
MathsHUBS
Norfolk and Suffolk
Heacham Infant and Junior School
Maths Improvement Action Plan 2018-2019
Our Vision
Our vision is for every child at Heacham Infant and Junior School to develop effective numeracy and mathematics skills to enable them to thrive, prepare them for life and future learning.
In order to realise our vision for the children of Heacham Infant and Junior School, the following aims have been set.
1. All staff will provide excellent, high quality experiences to promote engagement and motivation, inspiring all learners to meet their individual needs in mathematics.
2. The curriculum will ensure that all children achieve their potential through clear challenge and progression in their learning from Early Years and throughout KS1 and KS2.
3. Effective feedback guides pupils in their learning process and provides them with the tools/direction they need to be successful.
4. All partners work in collaboration to develop and enrich numeracy and mathematics experiences for all children in school and beyond.
Part-part-whole Number Bonds
Fluency
Reasoning
Problem Solving
What are the key drivers for achieving our vision?
Maths Mastery implementation 'Power Maths'
Performance Analysis (tracking and monitoring)
Research based guidance (EEF)
Curriculum Design
ENGAGEMENT
CHALLENGE
FEEDBACK
Education Endowment Foundation
PiXL
The whole-class mastery approach that works for every child
POWER MATHS

FINDINGS/QUESTIONS

- Are we providing enough challenge in KS2?
- Are we making it clear about what pupils need to do to improve - next steps/targets?
- How can we make maths more engaging, more fun?

UKS2

- 90% of pupils enjoy maths lessons.
- 90% of pupils understand what they are learning and feel that teachers explain things well.
- 70% knew what they needed to improve on in maths.
- 80% of pupils felt that maths was a bit easier than other subjects.
- 90% complete homework regularly.
- Children explained that they would like the opportunity to explore patterns in numbers, reflection, symmetry. More challenge!

6th March 2019

LKS2

- 70% of pupils enjoy maths lessons.
- 100% understand what they are learning in lessons.
- Children said that access to resources was limited to number squares and rulers but would like to use other equipment to help build mathematical understanding.
- 80% of pupils complete homework tasks regularly.
- 60% knew what they needed to improve on in maths.
- 70% of pupils felt that maths lessons were a bit easier or about the same as other subjects.
- Most pupils felt that they were good at addition/subtraction and times tables. Areas to improve included division, fractions and worded problems.

KS1

- 80% of pupils enjoy maths lessons.
- 90% said that they understood what they were learning but struggle with new concepts.
- 100% of pupils use a range of resources to support their learning; Numicon, Base 10, bead strings and counters etc.
- 100% of pupils said that teachers explained things clearly.
- Only 10% knew what they needed to improve on.
- 100% told me that maths was a bit harder than other subjects.
- Less confidence among girls.

Heacham Infant and Junior School

Short Burst Maths Plan

Focus – To Develop Problem Solving and Reasoning skill

'Maths Detectives'

'Maths Detectives'

MI-5 Problem Solving Strategies

Compare

I can think of a similar calculation to this like.....

This is the same as.....because.....

This is different because.....

This is always true because.....

Pupils use a range of strategies when confronted with a problem.

Interpret

I understand that the question is asking me to.....

I know that this is the calculation I need to tackle first because.....

This tells me that.....

First.....next.....after that.....

Make connections between mathematical facts, procedures and concepts.

Reason

I already know that.....so.....

The pattern that I noticed was.....

I wonder whether.....

If.....then.....

I wondered why.....

Well-rehearsed methods are readily available!

Reflect

REFLECT

I checked by.....

I used this strategy because.....

Is the approach I am taking working?

What other approaches could I try?

What similar problems to this one have I solved in the past?

Pupils plan, monitor and evaluate their thinking and learning.

Communicate

I was systematic because.....

My strategy was not successful because.....

