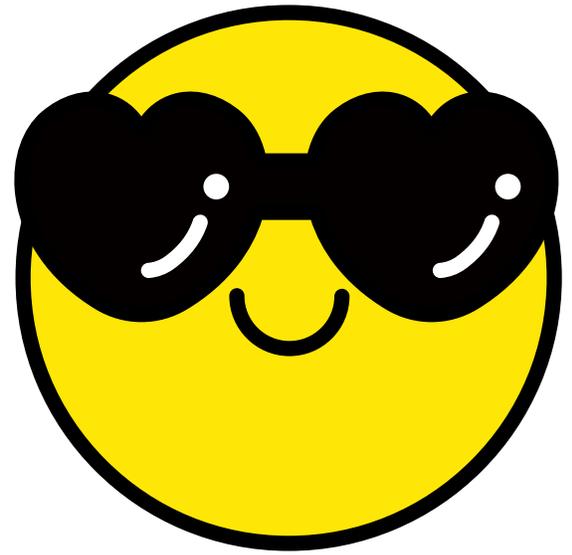# DAM GOOD MATH

A super fun summer math workbook for **Beaver Middle School** students

B

This book belongs to ...

Hi, students!

It's no secret we ❤️❤️❤️ math, so we created this fun workbook for you to work on throughout the summer. While this work is optional, we hope you explore the following pages. You'll notice all of the topics are review; we did this on purpose!

As you know, math at Beaver is all about *investigating* and *discovering* new ideas together. The best way to ensure you are ready to collaborate and explore new math next year is by spending a little time this summer to keep these topics in your toolkit.

You can sit and do the workbook all at once—or you can do a problem here and a problem there.

However, wherever, whenever! It's as easy as π.

Now, go have a DAM good summer! 😎

- The MS Math Team

RISING 6th GRADE SUMMER MATH PRACTICE

☐ However, wherever, whenever! The guide below will help you start and ensure everything gets done before school starts.

☐ Leave out the calculator. You won't need it!

Suggested Date	Topic
Week 1 June 30 - July 4	Multi-Digit Multiplication
Week 2 July 7 - 11	Multi-Digit Division
Week 3 July 14 - 18	Adding & Subtracting Decimals
Week 4 July 21 - 25	Multiplying Decimals
Week 5 July 28 - August 1	Dividing Decimals
Week 6 August 4 - 8	Adding & Subtracting Fractions
Week 7 August 11 - 15	Fraction Multiplication
Week 8 August 18 - 22	Fraction Division Complete the Student and Parent Reflections.
FIRST DAY OF SCHOOL September 2nd	Give your Summer Math Practice to Mr. O'Brien, receive a 🎁 !

😎

Week 1: Multi-Digit Multiplication

1. Find the value of each product. Explain or show your reasoning.
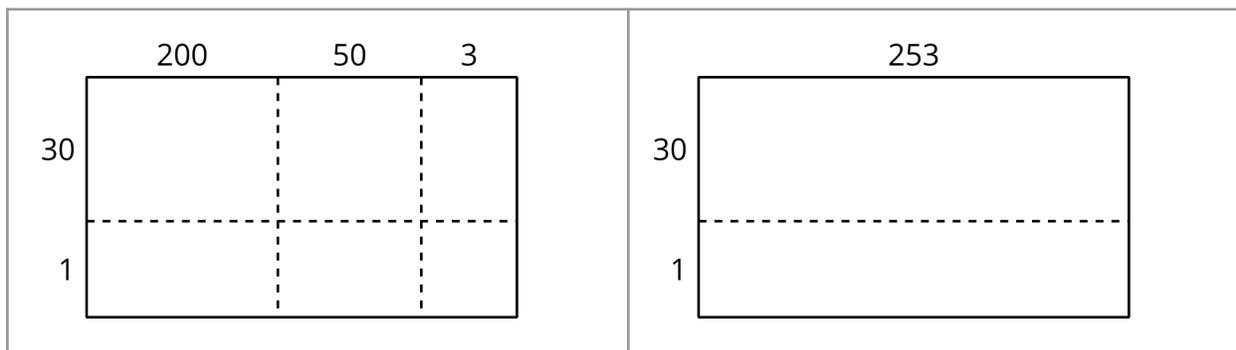
    a. 100×50

    b. 120×50

    c. 127×50

2. Complete the diagrams and use each of them to find 253×31.

	200	50	3
30			
1			

	253
30	
1	

How are the strategies the same? How are they different?

3. Find 315×43 using partial products (the strategy in #2)

😎

4. Use the standard algorithm to find the value of $16,452 \times 6$.

5. Find the value of 322×41 using the standard algorithm.

6. Find the value of 562×34 using ANY strategy.

Week 2: Multi-Digit Division

1.   Boston Dance has 480 dancers in the company.

   a.   If they make groups of 15, how many groups are there? Explain or show your reasoning.

   b.   If they make groups of 30, how many groups are there? Explain or show your reasoning.

2.   Explain why $256 \div 4$ is equivalent to $(200 \div 4) + (40 \div 4) + (16 \div 4)$.

3.   What is the value of $256 \div 4$? Explain your reasoning.

😎

4. Use partial quotients to find the value of $243 \div 9$

$$9 \overline{)243}$$

5. Use partial quotients to find the quotient $636 \div 12$.

$$12 \overline{)636}$$

6. Find $4,250 \div 34$ using partial quotients. Explain your calculations.

7. The area of a rectangular field is 8,320 square yards. The width is 65 yards. How long is the field? Explain your reasoning.

😎

Week 3: Adding & Subtracting Decimals

Adding & Subtracting Decimals

1. Write the problem vertically, lining up the decimal points.

2. Add additional zeroes at the end, if necessary, to make the numbers have the same number of decimal places.

3. Add/subtract as if the numbers are whole numbers.

4. Bring the decimal point straight down

ex: $14.2 - 7.934$

$$\begin{array}{r} 14.200 \\ -7.934 \\ \hline 6.266 \end{array}$$

1. WITHOUT DOING ANY CALCULATIONS, estimate which whole number $3.62 + 1.49$ is closest to? Explain or show your reasoning.

2. CALCULATE the value of $3.62 + 1.49$.

3. Find the value of the expression $215.7 + 64.94$.

4. WITHOUT DOING ANY CALCULATIONS, estimate which whole number $9.36 - 6.52$ is closest to? Explain or show your reasoning.

5. CALCULATE the value of $9.36 - 6.52$.

😎

6. Here is how Elena found the value of $15.37 - 8.19$.

$$
\begin{array}{r}
\color{blue}{15\ \ 2\ \ 17} \\
\cancel{1}\ \cancel{5}.\ \cancel{3}\ \cancel{7} \\
-\quad\ 8.\ 1\ \ 9 \\
\hline
7.\ 1\ \ 8
\end{array}
$$

    a.   Explain Elena's calculations and the meaning of the 15 above the 5 and the 17 above the 7 in 15.37.

    b.   Use Elena's algorithm to calculate $52.63 - 17.55$.

7.   Find the value of each expression.

$37.06 - 22.57$	$555 - 4.44$

Week 4: Multiplying Decimals

Multiplying Decimals

1. Write the problem vertically with the numbers lined up to the right. The decimals **do not need** to be lined up.

2. Ignore the decimals and multiply as if the numbers are whole numbers.

3. Count the total number of decimal places in the factors and put a decimal point in the product so that it has the same number of decimal places.

ex: 6.94 x 7.8

$$6.94 \rightarrow \text{2 decimal places}$$
$$\times \ \ 7.8 \rightarrow \text{1 decimal place}$$
$$\overline{} \quad \text{3 decimal places}$$
$$+ \ \ 5552$$
$$48580$$
$$\overline{54132}$$
$$\boxed{54.132}$$

1. Mai says that 7×0.4 and 7×0.04 both have the same value. She says that they are both 28. Do you agree with Mai? Explain or show your reasoning.

2. Shade the diagram to represent 0.7×0.4.

1

1
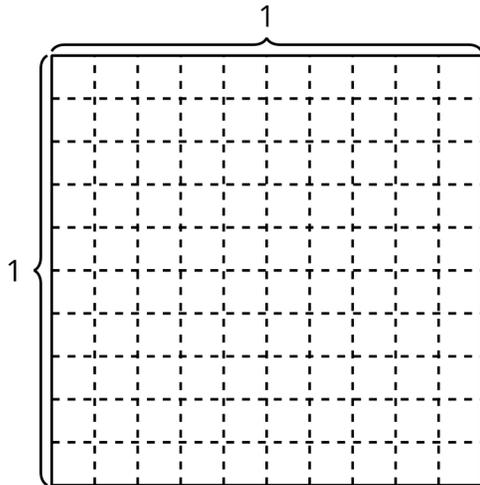
What is the value of 0.7×0.4?

3. Calculate 5.6×3.4.

Week 5: Dividing Decimals

Dividing Decimals

1. Write the dividend under the long division symbol and the divisor to the left of it.

2. Multiply the divisor and dividend by the same power of ten so that the dividend becomes a whole number. Bring the decimal up from the divisor.

3. Divide as if the numbers are both whole numbers.

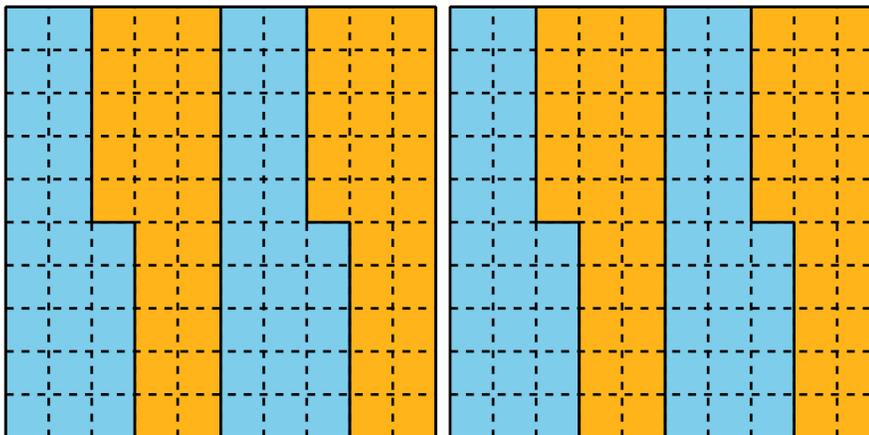4. Add zeros in the dividend as needed until there is no remainder.

ex: $25.3 \div 0.3$

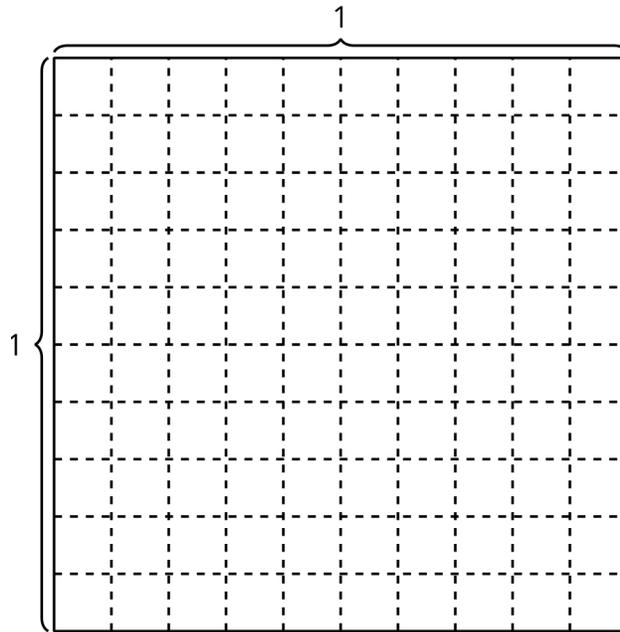$$0.3 \overline{)25.3} = 84.3$$

1. Here is a diagram.

   a. Explain or show how the diagram shows $200 \div 25$. What is the value of the expression?

   b. Explain or show how the diagram shows $2 \div 0.25$. What is the value of the expression?

2. Find the value of each expression. Explain or show your reasoning.

Use the diagram if it is helpful.

a. $0.2 \div 5$

b. $6 \div 3$

c. $6 \div 0.3$

3. Find the value of each expression. Explain or show your reasoning.

  a. $0.5 \div 0.1$

  b. $0.5 \div 0.01$

  c. $3.5 \div 0.01$

😎

Week 6: Adding & Subtracting Fractions

Adding Fractions & Mixed Numbers

1. Find a common denominator for the two fractions.

2. Add the two numerators and keep the denominators the same.

3. Add the whole numbers.

4. Simplify the answer.

ex: $3\frac{3}{4} + 2\frac{1}{2}$

$3\frac{3}{4} = 3\frac{3}{4}$

$+\ 2\frac{1}{2} = 2\frac{2}{4}$

$5\frac{5}{4} = 6\frac{1}{4}$

1. Find the value of each sum. Explain or show your reasoning.

    a. $\frac{5}{6} + \frac{2}{6}$

    b. $\frac{5}{6} + \frac{2}{3}$

    c. How were the calculations the same? How were they different?

2. Explain why the expressions $\frac{2}{3} - \frac{7}{12}$ and $\frac{8}{12} - \frac{7}{12}$ are equivalent.

3. How is the expression $\frac{8}{12} - \frac{7}{12}$ helpful to find the value of $\frac{2}{3} - \frac{7}{12}$?

4. Find the value of each expression. Explain or show your reasoning.

   a. $\frac{1}{4} + \frac{1}{5}$

   b. $\frac{10}{9} - \frac{3}{4}$

😎

5. Find the value of $2\frac{3}{4} - \frac{1}{3}$. Explain or show your reasoning.

6. Find the value of $3\frac{2}{7} - \frac{4}{5}$. Explain or show your reasoning.

7. Jada picked $4\frac{2}{3}$ cups of blackberries. Andre picked $3\frac{5}{8}$ cups of blackberries.

    a. How many cups of blackberries did Jada and Andre pick together? Explain or show your reasoning.

    b. How many more cups of blackberries did Jada pick than Andre? Explain or show your reasoning.

Week 7: Fraction Multiplication

Multiplying and Dividing Fractions

1. Turn any mixed numbers into improper fractions.

ex: $2\frac{1}{6} \cdot \frac{4}{7}$

2. Cross-simplify when possible.
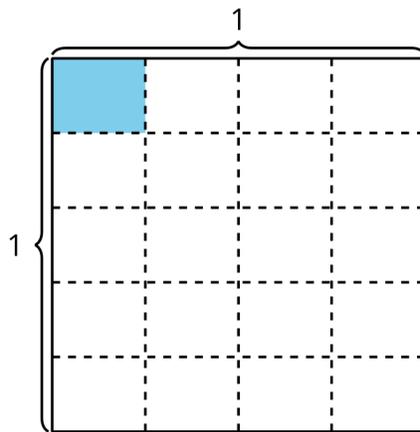
$\frac{13}{3\cancel{6}} \cdot \frac{\cancel{4}^2}{7} = \frac{26}{21} = \boxed{1\frac{5}{21}}$

3. Multiply the numerators and multiply the denominators.
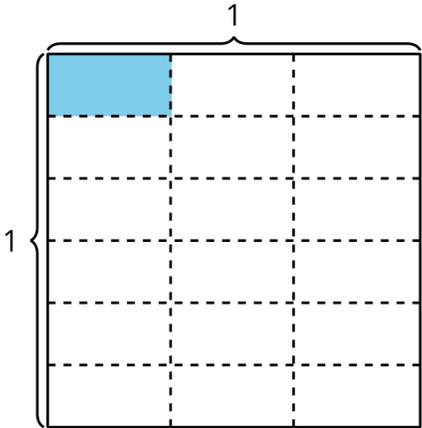
Scan to watch a review video.

1. Use the diagram below.

1

1

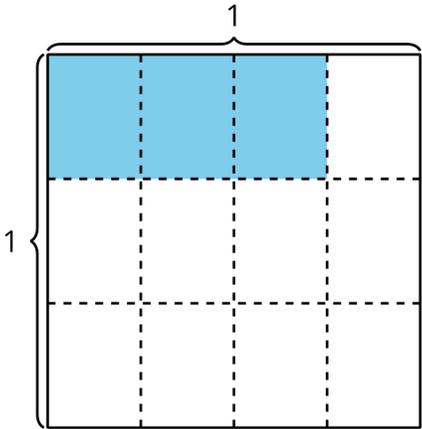a. Write a **FRACTION MULTIPLICATION** problem for finding how much of the square is shaded.
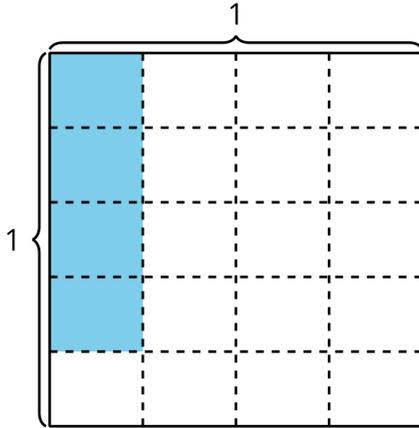
b. Find the value of your expression.

😎

2. Write a **FRACTION MULTIPLICATION** problem for finding the shaded part of the diagram.
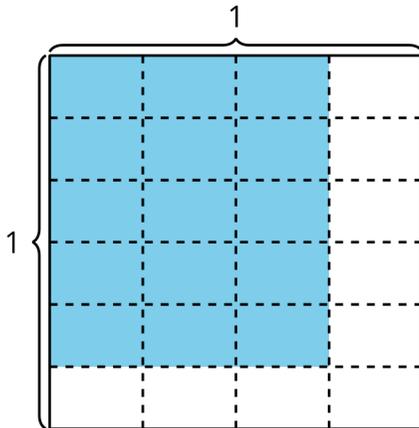
1

1

3. Write a **FRACTION MULTIPLICATION** problem for finding the shaded region of the square.

1

1

4. Write a **FRACTION MULTIPLICATION** problem for finding the area of the shaded region.

1

1

5. Write a **FRACTION MULTIPLICATION** problem for finding the area of the shaded region.

1

1

6. This flag of Sweden is $3\frac{1}{5}$ inches wide and 2 inches tall.

    a. What is the area of the whole flag?

    b. The rectangle in the upper right is $\frac{9}{5}$ inches wide and $\frac{4}{5}$ inch tall.

    What is the area of the rectangle in the upper right?

Week 8: Fraction Division

Multiplying and Dividing Fractions

1. Turn any mixed numbers into improper fractions.

2. Cross-simplify when possible.

3. When dividing, remember to switch the second fraction to its reciprocal.

4. Multiply the numerators and multiply the denominators.

ex: $2\frac{1}{6} \cdot \frac{4}{7}$

$\frac{13}{3\cancel{6}} \cdot \frac{\cancel{4}^2}{7} = \frac{26}{21} = \boxed{1\frac{5}{21}}$

ex: $7 \div 1\frac{3}{4}$

$\frac{7}{1} \div \frac{7}{4}$

$\frac{1\cancel{7}}{1} \cdot \frac{4}{\cancel{7}_1} = \frac{4}{1} = \boxed{4}$

1. Mai has a strip of paper that is 3 feet long. She cuts it into $\frac{1}{4}$ foot strips.

    a. How many $\frac{1}{4}$ foot strips does Mai make? Explain or show your reasoning.

    b. Write a **FRACTION DIVISION** problem to represent your answer.

😎

2. Find the value of each expression.

$5 \div \frac{1}{4}$	$6 \div \frac{1}{4}$	$3 \div \frac{1}{6}$

3. Solve each problem. Write a **FRACTION DIVISION** problem for finding your answer.

    a. There are 4 liters of water. How many $\frac{1}{2}$ liter bottles of water is that?

    b. 4 friends split $\frac{1}{2}$ pound of dried fruit equally. How many pounds of fruit does each friend get?

4. Find the value of each expression. Explain or show your reasoning.

$3 \div \dfrac{1}{4}$	$\dfrac{1}{5} \div 8$

😎

Student Reflection

1. How would you rate the difficulty of the problems in general throughout the summer break packet? Please rate on a scale from 1-10, with 1 being the easiest and 10 being the hardest.

   1   2   3   4   5   6   7   8   9   10

2. What types of problems in the packet were the most difficult and why?

3. What types of problems in the packet were the easiest and why?

4. When did you complete the packet? How did you pace yourself when completing the packet? (Did you do it every day, once a week, all of it crammed into a few days?)

5. List at least 3 goals you have for 6th-grade math.

   1. _____

   2. _____

   3. _____

6. Explain how you plan to achieve those goals.

Family Reflection

1. How difficult did you feel this summer math packet was for your student? Was it too easy or too difficult or somewhere in the middle?

2. How much help did you give your child in completing this packet?

3. What would you say was the most difficult thing about the summer math packet?

😎

YAY!
YOU DID IT!

CHECK YOUR WORK!
Scan the QR code or go to
http://q-r.to/BVRMath6th
for the Answer Key.