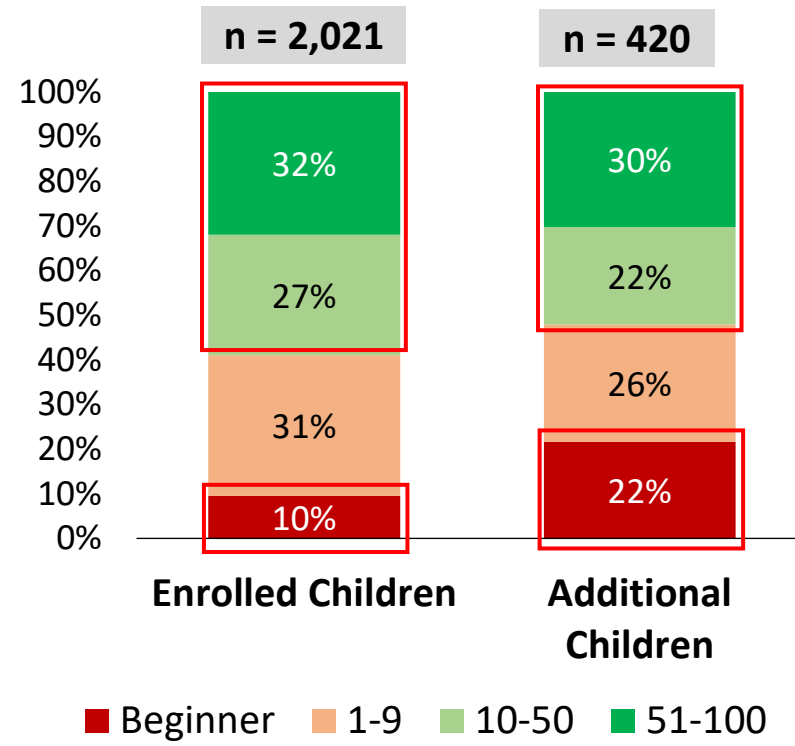
Enrolled children were attending classes prior to COVID, while additional children were not

Language: Reading



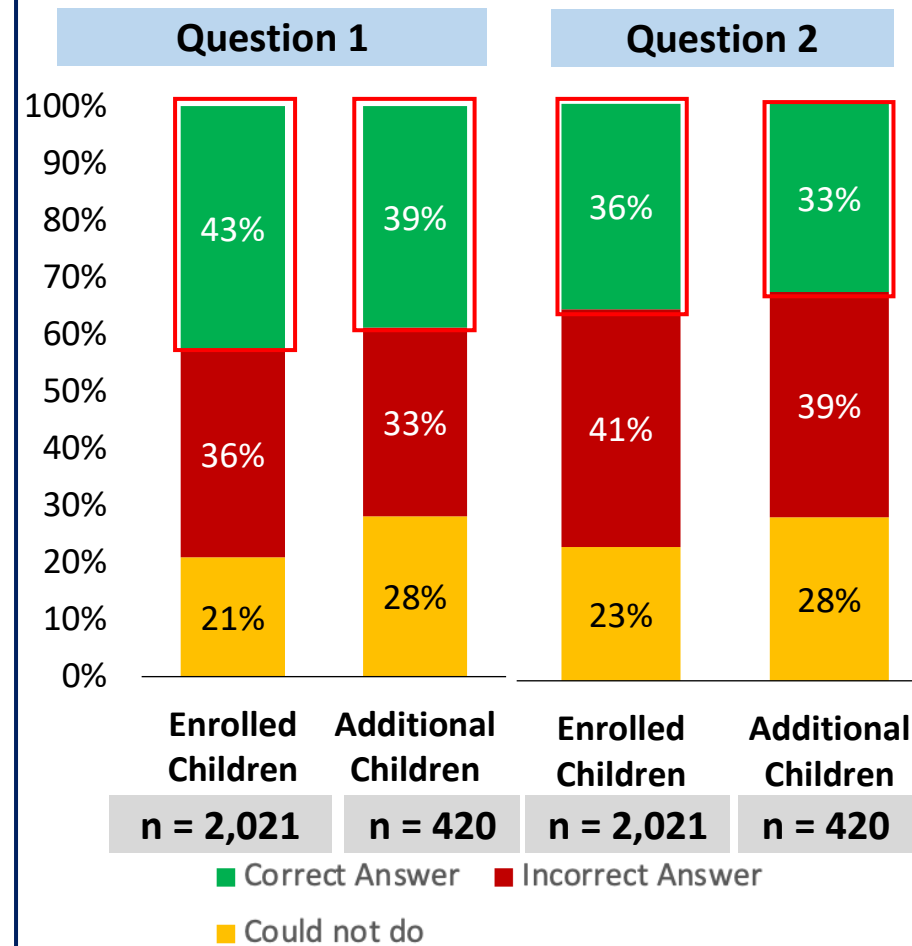
- A higher % of enrolled children were at letter and para level compared to those who weren't enrolled
- There was still a significant % of additional children who were beginners

Math: Number Recognition



- A higher % of enrolled children were 2 digit level compared to those who weren't enrolled
- There was still a significant % of additional children who were beginners

Math: Word Problems



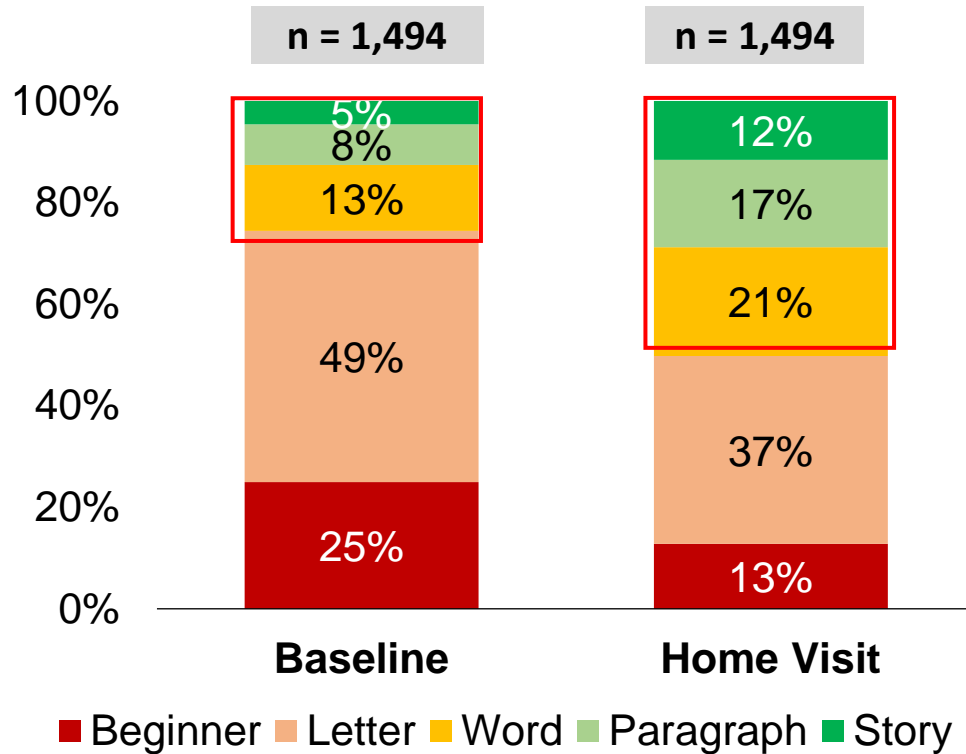
- A higher % of enrolled children attempted the question and got it correct

Learning Change Compared to Baseline Assessment

Reading

Learning Change (Reading)

Overall: Baseline vs Home Visits



Learning Changes

		Home Visit (Nov 2020)					Total
		Beginner	Letter	Word	Para	Story	
Baseline (Dec 2019)	Beginner	34%	54% 1 level up	12% moved 2 levels up or more		373	
	Letter	9% 1 level down	43%	30% 1 level up	19% moved 2 levels up		738
	Word	1% 2 levels down	14% 1 level down	26%	40% 1 level up	20% 2 levels up	194
	Para	4% 2 levels down		17% 1 level down	38%	41% 1 level up	120
	Story	8% moved 2 levels down or more			17% 1 level down	74%	69
	Total	191	552	320	257	174	1,494

