

Spreading Improvement Times Tables

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Aim: 85% of pupils in class P5/6, will know* their times tables by 01 December 2017.

Subsequent Aim: By 01 November 85% pupils will know* the 4 times table.

Project Objective: To spread best practice for children learning their times tables from P7 to P5/6 class and test whether this approach mirrored improvement and generated any further learning.

Method

Primary 7 teacher modelled process from assessment through to pupil participation.

Assessment

*Pupils can correctly answer three random multiplication questions as well as an inverse multiplication question e.g. $7 \times 3 = ?$ $6 \text{ } 7\text{s?}$ $? \times 7 = 49$.

- **Green** score 3: Fluent (i.e. answering within 3 seconds) for all questions within a given table.
- **Amber** score 2: Some knowledge but inconsistent in accuracy and/or slow on recall.
- **Red** score 1: little to no knowledge.
- Any anomalies when baselining noted e.g. finding inverse tricky.

Masters

- Children consistently answering three random questions about any times tables are awarded 'Master' status (tested once a week for retention).
- Masters act as a buffer for the testing process: children must be approved (assessed) by a master before coming to the teacher.

Pupil Participation

- Pupils generated their own change ideas.

Process Change

Spread learning from P7 class:

- Times table selected was determined by baseline assessment

Name	x2	x3	x4	x5	x6	x7	x8	x9	x10	Total
Pupil A	3	1	1	2	1	1	1	1	3	14
Pupil B	2	2	1	3	1	1	1	1	3	15
Pupil C	1	1	1	1	1	1	1	1	3	11
Pupil D	3	3	3	3	3	3	3	3	3	27
Pupil E	3	3	3	3	3	1	3	1	3	23
Baseline	12	6	0	13	0	0	0	2	21	

