

Year 7 Mathematics

Mr Moulder – Head of Mathematics



What do you need to know?

- How do we set in year 7?
- Lessons
- Making it stick
- Equipment
- What is my child taught in year 7?
- Other opportunities
- Mathswatch
- I can't do it **yet**
- Your role



How do we set in year 7?

- SATs results
- Information from primary schools
- 2 parallel populations, 6 sets each

| Class | Scheme of Work |
|------------------------------|----------------|
| Classes with a '1 or 2' in | Depth |
| Classes with a '3 or 4/5' in | Core |
| Classes with a '5 or 6' in | Support |

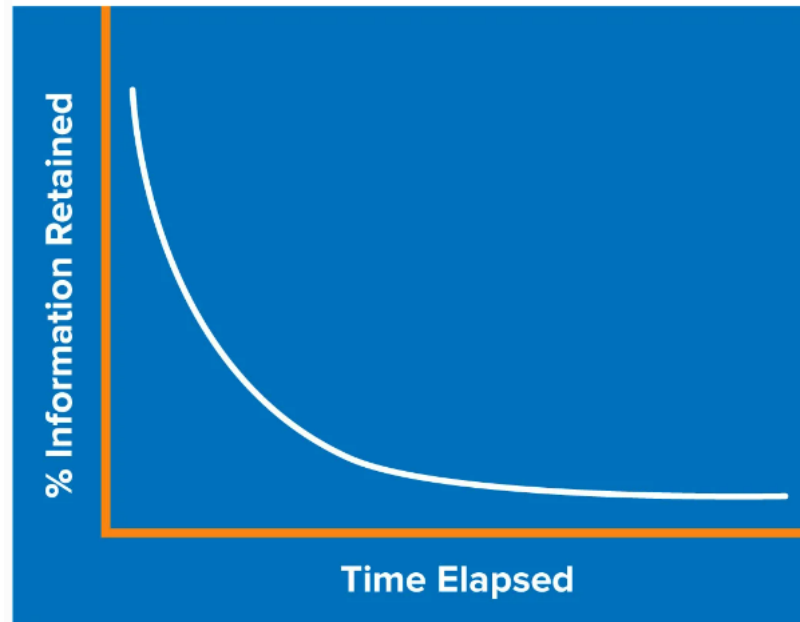


Lessons

- Practice and perfect the basics
- Reason mathematically – explain their thinking
- Problem solving



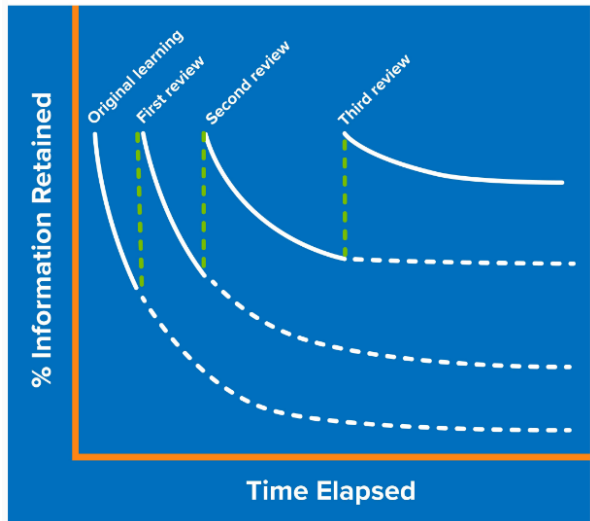
The Big challenge - Making it stick



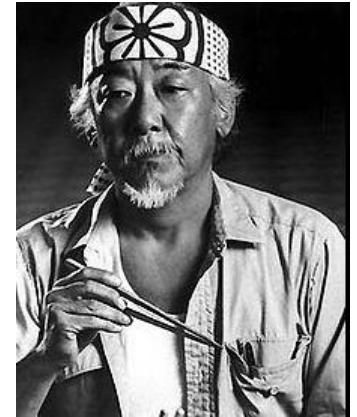
Ebbinghaus forgetting curve



How do we combat the curve?