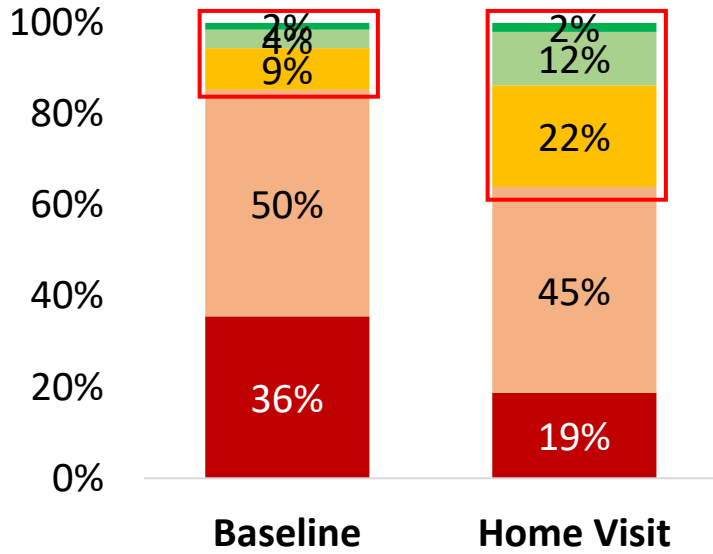
Overall, **51%** children had a **gain**, **9%** had a **loss**, **40%** had **no change**

- From the baseline assessment to the home visit assessment, **overall % of Word+ children had increased from 26% to 50%**
- 51% children had an improvement in their reading level** – this improvement may be the result of various factors including PI classes, daily messages, inputs from govt/private schools

Learning Change (Reading) – By Grade Distribution

Std 1 Children

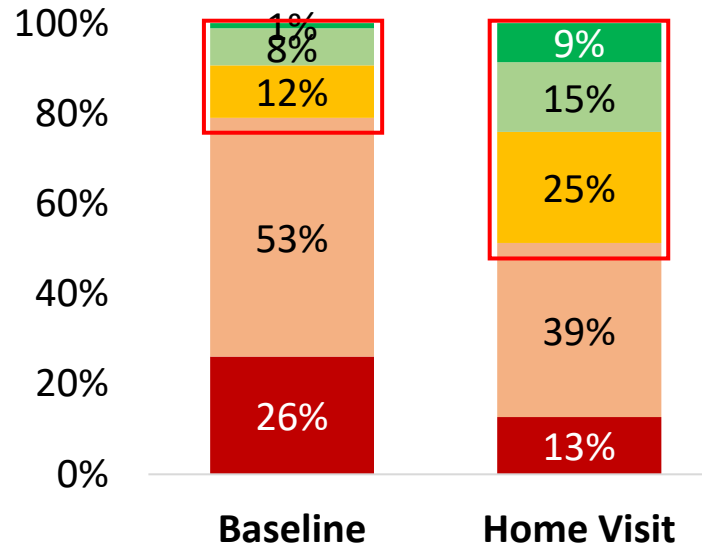
n = 197



47% children had a gain, 8% had a loss, 46% had no change

Std 2 Children

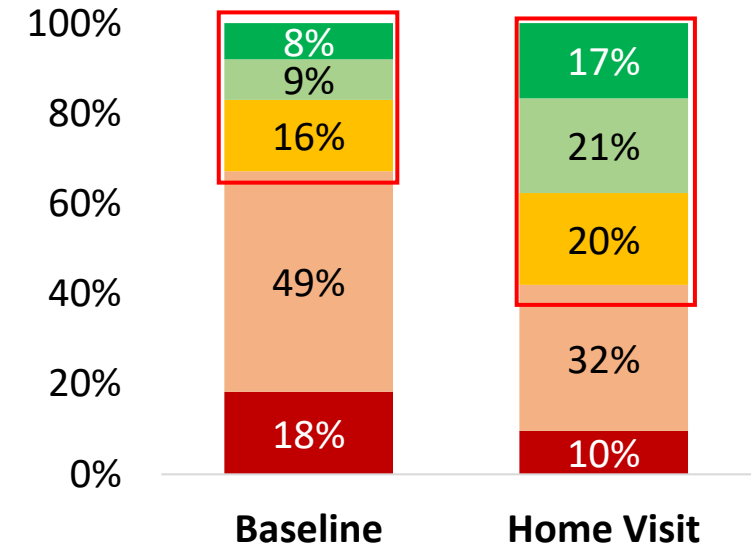
n = 544



53% children had a gain, 8% had a loss, 38% had no change

Std 3 Children

n = 624



52% children had a gain, 10% had a loss, 37% had no change

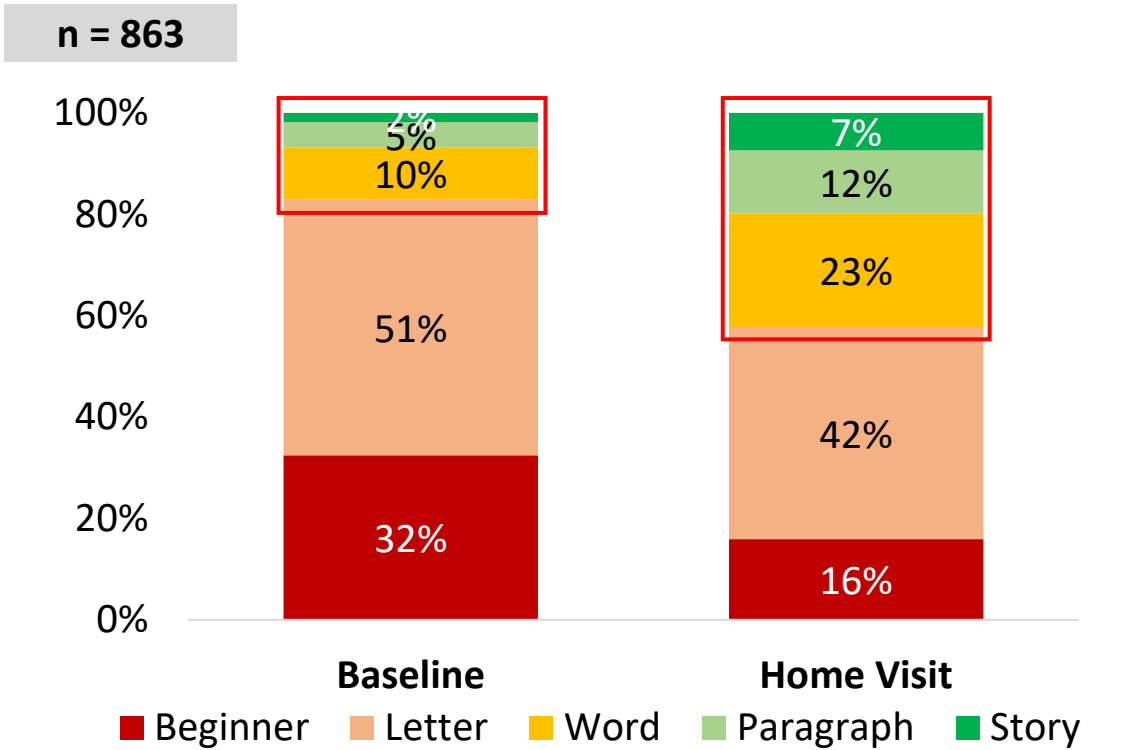
- Children from all grades had learning gains over the course of one year, but a **slightly higher % of Std 2 and Std 3 children had gains compared to Std 1 children**

% Children at word level or above

	Baseline	Home visit	Diff
Std 1	15%	36%	21 pp
Std 2	21%	49%	28 pp
Std 3	33%	58%	25 pp

