## Big Maths, Beat That!

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## How to use ‘Big Maths, Beat That!' to rapidly raise standards

- 'Big Maths, Beat That!' is an assessment tool that allows teachers to see exactly what their children know and what they don't know.
- It provides children with a fun and motivational way to track their own progress and set their own targets for numeracy.
- It involves two quick and easy tests that children typically complete on a Friday alongside Big Write.
- The children are constantly challenged to increase their own score (literally..."Beat That!", where 'that' is their best ever score) and the teachers' role in uplevelling each child is at the heart of teaching through CLIC.
- One is called 'The CLIC Challenge' and it asks children to answer 10 key numeracy questions. There are 5 different challenges. There is no time limit as such and children complete their pencil and paper jottings around the sheet or on the back of it. Teachers should play the CLIC challenge jingle (available on the Andrell Education website) either before the challenge itself or just before the challenges are marked/returned. Once children have scored 10 out of 10 in 3 consecutive weeks then they move on to the next level up. Learners that 'flatine' and do not make sufficient progress are taught specifically how to complete appropriate questions. In this way all children are 'uplevelled'.
- The second challenge is called 'The Total Recall Challenge' and it asks the children to answer a set number of 'Learn Its' questions in a set time. There is another jingle (again available for free from the Andrell Education website), and these provide the time limits for each challenge. There are 6 different Total Recall challenges, and these are linked to the Learn Its schedule from Big Maths. Children keep the same challenge all year and aim to write down all the facts required in the time available. Once they can complete it in the time available then they aim to complete it in a quicker time.
- Steps 1,2,3-only addition facts
- Steps 4,5,6- only addition facts
- Steps 7, 8, 9 - there are the remaining 1 digit add 1 digit facts and facts from the $\mathrm{X} 10, \mathrm{X} 5$ and X 2 tables
- Steps $10,11,12$ - there are no addition facts since the focus is on the $X 3, X 4$ and $X 8$ tables
- Step 13 - the 6 multiplication facts from the $\mathrm{X} 6, \mathrm{X} 7, \mathrm{X} 9$ tables that have not already been learnt as part of earlier tables are tested along with all 36 of the addition facts.
- Steps 1-13-all 36 addition facts and 36 multiplication facts are tested.
- For all 11 challenges (the 5 CLIC challenges and the 6 Total Recall challenges) Big Maths provides a new challenge for each week over a 10 week period. This means the children can not merely learn a sequence of answers and therefore keeps the resultant data valid. For example, the whole school would complete the relevant challenge from the week 1 bank of tests and then from the week 2 bank of tests the following week. After 10 weeks then the school returns to the bank of tests from week 1 and begins to move through the 10 weeks again.
- All 110 tests can be found on the 'Big Maths, Beat That!' disc that is available to purchase from Andrell Education. Also on the disc are the equivalent 110 answer sheets as well as the 2 jingles.
- Crucially, the 'Big Maths, Beat That!' disc also has a software package that easily allows schools to input each child's data. The software then creates easy-toread line graphs for a visual representation of each child's progress over time for both challenges. These can be controlled to select a specific group of children, or to illustrate the average gains of an entire class.
- The software also effortlessly creates bar graphs for each child's 10 CLIC challenge questions so that success in these areas can be quickly tracked.


| $5+5=$ | $2+8=$ | $1+9=$ |
| :--- | :--- | :--- |
| $9+9=$ | $5+2=$ | $7+7=$ |
| $4+2=$ | $9+2=$ | $6+3=$ |
| $6+6=$ | $4+3=$ | $4+6=$ |
| $3+7=$ | $6+2=$ | $5+3=$ |
| $8+8=$ |  | $7+2=$ |

## How to use 'Big Maths, Beat That!' to rapidly raise standards

## How do I get started?

- Getting started with 'Big Maths, Beat That!' is easy. You don't have to be teaching through CLIC or using any other Big Maths method.
- Using your knowledge of the children already, simply start by giving them a CLIC challenge one Friday for a level you know they will find easy.
- From that point onwards children are then on the CLIC test progression until they can score 10 out of 10 on the final challenge. Gradually explain to the children how the 'Big Maths, Beat That!' system works. A reward system should be put in place for children that do'beat that' and get their best ever score, as well as for the class if a class target is set using the line graph of the class average.
- After a routine has been developed then start to add in the jingle if you haven't already done so from the start.
- Then, start to use the software and input each child's score every week. Creating the line graphs and then sharing them with the children and parents is easy.
- After a few weeks then start to add input the data at the question level and start to look at the bar graphs that indicate which questions individual children need more help on (if any!).
- Begin to use the information from the graphs to inform planning.