1. Spaced learning
2. Overlearning
3. Make it meaningful
4. Challenge your memory



How do we make this work in Maths?



| | Learning in lessons | Assessmen | Starter booklets | Homework |
|----------|--|------------|-----------------------------|---|
| Autumn 1 | 1: Analysing and displaying data | EOU1 Test | Basic Numeracy | Practice of key skills being taught during that time. |
| | 2: Number skills | EOU2 Test | | |
| Autumn 2 | 3: Expressions, functions and formulae | EOU3 Test | Units 1 & 2 | |
| | 4: Decimals and measures | EOU4 Test | | |
| Spring 1 | 5: Fractions and percentages | EOU5 Test | Units 3 & 4 | |
| | 6: Probability | | | |
| Spring 2 | | EOU6 Test | Units 1-4 recap plus Unit 5 | |
| | 7: Ratio and proportion | EOU7 Test | | |
| | 8: Lines and angles | | | |
| Summer 1 | 8: Lines and angles | EOU8 Test | Units 6 & 7 | |
| | 9: Sequences and graphs | EOU9 Test | | |
| Summer 2 | End of year exams | | Unit 8 | |
| | 10: Transformations | EOU10 Test | | |
| | Curriculum Enrichment week | | | |

Starter Booklets

Name: _____

Richard Lander School

Maths Department



Y7 Starter Booklet

Autumn HT 2

Core

Instructions:

- Every lesson, (with a few exceptions) you will complete one page of this booklet.
- You are testing yourselves on last half term's work
- Through repeated practice over a half term, you will master these skills
- The skills will become lodged in your memory ready for use in more challenging work.
- You will be given between 5 and 10 minutes to do these questions from the second your lesson is scheduled to begin! So make sure you are on time!

My scores: (Please record your marks out of 5 for every starter below)

| | | | | |
|----------|-----------|-----------|-----------|--|
| Lesson 1 | Lesson 8 | Lesson 15 | Lesson 22 | |
| Lesson 2 | Lesson 9 | Lesson 16 | Lesson 23 | |
| Lesson 3 | Lesson 10 | Lesson 17 | Lesson 24 | |
| Lesson 4 | Lesson 11 | Lesson 18 | Lesson 25 | |
| Lesson 5 | Lesson 12 | Lesson 19 | | |
| Lesson 6 | Lesson 13 | Lesson 20 | | |
| Lesson 7 | Lesson 14 | Lesson 21 | | |



Lesson 1

| Question | Working out space | | | | | | | | | | | | |
|---|--|------|------|--------|-------|------|--------------------|-------|----|----|----|----|--|
| <p>1. Find the Mode, Median, mean and range of these numbers: 5, 9, 5, 6, 10</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Mode</td><td></td></tr> <tr><td>Median</td><td></td></tr> <tr><td>Mean</td><td></td></tr> <tr><td>Range</td><td></td></tr> </table> | Mode | | Median | | Mean | | Range | | | | | |
| Mode | | | | | | | | | | | | | |
| Median | | | | | | | | | | | | | |
| Mean | | | | | | | | | | | | | |
| Range | | | | | | | | | | | | | |
| <p>2. Draw a bar chart to show the number of students absent from school in a week.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Mon</th> <th>Tues</th> <th>Wed</th> <th>Thurs</th> <th>Fri</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Number of students</td> <td style="text-align: center;">12</td> <td style="text-align: center;">10</td> <td style="text-align: center;">13</td> <td style="text-align: center;">17</td> <td style="text-align: center;">19</td> </tr> </tbody> </table> | | Mon | Tues | Wed | Thurs | Fri | Number of students | 12 | 10 | 13 | 17 | 19 | <div style="text-align: center;"> <p>Students absent from school</p> </div> |
| | Mon | Tues | Wed | Thurs | Fri | | | | | | | | |
| Number of students | 12 | 10 | 13 | 17 | 19 | | | | | | | | |
| <p>3. Work out $7 + 9 \times 4$</p> | | | | | | | | | | | | | |
| <p>4. Work out 432×4</p> | | | | | | | | | | | | | |
| <p>5. Find the Lowest Common Multiple of 8 and 12</p> | | | | | | | | | | | | | |