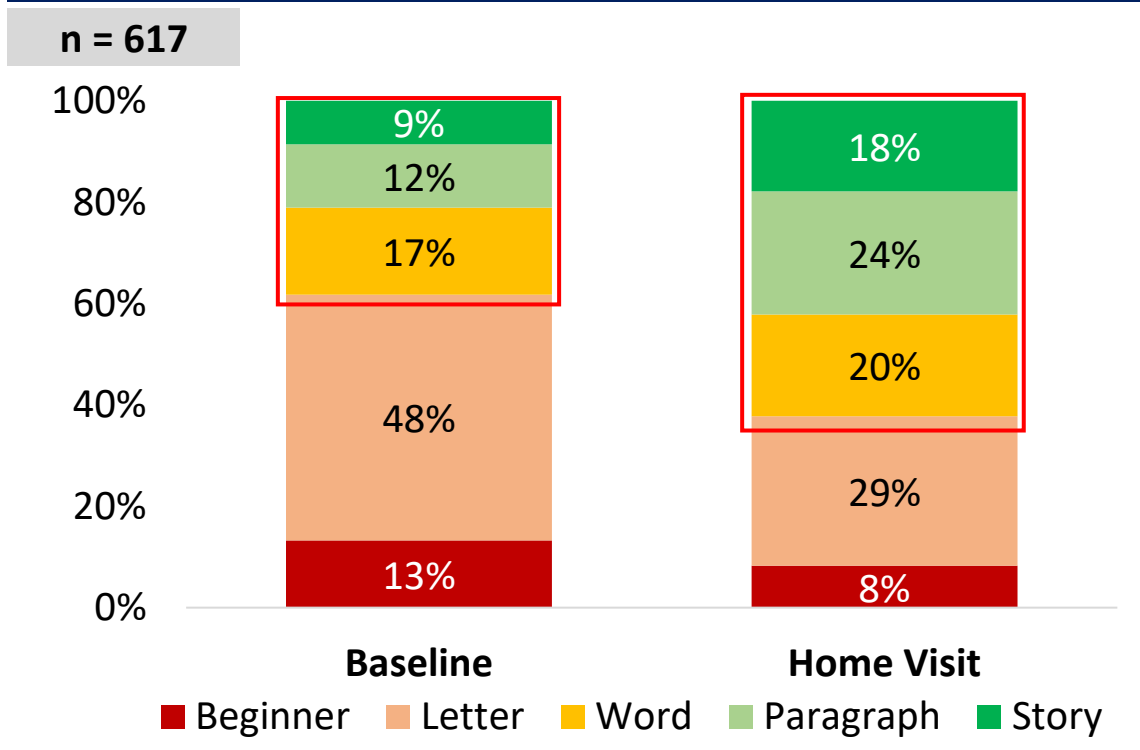
Learning Change (Reading) – By Govt vs Private Schools

Children from Govt Schools



53% children had a **gain**, **8%** had a **loss**, **39%** had **no change**

Children from Private Schools



49% children had a **gain**, **11%** had a **loss**, **40%** had **no change**

- Both, children from private and govt schools, had learning gains over the course of a year

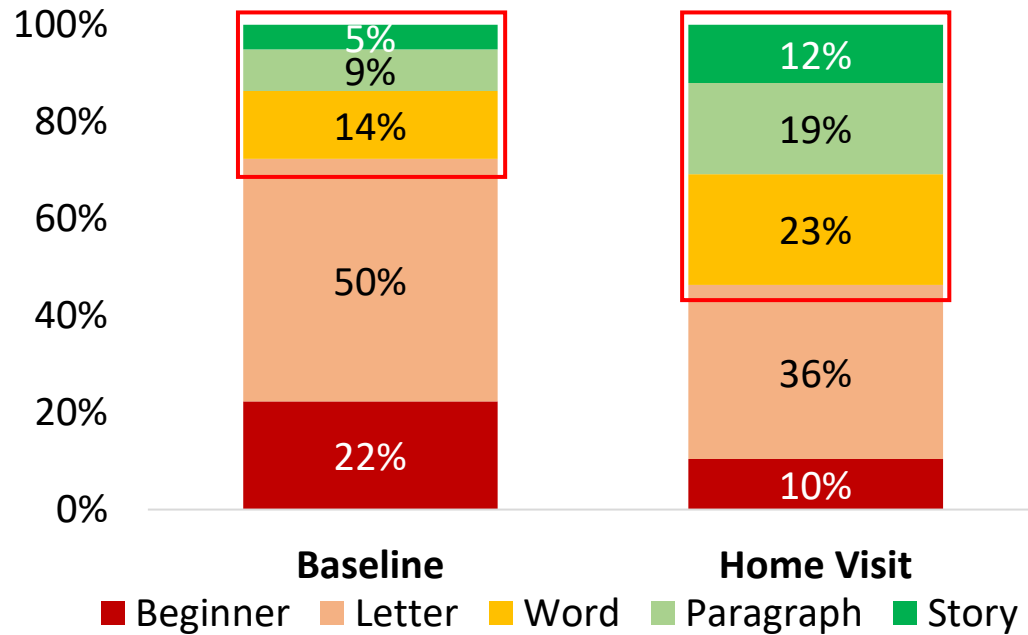
% Children at word level or above			
	Govt schools		
	Baseline	Home visit	Diff
Std 1	7%	30%	23 pp
Std 2	16%	43%	27 pp
Std 3	20%	47%	27 pp

% Children at word level or above			
	Private schools		
	Baseline	Home visit	Diff
Std 1	24%	43%	19 pp
Std 2	30%	59%	30 pp
Std 3	50%	72%	22 pp

Learning Change (Reading) – For children who receive messages vs those who don't

Children who receive daily messages

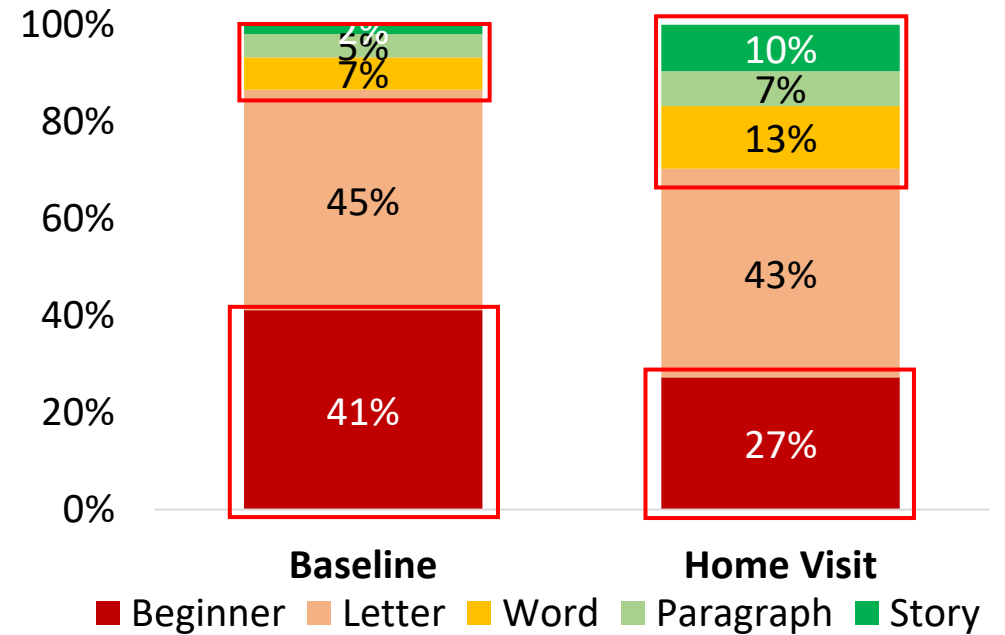
n = 1,285



52% children had a gain, 9% had a loss, 39% had no change

Children who do not receive daily messages

n = 209



45% children had a gain, 10% had a loss, 44% had no change

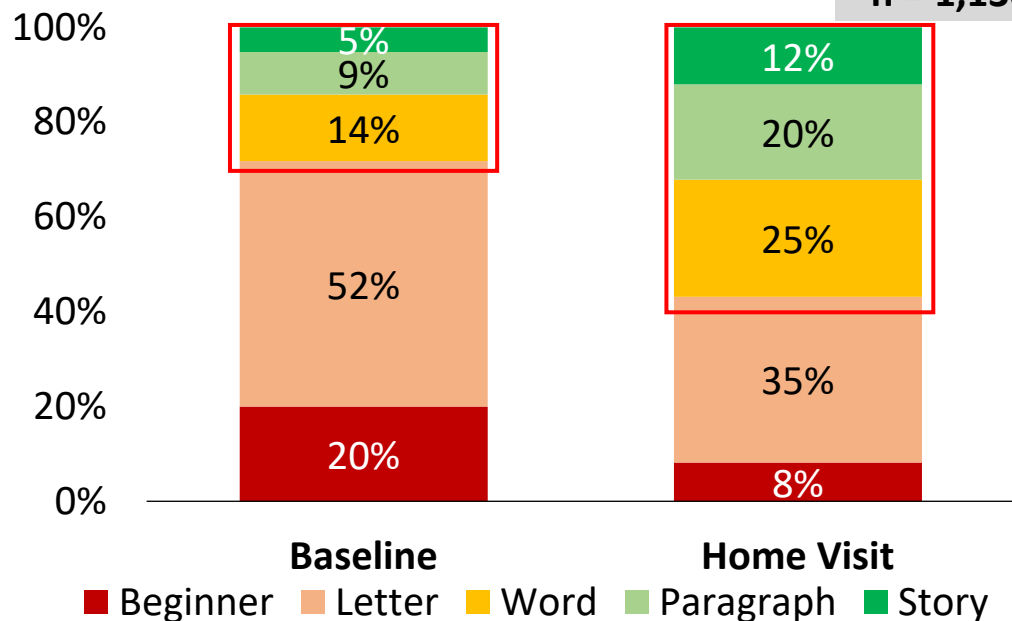
- % Children who had learning gains was higher when children were receiving messages
- 209 children weren't receiving messages as their families did not have access to a phone – hence the relatively lower gains in this group suggest that the digital divide has an impact on learning outcomes