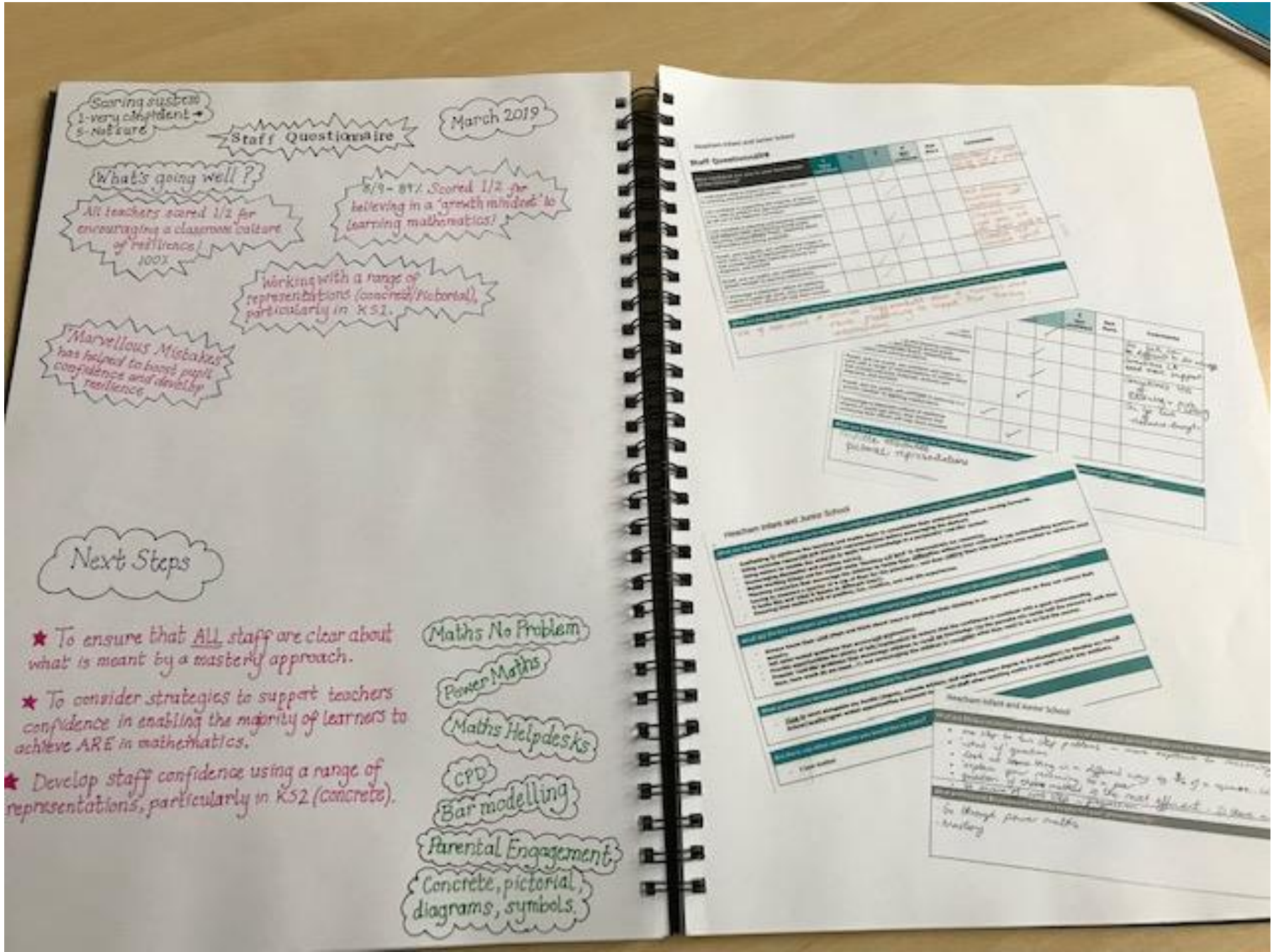
What worked well when solving this p

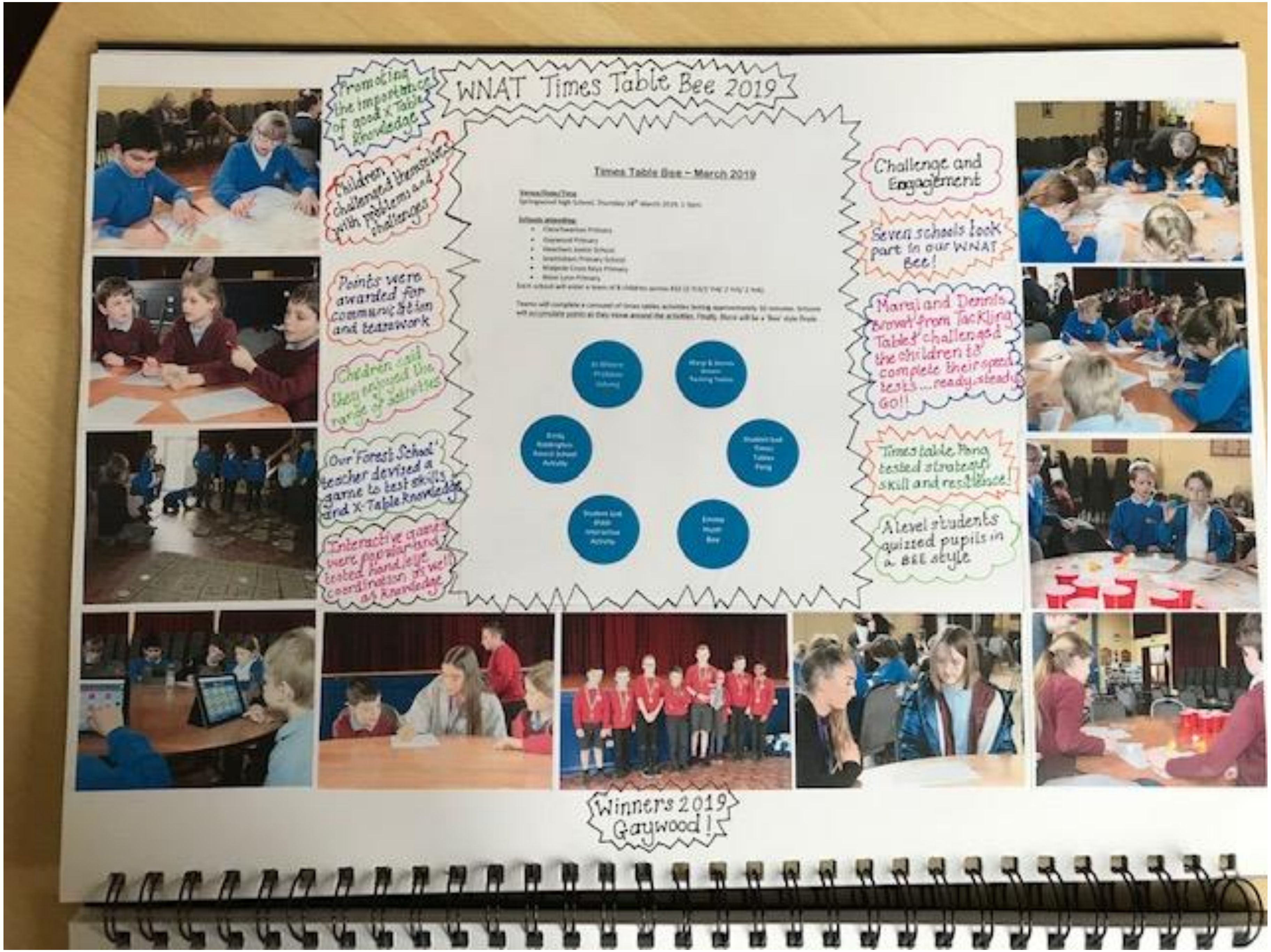
What didn't work well?

What other problems could be solv

similar approach?

Sentence s


Scoring system
1-very confident
5-unsure
Staff Questionnaire
March 2019
What's going well?
All teachers scored 1/2 for encouraging a classroom culture of resilience/ 100%
89% Scored 1/2 for believing in a 'growth mindset' to learning mathematics!
Working with a range of representations (concrete/pictorial), particularly in KS1.
Marvellous Mistakes has helped to boost pupil confidence and develop resilience
Next Steps
To ensure that ALL staff are clear about what is meant by a mastery approach.
To consider strategies to support teachers confidence in enabling the majority of learners to achieve ARE in mathematics.
Develop staff confidence using a range of representations, particularly in KS2 (concrete).
Maths No Problem
Power Maths
Maths Helpdesks
CPD
Bar modelling
Parental Engagement
Concrete, pictorial, diagrams, symbols


WNAT Times Table Bee 2019
Promoting the importance of good X Table Knowledge
Children challenged themselves with problems and challenges
Points were awarded for communication and teamwork
Children said they enjoyed the range of activities
Our 'Forest School' teacher devised a game to test skills and X-Table Knowledge
Interactive games were popular and tested hand/eye coordination as well as Knowledge
Times Table Bee – March 2019
Challenge and Engagement
Seven schools took part in our WNAT Bee!
Margi and Dennis Brown from Tackling Tables challenged the children to complete their speed tests... ready, steady, GO!!
Times table Pong tested strategy, skill and resilience!
A level students quizzed pupils in a BEE style
Winners 2019 Gaywood!

