| Slide                                  |  |   |
|--|--|---|
| 1                                      |  |   |
|  | Advanced Mathematics   |   |
|  | Support Programme  |   |
| Slida                                  |  |   |
| 2                                      | Camsp Mellination"   |   |
|  |  |   |
|  | Primed for action!   |   |
|  |  |   |
| Slide                                  | Qamsp Kenerita'  | With the first task, pupils are asked to make sense of these  |
| 3                                      | What are these?  | pictures. They are not told these pictures are of a date, expressed   |
|  | 3/125 / 8° / 5400 (0.2 × 15)°/ \$27   120  | in day/month/year.  |
|  |  |   |
|  | $\frac{1080}{54} \Big/ \frac{3}{54} \Big/ \frac{2}{\sqrt{64}} \Big/ \frac{2}{\sqrt{5}} - \frac{2}{\sqrt{5}} \Big $   |   |
|  |  |   |
| Slido                                  | C amsp   |   |
| Slide<br>4                             | Oamsp         MEI           Make your own date   |   |
| Slide<br>4                             | Make your own date   |   |
| Slide<br>4                             | Can you write any date using sums?     What about tomorrow's date?     What about usour bitbdor?   |   |
| Slide<br>4                             | Can you write any date using sums?  Can you write any date using sums?  What about tomorrow's date?  What about your birthday?   |   |
| Slide<br>4                             | Camsp Make your own date <ul> <li>Can you write any date using sums?</li> <li>What about tomorrow's date?</li> <li>What about your birthday?</li> <li>You could send your birthday to your teacher</li> </ul>  |   |
| Slide<br>4<br>Slide                    | Can you write any date using sums? Can you write any date using sums? What about tomorrow's date? What about your birthday? You could send your birthday to your teacher Camsp   |   |
| Slide<br>4<br>Slide<br>5               | Can you write any date using sums? Can you write any date using sums? What about tomorrow's date? What about your birthday? You could send your birthday to your teacher Camsp   |   |
| Slide<br>4<br>Slide<br>5               | Can you write any date using sums?     Make your own date      Can you write any date using sums?     What about tomorrow's date?     What about your birthday?     You could send your birthday to your teacher      You could send your birthday to your teacher      Prime Numbers      On a piece of paper, write down the first 8 prime     numbers   |   |
| Slide<br>4<br>Slide<br>5               | Camsp Make your own date • Can you write any date using sums? • What about tomorrow's date? • What about your birthday? You could send your birthday to your teacher You could send your birthday to your teacher Prime Numbers On a piece of paper, write down the first 8 prime numbers  |   |
| Slide<br>4<br>Slide<br>5               | Camsp Make your own date • Can you write any date using sums? • What about tomorrow's date? • What about your birthday? You could send your birthday to your teacher You could send your birthday to your teacher Prime Numbers On a piece of paper, write down the first 8 prime numbers  |   |
| Slide<br>4<br>Slide<br>5               | <ul> <li>✔ amsp</li> <li>✔ Make your own date</li> <li>A Can you write any date using sums?</li> <li>♥ What about tomorrow's date?</li> <li>♥ What about your birthday?</li> <li>You could send your birthday to your teacher</li> <li>✔ amsp</li> <li>✔ Prime Numbers</li> <li>On a piece of paper, write down the first 8 prime numbers</li> </ul>   |   |
| Slide<br>4<br>Slide<br>5<br>Slide      |  | The first prime number is P <sub>1</sub> , the second P <sub>2</sub> and so on.   |
| Slide<br>4<br>Slide<br>5<br>Slide<br>6 |  | The first prime number is P <sub>1</sub> , the second P <sub>2</sub> and so on.<br>Understanding the ordinal code is important because pupils will<br>be asked to write a date in prime number form. Thus, the 16 <sup>th</sup>   |