% Children at word level or above			
	Baseline	Home visit	Diff
Messages	27%	54%	27 pp
No messages	14%	30%	16 pp

Learning Change (Reading) – When messages were according to level vs not

Children for whom messages were according to level

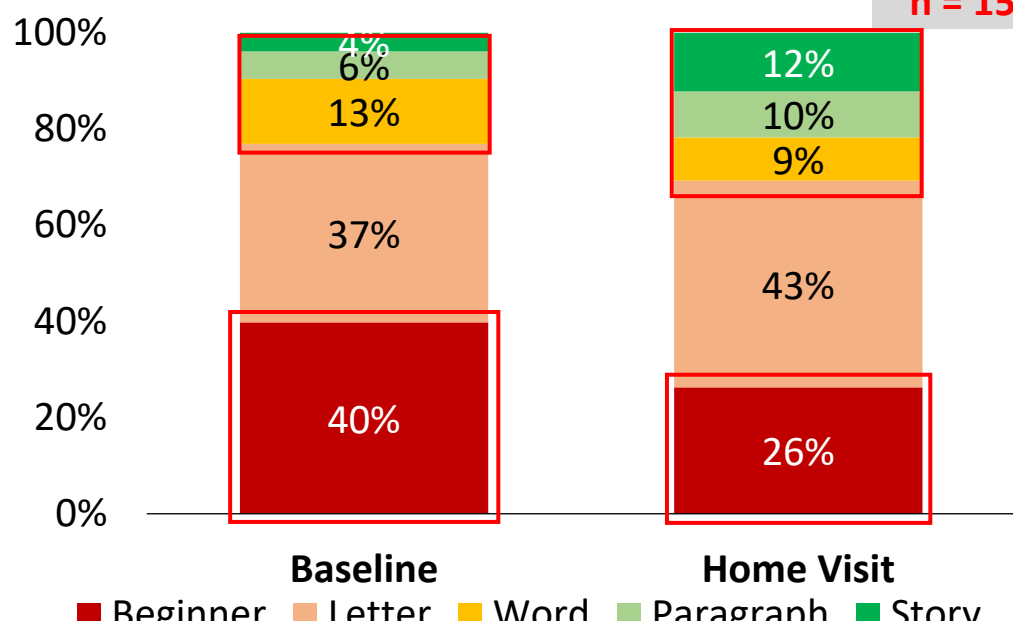
n = 1,130



54% children had a **gain**, **8%** had a **loss**, **38%** had **no change**

Children for whom messages were not according to level

n = 156*



42% children had a **gain**, **13%** had a **loss**, **45%** had **no change**

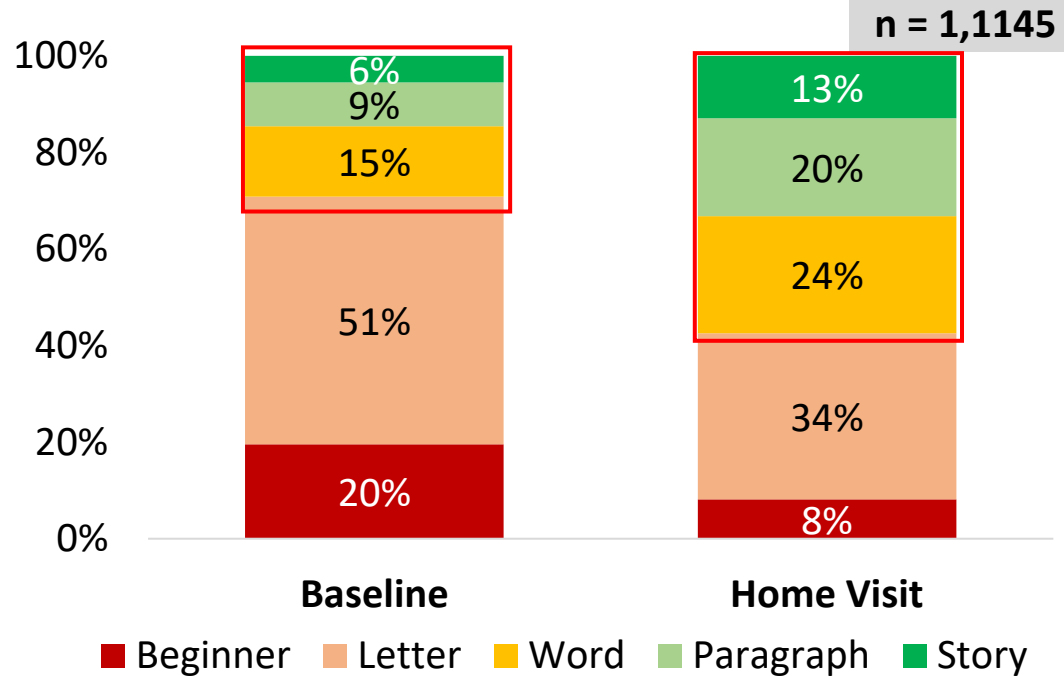
- For children of parents who reported that messages were not according to level, a significant proportion were beginners at baseline – 50% of these beginner children had a 1 level jump
- **The % of children who had learning gains was higher when the messages were according to level**

% Children at word level or above			
	Baseline	Home visit	Diff
Level appropriate	28%	57%	29 pp
Not Level appropriate	23%	31%	8 pp

* For these 156 children, 79 (51%) parents said that there was no learning from messages

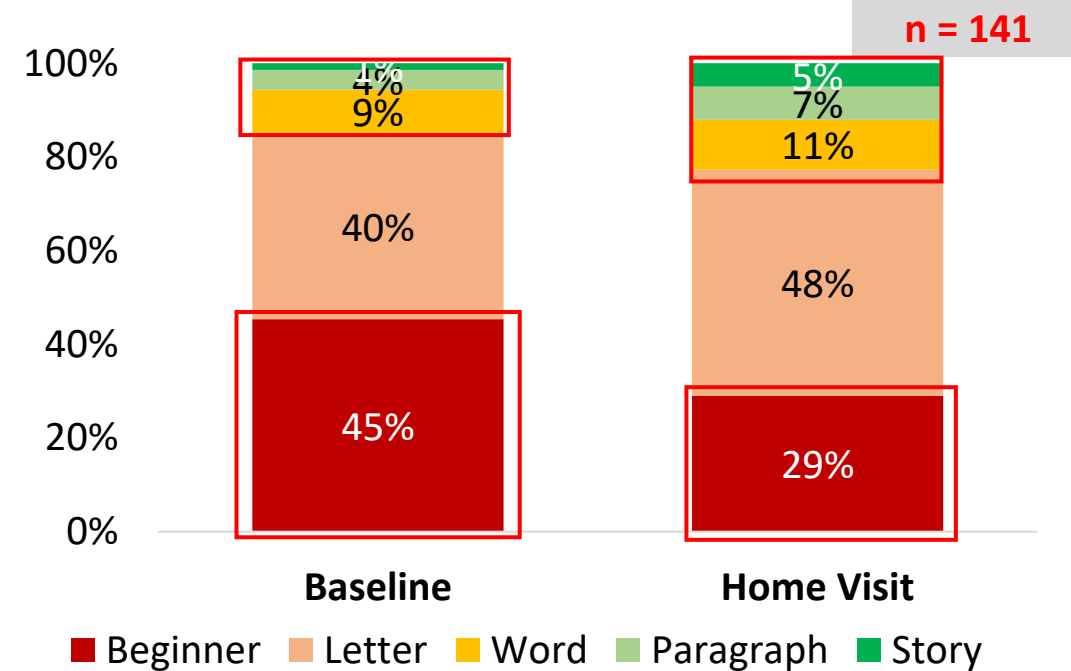
Learning Change (Reading) – When children learnt something from messages vs not