## How does it become embedded?

- Once the above steps have been made then the system runs itself and children become more and more motivated to keep going and beating their best ever scores.
- If all teachers across the school are focussing their teaching around the questions that are not being answered correctly then a culture of personalised learning is created. Schools already implementing Big Write will be familiar with the feelings of enthusiasm, success and pride spreading contagiously throughout a school.
- Subject leaders may wish to analyse the whole-school dimension using the software on the disc to look for line graphs showing areas of flat-lining and respond appropriately. The significance of this is that the 'Big Maths, Beat That!' package will ensure that all children move through school learning the core skills of numeracy increasingly rapidly and at increasingly higher levels.
- Each child becomes familiar with the three targets that they would take ownership of at any one time, i.e. their next step on the progress drive that they are climbing at any one moment in time, their CLIC test score, and their 'Total Recall' test score i.e. knowing which question they need to focus on being able to answer next) see next page.
- Teachers can then focus their personalised teaching on the skills and concepts that the learners don't possess.


## Big Maths Target Setting



## "Big Maths, Beat That"

## CLIC Tests

Criterion Scales

## For

Essential
CLIC Numeracy

| Q | APP Statement | 'I Can...' <br> statement | Location within Big <br> Maths | Teacher Notes |
| :---: | :--- | :---: | :--- | :--- |


| Q <br> No. | APP Statement | 'I Can...' <br> statement | Location within Big <br> Maths | Teacher Notes |
| :---: | :--- | :---: | :--- | :--- |



## BIG MATHS

| $\begin{gathered} \text { Q } \\ \text { No. } \end{gathered}$ | APP Statement | 'I Can... statement | Location within Big Maths | Teacher Notes |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Numbers and the number system: <br> - begin to understand the place value of each digit <br> - know the relative sixe of numbers to 100 | I can partitiona 2 digit number | Counting-section <br> 3: <br> Squiggleworth | N/A |
| 2 | Numbers and the number system: <br> - recognise sequences of numbers, including odd and even numbers, e.g. <br> - recognise numbers from counting in twos | I can spot odd and even numbers | Counting-section <br> 8: <br> Counting Multiples | N/A |
| 3 | Solving numerical problems: <br> - use repeated addition to solve multiplication problems | I can solve repeated addition | Calculation multiplication: Step 8 | This question is designed for children that have been taught to use repeated addition for multiplication when they can not solve by instant recall. For example, children in Year 2 that are following the Big Maths 'Learn Its' schedule will only know multiples of 10,5 and 2 by instant recall and so they are given questions here that encourage repeated addition. |
| 4 | Operations, relationships between them : <br> - use the knowledge that subtraction is the inverse of addition <br> - given 14, 6 and 8 , make related number sentences $6+8=14,14-8=6,8+6=14,14-6=8$ | I know the fact families for 1d + 1d facts | It's Nothing New section 10: <br> Fact Families | This question gives a number sentence (including the 'answer') since what is being tested is the ability to derive new facts not the ability to find totals. |
| 5 | Mental methods: <br> - recall doubles to $10+10$ | I know my doubles facts | Learn Its: <br> Y1 term 3 | The children should not use a number line or any other resource to help them. |


| $\begin{gathered} \text { Q } \\ \text { No. } \end{gathered}$ | APP Statement | 'I Can...' statement | Location within Big Maths |
| :---: | :---: | :---: | :---: |
| 6 | Solving numerical problems: <br> - add two-digit and one digit numbers, bridging tens where necessary | I can solve any $2 \mathrm{~d}+1 \mathrm{~d}$ | Calculation-addition: <br> Step 20 |
| 7 | Solving numerical problems: <br> - subtract two-digit and one digit numbers, bridging tens where necessary | I can take any 1 digit number from any 2 digit number | Calculation - subtraction: <br> Step 18 |
| 8 | Mental methods: <br> - use mental recall of addition and subtraction facts to 10 , e.g.- use addition/subtraction facts to 10 and place value to add or subtract multiples of 10 , e.g. know $3+7=10$ and use place value to derive $30+70=100$ | I can add 10s | It's Nothing New - section 2: <br> Adding with Pim |
| 9 | Mental methods: <br> - use mental recall of addition facts to 10 | I know the missing piece to the next multiple of 10 | It's Nothing New - section 4: Jigsaw Numbers |
| 10 | Mental methods: <br> - use knowledge of doubles to $10+10$ to derive corresponding halves | I can use my double facts to find halving facts | Learn Its: <br> Y1 term 3 |



