



Helping With Math

USA
GRADES

Multiplication of Mixed Numbers

Suitable for students
aged 9-11



This pack is suitable for learners aged 9 - 11 years old or 5th and 6th graders (USA). The content covers fact files and relevant basic and advanced activities involving multiplication of mixed numbers.

Jake is preparing gifts for his father. He has $2\frac{2}{5}$ feet of a wrapper for his first gift but the second item requires $1\frac{1}{2}$ times as much as the wrapper of the first gift. How many feet of gift wrapper does he need for the second item?



Whole number



$$2\frac{2}{5}$$



Proper fraction



A **mixed number** is a combination of a whole number and a proper fraction.



MIXED NUMBER AND IMPROPER FRACTIONS

CHANGING MIXED NUMBER TO IMPROPER FRACTION



All mixed numbers can be converted to improper fractions and vice versa.

Step 1

Multiply the whole number by the denominator.

$$2\frac{2}{5} = \frac{2 \times 5}{5} = \frac{10}{5}$$

Step 2

Add the numerator to the product. The answer will be the numerator of the improper fraction.

$$\frac{10 + 2}{5} = \frac{12}{5}$$

Step 3

Simply copy the original denominator.

$$2\frac{2}{5} = \frac{12}{5}$$



MULTIPLYING MIXED NUMBERS



To multiply mixed fraction:

1. Change mixed number to improper fraction.
2. Multiply the numerators and the denominators.
3. Write the product in its simplest form.
Change also in mixed number if possible.

$$2\frac{2}{5} \times 1\frac{1}{2} = \frac{12}{5} \times \frac{3}{2} = \frac{36}{10}$$

$$\frac{36 \div 2}{10 \div 2}$$

You can simplify the product because both 36 and 10 can still be divided by 2.



$$\frac{18}{5} \text{ or } 3\frac{3}{5}$$

Canceling may be used to eliminate common factors before multiplying the numerators and denominators.

$$\frac{\overset{6}{\cancel{12}}}{5} \times \frac{3}{\cancel{2}_1} = \frac{18}{5} \text{ or } \boxed{3\frac{3}{5}}$$



TRY THIS!



How about multiplying mixed numbers with a whole number? Try this one!

A whole number can be written as a fraction with denominator as 1 before multiplying it.

$$3\frac{1}{4} \times 5\frac{1}{7} \times 10 =$$

Step 1: Change all the mixed numbers to improper fractions.

Step 2: Apply cancellation if possible. Multiply the numerators and the denominators.

Step 3: Check the product if it is already in simplest form. Change also into mixed number if possible.



TABLE OF ACTIVITIES

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10	A Special Day



LIKE FATHER, LIKE SON

G5

Basic

Jake is planning to play basketball with his dad wearing a matching jerseys. Before that, let us help Jake match the mixed numbers into its equivalent improper fractions. Write only the letter of your answer.

$$3\frac{2}{7} = \boxed{}$$

$$4\frac{1}{7} = \boxed{}$$

$$5\frac{3}{7} = \boxed{}$$

$$6\frac{2}{7} = \boxed{}$$

$$8\frac{1}{7} = \boxed{}$$

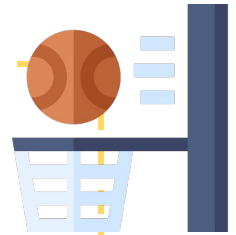
A. $\frac{29}{7}$

B. $\frac{23}{7}$

C. $\frac{38}{7}$

D. $\frac{57}{7}$

E. $\frac{44}{7}$



THANKFUL EVERYDAY, DAD!

G5

Basic

Jake asked his dad to help him in solving this. Let us also help him by putting a check (✓) or wrong (x) mark if the steps are correct or incorrect.

1

$$2\frac{1}{4} \times 6\frac{2}{5} =$$

Step 1

☐

$$\frac{9}{4} \times \frac{32}{5}$$

Step 2

☐

$$\frac{9}{\cancel{4}^1} \times \frac{\cancel{32}^8}{5}$$

Final answer

☐

$$\frac{72}{5} \text{ or } 14\frac{2}{5}$$

If wrong, what is the final answer?

2

$$1\frac{1}{6} \times 4\frac{2}{8} =$$

Step 1

☐

$$\frac{7}{4} \times \frac{36}{8}$$

Step 2

☐

$$\frac{7}{\cancel{4}^1} \times \frac{\cancel{36}^9}{8}$$

Final answer

☐

$$\frac{63}{8} \text{ or } 7\frac{7}{8}$$

If wrong, what is the final answer?

BEST
DAD



A SPECIAL DISH

G5

Basic

Jake's family is preparing a special dish for the celebration of Father's Day. He needs to solve the following to get the correct recipe. Let us try this. Write your solution and do not forget to simplify your final answer and change into mixed number if possible.

1

$$3\frac{4}{6} \times \frac{3}{5}$$

2

$$\frac{1}{3} \times 5\frac{2}{7}$$

3

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

4

$$6\frac{2}{5} \times \frac{3}{8}$$

5

$$\frac{6}{8} \times 4\frac{4}{5}$$



GO FOR A HIKE

G5
Basic

Another way to celebrate father's day is having an adventure with the family. Jake and his family decided to go for a hike. On their way going to the trail, there are sets of fractions to solve. Let us help them by multiplying the sets of fractions.

$$1\frac{1}{5} \times 2\frac{2}{3}$$

=

$$4\frac{2}{7} \times 2\frac{1}{4}$$

=

$$5\frac{3}{5} \times 1\frac{3}{7}$$

=

$$3\frac{2}{8} \times 3\frac{1}{2}$$

=

$$5\frac{4}{7} \times 4\frac{2}{6}$$

=

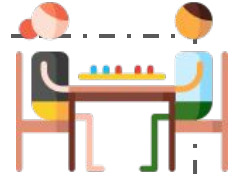


FAMILY GAME NIGHT

G5

Basic

Let Dad flaunt his competitive side in playing board games. Show also what you have learned in multiplying mixed numbers. Write your complete solution and final answer in simplest form and mixed number if possible.



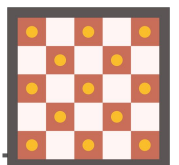
1 $10\frac{1}{2} \times \frac{2}{7} =$

2 $3\frac{2}{8} \times 4\frac{4}{6} =$

3 $6\frac{3}{4} \times 1\frac{2}{9} =$

4 $5\frac{5}{8} \times 12 \times \frac{3}{9} =$

5 $4\frac{3}{6} \times 6\frac{2}{5} \times 10 =$



A SPLASH AT THE POOL

G6
Advanced

A family day at the pool, another way to celebrate Father's Day but Jake needs to complete this set first before he can go out, let us help him multiply the following mixed numbers.



1. $3\frac{2}{10} \times \frac{1}{12}$

2. $\frac{6}{12} \times 5\frac{1}{6}$

3. $3\frac{2}{15} \times 25$

4. $8\frac{2}{11} \times \frac{3}{10}$

5. $7\frac{3}{12} \times \frac{6}{15}$

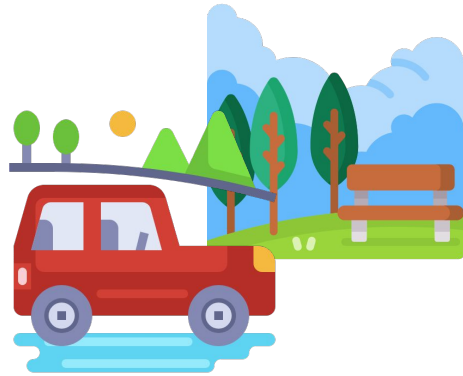


DAD'S DAY OUT

G6
Advanced

Take the whole family for a road trip or to a park as a treat for Dad. Spend quality time with the family and time to share your knowledge in the next level of multiplying mixed fractions. Try the following sets.

$$1. \quad 10\frac{2}{9} \times 1\frac{2}{10}$$



$$2. \quad 3\frac{9}{15} \times 3\frac{4}{12}$$

$$3. \quad 4\frac{2}{13} \times 2\frac{8}{9}$$

$$4. \quad 4\frac{4}{14} \times 2\frac{3}{10}$$

$$5. \quad 2\frac{8}{11} \times 4\frac{5}{6}$$



Let us all be thankful with our super dads! Now, it is time to show your super skills in multiplying mixed numbers. Write your complete solution and final answer in simplest form and mixed number if possible.



1 $10\frac{2}{9} \times \frac{3}{12} \times \frac{2}{14} =$

2 $4\frac{3}{12} \times \frac{6}{15} \times 1\frac{4}{11} =$

3 $2\frac{3}{15} \times 3\frac{2}{12} \times 18 =$

4 $4\frac{2}{9} \times 30 \times 5\frac{3}{12} =$

5 $6\frac{4}{11} \times 2\frac{2}{14} \times 2\frac{1}{5} =$



A BACKYARD PICNIC

G6
Advanced

To enjoy more this father's day, Jake is planning to have a backyard picnic with the family. Let us help him solve the following word problems.

1. A sandwich requires $1 \frac{1}{2}$ ham slice. Jake needs to prepare 12 sandwiches, how much ham slices does he need?

Solution:

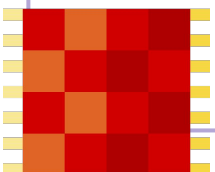
Answer:



2. Jake will bring the blanket that measures $3 \frac{3}{5}$ yards but his sister offers to bring a bigger blanket which is $2 \frac{1}{3}$ as Jake's blanket. What is the measurement of his sister's blanket?

Solution:

Answer:



A SPECIAL DAY

G6
Advanced

To continue the celebration of this special day, Jake and his family prepare a special dish and handmade cards. Let us help him again in solving the following word problems. Write your solution and final answer inside the box.



1. Jake and his mom used $2 \frac{2}{5}$ packs of tomato sauce for their special dish recipe. How many packs of tomato sauce would they use for $1 \frac{5}{12}$ recipe?

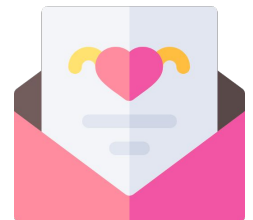
Solution:

Answer:

2. Jake and his sister also prepared handmade cards. They used $3 \frac{1}{4}$ paper in one card with decorations. How many papers would they need to make 8 cards?

Solution:

Answer:



ANSWER GUIDE

Activity 1

1. B 2. A 3. C
4. E 5. D

Activity 2

1. ✓, ✓, ✓
2. X, X, X, Answer: 5 $\frac{1}{4}$

Activity 3

1. 4 $\frac{2}{5}$ 2. 1 $\frac{16}{21}$ 3. 20 $\frac{2}{3}$ 4. 2 $\frac{2}{5}$ 5. 3 $\frac{3}{5}$

Activity 4

1. 3 $\frac{1}{5}$ 2. 9 $\frac{9}{14}$ 3. 8 4. 11 $\frac{3}{8}$ 5. 24 $\frac{1}{7}$

Activity 5

1. 3 2. 15 $\frac{1}{6}$
3. 8 $\frac{1}{4}$ 4. 22 $\frac{1}{2}$
5. 288

Activity 6

1. $\frac{4}{15}$ 2. 2 $\frac{7}{12}$
3. 78 $\frac{1}{3}$ 4. 2 $\frac{5}{11}$
5. 2 $\frac{9}{10}$

Activity 7

1. 12 $\frac{4}{15}$ 2. 12
3. 12 4. 9 $\frac{6}{7}$
5. 14 $\frac{1}{11}$

Activity 8

1. $\frac{23}{63}$ 2. 2 $\frac{7}{22}$
3. 125 $\frac{2}{5}$ 4. 665
5. 30

Activity 9

1. $1 \frac{1}{2} \times 12 \frac{1}{1} = 18$
2. $3 \frac{3}{5} \times 2 \frac{1}{3} = 8 \frac{2}{5}$

Activity 10

1. $2 \frac{2}{5} \times 1 \frac{5}{12} = 3 \frac{2}{5}$
2. $3 \frac{1}{4} \times 8 \frac{1}{1} = 26$



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