Parent perception: “Children who learnt something from messages”



54% children had a **gain**, **8%** had a **loss**, **38%** had **no change**

Parent perception: “Children who did not learn something from messages”



41% children had a **gain**, **12%** had a **loss**, **47%** had **no change**

- For children of parents who reported that there is no learning from messages, a significant proportion were Beginners at baseline – 52% of these Beginner children had a 1 level jump
- **% Children who had learning gains was higher when parents felt that there was some learning from messages**

% Children at word level or above			
	Baseline	Home visit	Diff
Learnt something	30%	57%	27 pp
Did not learn something	15%	23%	8 pp

Comparison of Satna STRIPES 2.0 results with ASER 2019 and Balvachan 2018-19

Competency	ASER Early Years 2019 - Satna		STRIPES 2.0				Balvachan – Academic Year 2018-19			
			Baseline (Dec 2019)	Home Visit (Nov 2020)	Growth	Sample Size*	Baseline	Endline	Growth	Sample Size
	Grade 1	Grade 2	Average	Average			Average	Average		
Reading letters+	56%	73%	75%	87%	12 pp	N = 1,494	49%	98%	49 pp	N = 15,394
Reading words+	14%	24%	26%	50%	24 pp		12%	81%	69 pp	
Recognize 2-dig numbers	24%	35%	38%	60%	22 pp		33%	93%	60 pp	

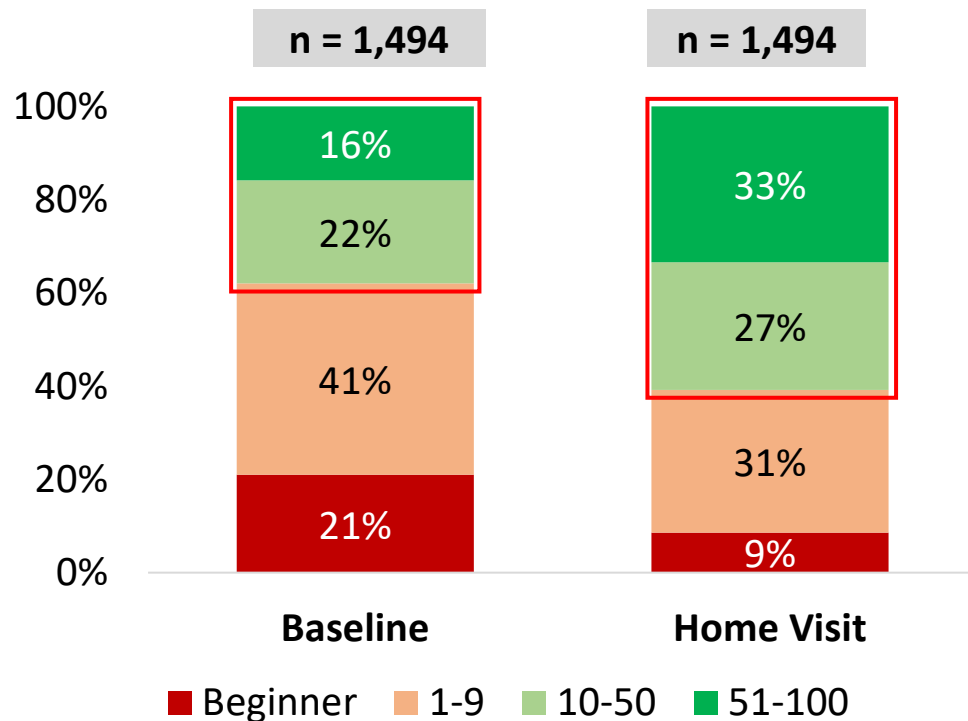
**Note on STRIPES 2.0 sample size: The sample size consists of those children for whom both Baseline and Home Visit assessment was conducted*

Learning Change Compared to Baseline Assessment

Number Recognition

Learning Change (Number Recognition)

Overall: Baseline vs Home Visits



Learning Changes

		Home Visit (Nov 2020)				Total
		Beginner	1-9	10-50	51-100	
Baseline (Dec 2019)	Beginner	31%	45% 1 level up	24% moved 2 levels up or more		314
	1-9	4% 1 level down	42%	35% 1 level up	19% 2 levels up	613
	10-50	1% 2 level down	15% 1 level down	35%	49% 1 level up	331
	51-100	6% moved 2 levels down or more		12% 1 level down	82%	236
	Total	129	457	409	499	1,494

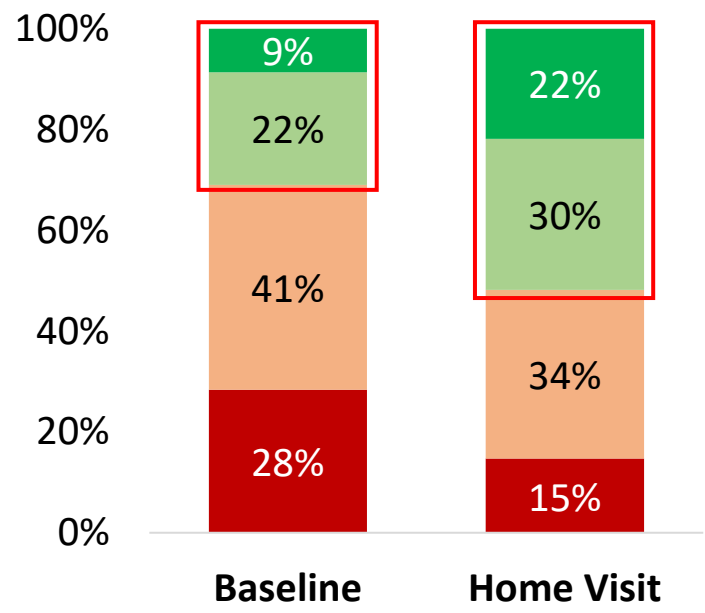
47% children had a **gain**, **8%** had a **loss**, **44%** had **no change**

- From the baseline assessment to the home visit assessment, **overall % of children who could recognize 2-digit numbers has increased from 38% to 60%**
- 47% children had an improvement in their number recognition level** – this improvement may be the result of various factors including PI classes, daily messages, inputs from govt/private schools

Learning Change (Number Recognition) – By Grade Distribution

Std 1 Children

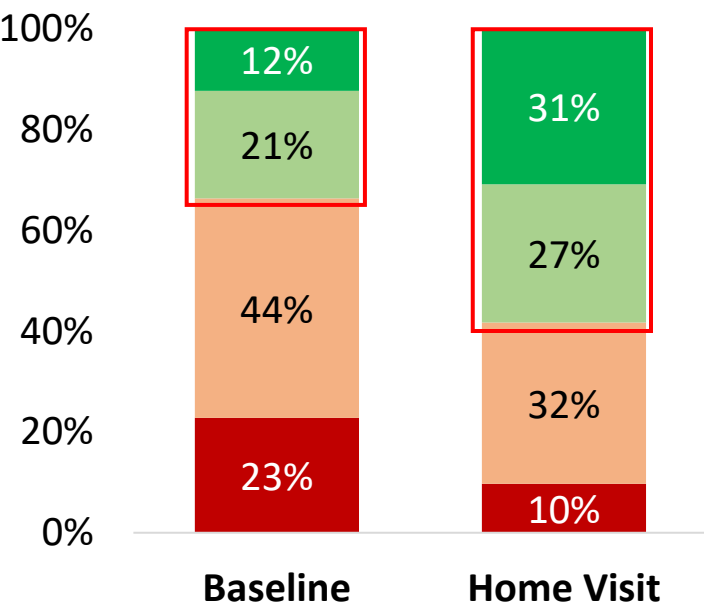
n = 197



■ Beginner ■ 1-9 ■ 10-50 ■ 51-100
46% children had a gain, 10% had a loss, 44% had no change