Lesson 2

| Question | Working out space | | | | | | | | | | |
|---|--|-------|-------|--------|------|------|---|-------|---|---|--|
| <p>1. Find the Mode, Median, mean and range of these numbers: 12, 7, 9, 12, 10</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Mode</td><td></td></tr> <tr><td>Median</td><td></td></tr> <tr><td>Mean</td><td></td></tr> <tr><td>Range</td><td></td></tr> </table> | Mode | | Median | | Mean | | Range | | | |
| Mode | | | | | | | | | | | |
| Median | | | | | | | | | | | |
| Mean | | | | | | | | | | | |
| Range | | | | | | | | | | | |
| <p>2. The table shows information about how teachers travel to work at RLS</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Car</th> <th>Walk</th> <th>Train</th> <th>Bus</th> <th>Bike</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">20</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">4</td> </tr> </tbody> </table> <p>On the grid, draw a bar chart to show this data.</p> | Car | Walk | Train | Bus | Bike | 20 | 4 | 2 | 8 | 4 | <div style="text-align: center;"> <p>Teacher's mode of transport to work</p> </div> |
| Car | Walk | Train | Bus | Bike | | | | | | | |
| 20 | 4 | 2 | 8 | 4 | | | | | | | |
| <p>3. Work out $37 - 80 \div 4$</p> | | | | | | | | | | | |
| <p>4. Work out 216×9</p> | | | | | | | | | | | |
| <p>5. Find the Lowest Common Multiple of 20 and 35</p> | | | | | | | | | | | |



Homework

- Once per week
- **Written** HW (Usually Hegarty Maths)



Equipment



| | |
|--------------------------|-------|
| Black pen | 10p |
| Pencil | 5p |
| Pencil case (empty) | 70p |
| Ruler (15cm) | 10p |
| Ruler (30cm) | 15p |
| Sharpener | 10p |
| Eraser | 5p |
| Highlighter | 15p |
| Pack of 4 highlighters | 60p |
| Protractor (semi-circle) | 10p |
| Protractor (full circle) | 40p |
| Compass (Metal) | 30p |
| Filler pencil case | £1.50 |
| Scientific calculator | £8.40 |



Hegarty

The screenshot shows a web browser window with the URL `hegartymaths.com/order-of-operations-1-positive-integers`. The page features the Hegarty logo and navigation options like 'Progress', 'Set work', and 'Search HegartyMaths'. The main content area is titled '24 - Order of operations 1 (positive integers)' and includes a video player with the title 'Order of operations 1 (basic arithmetic with positive integers)'. Below the video, there is a 'Key words' section listing 'BIDMAS, Brackets, Indices, Division, Multiplication, Addition, Subtraction.' To the right of the video, there are buttons for 'Continue quiz' and 'Preview questions', along with progress indicators for video watched and score. Below the main content, there is a 'Building blocks' section with two question preview cards: '18 - Addition' showing the equation $778 + 391$ and '19 - Subtraction'. A 'HELP' button is visible in the bottom right corner of the page.



ActiveLearn x ActiveLearn x Ebbinghaus's Forgetting Curve x mr mijagi - Google Search x h-83GTx Black x HegartyMaths x +

← → 🏠 hegartymaths.com/assessment Progress Set work Search HegartyMaths Mark work 8 Manage Duncan DM

Number > Operations with positive integers > 24 - Order of operations 1 (positive integers) > Quiz

1 ✓ 2 3 4 5 6 7 8 9 10

2 of 10

Evaluate

$4 + 5 \times 3$

🔍

Do not use a calculator

Get help

Report a mistake to HegartyMaths

Quit assessment

On-screen keypad ON

Check

Skip

hegartymaths Privacy and Legal Success stories

| | | | | | | | | | | | | | | | | | | | |
|---|---|-------|------|-------|---|-------|---|---|---|---|-----|-----|---|---|---|-----|---|---|---|
| 7 | 8 | 9 | q | w | e | r | t | y | u | i | o | p | ⌫ | ÷ | √ | π | < | > | ⌫ |
| 4 | 5 | 6 | a | s | d | f | g | h | j | k | l | () | × | √ | ± | ≤ | ≥ | : | |
| 1 | 2 | 3 | CAPS | z | x | c | v | b | n | m | () | - | ² | ³ | □ | x10 | → | | |
| 0 | . | Check | ← | Space | → | Check | + | = | □ | □ | □ | → | 📄 | | | | | | |

09:46 19/10/2022



What is my child taught in year 7



Year 7 Mathematics Revision Guide

We sincerely believe that the work completed in lessons and for homework will help students to be successful in their maths studies this year. This document can be used to give students that little bit of extra support or guidance that could enable them to do even better. Please feel free to use this document at your own discretion.