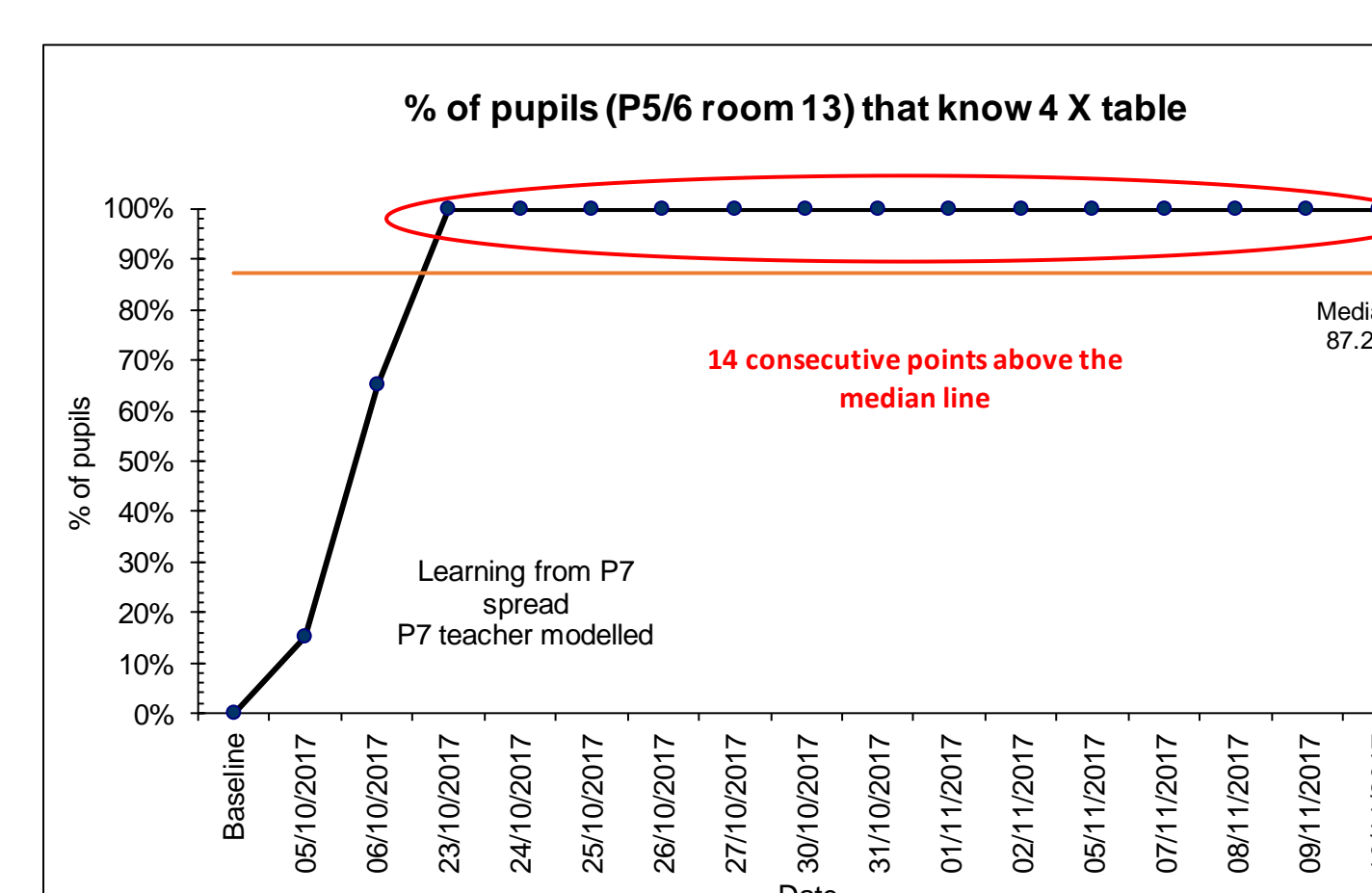
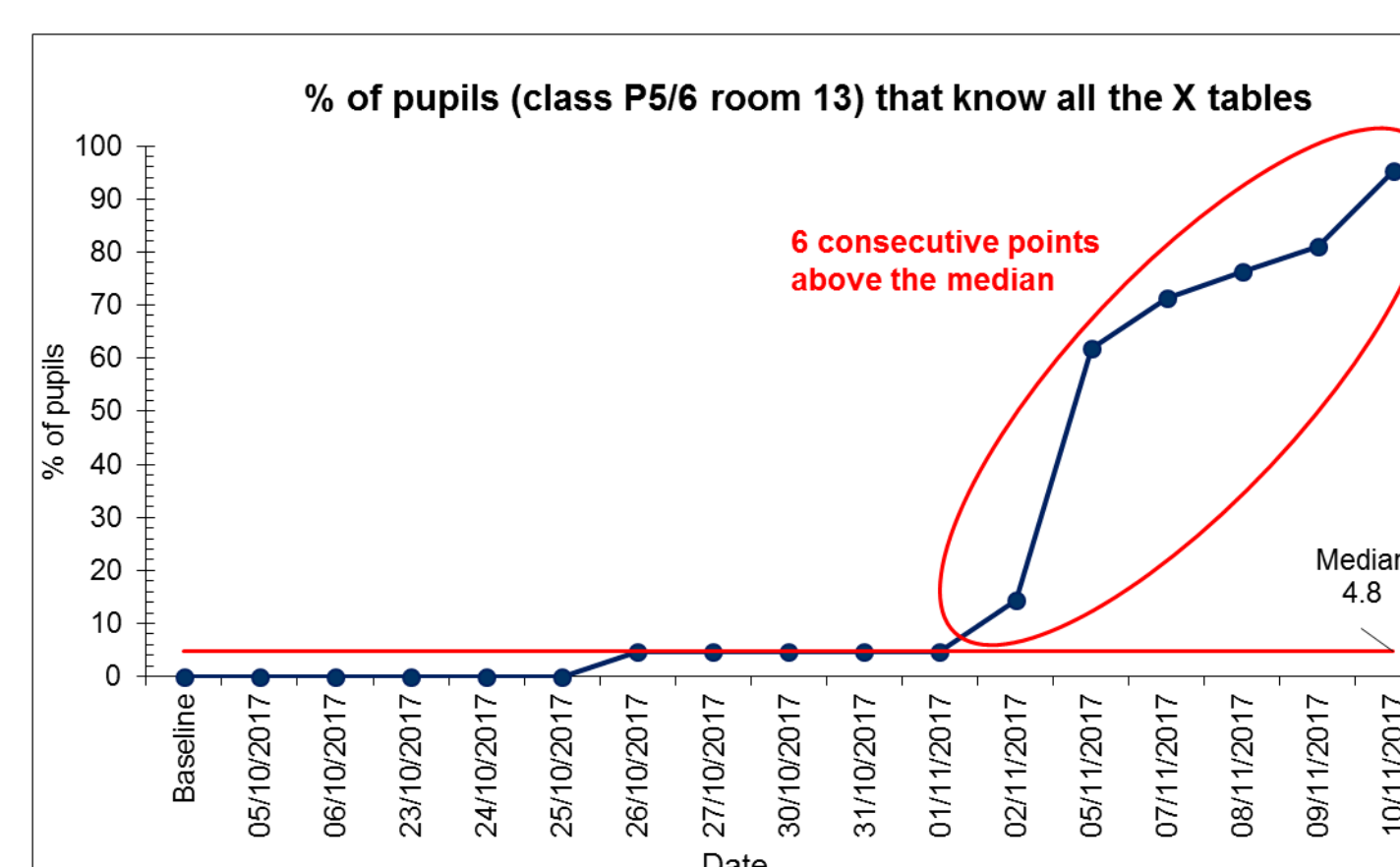
In order to make the biggest gain we began with one of the tables that the least children knew.

- Daily focus on multiplication tables (15 mins).
- Parental engagement (letters/texts).
- Key strategies: cheat sheets, magic stick and peer assessment.
- Random sampling on a daily basis to ensure retention.

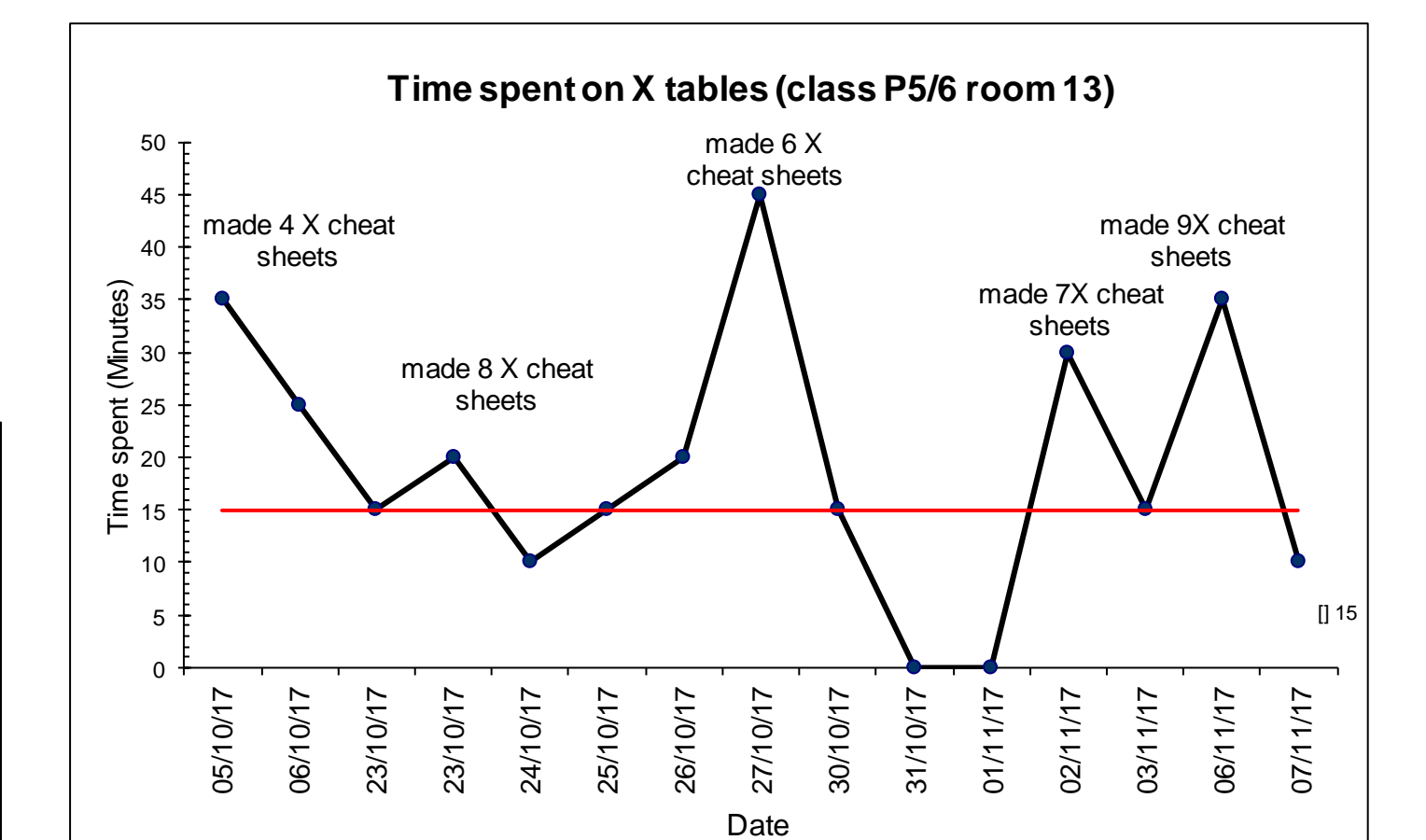
Achievements

- Number of children who knew all their times tables rose from 0-95% over 4 academic weeks.
- Improvement gains exceeded project aims and projected timescale.
- Increase in teacher's understanding and confidence of applying the Model for Improvement at classroom level.
- Demonstration of improvement has generated a buzz with the teacher excited to share her data and learning with others.