Std 2 Children

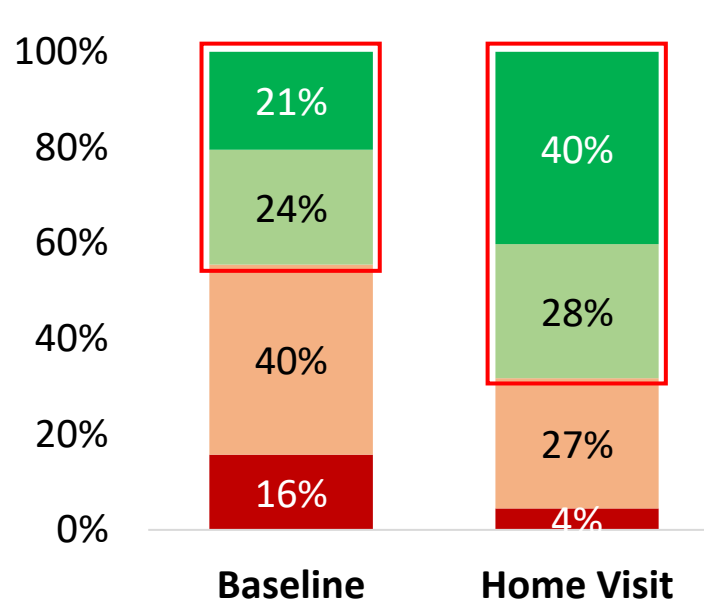
n = 544



■ Beginner ■ 1-9 ■ 10-50 ■ 51-100
48% children had a gain, 8% had a loss, 45% had no change

Std 3 Children

n = 624



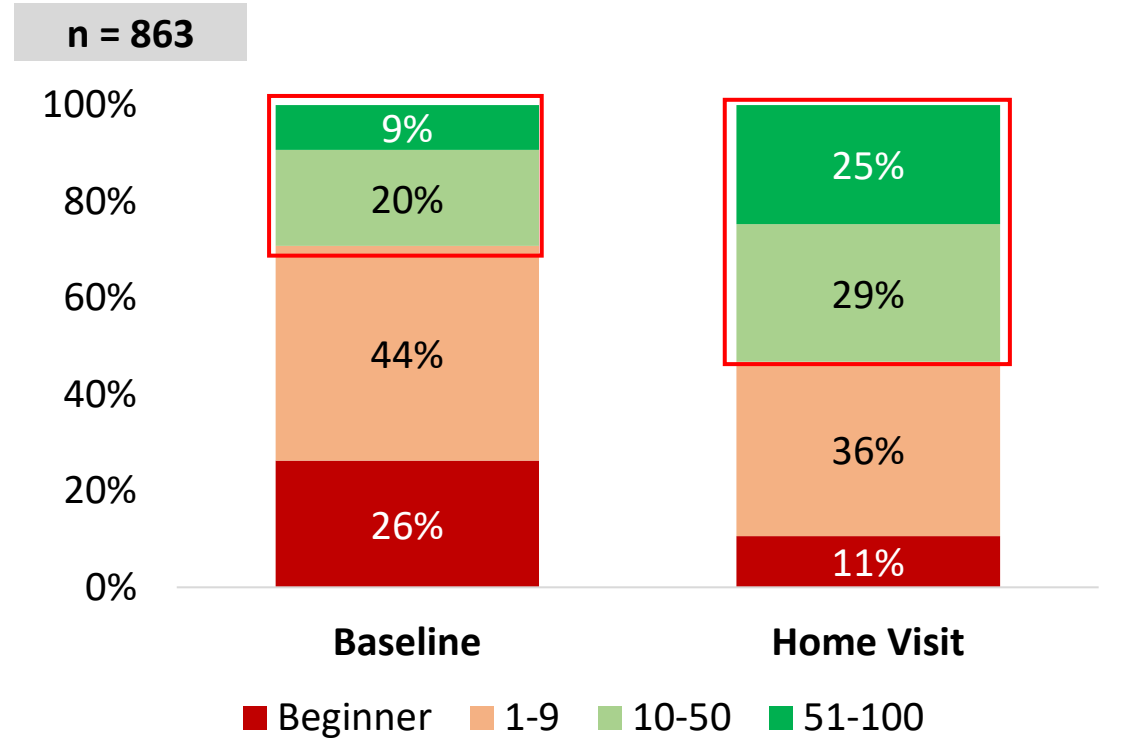
■ Beginner ■ 1-9 ■ 10-50 ■ 51-100
49% children had a gain, 7% had a loss, 44% had no change

- Both baseline and home visit learning levels are higher across higher grades
- **Children from all grades had learning gains over the course of one year**

% Children at 2 Digit Level			
	Baseline	Home visit	Diff
Std 1	31%	52%	21pp
Std 2	33%	58%	25 pp
Std 3	45%	68%	23 pp

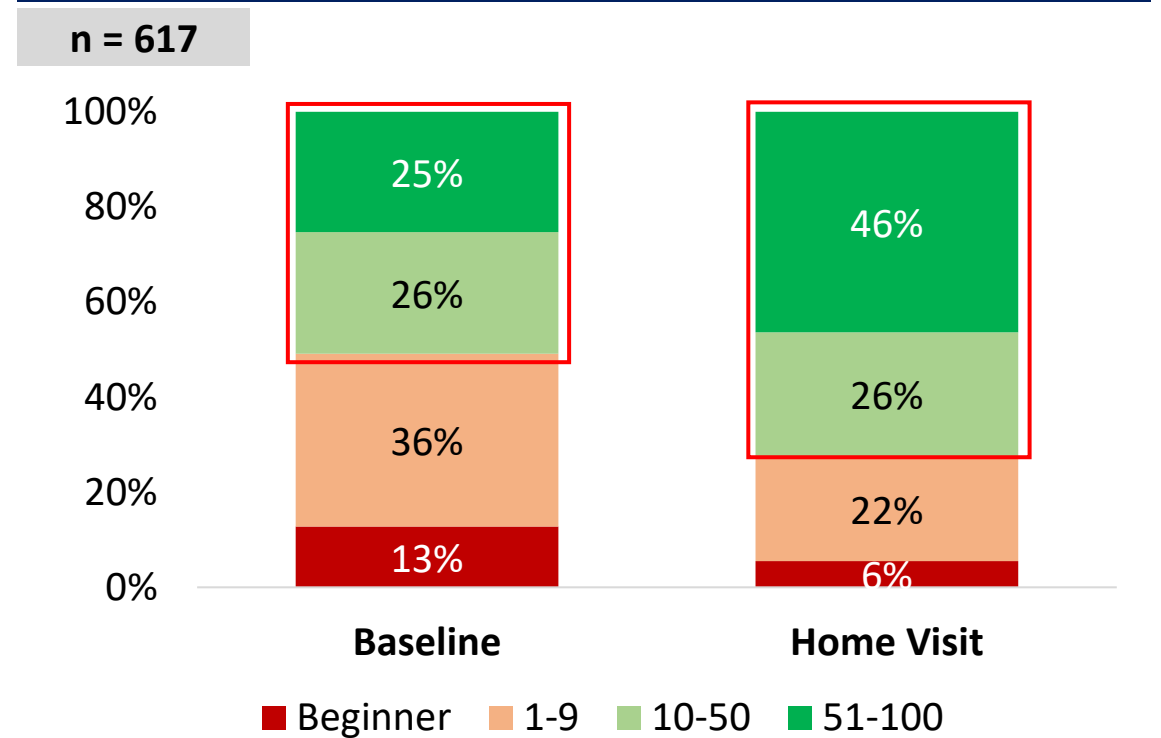
Learning Change (Number Recognition) – By Govt vs Private Schools