QLA-Autumn 2018

Task	Rationale	Actions/Resources to support implementation	Monitoring and impact	Evaluation
Priority 3 To ensure robust assessments, including QLAs, build on pupils' knowledge and inform planning, teaching and strategic intervention. How? Complete assessments termly/TA half termly to monitor the progress of all pupils. Plan interventions following QLA.	New assessments being introduced autumn 2018 (PIXL KS2) and this will require QLA termly. This will also provide teachers with information/bonus to target any marginal pupils and fill gaps in knowledge. Question Level Analysis of the KS2 2018 papers shows that areas requiring improvement include: Algebra, Ratio and Proportion and Measurement. What are the strengths/weaknesses of other cohorts?	Half termly TA and termly formal assessments completed. PIXL – QLA, Bangles, tracker and resources. Informal observations of pupils. Interventions are put in place to address misconceptions quickly. Teachers plan lessons to address potential misconceptions before they arise. (Pre-teach pupils where necessary) Hold 'Feedback' at staff meeting – Jan 19 Teachers must ensure that feedback is efficient. The EEF suggest that teachers should consider the following characteristics of effective feedback: • be specific, accurate and clear; • give feedback sparingly so that it is meaningful; • compare what a pupil is doing right now with what they have done wrong before; • encourage and support further effort by helping pupils identify things that are hard and require extra attention; • provide guidance to pupils on how to respond to teachers' comments; • provide specific guidance on how to improve rather than just telling pupils when they are incorrect.	SL monitoring of interventions, teacher feedback and assess impact. Peer planning. Assessment timetable supplied by the trust followed. Pupil asset monitored for progress and attainment. Work samples collected.	Did exemplification take place before moderation? Did moderation happen termly? Did termly assessments and QLAs inform next steps and intervention? Is feedback used effectively across the schools? Are strengths/weaknesses of cohorts/groups known?

Year 2

Areas of concern:
- Finding ½/¼/⅛ of an amount
- Multiplication & division
- Adding/subtracting two 2-digit numbers
- Fractions of shapes
- Word problems involving money and measures.

Year 3

Areas of concern:
- Fractions - finding fractions of amounts
- Adding and subtracting fractions
- Multiplication and division
- Adding 3-digit numbers

Year 4

Areas of concern:
- Fractions of shapes/quantities
- Measures - converting units
- Area of shapes
- Statistics
- Comparing mass

Year 5

Areas of concern:
- Multiplying 2 and 3 digits by 1 digit
- Multiplication and division
- Converting measures - hours/mins etc
- Percentage/decimal equivalent

Year 6

Areas of concern:
- Ordering numbers with up to 3 decimal places
- Solve problems - time/converting measures
- Pairs of numbers that satisfy equations

QLA-Spring 2019

Year 2

Areas of concern:
- Subtraction
- Money - using coins to make an amount/finding change
- TU crossing exchanging
- Missing number problems.

Year 3

Areas of concern:
- Mass (g, kg) solving probs
- 3 part missing number problems
- Fractions of objects/shapes

Year 4

Areas of concern:

Year 5

Areas of concern:
- Multiplying larger numbers
- Fractions
- Reasoning - multi-step word problems.

Year 6

Areas of concern:
- Measures - volume/mass/miles-km
- Averages
- Fractions, decimals, percentages
- Multi-step problems

QLA-Summer 2019

ART ROOM

From conversations with staff and their feedback, I realised teachers were finding it hard to find art resources as they were scattered across the school. We were also running low on supplies. As well as putting in a large order for supplies, I also arranged for the art resources to all be moved + collected behind the cookery room. I then organised the resources according to the type of art e.g. paint shelf, printing shelf, sculpture shelf...

Paints organised according to colour

Pastels shelf

Clay/sculpture shelf

Printing shelf

Craft bits + books (feathers etc)

Adhesive shelf

Fabric shelf (dyes + salts)

Art trip - Stones of Lynn

We arranged for the Y3 + Y4 children to go on an art trip to King's Lynn. The children got to work with a real printing artist! We got them to dress up as artists for the day (Either Andy Warhol, Frida Kahlo, Georgia O'Keefe, Pablo Picasso or an artist of their choice) they looked fantastic! The children based their prints on symbols and patterns they noticed from old maps of King's Lynn. We also even walked to the river Ouse to put the maps in context and learnt where the old river used to be

Pablo Picasso!

We sketched our designs first before carving them onto styrofoam
We used tracing paper to help us reverse our letter
We used a felt-tip to practice drawing our design on our tile before carving