Results



"I was very keen to improve numeracy within my classroom. I realised that most children were not secure on their times tables which is fundamental to many areas of maths." (class teacher)

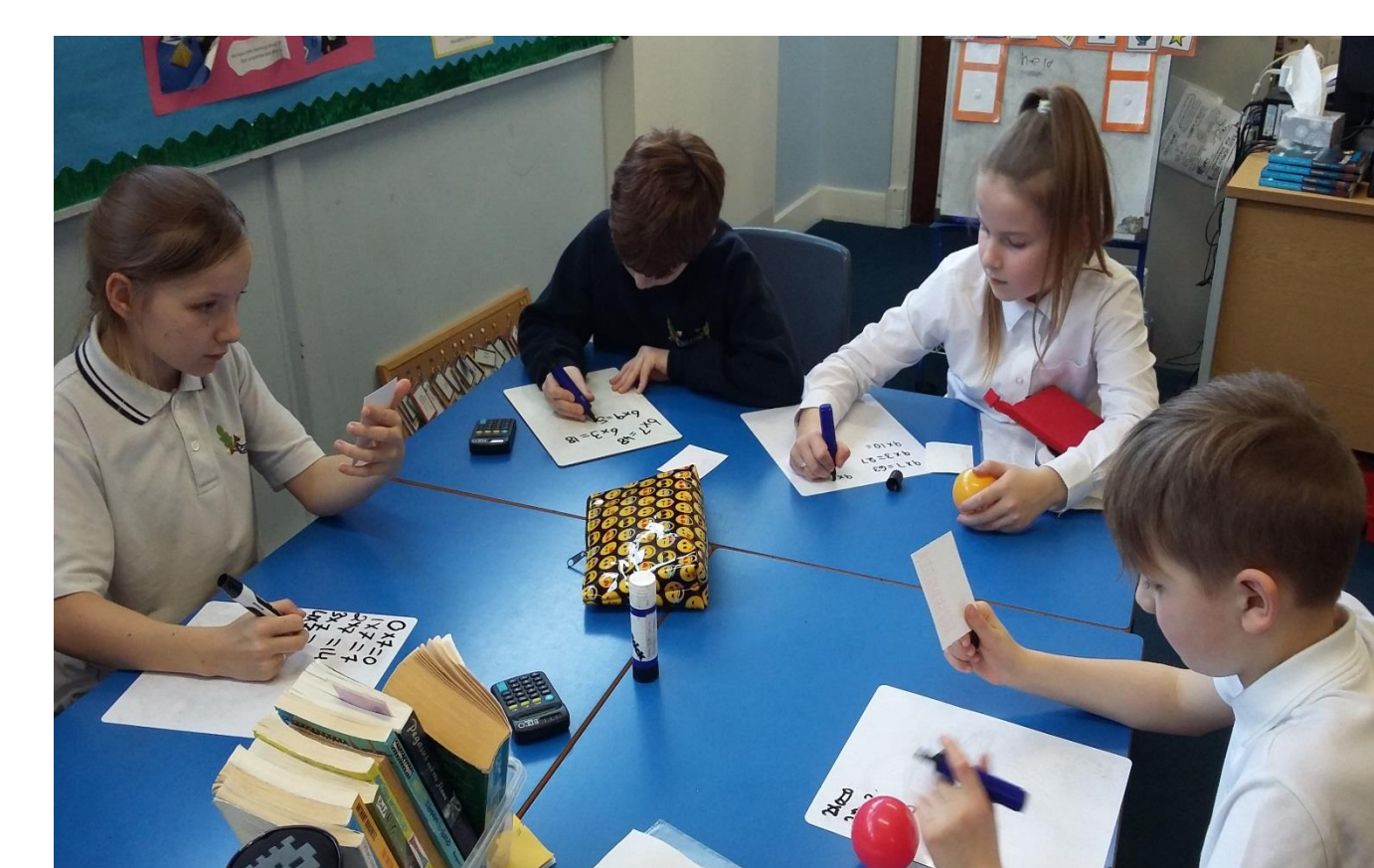


"Setting aside time daily was worth it, the children were so engaged and completely motivated to improve their score, and also helping others." (class teacher)

Conclusions

- Learning from P7 class was successfully spread.
- Children learned the tables within P5/6 class because we utilised learning from P7.
- Time spent on times tables was considered acceptable (15 mins daily).
- Having success in two classes has encouraged other teaching staff to engage with the Model for Improvement.

"Using cheat sheets and practising everyday has helped almost everyone in our class learn all their times tables." (P6 Pupil)



"It's really helped with dividing and fractions." (P6 Pupil)

Key Learning Points

- Spreading learning from P7 worked for P5/6 children.
- P5/6 teacher found process relatively easy to implement.
- P7 teacher modelled intervention ensuring consistency during implementation.
- Children found inverse multiplication challenging.
- Younger children appear to master their times tables quicker.