

Aim: 85% of pupils in class P7B, will know* their times tables by 22nd December 2017.

Subsequent Aim: By 14th September 85% (26/30) pupils will know* the 9 times table.

Fluent recall of times tables are considered an essential prerequisite to success in multiplication and other mathematical concepts (Ofsted, 2010).

Method

Our first step was to agree operational definitions and carry out baseline assessment.

Assessment

*Pupils can correctly answer three random multiplication questions including 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 across all 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.

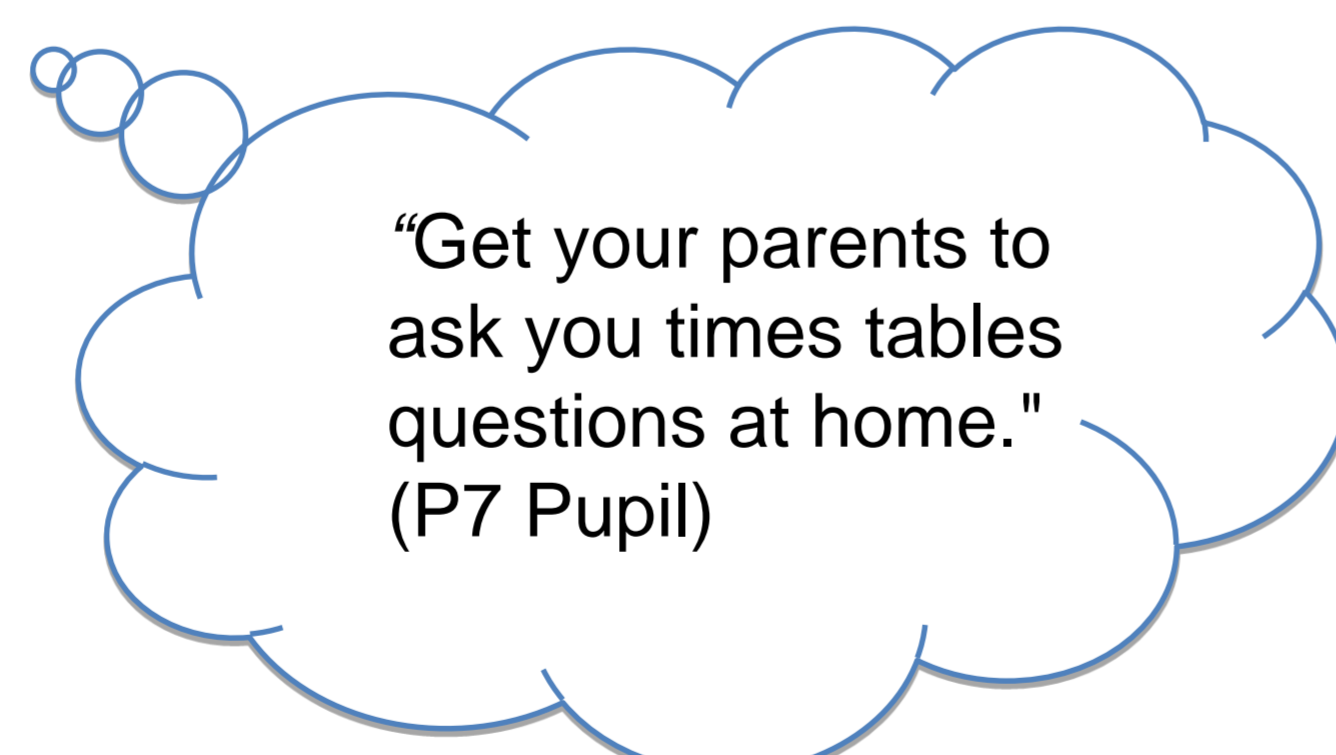
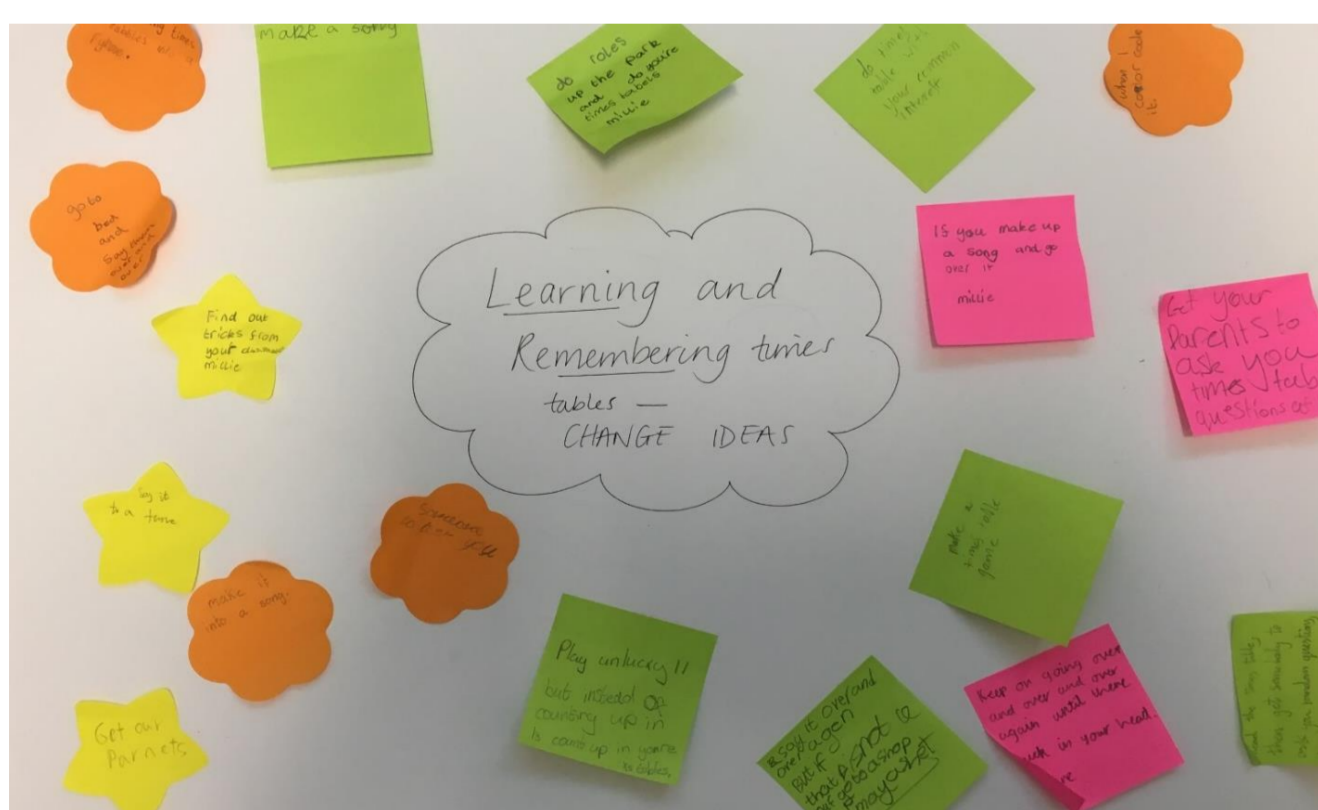
Process Change

