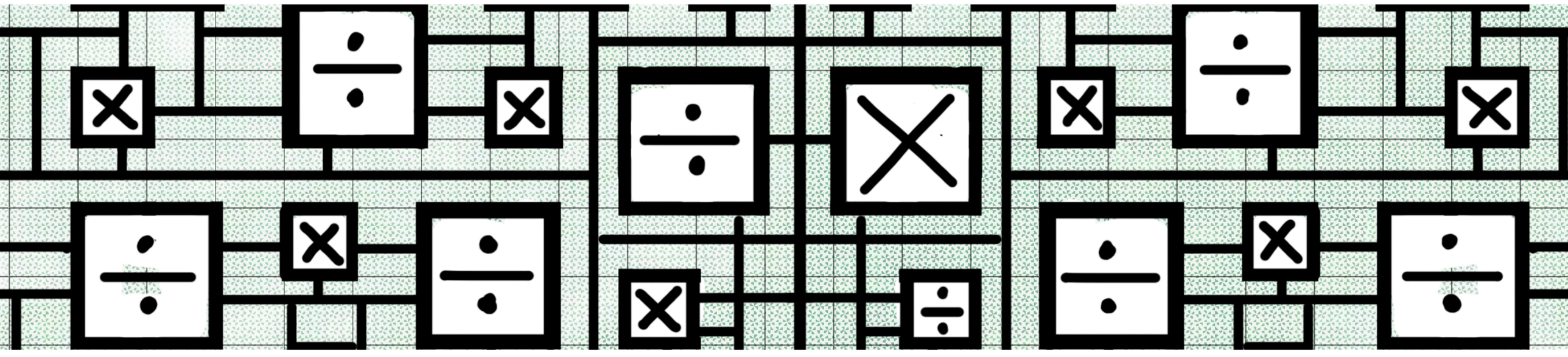


Long Division and Multiplication Grid

Use our poster-style Long Division and Multiplication Grid to visualize big-number problems—an easy, reusable tool that helps students practice and build confidence step by step.

Materials needed for the long division and multiplication grid:

- Printout
- White board markers
- Tissue/white board eraser

Reusable Methods and materials needed:
Speak with your parents to select one of the following methods.

- If you don’t have access to lamination techniques you can use any writing. surface and our printout as a template:
  - Use the printout and grid guide to learn the method.

- Using a laminator makes the pieces durable and reusable:
  - This can be done at your local print shop.
  - Use dry erase markers and a tissue for your laminated project.

- DIY Lamination at home:
  - Lamination sleeves/clear freezer Bags/ziploc bags.
  - Make sure the size of the sleeve can fit the grid template and is thicker than a file sleeve.
  - Parchment paper/baking sheets (front and back of the plastic)
  - Iron (with no water/steam off on a medium heat)
  - Ironing board.
  - Use dry erase markers and a tissue for your laminated project.

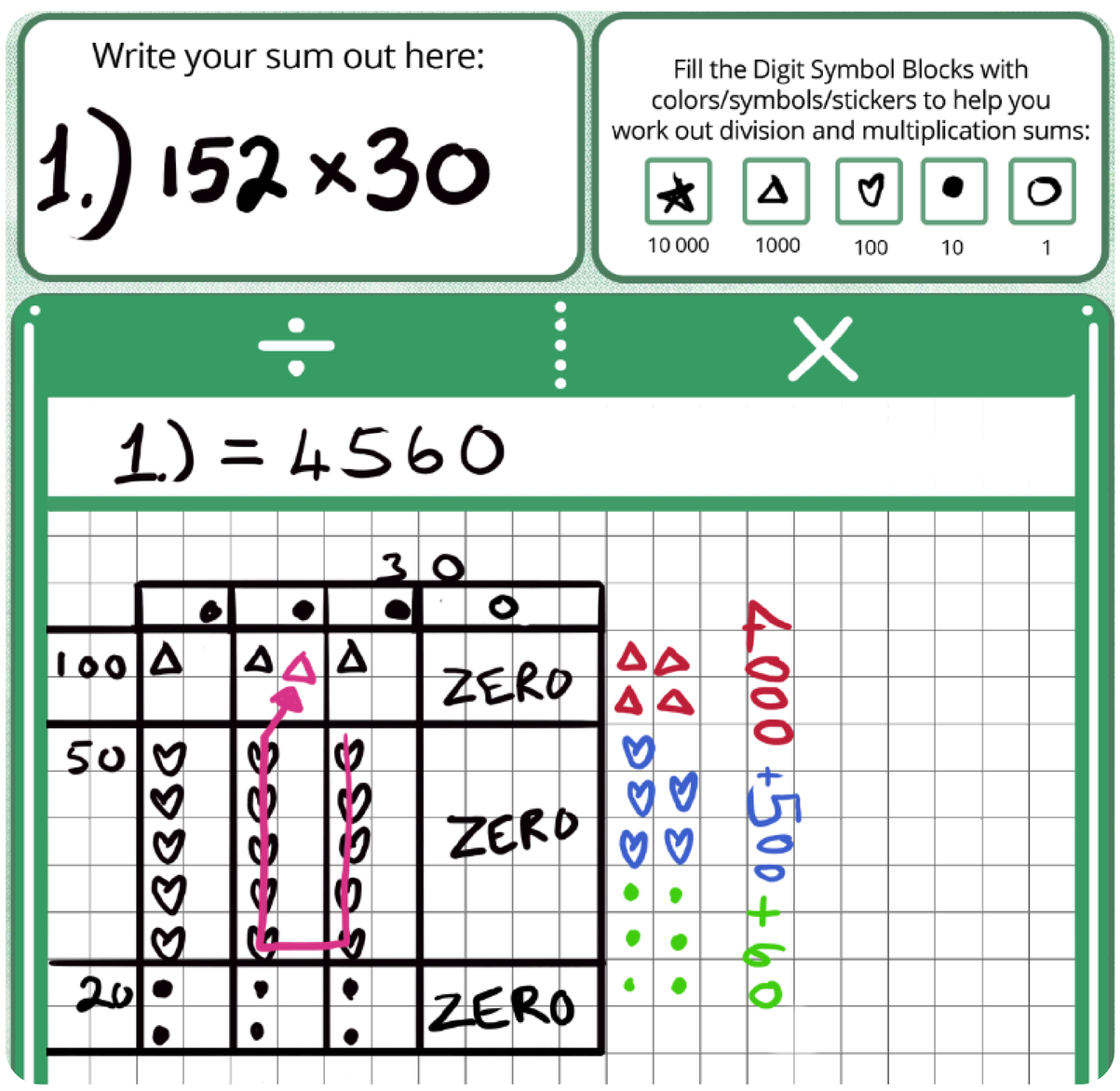
Grid Method Guide:

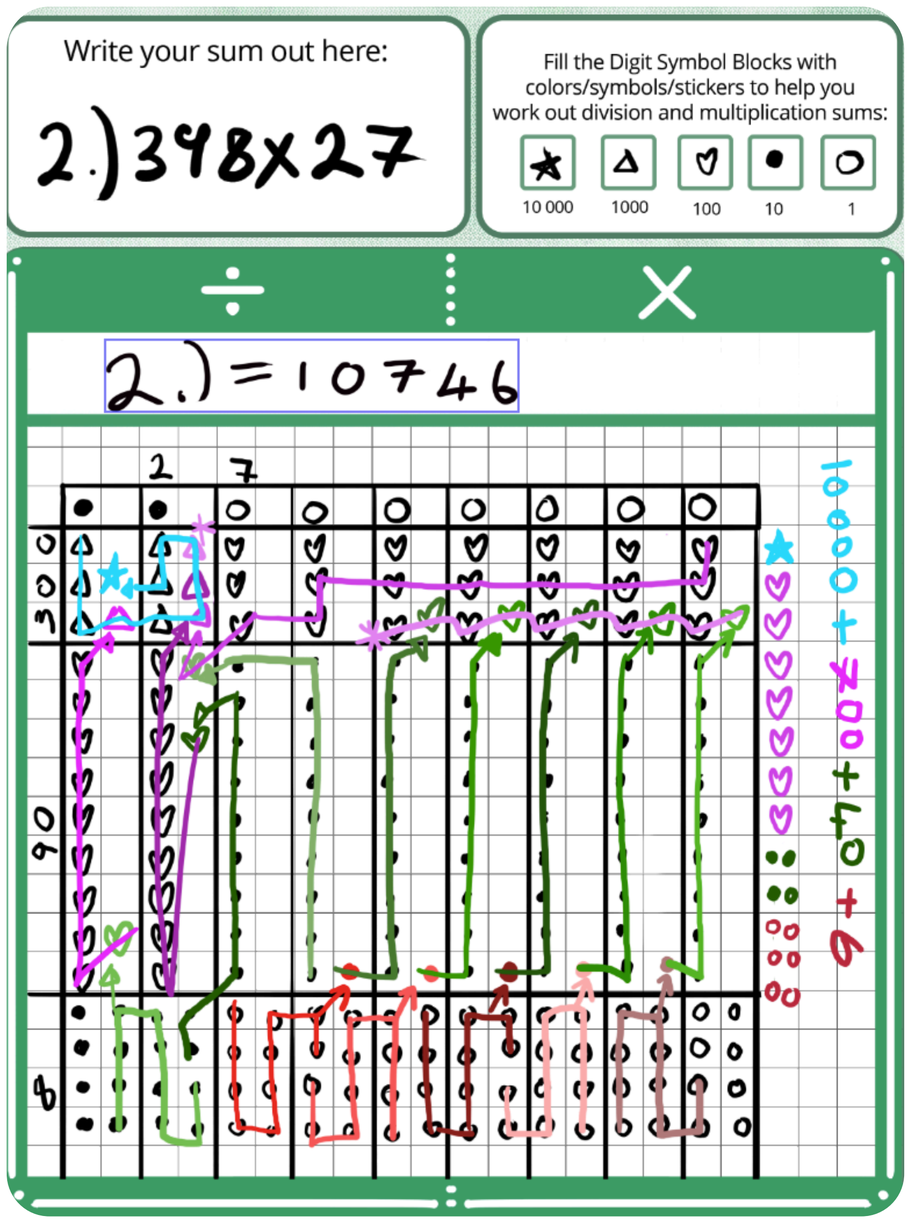
- Write out your sum you are trying to work out
- In the grid use colored markers or symbols or that represent each of the digit blocks when practicing your multiplication and long Division sums