Our printing tiles →

We had professional artists to help us with our designs and show us what to do

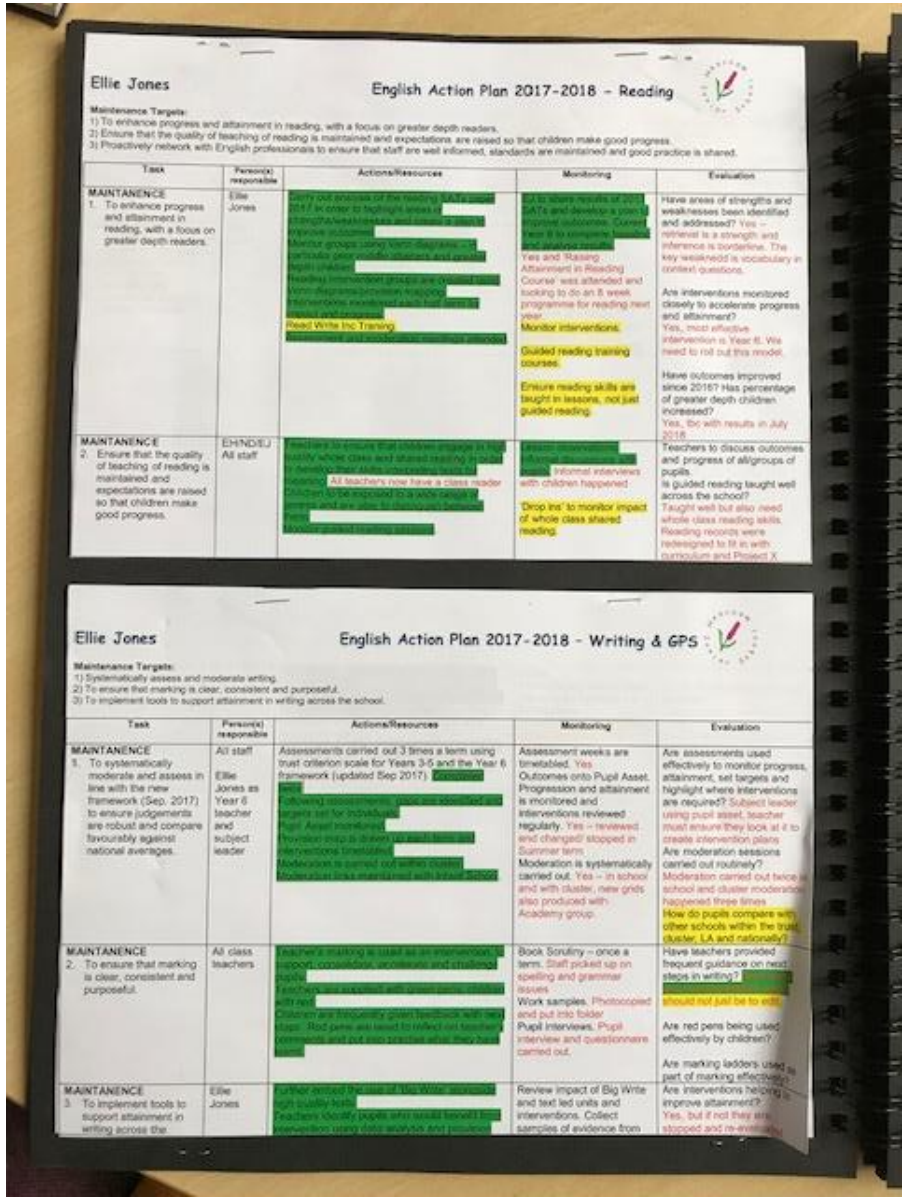
We had a range of colours to print with

← Some of us tried using more than 1 colour on our tile - it was very effective

Smithdon Art Exhibition

ENVIRONMENTS

Each class created a piece of artwork for the Smithdon Art Exhibition



Ellie Jones

English Action Plan 2017-2018 – Reading

Maintenance Targets:
1) To enhance progress and attainment in reading, with a focus on greater depth readers.
2) Ensure that the quality of teaching of reading is maintained and expectations are raised so that children make good progress.
3) Proactively network with English professionals to ensure that staff are well informed, standards are maintained and good practice is shared.

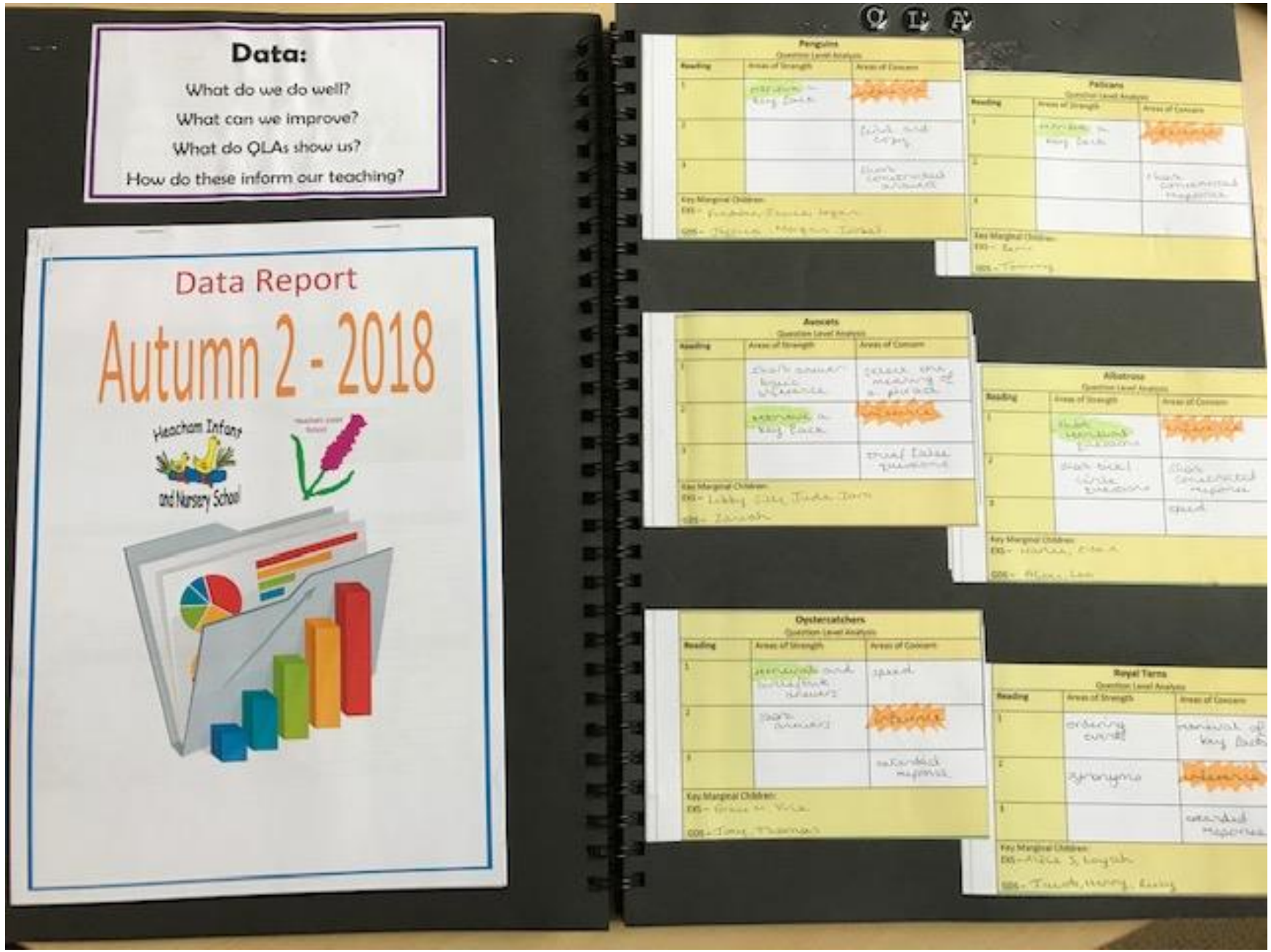
Task	Person(s) responsible	Actions/Resources	Monitoring	Evaluation
MAINTANENCE 1. To enhance progress and attainment in reading, with a focus on greater depth readers.	Ellie Jones	[redacted] Read Write Inc Training [redacted]	[redacted]	Have areas of strengths and weaknesses been identified and addressed? Yes – retrieval is a strength and inference is contentine. The key weakness is vocabulary in context questions. Are interventions monitored closely to accelerate progress and attainment? Yes, most effective intervention is Year 6. We need to roll out this model. Have outcomes improved since 2016? Has percentage of greater depth children increased? Yes, tbc with results in July 2018
MAINTANENCE 2. Ensure that the quality of teaching of reading is maintained and expectations are raised so that children make good progress.	EH/ND/EJ All staff	[redacted] All teachers now have a class reader [redacted]	Lesson observations [redacted] Informal interviews with children happened 'Drop ins' to monitor impact of whole class shared reading.	Teachers to discuss outcomes and progress of all/groups of pupils. Is guided reading taught well across the school? Taught well but also need whole class reading skills. Reading records were redesigned to fit in with curriculum and Project X