| Slide<br>4<br>Slide<br>5<br>Slide<br>6 | <ul> <li>✓ amsp</li> <li>Make your own date</li> <li>Can you write any date using sums?</li> <li>What about tomorrow's date?</li> <li>What about your birthday?</li> <li>You could send your birthday to your teacher</li> <li>✓ amsp</li> <li>✓ Prime Numbers</li> <li>On a piece of paper, write down the first 8 prime numbers</li> <li>On a piece of paper, write down the first 8 prime</li> <li>✓ amsp</li> <li>✓ Prime Numbers</li> <li>The first 8 prime numbers are 2, 3, 5, 7, 11, 13, 17, and 19</li> <li>✓ Prime numbers have their own ordered order.</li> </ul>  | The first prime number is P <sub>1</sub> , the second P <sub>2</sub> and so on.<br>Understanding the ordinal code is important because pupils will<br>be asked to write a date in prime number form. Thus, the 16 <sup>th</sup><br>January 2019 would be written ( $P_1$ ) <sup>4</sup> / $P_8^{\circ}$ / 3( $P_{122}$ ). |
| Slide<br>4<br>Slide<br>5<br>Slide<br>6 |  | The first prime number is P <sub>1</sub> , the second P <sub>2</sub> and so on.<br>Understanding the ordinal code is important because pupils will<br>be asked to write a date in prime number form. Thus, the 16 <sup>th</sup><br>January 2019 would be written ( $P_1$ ) <sup>4</sup> / $P_8^{\circ}$ / 3( $P_{122}$ ). |
| Slide<br>4<br>Slide<br>5<br>Slide<br>6 | Image       Image matrix         Make your own date         • Can you write any date using sums?         • What about tomorrow's date?         • What about tomorrow's date?         • What about your birthday?         You could send your birthday to your teacher         Image: matrix about tomorrow's date?         On a piece of paper, write down the first 8 prime numbers         On a piece of paper, write down the first 8 prime numbers         Prime Numbers         • The first 8 prime numbers are         2, 3, 5, 7, 11, 13, 17, and 19         • Prime numbers have their own ordered code:         Image: matrix about the first 8 prime numbers have the first 19 prime numbers | The first prime number is P <sub>1</sub> , the second P <sub>2</sub> and so on.<br>Understanding the ordinal code is important because pupils will<br>be asked to write a date in prime number form. Thus, the 16 <sup>th</sup><br>January 2019 would be written ( $P_1$ ) <sup>4</sup> / $P_8^{\circ}$ / 3( $P_{122}$ ). |

| Slide                                     | Oamsp Methodska  | For working with dates use of $P_{122}$ can be helpful. This is because  |
|---|--|--|
| 7   | Dates with Prime Numbers   | the 122 <sup>nd</sup> prime number is 673, which when multiplied by 3 is   |
|   | Can you work out the date below? Prime numbers are used to express the date.   | 2019.  |
|   | $P_{344} = 6.73$<br>$P_{423} = 6.77$   | P <sub>26</sub> is 101, so 2020 is 20P <sub>26</sub>   |
|   | • $P_8 - P_1 / (P_2)^2 / 3P_{122}$   | 2021 is <i>P</i> <sub>14</sub> x <i>P</i> <sub>15</sub>  |
|   |  |  |
|   |  | Answers are on the next slide for students to self-mark  |
| Slide                                     | ⊘amsp ME Manual  | And this slide gives the answer  |
| 8   | Dates with Prime Numbers -   | A common error is where pupils mistake $P_2$ for the number 2 and  |
|   | Answer Atiput  | thus think $P_2^2 = 2^2 = 4$ when they should have calculated $(P_2)^2 =$  |
|   | Here is the solution to the last slide $P_{8} - P_{1} / (P_{2})^{2} / 3P_{122}$  | 3 <sup>2</sup>   |
|   | (19 -2) /3 <sup>2</sup> / (673 × 3) → 17 / 9 / 2019  |  |
|   | <ul> <li>17<sup>th</sup> September 2019</li> </ul>   |  |
|   |  |  |
| Slido                                     |  | Answers are on the next slide for students to self mark  |
| a   | Dates with Prime Numbers 2   | Answers are on the next side for students to sen-mark  |
| 5   | Can you work out this date?  |  |
|   | • $(P_1)^3 - P_4 / \sqrt{(P_4^2 - P_6)} / 3P_{123} - P_5$  |  |