Children from Govt Schools



50% children had a gain, 7% had a loss, 43% had no change

Children from Private Schools



44% children had a gain, 9% had a loss, 47% had no change

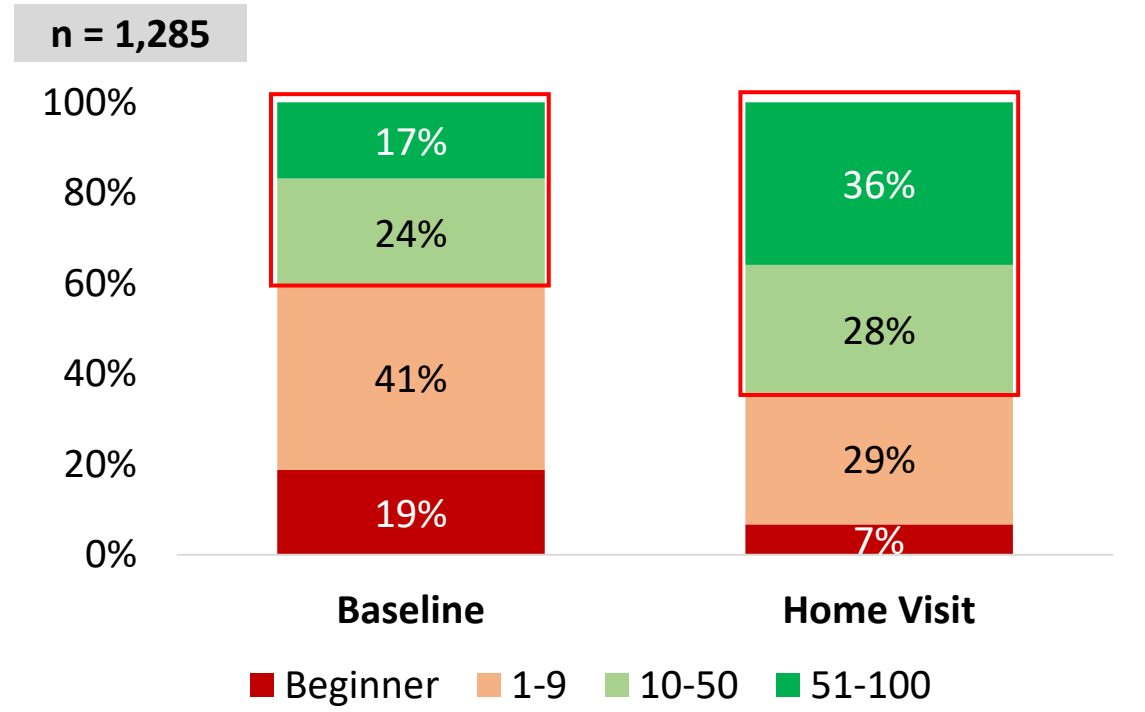
- Both, children from private and govt schools, had learning gains over the course of a year

% Children at 2 Digit Level			
	Govt schools		
	Baseline	Home visit	Diff
Std 1	18%	38%	21 pp
Std 2	28%	53%	25 pp
Std 3	34%	60%	26 pp

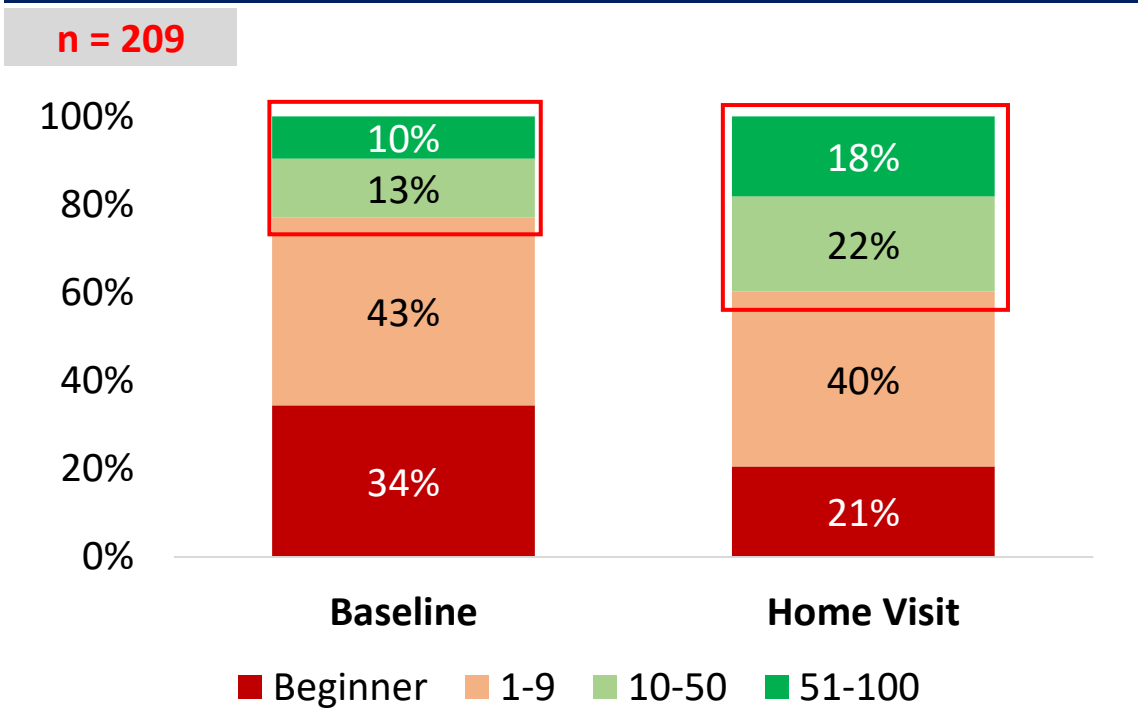
% Children at 2 Digit Level			
	Private schools		
	Baseline	Home visit	Diff
Std 1	47%	68%	21 pp
Std 2	44%	67%	24 pp
Std 3	59%	80%	20 pp

Learning Change (Number Recognition) – For children who receive messages vs those who don't

Children who receive daily messages



Children who do not receive daily messages



49% children had a gain, 8% had a loss, 44% had no change

40% children had a gain, 11% had a loss, 49% had no change

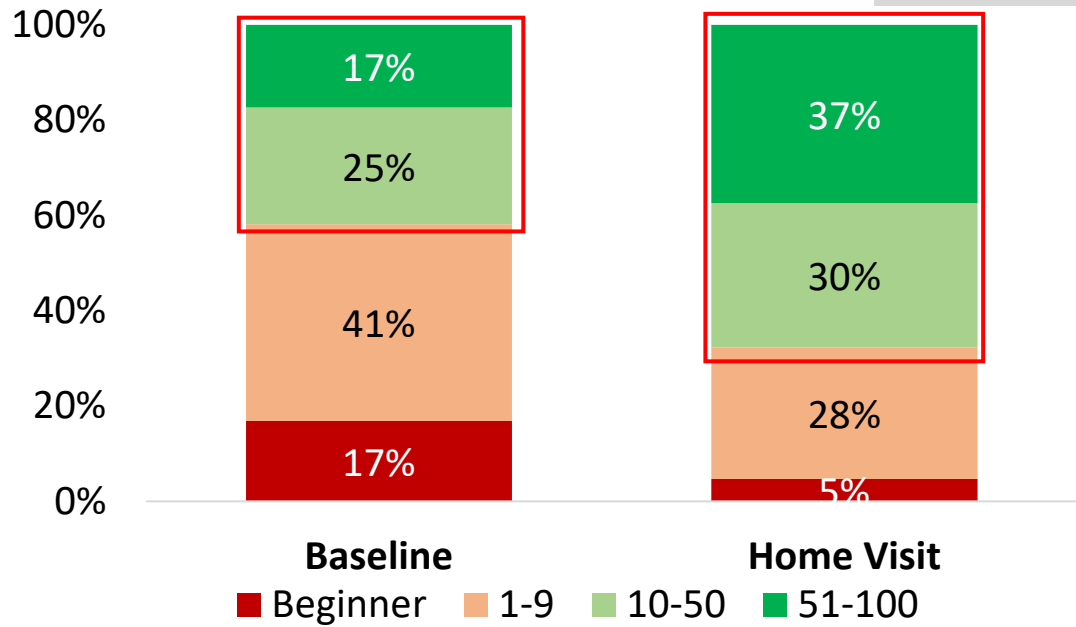
- % Children who had learning gains was higher when children were receiving messages
- 209 children weren't receiving messages as their families did not have access to a phone – hence the relatively lower gains in this group suggest that the digital divide has an impact on learning outcomes

% Children at 2 Digit Level			
	Baseline	Home visit	Diff
Messages	41%	64%	23 pp
No messages	23%	40%	17 pp

Learning Change (Number Recognition) – When messages were according to level vs not