This document can be used for the following purposes:

- For students to identify their own strengths and weaknesses.
- To guide students to a video clip that will strengthen your understanding of a certain topic.
- To inform parents of what is being learnt in school and different times of the year.

Students will take an assessment at the end of every topic. These scores will not be reported home but the outcomes will be reflected in the termly progress reports sent home. Students will find these results out shortly after the test is taken when they will also identify their areas of strength and the skills they need to improve on. Students will also take an end of year assessment covering units 1 to 9 after May half-term. This along with their performance in the individual topic assessments will help inform us on how students have progressed during the academic year.

Year 7 at a glance

The schedule on the next page indicates which topic is being taught during each school week of this year. This is a rough guideline only as some classes may take slightly longer on some units than others. Some students have more than one teacher who may cover different units of work. For example, a student with two maths teachers may start the year learning unit 1 with one teacher and unit 2 with the other.



Progress Checklist - Analysing and Displaying Data

| | Objective | Hegarty clips | ☹️ | 😊 | 😄 |
|------|---|---------------|----|---|---|
| 1.1 | Find the mode, median and range of a set of data | 404, 409, 410 | | | |
| 1.2a | Find information from tables and diagrams | 425, 414, 415 | | | |
| 1.2b | Display data using tally charts, tables, bar charts and bar-line graphs | 401, 425 | | | |
| 1.3a | Interpret simple charts for grouped data | 414, 415 | | | |
| 1.3b | Find the modal class for grouped data | 415 | | | |
| 1.4a | Calculate the mean of set of data | 405-408 | | | |
| 1.4b | Compare sets of data using their range and averages | | | | |
| 1.5a | Understand and draw line graphs | 450 | | | |
| 1.5b | Understand and draw dual and compound bar charts | 425 | | | |

Progress Checklist - Number skills

| | Objective | Hegarty clips | ☹️ | 😊 | 😄 |
|------|---|---------------|----|---|---|
| 2.1a | Use the priority of operations, including brackets (Core & Depth only) | 24 | | | |
| 2.1b | Use multiplication facts up to 10×10 and the laws of arithmetic to do mental multiplication and division | 10 | | | |
| 2.1c | Multiply by multiples of 10, 100 and 1000 | 15 | | | |
| 2.1d | Use the priority of operations (Support only) | | | | |
| 2.2a | Make an estimate to check an answer (Core & Depth only) | 131 | | | |
| 2.2b | Use inverse operations to check an answer (Core & Depth only) | | | | |
| 2.2c | Use a written method to add and subtract numbers of any size | 18, 19 | | | |
| 2.2d | Round whole numbers to the nearest, 10 000, 100 000 and 1 000 000. (10, 100, 1000 for support) | 17 | | | |
| 2.3a | Use an estimate to check an answer to a multiplication (Core & Depth only) | 131 | | | |
| 2.3b | Use a written method to multiply whole numbers | 21, 143 | | | |
| 2.4a | Use a written method to divide whole numbers | 145 | | | |
| 2.4b | Use inverse operations to check an answer (Core & Depth only) | | | | |
| 2.5a | Round money to the nearest pound or penny | | | | |
| 2.5b | Interpret the display on a calculator in different contexts | | | | |
| 2.5c | Use a calculator to solve problems involving money and time | 752 - 754 | | | |
| 2.6a | Order positive and negative numbers | 37 | | | |
| 2.6b | Add and subtract positive and negative numbers | 41 | | | |
| 2.6c | Begin to multiply with negative numbers (Core & Depth only) | 42 | | | |

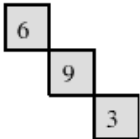
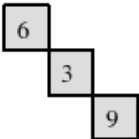
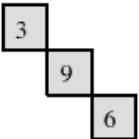
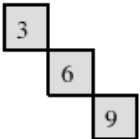
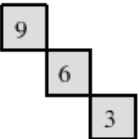
Other Opportunities



Welcome to the
United Kingdom Mathematics Trust

In a magic square, the numbers in each row, each column and the two main diagonals have the same total. This magic square uses the integers 2 to 10. Which of the following are the missing cells?

| | | |
|---|----|---|
| | 10 | 5 |
| 8 | | 4 |
| 7 | 2 | |

A  B  C  D  E 

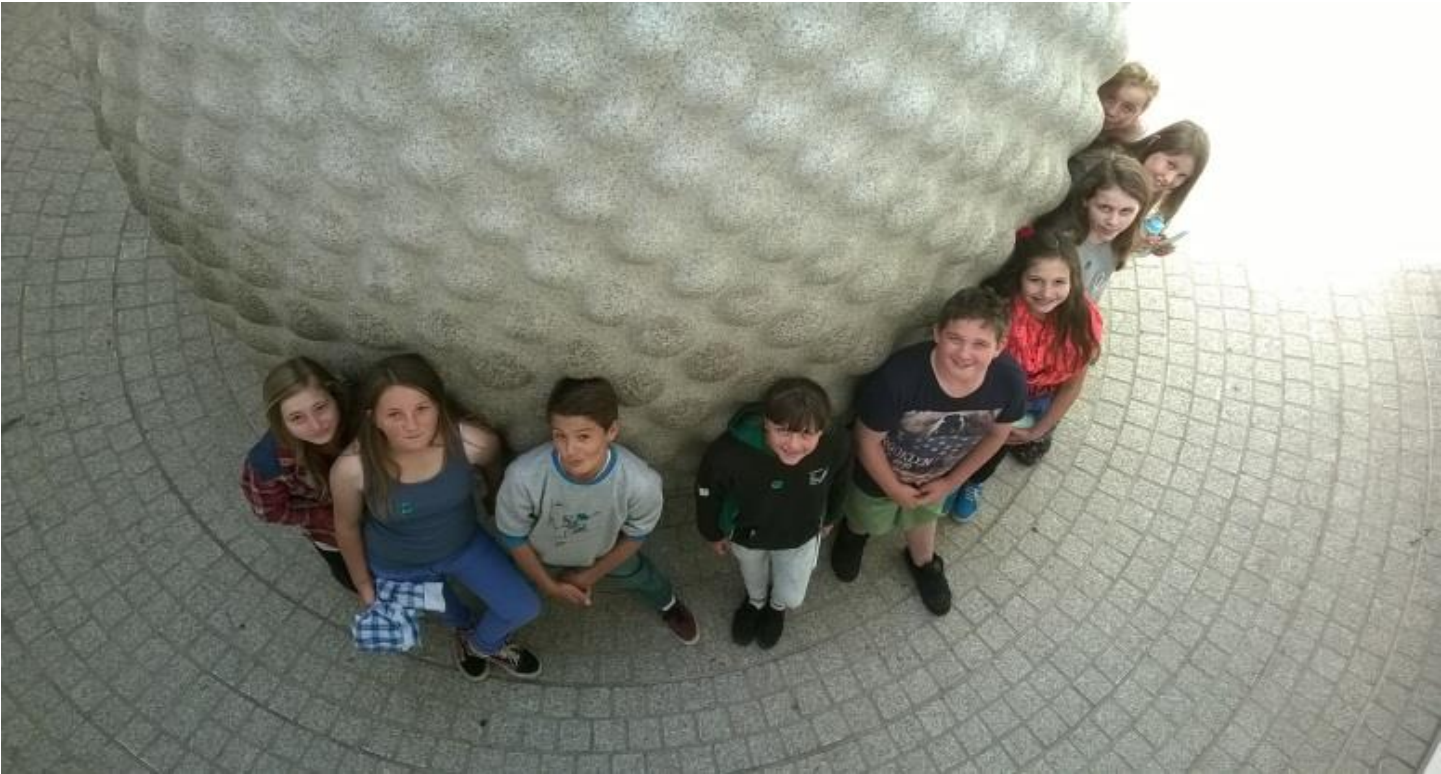
Quotes from Richard lander students last year:

"I love trying to get a higher coloured certificate each year. "

"The maths challenge is great because I really enjoy tough puzzles."



Eden Visit



I am willing to take on
new challenges

With perseverance,
hard work and help, I
can achieve anything I
want

Growth
Mindset

I see failure as a
step in the right
direction

I am inspired by other
people's success, not
intimidated



I can't do it **yet**