|   | What about this date?  |  |
|   | • $(P_2)^3 / \sqrt[3]{(2P_4)^2 - P_6^2} / 3P_{122}$  |  |
|   | <b>Extension:</b> Using $P_1$ to $P_8$ and $P_{122}$ $P_{123}$ as code, please try and create any date as a prime number.  |  |
|   | Be inventive, creative and use your initiative!  |  |
| <b>A</b> 1 1 1                            | Konggel In   |  |
| Slide                                     |  |  |
| Slide<br>10                               | Dates with Primes Numbers 2 -  |  |
| Slide<br>10                               | Dates with Primes Numbers 2 -<br>Answers<br>$(P_{c})^{3} = P_{c} \left( \sqrt{P_{c}^{2} - P_{c}} \right) \left( 3P_{c} - P_{c} \right)$  |  |
| 10  | Dates with Primes Numbers 2 -<br>Answers<br>• $(P_1)^3 - P_4 / \sqrt{(P_4^2 - P_6)} / 3P_{123} - P_5$<br>• $8 - 7 / \sqrt{7^2 - 13} / 2031 - 13 → 14^3 June 2020$  |  |
| 10  | $\begin{array}{c} \hline & & & & \\ \hline \hline & & & \\ \hline \hline & & & \\ \hline \hline \\ \hline & & & \\ \hline \hline & & & \\ \hline \hline \\ \hline \\$  |  |
| Slide<br>10                               | $\begin{array}{c} \hline \label{eq:constraint} \hline \label{eq:constraint} \hline \label{eq:constraint} \hline \label{eq:constraint} \hline \begin{tabular}{lllllllllllllllllllllllllllllllllll$  |  |
| 10  | $\begin{array}{c} \hline & & & & & & \\ \hline & & & & \\ \hline & & & & \\ \hline & & & &$  |  |
| Slide<br>10<br>Slide                      | $\begin{array}{c} \hline & & & & & & & & & & & & & & & & & & $   | Pupils who are able to find out the 25 prime numbers between 1   |
| Slide<br>10<br>Slide<br>11                | $\begin{array}{c c} \hline & & & & & & & & & & & & & & & & & & $   | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility  |
| Slide<br>10<br>Slide<br>11                | $\begin{array}{c c} \hline \textbf{C} \text{ armsp} & \hline \textbf{M} \in \textbf{M} \text{ arms}^* \\ \hline \textbf{Dates with Primes Numbers 2 - Answers} \\ \hline \textbf{Answers} \\ \hline \textbf{(} P_1)^3 - P_4 / \sqrt{(P_4^2 - P_6)} / 3P_{123} - P_5 \\ \hline \textbf{8} - 7/\sqrt{7^2 - 13}/2031 - 13 \rightarrow 1^{s1} \text{ June 2020} \\ \hline P_{4a}^{1} + \frac{93}{642} \\ \hline P_{4a}^{1} + \frac{93}{642} \\ \hline \textbf{(} P_{2})^3 / \frac{3}{\sqrt{2}(2P_4)^2 - P_6^2} / 3P_{122} \\ \hline \textbf{3}^3 / \frac{3}{\sqrt{14^2 - 13^2}} / 2019 \rightarrow 27^{th} \text{ March 2019} \\ \hline \hline \textbf{V} \text{ armsp} \\ \hline \textbf{Nearly ready for a YouTube Clip?} \\ \hline \textbf{It is almost time to watch a YouTube video about gaps between prime numbers. \end{array}$  | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are  |
| Slide<br>10<br>Slide<br>11                | $\begin{array}{c} \hline \mathbf{P}_{11} & \mathbf{P}_{11} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{Dates with Primes Numbers 2 - Answers} \\ \hline \mathbf{P}_{11} & \mathbf{P}_{11} & \sqrt{(P_{4}^{-2} - P_{6})} & \mathbf{P}_{123} - P_{5} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf{P}_{12} & \mathbf{P}_{12} & \mathbf{P}_{12} \\ \hline \mathbf$  | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime   |
| Slide<br>10<br>Slide<br>11                | $\label{eq:constraint} \hline \textbf{Varphing} & \textbf{M} \in \textbf{M} \\ \hline \textbf{Dates with Primes Numbers 2 - Answers} \\ \hline \textbf{Answers} \\ \hline \textbf{(} P_1)^3 - P_4 \ / \ \sqrt{(P_4^2 - P_6)} \ / \ 3P_{123} - P_5 \\ \hline \textbf{(} B - 7 \ / \ \sqrt{7^2 - 13} \ / \ 2031 - 13 \ \rightarrow \ 1^{st} \ June \ 2020 \\ \hline \textbf{M} \\ \hline \textbf{P}_{as}^{st} \ = \ 493 \\ \hline \textbf{P}_{as}^$  | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.   |
| Slide<br>10<br>Slide<br>11                | $\boxed{\operatorname{Camsp}}$   | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.   |