Children for whom messages were according to level

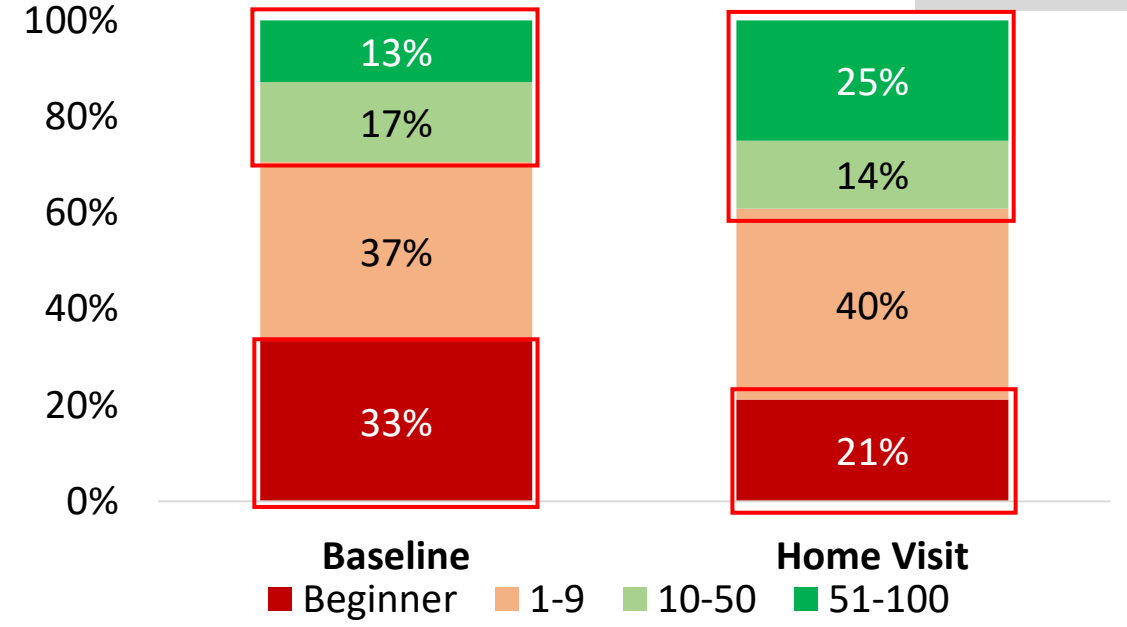
n = 1,130



51% children had a gain, 7% had a loss, 42% had no change

Children for whom messages were not according to level

n = 156



34% children had a gain, 9% had a loss, 57% had no change

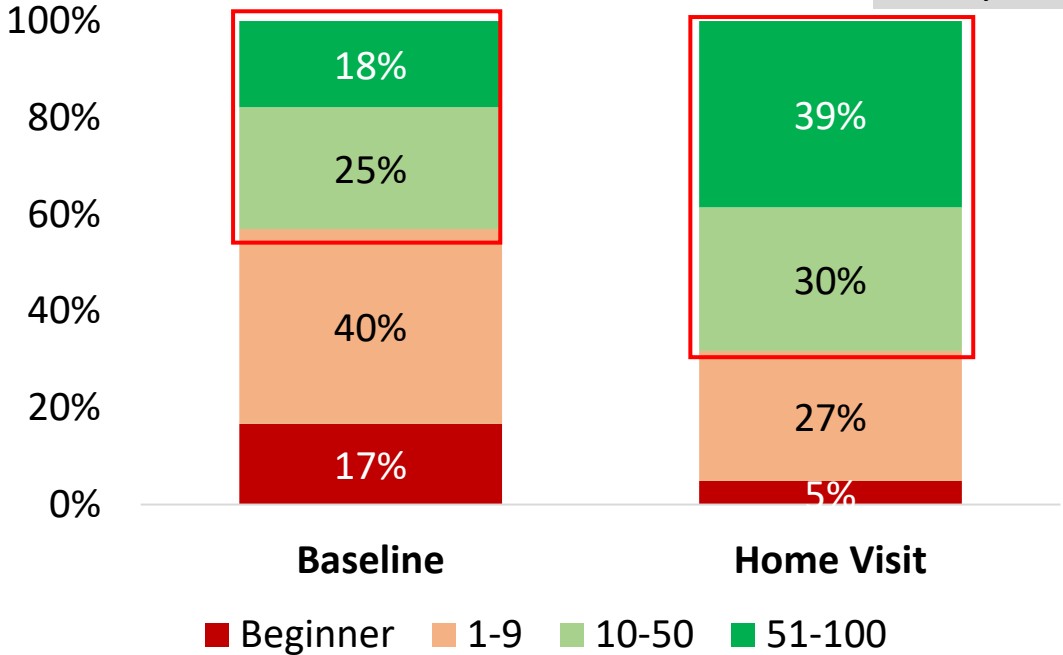
- For children of parents who reported that messages were not according to level, a significant proportion were beginners at baseline
- **The % of children who had learning gains was higher when the messages were according to level**

% Children at 2 Digit Level			
	Baseline	Home visit	Diff
Level appropriate	42%	67%	25 pp
Not Level appropriate	30%	39%	9 pp

Learning Change (Number Recognition) – When children learnt something from messages vs not

Children who learnt something from messages

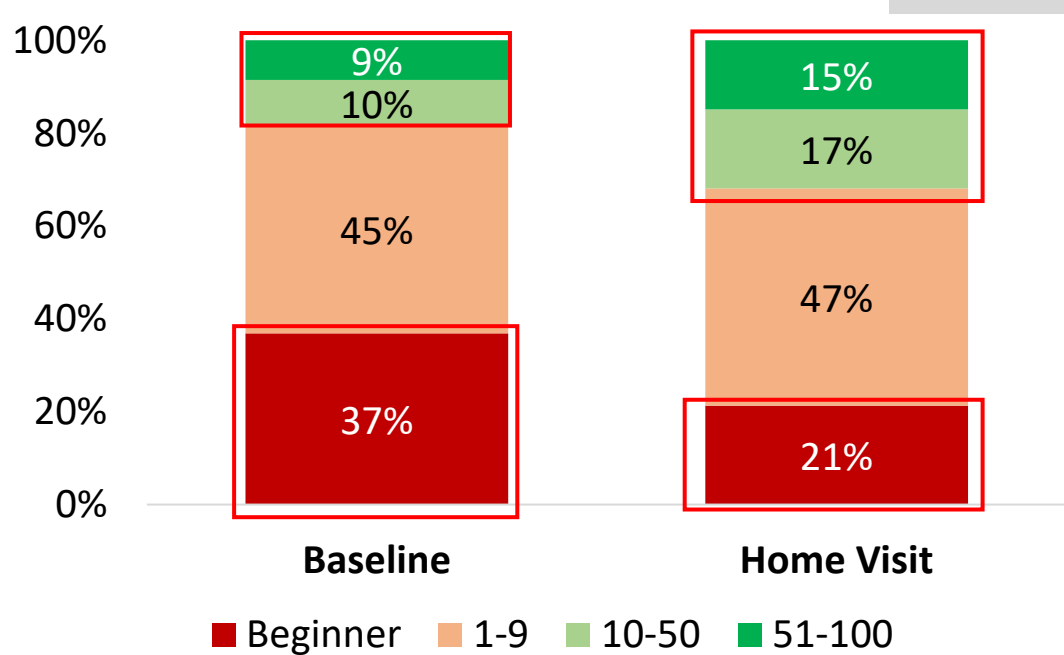
n = 1,1145



50% children had a gain, 8% had a loss, 43% had no change

Children who did not learn something from messages

n = 141



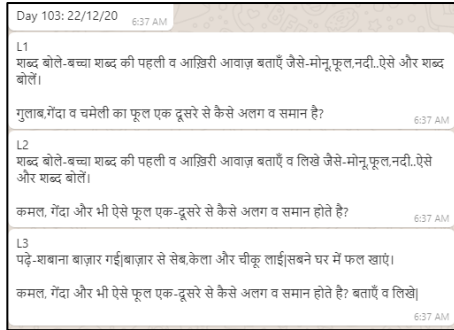
38% children had a gain, 9% had a loss, 53% had no change

- For children of parents who reported that there is no learning from messages, a significant proportion were Beginners at baseline
- The % of children who had learning gains was higher when there was some learning from messages

% Children at 2 Digit Level			
	Baseline	Home visit	Diff
Learnt something	43%	69%	26 pp
Did not learn something	19%	32%	13 pp

Next Steps

- **Since 15th December 2020, messages are being sent according to children's learning levels. Hence it will be important to track the progress of Beginner and Letter children to understand whether level-appropriate messages lead to learning improvements.**



Example of level appropriate messages

- Since children have had significant learning gains over the course of one year, it is important to track the inputs that they have received, apart from Pratham (i.e. from schools, private tuitions etc.). This will help us **understand the impact of various inputs on learning improvements.**
- Furthermore, it is also important to explore the **relationship between the extent of home-support with learning improvements.**