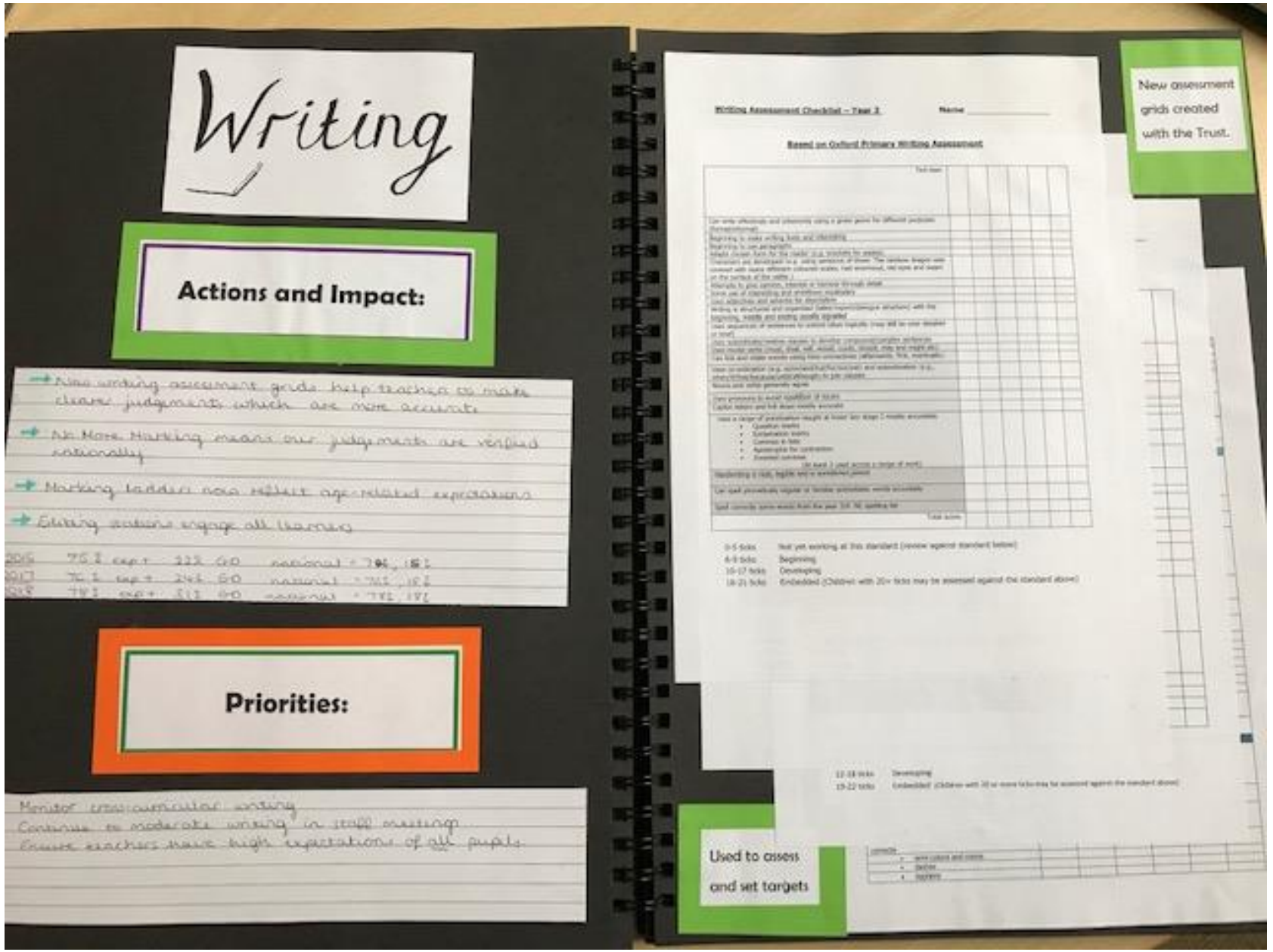
Ellie Jones

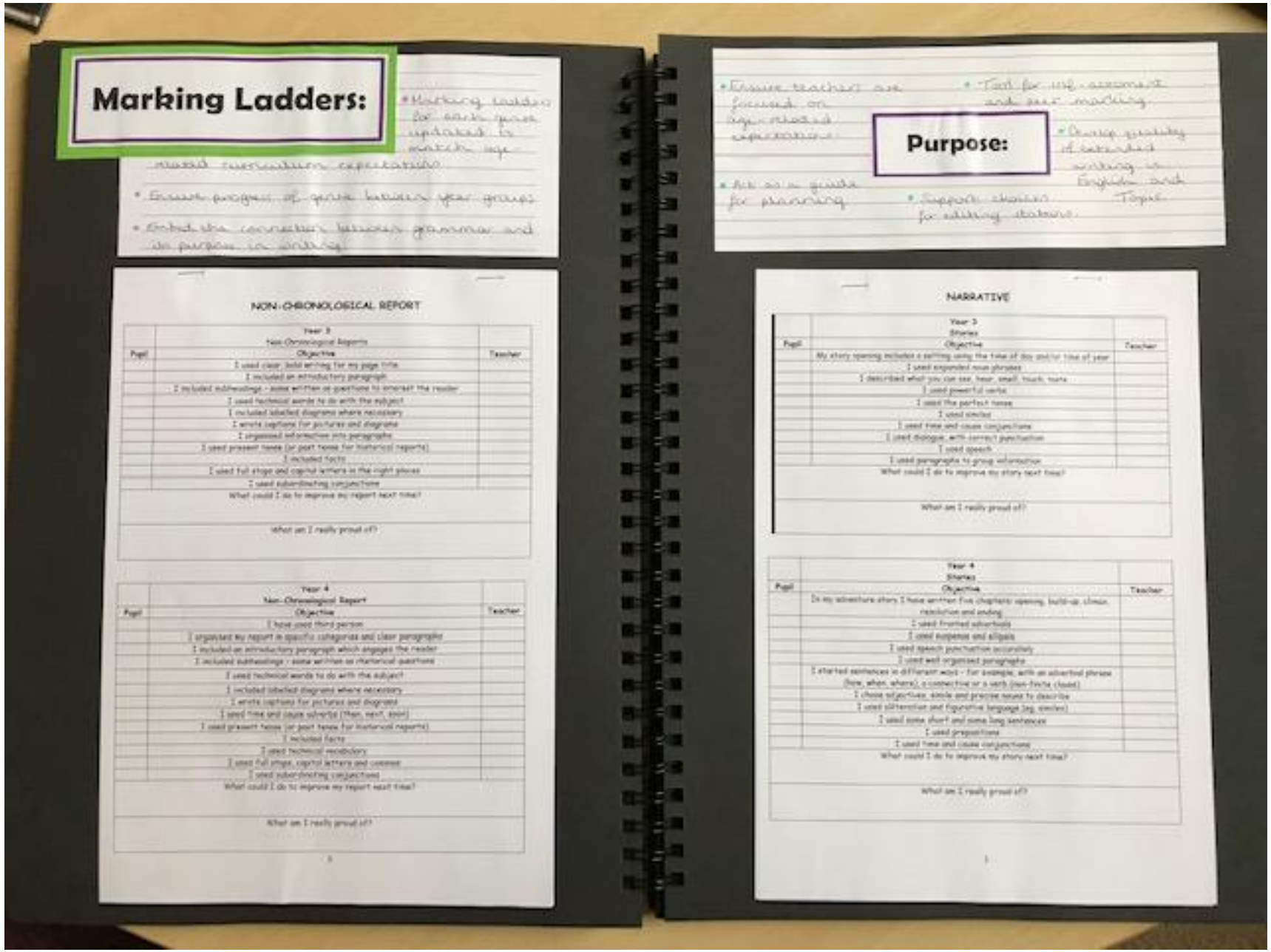
English Action Plan 2017-2018 – Writing & GPS