| Slide<br>10<br>Slide<br>11                | $\boxed{P_{n}^{(1)} (P_{n})^{3} - P_{4} / \sqrt{(P_{4}^{2} - P_{6})} / 3P_{123} - P_{5}} \\ = (P_{1})^{3} - P_{4} / \sqrt{(P_{4}^{2} - P_{6})} / 3P_{123} - P_{5} \\ = 8 - 7 / \sqrt{7^{2} - 13} / 2031 - 13 \rightarrow 1^{st} June 2020 \\ \boxed{P_{23}^{(1)} + \sqrt{(2P_{4})^{2} - P_{6}^{3}} / 3P_{122}} \\ = 3^{3} / \sqrt[3]{(14^{2} - 13^{2})} / 2019 \rightarrow 27^{th} March 2019 \\ \boxed{P_{23}^{(1)} + \sqrt{(2P_{4})^{2} - P_{6}^{3}} / 3P_{122}} \\ = 3^{3} / \sqrt[3]{(14^{2} - 13^{2})} / 2019 \rightarrow 27^{th} March 2019 \\ \boxed{P_{23}^{(1)} + \sqrt{(2P_{4})^{2} - P_{6}^{3}} / 3P_{122}} \\ = 1 \text{ It is almost time to watch a YouTube Video about gaps between prime numbers.} \\ = Before the video try this short task first \\ = There are 25 prime numbers between 1 and 100. Can you find an easy way of listing them? Remember to use the Prime Number code P_{n} Give it a go!$   | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.   |
| Slide<br>10<br>Slide<br>11                | Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp<br>Comp   | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.   |
| Slide<br>10<br>Slide<br>11<br>Slide       | $\boxed{\operatorname{Comsp}}$   | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.   |
| Slide<br>10<br>Slide<br>11<br>Slide<br>12 | $\begin{tabular}{ c c c c } \hline $ \end{tabular} tabula$   | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.<br>The video is less than seven minutes in length.<br>Please note that the reference to 'sexy prime numbers' is a play<br>on the latin for the word (six' which is 'nory'. This phrases linked to   |
| Slide<br>10<br>Slide<br>11<br>Slide<br>12 | $\label{eq:constraint} \hline \textbf{Constraint} \\ \hline \textbf{Constraint} \\ \hline \textbf{C} \hline \textbf{C} \\ \hline \textbf{C} \\ \hline \textbf{C} \hline \textbf{C} \hline \textbf{C} \\ \textbf{C} \hline C$ | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.<br>The video is less than seven minutes in length.<br>Please note that the reference to 'sexy prime numbers' is a play<br>on the latin for the word 'six' which is 'sex.' This phrases linked to<br>primes in this video date back in history at least over 100 years   |
| Slide<br>10<br>Slide<br>11<br>Slide<br>12 | $\label{eq:constraints} \hline We have the set of the set$  | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.<br>The video is less than seven minutes in length.<br>Please note that the reference to 'sexy prime numbers' is a play<br>on the latin for the word 'six' which is 'sex.' This phrases linked to<br>primes in this video date back in history at least over 100 years<br>according to a reliable course at the University of Lancester                            |
| Slide<br>10<br>Slide<br>11<br>Slide<br>12 | Comsp Constant Primes Numbers 2 - Answers<br>$(P_1)^3 - P_4 + \sqrt{(P_4^2 - P_6)} + 3P_{123} - P_5$ $8 - 7/\sqrt{7^2 - 13}/2031 - 13 \rightarrow 1^{st} June 2020$ $(P_2)^3 + \sqrt[3]{(2P_4)^2 - P_6^2} + 3P_{122}$ $3^3 / \sqrt[3]{14^2 - 13^2}/2019 \rightarrow 27^{th} March 2019$ Comsp Constant Prime Numbers 2019<br>It is almost time to watch a YouTube Clip?<br>It is almost time to watch a YouTube Clip?<br>It is almost time to watch a YouTube video about gaps between prime numbers.<br>Before the video try this short task first<br>There are 25 prime numbers between 1 and 100. Can you find an easy way of listing them?<br>Remember to use the Prime Number code $P_n$ Give it a go!<br>Comsp Consp Consp Constant Prime Number code $P_n$ Give it a go!<br>Prime State of the video for watching the video, you might want to list all of<br>0 and 100 that you listed before watching the video, you might want to list all of<br>0 the cousin primes<br>As well as the twin primes<br>Maybe too, the sexy ortimes & any triplets?  | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.<br>The video is less than seven minutes in length.<br>Please note that the reference to 'sexy prime numbers' is a play<br>on the latin for the word 'six' which is 'sex.' This phrases linked to<br>primes in this video date back in history at least over 100 years<br>according to a reliable source at the University of Lancaster<br>mathematics department  |