- Times table selected was determined by baseline assessment.

Name	x2	x3	x4	x5	x6	x7	x8	x9	x10	Total
Child A	2	3	2	2	2	1	2	1	3	18
Child B	3	3	1	3	1	1	1	1	3	17
Child C	3	3	2	3	1	1	1	1	3	18
Child D	3	3	3	3	3	3	3	1	3	25
Child E	3	3	3	3	3	3	3	1	3	25
Baseline	16	9	7	16	6	6	9	5	26	2

In order to make the biggest gain we began with the table that the least children knew.

- We introduced a daily focus on multiplication tables (15 mins).
- Pupil Participation – pupils generated their own change ideas.

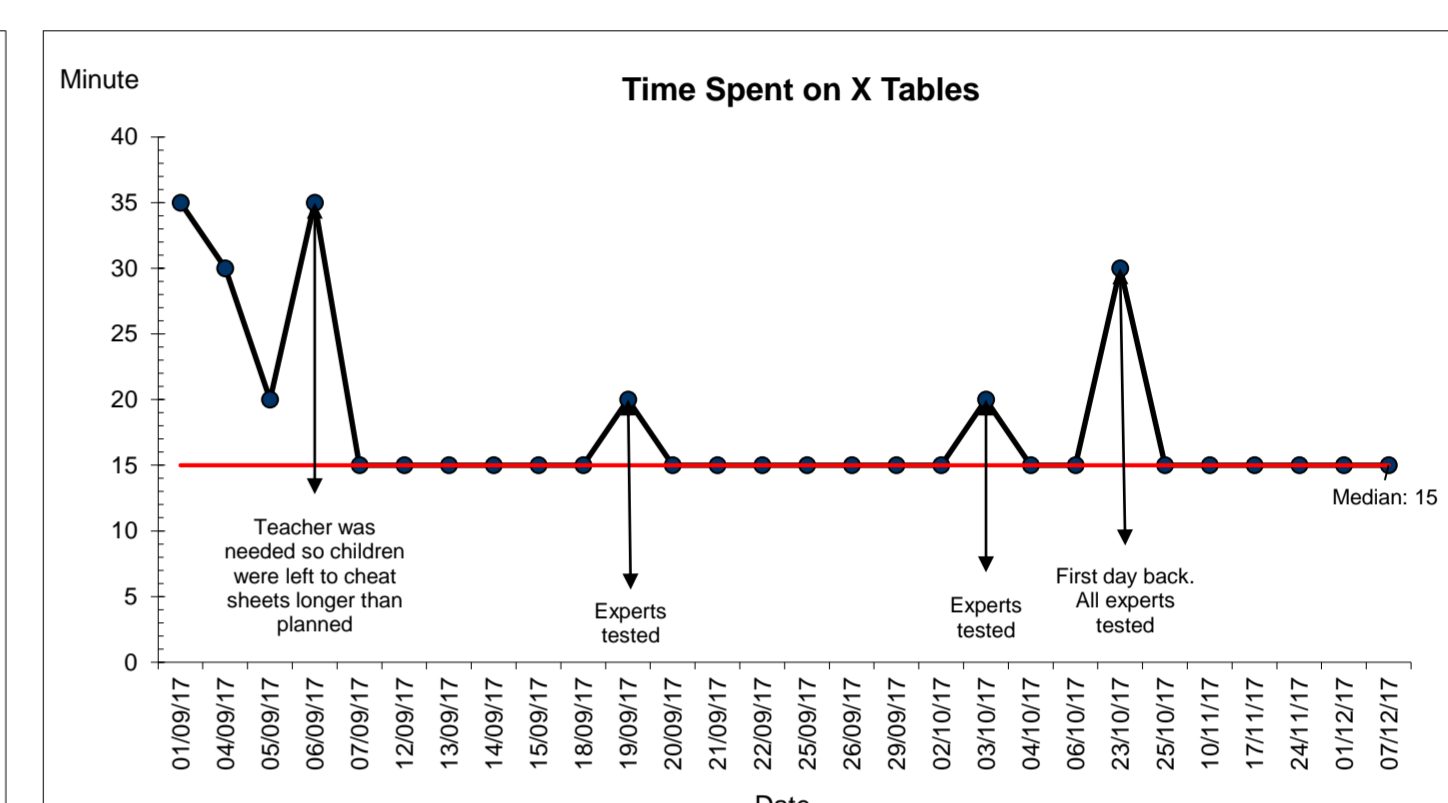
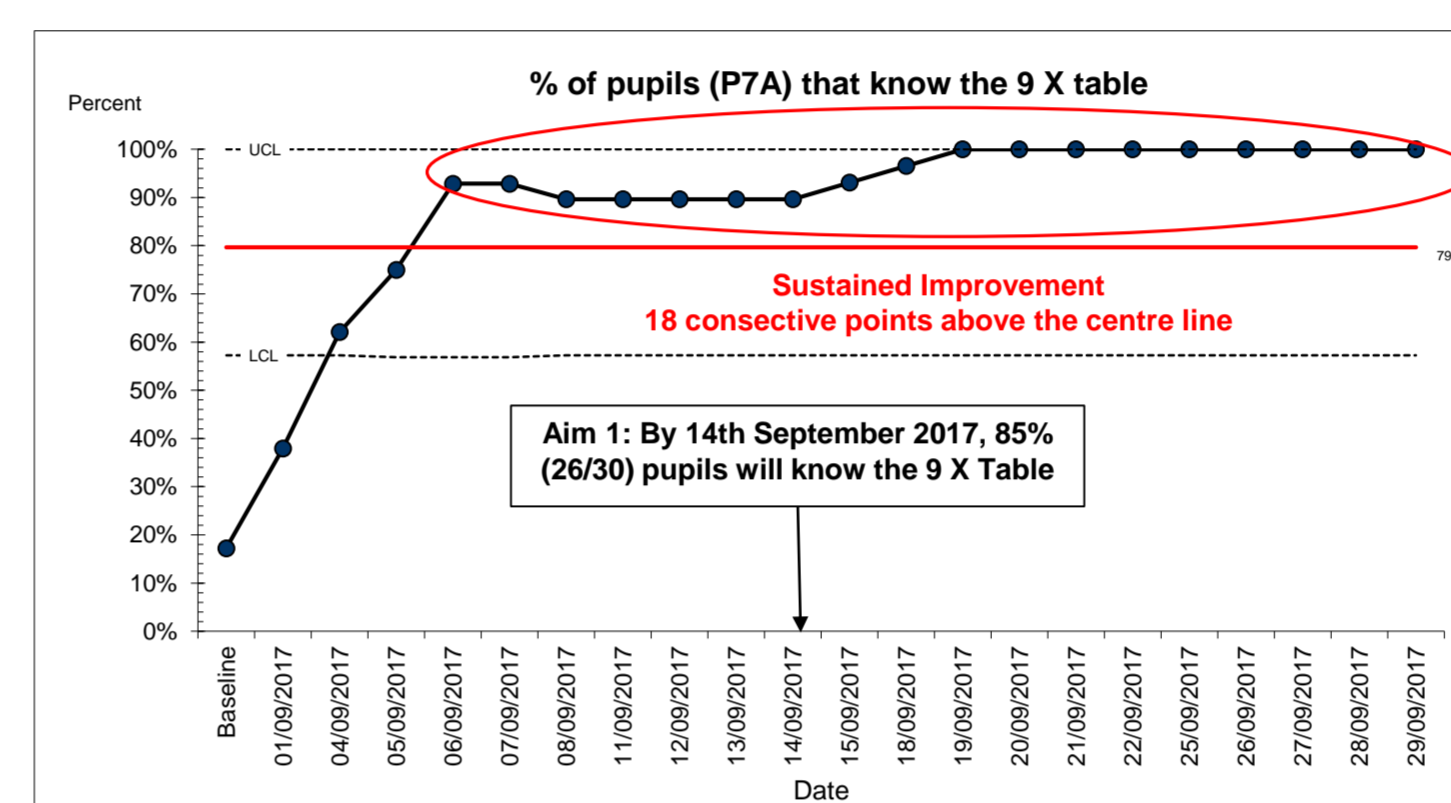
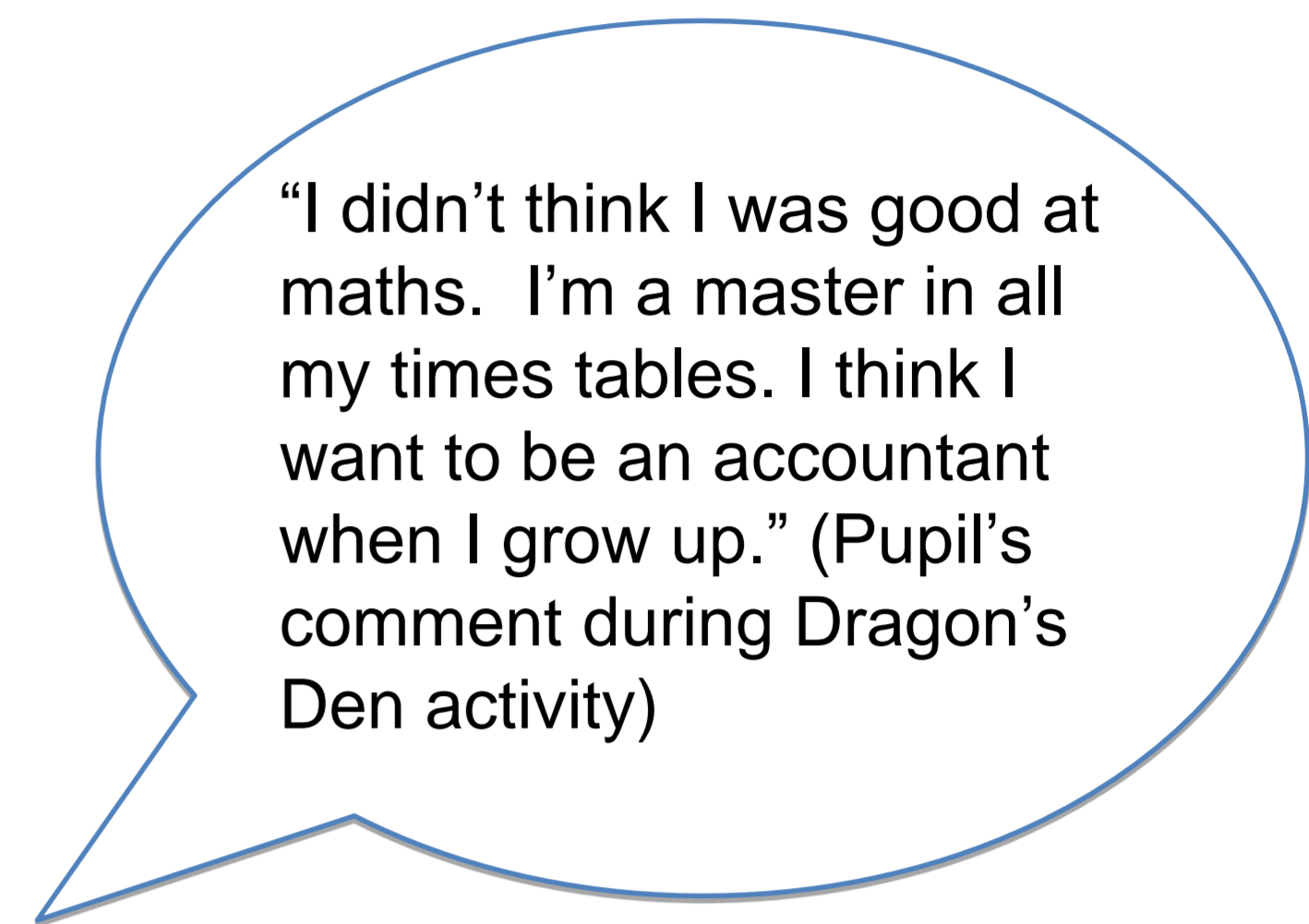
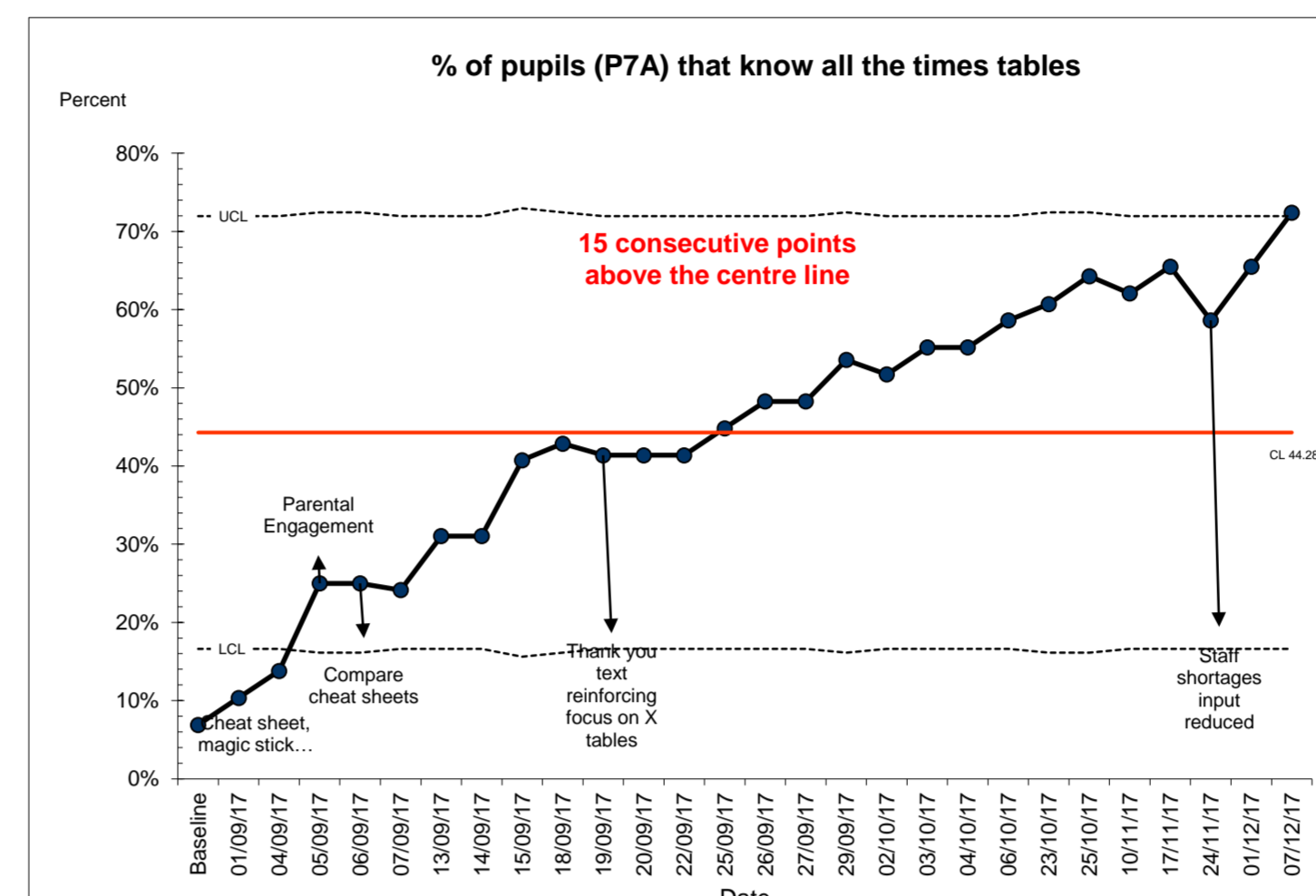


- Parental engagement (letters/texts).
- Key strategies: cheat sheets, magic stick and peer assessment.

Achievements

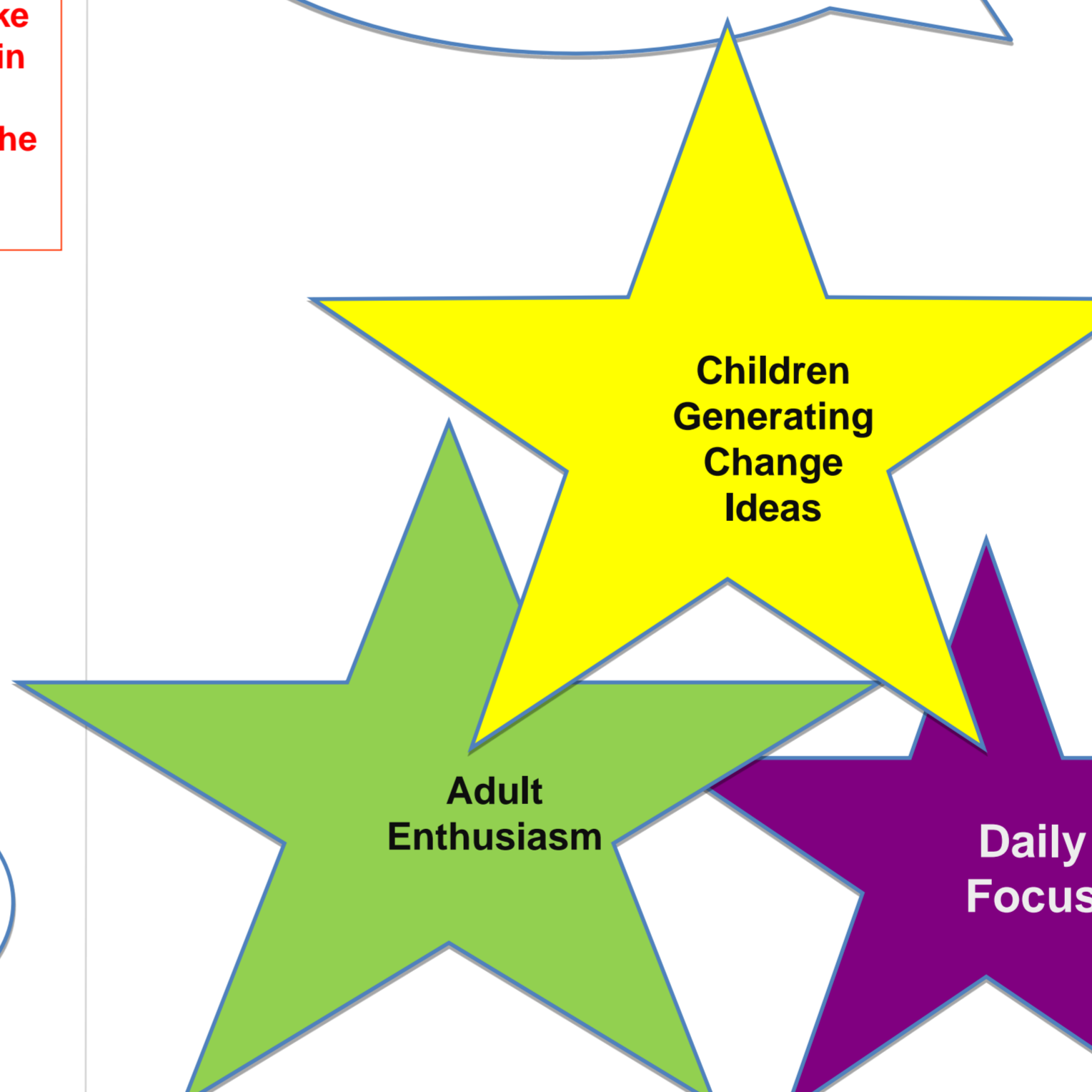
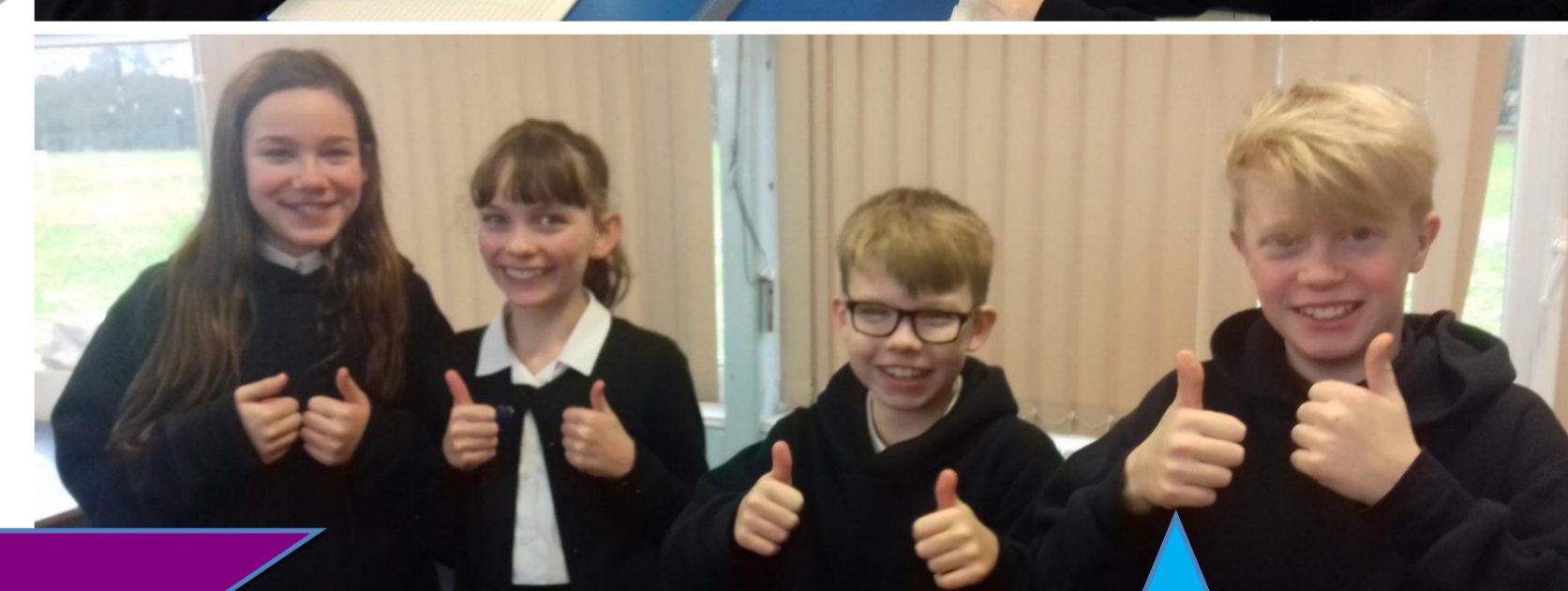
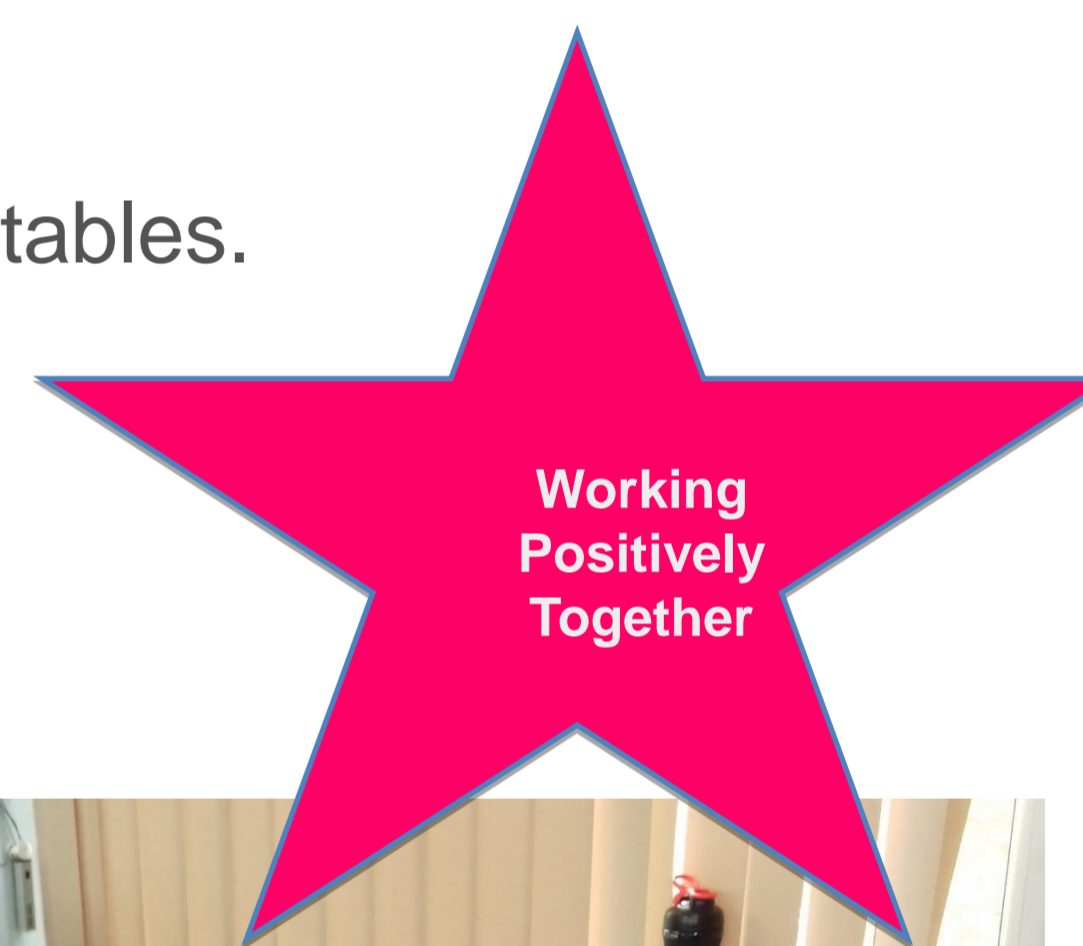
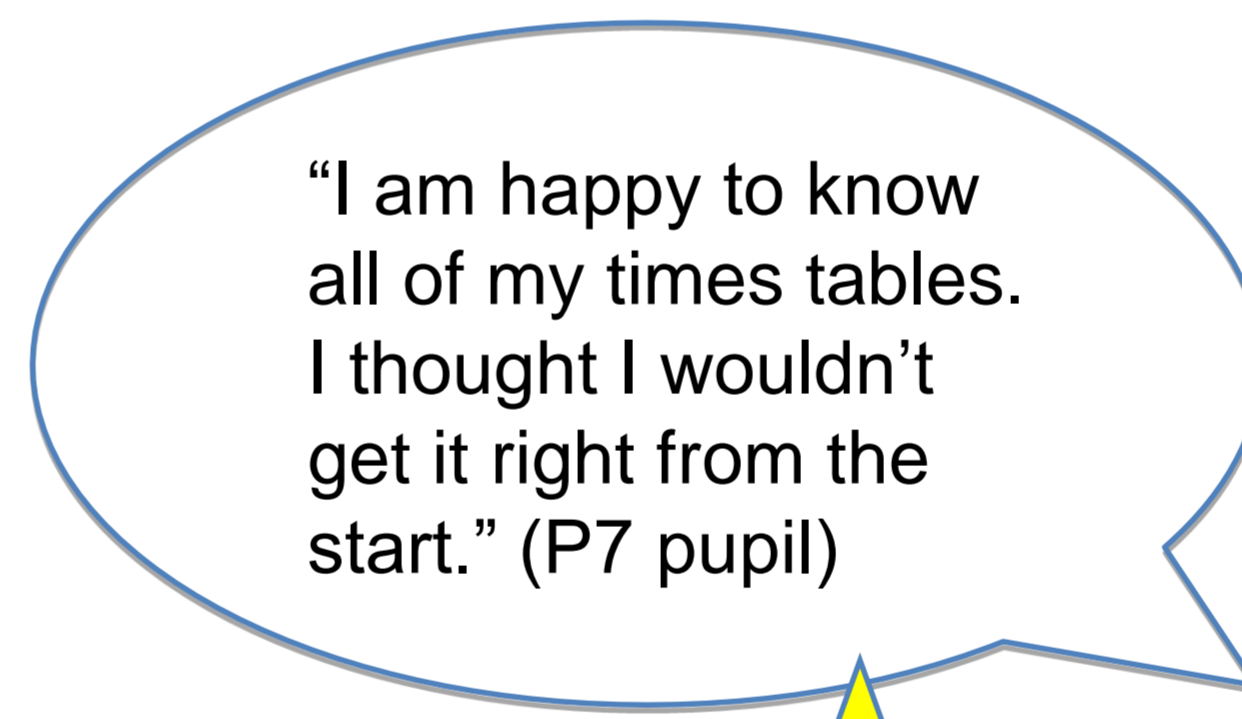
- Number of P7 children who knew all their times tables rose from 7% in September to 70% in December.
- Improvement has been successfully spread to P5/6 class (0-95% over 4 academic weeks).
- Increased teacher's understanding and confidence of applying the Model for Improvement at classroom level.
- Improvement gains generated a real enthusiasm for learning.

Results



Conclusions

- Children enjoyed feeling the success of 'going green!'
- Knowledge of tables is ensuring children are capable in other mathematical concepts e.g. fractions.
- Children with dyscalculia can learn their times tables.



Key Learning Points

- The daily input is delivered with high energy and enthusiasm.
- **Self regulated learning with children taking responsibility for:**
 - learning process (e.g. change ideas, cheat sheet design).
 - their readiness for assessment.
 - choosing which table to conquer next.
 - checking progress by seeing their greens on the Spreadsheet
- Aim high for all! Some children we thought would struggle (e.g. pupils with dyscalculia) excelled.
- Link multiplication and division from the outset.
- Ongoing assessment to check for retention is needed.