## Times Tables Shifts solution for Nrich

Myself Shubhangee (Facilitator) had worked collaboratively on 'Times Tables Shifts' with a group of 13 students, in online mode, in 'Ganit Kreeda', Vicharvatika, India. The names of the students are:

Ahana, Sehar, Saanvi, Dhanvin, Aariz, Ananthjith, Vivaan, Sai, Pranathi, Paavani, Utkarsh, Tavish, Dhruv.

All the kids worked collaboratively during the session using interactivity. Here are the answers they found for all the questions.

What is the same between numbers in a times table and numbers in the shifted times table?
A. The difference between two numbers of the shifted time table is the same as the normal table.
2. What can you learn from the difference between any two numbers in a shifted times table?
A. the difference is the same from the normal table.
3. How do you find the shift once you've worked out the table?
A. Add or subtract the original number from the time table.
4.What can you say if the numbers from the shifted table are all odd?
A. We can say that an odd number is subtracted or added from an even number table.

Sharing pics of some of the kid's solution:
First 3 images show Sehar's work:


Athens work
and 2 is to subtract 2 consecutive numbers and the difference will be the table because pow are just adding the number of the table each time and that is reapted addition or multplecation The methord I used for level 3 and 4 was to firmest arranges all the numbers in sending order, then I checked all the coles bellow the first sumbere and numbers without any multiples. in the numberens.

Group/ Class \& Div.
Subject: $\qquad$ Topic $\qquad$ Page: $\qquad$ of $\qquad$

Times Tables Shift HW

1. My strategy to find out the tables and how much it has been shifted:
(1) Firstly, the computer gives 5 numbers. Subtract the first number by the second number; the ruresult will be the table of that has been . Shifted.
(2) Next, subtract the first number try your table. The result will be the number which the table has been shifted un by. If the 1 st number is smaller than the table, than click the 'shifted' button to 'down' and \$ put in the difference between the first number and your table number in the blank.


Below 9 images are from Pranathis work:

|  | Tines | how |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & 5 \text { server } \\ & \text { cunbers } \end{aligned}$ | Talles | $\begin{aligned} & \text { nuppread pout } \\ & \text { sen } \end{aligned}$ | domen/up | Yhoory |
|  |  | the trave | dre | - -1 |
| 1),9,6, $23,30,37$ | 7 | $16-9=7$ |  | shipt |
|  |  |  |  | $9-7=2$ |
| $26,8,200,27,34$ | 7 | $13-6=7$ | down 1 | $7 \cdot 6=1$ |
| 3) $7,14,15,19,23$ |  | $11-7=4$ | Mo 3 |  |
| .5,7,9,11 |  |  |  | $74=3$ |
|  | 2 | $5-3=2$ | up 1 | 3-2:1 |
| $54.4,1011316$ | 3 | $7 \cdot 4=3$ | \|wal | 4-3-1 |




| 1) $08^{2} 138888^{5} 8 x^{11} 544^{2} 4$ $\begin{array}{lll} \frac{188}{45} \\ \frac{1-88}{45} & -(-161 \\ & \frac{16}{27} & \frac{16}{18} \\ \hline \end{array}$ |
| :---: |
| $M$ of $9=9,18,27,36,45,54,63,72,81,90,99$, $108,117,126,135,144$ |
| $\text { 2) } \begin{array}{rrr} 37 & 57 & 27 \\ \frac{1-727}{10} & -737 \\ \hline 10 & \frac{-722}{05} & \frac{-122}{10} \\ \hline \end{array}$ |
| $M_{A \rho} 5=5,10,15,20,25,30,35,40,45,50,55$ |
|  |



|  | Senelt-4 |
| :---: | :---: |
| M of $15=15,30,45,60,75,90,105,120,135,150$ $165,180,195,210$ <br> 2) $237 \times 8 x^{182} 15 \quad \sqrt{15} \quad 5^{5} x^{11}$ |  |
| $\Leftrightarrow \frac{205}{032} \frac{157}{048}+\frac{61}{96} \xrightarrow{(-16}$ | $\begin{gathered} \text { Mof } 15=15,30,45,60,75,90,105,120,135.150 \\ 165,180,195,210,225 \end{gathered}$ |
| $M_{\text {of }} 16=16,32,48,44,80,96,112,128,144,160$, $176,192,208,224,240$ <br> 3) $15518 x^{211} 8119{ }^{6} 1^{11}$ | $\left\{\begin{array}{rrrr} 511 & 013 & 62 & 51 \\ 18 x & 889 & 62 \\ -139 & \Leftrightarrow-762 & -251 & 1-740 \\ \hline \end{array}\right.$ |
| $\frac{131}{024} \frac{(-119}{012}-\frac{71}{48} \frac{59}{12}$ | 022 77 |
| $\begin{array}{r} M \text { of } 12=12,24,36,48,60,72,84,96,108,120 \\ 1132,144,156,168 \end{array}$ | Mof $11111,22,33,44,55,66,77,88,99,110,12,133$ $143,154,165,176$ |



Saston 5 H.W
Q.2 ${ }_{4}$ Con you weate out the tolle and whlt wech then? 4. 1 Yer
Q.2. Iephamen ypar mothat and uthy it wanter
A2d ben In my mold. I find subltract two

- cumbere ofthating teopthen to find the
Timus talle. Ifen wiltand. numeder
Ther find the diffrenes of opyluer buen
Ho s diat ard lla
fuem the timess talle to find to out
ly tom haw mich the tefle is suffed uf
or doum.

Zow $1 /$




Last 3 images show Anathjith's work.