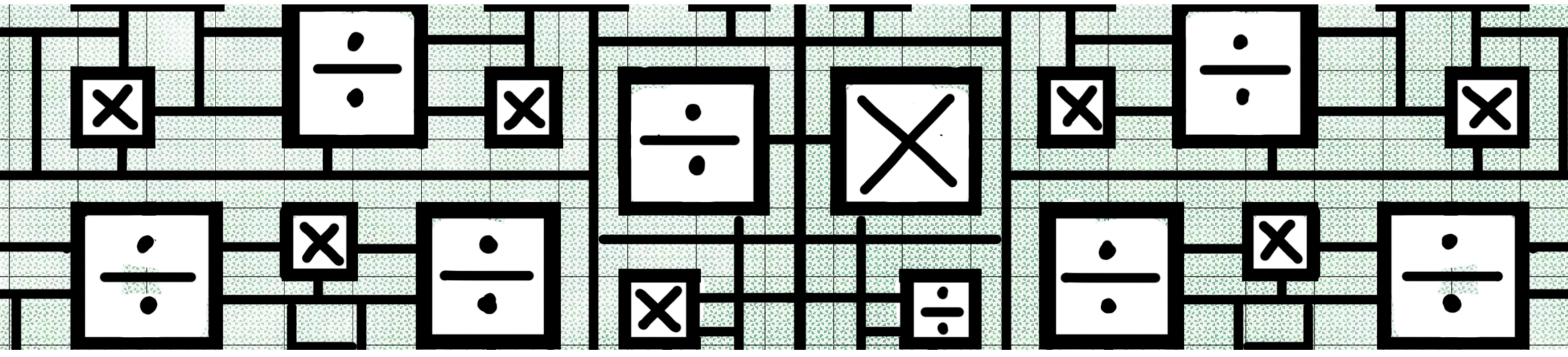
Multiplication method:

- Write down the smallest number first of the numbers from your multiplication sum—leaving plenty of space for your working area.
- If there is a zero, skip the column as any number multiplied by zero = zero but be aware of where the zero is in the number.
- Use the first column under each digit symbol to write out the second number in the multiplication sum into the digit symbols.
  - Remember to increase the digit values by 10 before you write in your symbols.
- When this is written out we can simplify our work:
  - Add each group of 10 of the same symbols -
  - use a long line to slash the symbols out and replace with one symbol of the next highest digit value.
    - For example: ten 10 digit symbols becomes one 1000 digit symbol.
- When you are done simplifying your work, write out the symbols you have left over to find your answer.
- You can double check by adding and counting them together to ensure your simplifications are correct.

Multiplication Grid example:







Long Division:

- Write down your divisor to leave plenty of space for your working area.
- Break down the divisor into your digit symbols into each block of the grid.
- If there is a zero skip the column as any number multiplied by zero = zero
- Write down your Dividend on the other side of the page.
- Break down the dividend into your digit symbols.
- Share all dividend digit symbols from biggest to lowest one row at a time under each column of the divisor:
    - To start a row, cross out the highest value digit symbol in your dividend and “copy” into the first row column.
    - For the next column in the same row choose the next lowest digit value symbol.
    - The digit symbols for the divisor and dividend represent multiples of 10 so each column based on the digits symbols value must be 10 times more or less.
    - If your next row is in the same value as the previous digit symbol used, that same symbol can apply.
- Cross out the dividend digit symbols you used as you work through each row of digit symbols while sharing these symbols.
    - If you cannot share a dividend digit evenly while still having plenty of digit symbols left over to share.
    - Make a single slash on the left over dividend digit symbol.
    - Add 10 of the next lower digit symbols .
    - Use brackets and arrows to help you separate these numbers for reference, i.e. a one 100 digit symbol with a single slash can be converted to ten [10 digit symbols].
- Repeat until all the digit symbols are slashed or crossed out and written under the divisor.
- To check your work, see if all the symbols that are not slashed are added up evenly between the dividend group and the divisor group.
- To get the final answer, look at the last 1 digit symbol column b and tally up your digit symbols as the 10 digit symbol is 10 times more.

Long division Grid examples: