Exponents I
Use your factor tiles to create models of the following problems and find a simplified result.

1. \((x^2y^3)(xy^2) =\)

2. \(y^2(xyz^3) =\)

3. \((3x^3y)(2x^3yz) =\)

4. \((4xy^3w^2)(3xy^2)(5xw^3) =\)

5. How would you explain a “shortcut” for multiplying expressions with exponents?

6. Use your shortcut to complete the problem discussed earlier in class: How far does light travel in one year?

7. The space shuttle Endeavor traveled at a speed of \(1.73 \times 10^4\) miles per hour while in space. There are approximately \(8.77 \times 10^3\) hours in a year. Using your shortcut, determine how far the space shuttle could travel in one year.

Extension – work on these problems if you have time

a. \((x^3)^2 =\)

b. \((3xy^3)^2 =\)