| $\begin{gathered} \text { Q } \\ \text { No. } \end{gathered}$ | APP Statement | 'I Can...' statement | Location within Big Maths |
| :---: | :---: | :---: | :---: |
| 1 | Numbers and the number system: <br> - Understand place value in numbers up to 1000 | I can partition a 3 digit number | Counting - section 3: Squiggleworth |
| 2 | Written methods: <br> - divide 2 digit numbers by $2,3,4$ or 5 with whole number answers and remainders, e.g. $49 \div 3$ | I can combine 2 or more tables facts to solve division | Calculation-division: <br> Step 19 |
| 3 | Mental methods: <br> - use mental recall of the $2,3,4,5$ and 10 multiplication tables | I can multiply multiples of 10 <br> (2, 3, 4 and 5 tables only) | It's Nothing New - section 6: Smile Multiplication |
| 4 | Operations, relationships between them: <br> - derive associated division facts from known multiplication facts, e.g. <br> - given a number sentence, use understanding of operations to create related sentences, e.g. given $14 \times 5=70$, create $5 \times 14=70$, $70 \div 5=14,70 \div 14=5$ | When given a single fact, I know the Fact Family | It's Nothing New - section 10: Fact Families |
| 5 | Fractions and decimals: <br> - begin to use decimal notation | I can partition a 1 dp number | Counting-section 3: Squiggleworth |


| $\begin{gathered} \text { Q } \\ \text { No. } \end{gathered}$ | APP Statement | 'I Can...' statement | Location within Big Maths |
| :---: | :---: | :---: | :---: |
| 6 | Written methods: <br> - add three-digit numbers using written method | I can solve any 3d add 3d | Calculation-addition: Step 29 |
| 7 | Written methods: <br> - subtract three-digit numbers using written method, e.g. <br> - use written methods that involve bridging 10 or 100 | I can solve any 3d take 3d | Calculation - subtraction: <br> Step 32 |
| 8 | Numbers and the number system: <br> - use understanding of place value to multiply/divide whole numbers by 10 (whole number answers) | I can multiply and divide whole numbers by 10 | It's Nothing New - section 5: Multiplying by 10 |
| 9 | Mental methods: <br> - calculate complements to 100 such as 100-24 | I know the missing piece to 100 | It's Nothing New - section 4: Jigsaw Numbers |
| 10 | Written methods: <br> - multiply 2 digit numbers by $2,3,4$ or 5 | I can solve 2d $\times 1 \mathrm{~d}$ | Calculation-multiplication: <br> Step 11 |



| $\begin{gathered} \text { Q } \\ \text { No. } \end{gathered}$ | APP Statement | 'I Can...' statement | Location within Big Maths |
| :---: | :---: | :---: | :---: |
| 1 | Fractions, decimals, percentages and ratio and proportion: <br> - order decimals to three decimal places | I can partition a 3 dp number | Counting - section 3: Squiggleworth |
| 2 | Numbers and the number system: <br> - recognise number relationships including multiple, factor and square | I know what a multiple, factor, square number is | It's Nothing New - section 9: Pom's Words |
| 3 | Mental, written and calculator methods: - use efficient written methods of division | I can combine 2 or more tables facts to solve division | Calculation - division: <br> Step 27 |
| 4 | Fractions, decimals, percentages and ratio and proportion: <br> - recognise simple equivalence between fractions, decimals and percentages e.g. $1 / 2,1 / 4,1 / 10,3 / 4$ | I can write fractions as decimals and percentages | Counting-section 9: Count Fourways |
| 5 | Mental, written and calculator methods: - use efficient written methods of multiplication | I can solve 2 digit $\times 2$ digit | Calculation - multiplication: Step 16 |


| Q <br> No. | APP Statement | 'I Can...' statement | Location within Big Maths |
| :---: | :--- | :---: | :--- |
| 6 | Mental, written and calculator methods: <br> -add decimals to two places | I can solve any <br> additions with 2dp | Calculation-addition: <br> Step 37 |
| 7 | Mental, written and calculator methods: <br> -subtract decimals to two places | I can subtract numbers <br> with hundredths | Calculation-subtraction: <br> Step 34 |
| 8 | Numbers and the number system: <br> - use place value to multiply and divide whole numbers by <br> 10 or 100 | I can multiply/divide whole <br> numbers by 10, 100 | It's Nothing New - section 5: <br> Multiplying by 10 |
| 9 | Mental, written and calculator methods: <br> -calculate complements to 100 such as 100-24 | I know the missing piece to 1000 | It's Nothing New - section 4: <br> Jigsaw Numbers |
| 10 | Mental, written and calculator methods: <br> - multiply a simple decimal by a single digit | I can multiply tenths | Calculation - Multiplication: <br> Step 17 |



| $\begin{gathered} \text { Q } \\ \text { No. } \end{gathered}$ | APP Statement | 'I Can...' statement | Location within Big Maths |
| :---: | :---: | :---: | :---: |
| 1 | Mental, written and calculator methods: <br> - divide decimal numbers by a single digit | I can combine 2 or more tables facts to solve decimal division | Calculation-division: <br> Step 33 |
| 2 | Fractions, decimals, percentages and ratio and proportion: <br> - Order decimals, e.g. <br> - order decimals that have a mixture of one, two or three decimal places | I can order numbers with different decimal places | Counting - section 4: Ordering Numbers |
| 3 | Mental, written and calculator methods: <br> - understand and use an appropriate non-calculator method for solving problems that involve dividing any three-digit number by any two-digit number | I can combine 2 or more coin facts to solve division | Calculation-division: <br> Step 31 |
| 4 | Fractions, decimals, percentages and ratio and proportion: <br> - use equivalence between fractions, e.g. <br> - convert fractions such as $2 / 5$ into tenths or hundredths and express them as decimals or percentages and vice versa | I can write fractions as decimals and percentages | Counting - section 9: Count Fourways |
| 5 | Mental, written and calculator methods: <br> - understand and use an appropriate non-calculator method for solving problems that involve multiplying any threedigit number by any two-digit number | I can solve 3 digit $\times 2$ digit | Calculation-multiplication: <br> Step 19 |


| $\begin{gathered} \text { Q } \\ \text { No. } \end{gathered}$ | APP Statement | 'I Can...' statement | Location within Big Maths |
| :---: | :---: | :---: | :---: |
| 6 | Mental, written and calculator methods: <br> - add numbers that do not have the same number of decimal places | I can solve any $2 \mathrm{dp}+1 \mathrm{dp}$ | Calculation-addition: <br> Step 41 |
| 7 | Mental, written and calculator methods: <br> - subtract numbers that do not have the same number of decimal places | I can subtract numbers with different decimal places | Calculation - subtraction: <br> Step 37 |
| 8 | Numbers and the number system: <br> - use understanding of place value to multiply and divide whole numbers and decimals by 10,100 and 1000 | I can multiply/divide whole numbers and decimals by 10,100, 1000 | It's Nothing New - section 5: Multiplying by 10 |
| 9 | Operations, relationships between them: <br> - use known facts, place value and knowledge of operations to calculate, e.g. <br> - calculate decimal complements to 10 or 100 such as 100 63.8 | I know the missing decimal piece | It's Nothing New - section 4: Jigsaw Numbers |
| 10 | Mental, written and calculator methods: <br> - use all four operations with decimals to two places - multiply decimal numbers by a single digit | I can multiply hundredths | Calculation-multiplication: <br> Step 18 |



## "Bigg Maths, Beat That"

## CLIC Level Tests

Weekly Key Assessments For Up-levelling

## Week One







## Week Two







## Week Three







Week Four






Week Five






Week Six






Week Seven






Week Eight






Week Nine






## Week Ten







## Week One







## Week Two







## Week Three

## ( +5

BIG MATHS BEAT THAT:

## 4







## Week Four




Name:


Draw a ring around the even numbers

43
(12) 39
$3 \times 8=$
24


$$
32+8=40
$$






## Week Five







## Week Six

# 2 <br> <br> BIG MATHS <br> <br> BIG MATHS BEAT THAT: 

 BEAT THAT:}


Write these numbers in order

1 less than 8 is?

| 8 | 5 | 7 |
| :--- | :--- | :--- |
| 5 | 7 | 8 |






Week Seven






## Week Eight







Week Nine

## BIG MATHS BEAT THAT:



Write these numbers in order

\section*{| 6 | 4 | 5 |
| :--- | :--- | :--- |
| 4 | 5 | 6 |}

1 more than is?
6





## WeekTen

# 8 <br> BIG MATHS BEAT THAT: 



Write these numbers in order


1 less than 9 is?

## 8



## Double 1 is <br> 2