| Slide<br>10<br>Slide<br>11<br>Slide<br>12 | $\boxed{\operatorname{Comsp}}$   | Pupils who are able to find out the 25 prime numbers between 1<br>and 100 should be able to use their knowledge of the divisibility<br>rules. They know that there will be no even numbers that are<br>prime numbers other than 2. Therefore, all of the other prime<br>numbers up to 100 will be odd.<br>The video is less than seven minutes in length.<br>Please note that the reference to 'sexy prime numbers' is a play<br>on the latin for the word 'six' which is 'sex.' This phrases linked to<br>primes in this video date back in history at least over 100 years<br>according to a reliable source at the University of Lancaster<br>mathematics department. |

| Slide | Oamsp Krater Krater  | The task has been adapted from                                      |
|-------|--|---|
| 13    | Investigation 1  | White Rose Maths Hub (2016), 'Mastery Overview: Autumn Term'        |
|       | <ul> <li>Three Panda Bears are given 51 bamboo shoots<br/>to share.</li> <li>Each Panda may only receive an odd number of</li> </ul> | Trinity Academy Publication: Halifax                                |
|       | bamboo shots. How many different combinations<br>of sharing these bamboo shots can you find?   |   |
|       | <ul> <li>How many different combinations can you find<br/>using prime numbers only? (Yes, you can use P<sub>1</sub>).</li> </ul>     |   |
|       | Start by sharing as many bamboo shoots as you<br>can amongst the 3 Pandas. You cannot use the<br>came prime pumper twice!            |   |
|       | Send your teacher your solution!   |   |
| Slide | ⊘amsp Met Manager  | The task has been adapted from                                      |
| 14    | Investigation 1 continued  | White Rose Maths Hub (2016), 'Mastery Overview: Autumn Term'        |
|       | <ul> <li>Exhausted yet? – try using the same prime<br/>number twice or three times, e.g. 17.</li> </ul>                              | Trinity Academy Publication: Halifax                                |
|       | <ul> <li>Then, try sharing a prime number of bamboo<br/>shoots across 4 Pandas.</li> </ul>   | Many excellent resources are freely available on the White Rose     |
|       | <ul> <li>Now, can you find any cousin, twin or sexy<br/>primes in your list?</li> </ul>  | maths website: <u>https://whiterosemaths.com/resources/schemes-</u> |
|       | Adapted from White Rose Maths  | of-learning/secondary-sols/   |
|       |  |   |
| Slide |  | The task is taken from <u>https://nrich.maths.org/6239</u>          |
| 15    | Investigation 2  | 1, 2, 3, 11 and 17 do not have a sum of two prime numbers. And      |
|       | <ul> <li>Both 4 and 8 can be written as the sum of two<br/>prime numbers (4 = 2+2, 8 = 5+3). How many</li> </ul>                     | the following can have a sum of two prime numbers.                  |
|       | numbers less than 20 cannot be written as the sum of two prime numbers?  | 4 = 2 + 2 9 = 7 + 2 15 = 13 + 2                                     |
|       | <ul><li>How many of these are twin or cousin primes?</li><li>Why is there never a gap of 7 between 2 prime</li></ul>                 | 5 = 2 + 3 10 = 7 + 3 16 = 13 + 3 or 11 + 5                          |
|       | numbers?   | 6 = 3 + 3 12 = 7 + 5 18 = 13 + 5                                    |
|       | Adapted noni, https://nicit.mains.org/0239   | 7 = 5 + 2 13 = 2 + 11 19 = 17 + 2                                   |
|       |  | 8 = 5 + 3 14 = 7 +7 or 3 + 11 20 = 17 + 3                           |
| Slide |  | -   |
| 16    | Contact the AMSP   |   |
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