

Luna's Space Adventure

Name _____

Grade 5 · Dividing with unit fractions · 5.NF.B.7

Date _____



Astronaut Luna is exploring a far-off corner of space. Solve each problem to help Luna's mission go smoothly!

A unit fraction shared $1/3 \div 4$: split a third into 4 equal parts.

$$\frac{1}{4} \div 5 = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{8} \div 2 = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{3} \div 6 = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{5} \div 6 = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{2} \div 6 = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{8} \div 4 = \frac{\boxed{}}{\boxed{}}$$

How many fit? $4 \div 1/3$: how many thirds are in 4?

$$5 \div \frac{1}{4} = \boxed{}$$

$$9 \div \frac{1}{4} = \boxed{}$$

$$2 \div \frac{1}{7} = \boxed{}$$

$$3 \div \frac{1}{7} = \boxed{}$$

$$6 \div \frac{1}{8} = \boxed{}$$

$$4 \div \frac{1}{5} = \boxed{}$$

Story time

- ① Luna has 3 pounds of trail mix and fills bags that each hold $1/2$ pound. How many bags does Luna fill?

.....

_____ bags

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ANSWER KEY



Astronaut Luna is exploring a far-off corner of space. Solve each problem to help Luna's mission go smoothly!

A unit fraction shared $1/3 \div 4$: split a third into 4 equal parts.

$$\frac{1}{4} \div 5 = \frac{1}{20}$$

$$\frac{1}{8} \div 2 = \frac{1}{16}$$

$$\frac{1}{3} \div 6 = \frac{1}{18}$$

$$\frac{1}{5} \div 6 = \frac{1}{30}$$

$$\frac{1}{2} \div 6 = \frac{1}{12}$$

$$\frac{1}{8} \div 4 = \frac{1}{32}$$

How many fit? $4 \div 1/3$: how many thirds are in 4?

$$5 \div \frac{1}{4} = 20$$

$$9 \div \frac{1}{4} = 36$$

$$2 \div \frac{1}{7} = 14$$

$$3 \div \frac{1}{7} = 21$$

$$6 \div \frac{1}{8} = 48$$

$$4 \div \frac{1}{5} = 20$$

Story time

- ① Luna has 3 pounds of trail mix and fills bags that each hold $1/2$ pound. How many bags does Luna fill?

$$3 \times 2 = 6$$

6 bags

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GUIDE

① What this sheet practises

Dividing a unit fraction by a whole number, like $1/3 \div 4$, and a whole number by a unit fraction, like $4 \div 1/3$, with stories.

② A problem from the sheet, worked out

Story time

- ① Luna has 3 pounds of trail mix and fills bags that each hold $1/2$ pound. How many bags does Luna fill?

$$3 \times 2 = 6$$

6 bags

How: $4 \div 1/3$ asks how many thirds fit in 4: 3 in each whole, so 12. $1/3 \div 4$ splits a third into 4 equal parts, each $1/12$. Check by multiplying back.

③ Words to know

unit fraction one part, with a top number of 1, like $1/4$

divide split into equal parts, or see how many fit

quotient the answer to $\div$

whole one complete thing

④ Watch for

- Expecting a smaller answer for $4 \div 1/3$: dividing by a fraction less than 1 gives more.
- Writing $1/3 \div 4$ as $4/3$ instead of $1/12$.
- Not checking: $12 \times 1/3$ should give back 4, and $1/12 \times 4$ should give back $1/3$.

⑤ Where it fits

BEFORE

5.NF.B.4

Multiply a fraction or whole number by a fraction.

THIS SHEET

5.NF.B.7

Divide unit fractions by whole numbers and whole numbers by unit fractions.

⑥ Helping at home

Cut 2 sandwiches into quarters and count the pieces: $2 \div 1/4 = 8$. Then split one quarter between 2 people: $1/4 \div 2 = 1/8$.