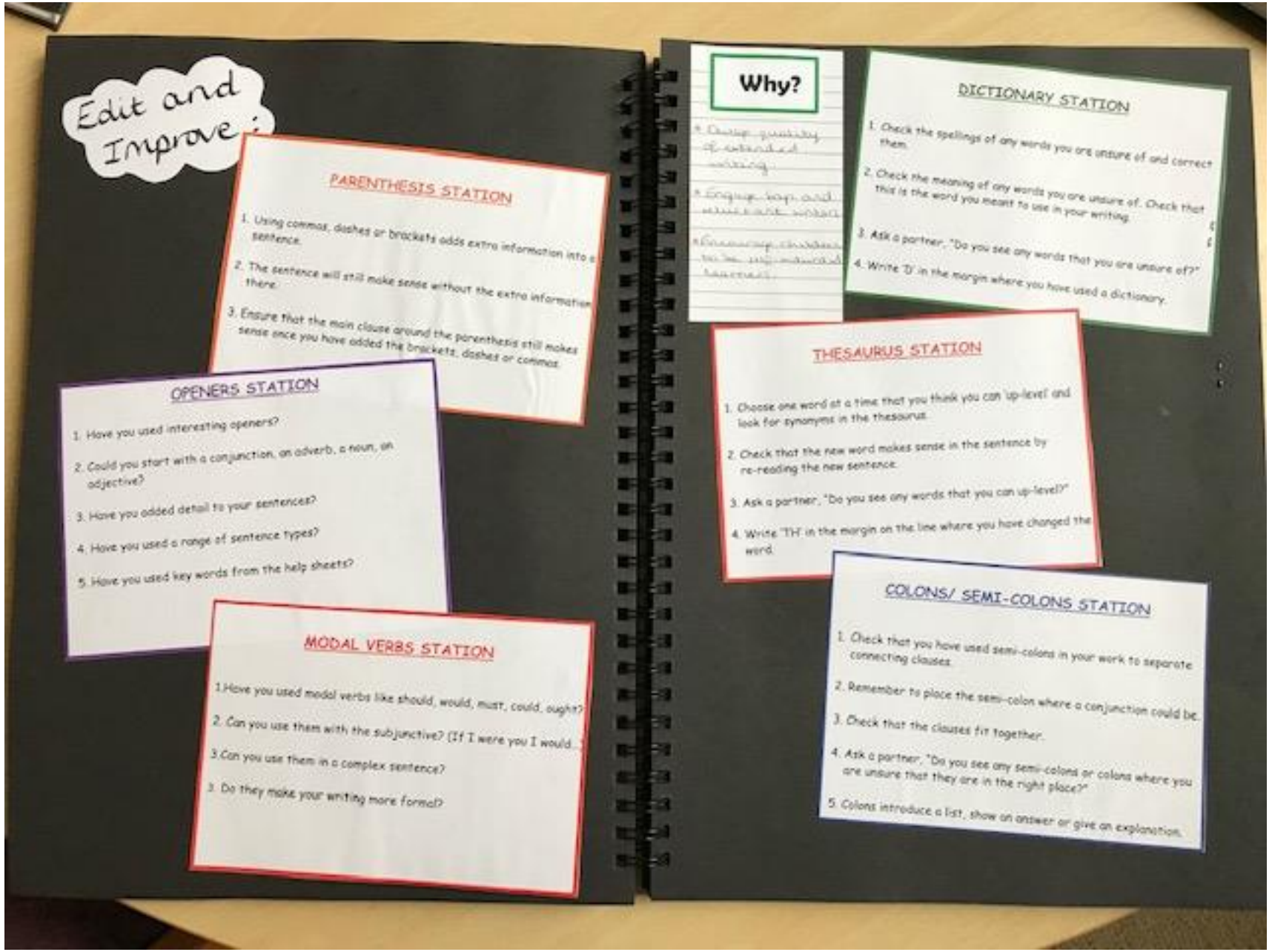
Maintenance Targets:
1) Systematically assess and moderate writing.
2) To ensure that marking is clear, consistent and purposeful.
3) To implement tools to support attainment in writing across the school.

Task	Person(s) responsible	Actions/Resources	Monitoring	Evaluation
MAINTANENCE 1. To systematically moderate and assess in line with the new framework (Sep. 2017) to ensure judgements are robust and compare favourably against national averages.	All staff Ellie Jones as Year 6 teacher and subject leader	Assessments carried out 3 times a term using trust criterion scale for Years 3-5 and the Year 6 framework (updated Sep 2017). [redacted] Following assessments, gaps are identified and targets set for individuals. Pupil Asset monitoring. Provision map is drawn up each term as interventions timetabled. Moderation is carried out within cluster. Moderation links established with broad school	Assessment weeks are timetabled. Yes Outcomes onto Pupil Asset. Progression and attainment is monitored and interventions reviewed regularly. Yes – reviewed and changed/ stopped in Summer term. Moderation is systematically carried out. Yes – in school and with cluster, new grids also produced with Academy group.	Are assessments used effectively to monitor progress, attainment, set targets and highlight where interventions are required? Subject leader using pupil asset, teacher must ensure they look at it to create intervention plans Are moderation sessions carried out routinely? Moderation carried out twice in school and cluster moderation happened three times How do pupils compare with other schools within the trust, cluster, LA and nationally?
MAINTANENCE 2. To ensure that marking is clear, consistent and purposeful.	All class teachers	Teacher's marking is used as an intervention to support, consolidate, accelerate and challenge pupils. Teachers use a consistent approach to marking with red pens. Children are frequently given feedback with next steps. Red pens are used to reflect on teacher's comments and put into practice what they have learnt.	Book Scrutiny – once a term. Staff picked up on spelling and grammar issues. Work samples. Photocopied and put into folder Pupil interviews. Pupil interview and questionnaire carried out.	Have teachers provided frequent guidance on next steps in writing? [redacted] should not just be to edit. Are red pens being used effectively by children? Are marking ladders used as part of marking effectively?
MAINTANENCE 3. To implement tools to support attainment in writing across the	Ellie Jones	Further embed the use of the Write stuff to [redacted] Teachers identify pupils who would benefit from intervention using data analysis and progress	Review impact of Big Write and text led units and interventions. Collect samples of evidence from	Are interventions helping to improve attainment? Yes, but if not they are stopped and re-evaluated

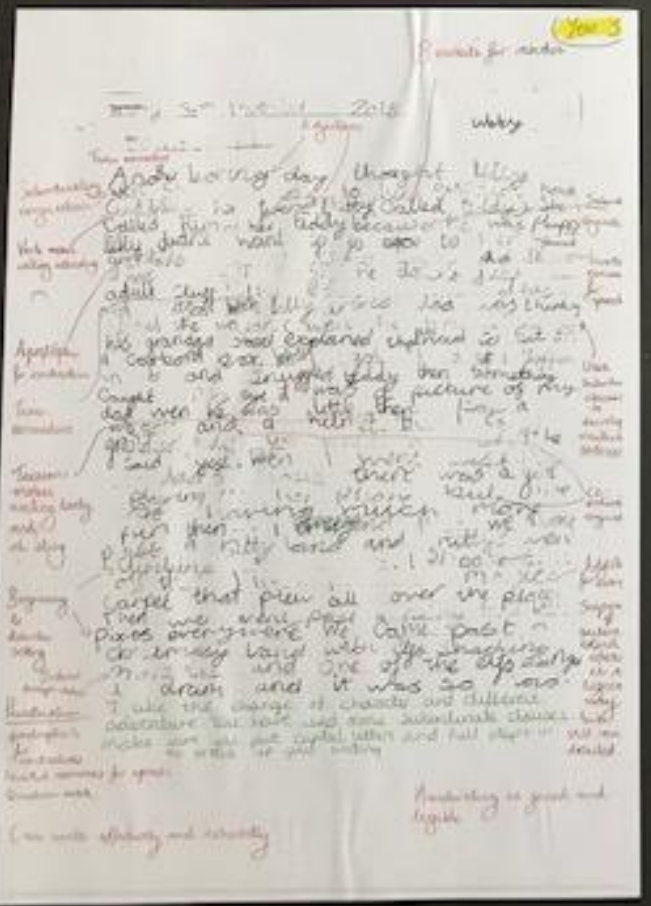

Data:
What do we do well?
What can we improve?
What do QLAs show us?
How do these inform our teaching?
Data Report
Autumn 2 - 2018
Heacham Infant and Nursery School
Q L A
Penguins
Pelicans
Avocets
Albatross
Oystercatchers
Royal Terns


Writing
Actions and Impact:
New writing assessment grids help teachers to make clearer judgments which are more accurate.
Mr More Marking means our judgments are verified nationally.
Marking ladders now reflect age-related expectations.
Editing sessions engage all learners.
Priorities:
Monitor cross-curricular writing.
Continue to moderate writing in staff meetings.
Ensure teachers have high expectations of all pupils.
Writing Assessment Checklist – Year 3
Name
Based on Oxford Primary Writing Assessment
0-5 ticks Not yet working at this standard (review against standard below)
6-9 ticks Beginning
10-17 ticks Developing
18-21 ticks Embedded (Children with 20+ ticks may be assessed against the standard above)
New assessment grids created with the Trust.
Used to assess and set targets

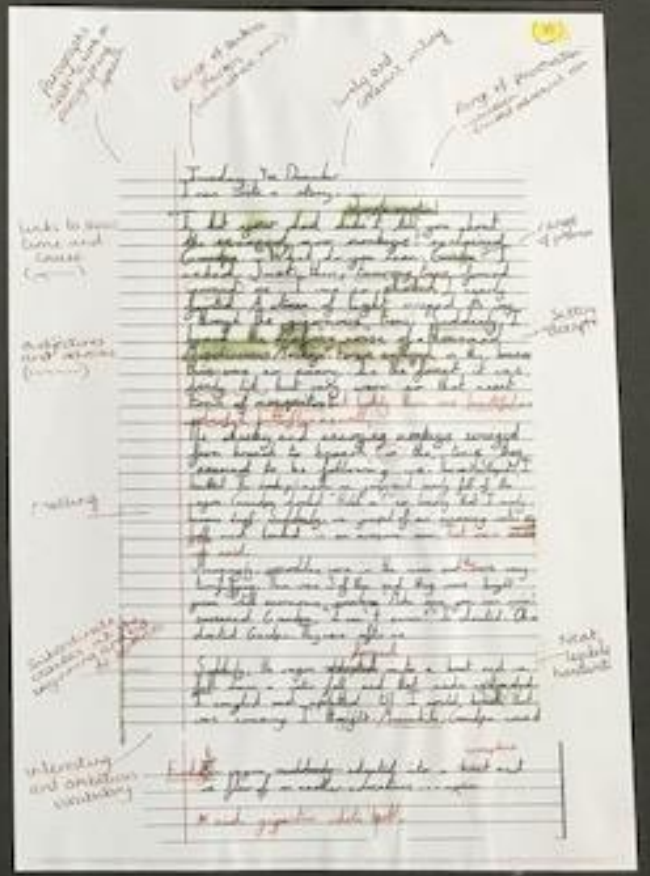

Marking Ladders:
Purpose:
NON-CHRONOLOGICAL REPORT
Year 3
Non-Chronological Reports
Pupil
Objective
Teacher
I used clear, bold writing for my page title
I included an introductory paragraph
I included subheadings - some written as questions to interest the reader
I used technical words to do with the subject
I included labelled diagrams where necessary
I wrote captions for pictures and diagrams
I organised information into paragraphs
I used present tense (or past tense for historical reports)
I included facts
I used full stops and capital letters in the right places
I used subordinating conjunctions
What could I do to improve my report next time?
What am I really proud of?
Year 4
Non-Chronological Report
Pupil
Objective
Teacher
I have used third person
I organised my report in specific categories and clear paragraphs
I included an introductory paragraph which engages the reader
I included subheadings - some written as rhetorical questions
I used technical words to do with the subject
I included labelled diagrams where necessary
I wrote captions for pictures and diagrams
I used time and cause adverbs (then, next, soon)
I used present tense (or past tense for historical reports)
I included facts
I used technical vocabulary
I used full stops, capital letters and commas
I used subordinating conjunctions
What could I do to improve my report next time?
What am I really proud of?
NARRATIVE
Year 3
Stories
Pupil
Objective
Teacher
My story opening includes a setting using the time of day and/or time of year
I used expanded noun phrases
I described what you can see, hear, smell, touch, taste
I used powerful verbs
I used the perfect tense
I used similes
I used time and cause conjunctions
I used dialogue, with correct punctuation
I used speech
I used paragraphs to group information
What could I do to improve my story next time?
What am I really proud of?
Year 4
Stories
Pupil
Objective
Teacher
In my adventure story I have written five chapters: opening, build-up, climax, resolution and ending
I used fronted adverbials
I used suspense and ellipsis
I used speech punctuation accurately
I used well organised paragraphs
I started sentences in different ways - for example, with an adverbial phrase (how, when, where), a connective or a verb (non-finite clause)
I chose adjectives, simile and precise nouns to describe
I used alliteration and figurative language (eg. similes)
I used some short and some long sentences
I used prepositions
I used time and cause conjunctions
What could I do to improve my story next time?
What am I really proud of?

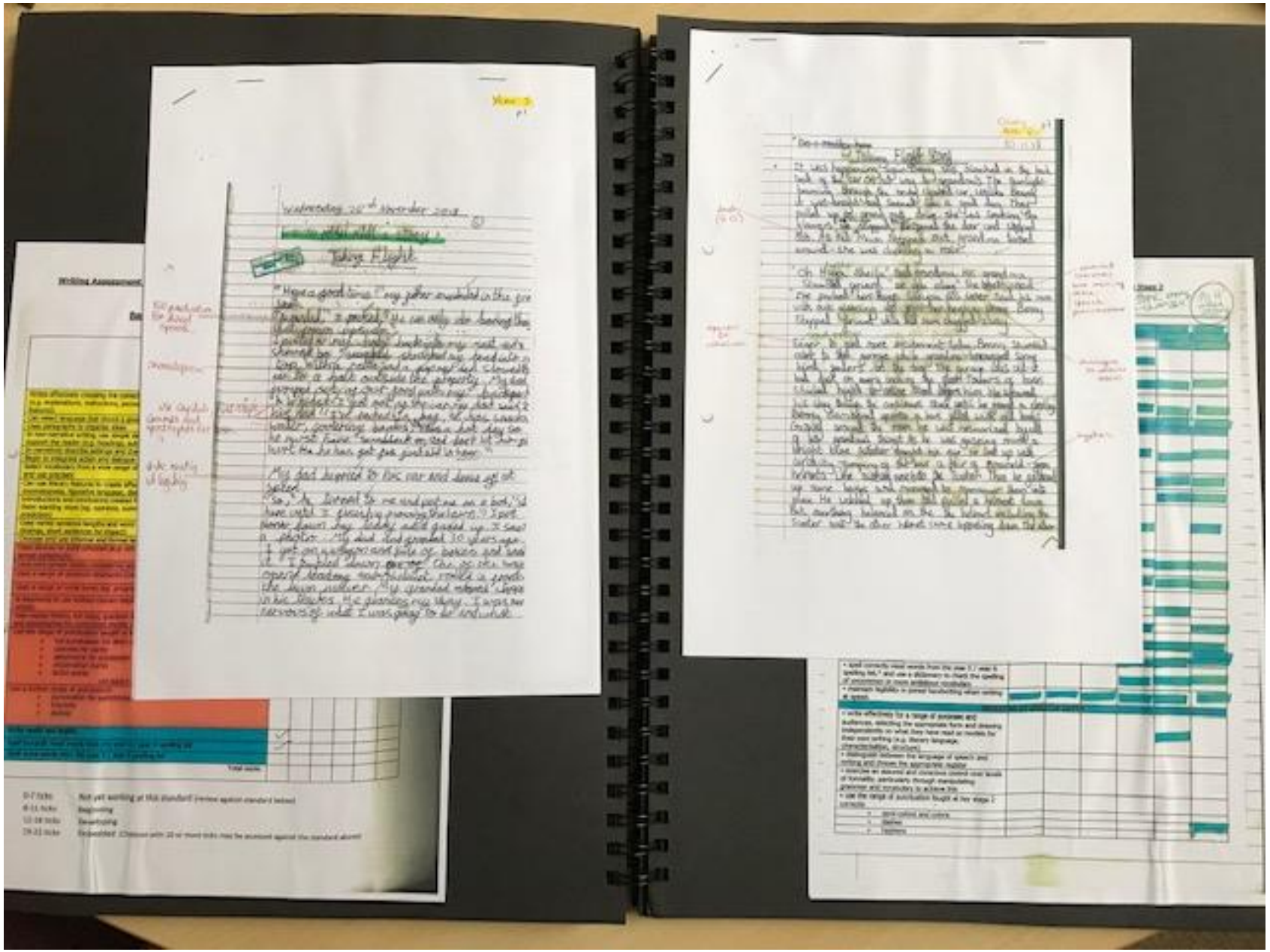

Edit and Improve!
PARENTHESIS STATION
1. Using commas, dashes or brackets adds extra information into a sentence.
2. The sentence will still make sense without the extra information there.
3. Ensure that the main clause around the parenthesis still makes sense once you have added the brackets, dashes or commas.
OPENERS STATION
1. Have you used interesting openers?
2. Could you start with a conjunction, an adverb, a noun, an adjective?
3. Have you added detail to your sentences?
4. Have you used a range of sentence types?
5. Have you used key words from the help sheets?
MODAL VERBS STATION
1.Have you used modal verbs like should, would, must, could, ought?
2. Can you use them with the subjunctive? (If I were you I would...)
3.Can you use them in a complex sentence?
3. Do they make your writing more formal?
Why?
DICTIONARY STATION
1. Check the spellings of any words you are unsure of and correct them.
2. Check the meaning of any words you are unsure of. Check that this is the word you meant to use in your writing.
3. Ask a partner, "Do you see any words that you are unsure of?"
4. Write 'D' in the margin where you have used a dictionary.
THESAURUS STATION
1. Choose one word at a time that you think you can 'up-level' and look for synonyms in the thesaurus.
2. Check that the new word makes sense in the sentence by re-reading the new sentence.
3. Ask a partner, "Do you see any words that you can up-level?"
4. Write 'TH' in the margin on the line where you have changed the word.
COLONS/ SEMI-COLONS STATION
1. Check that you have used semi-colons in your work to separate connecting clauses.
2. Remember to place the semi-colon where a conjunction could be.
3. Check that the clauses fit together.
4. Ask a partner, "Do you see any semi-colons or colons where you are unsure that they are in the right place?"
5. Colons introduce a list, show an answer or give an explanation.

Our school progression exemplification document:



- Each term the class would complete the same piece of writing.
- To a staff meeting the pieces are moderated and annotated to show the expectations.
- This contributes to a progression exemplification document.
- It now forms key supporting moderation judgements.





Working Walls:

- What are we learning?
- Vocabulary
- WAGOLL

Why?

In September 2018, 40% of children said displays help their learning.

↓

February 2019 this had risen to 60% (always helped them) and 93% (sometimes or always helped their learning.