FRACTIONS

FRACTION OF A CONTINUOUS WHOLE

TEACHING TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Question

1. You have a 3-liter jug and pour out $\frac{2}{3}$ of it. How many liters are left in the jug?

A) 1 liter B) 2 liters C) 1.5 liters D) 2.5 liters

Key: A

Explanation: $\frac{2}{3}$ of 3 = 2 liters poured out. Left = 3 - 2 = 1 liter.

2. If you use $\frac{7}{12}$ of a roll of paper, what fraction of the roll is still unused?

A) $\frac{5}{12}$ B) $\frac{7}{12}$ C) $\frac{1}{2}$ D) $\frac{7}{24}$

Key: A

Explanation: Whole = 1. Unused = 1 - $\frac{7}{12}$ = $\frac{5}{12}$.

3. What fraction of an hour is 20 minutes?

A) $\frac{1}{3}$ B) $\frac{1}{4}$ C) $\frac{1}{2}$ D) $\frac{2}{3}$

Key: A

Explanation: 1 hour = 60 minutes. Fraction = $\frac{20}{60}$ = $\frac{1}{3}$.

4. What is $\frac{5}{6}$ of 48?

A) 36 B) 40 C) 30 D) 32

Key: B

Explanation: $\frac{5}{6}$ × 48 = 5 × 8 = 40.

5. If a piece of rope is $\frac{3}{4}$ meters long and you cut off $\frac{1}{2}$ of it, what fraction of the rope is left?

A) $\frac{1}{4}$ B) $\frac{1}{2}$ C) $\frac{1}{8}$ D) $\frac{3}{8}$

Key: B

Explanation: Cutting half leaves $\frac{1}{2}$ of the original rope.

6. A recipe calls for $\frac{2}{3}$ cup of sugar, and you only have $\frac{1}{3}$ cup. What fraction of the sugar required do you have?

A) $\frac{1}{2}$ B) $\frac{1}{3}$ C) $\frac{2}{3}$ D) $\frac{1}{4}$

Key: A

Explanation: Fraction = $\frac{\frac{1}{3}}{\frac{2}{3}} = \frac{1}{2}$.

ADVANCED LEVEL

More than One Answer Type

7. Which statements accurately describe the fraction $\frac{2}{5}$ in the context of a continuous whole? (Select all that apply)

A) It represents 40% of the whole.
B) It means that 2 out of 5 equal parts of the whole are considered.
C) It shows that the whole is divided into 5 equal parts.
D) It represents 2 pieces out of a total of 5 pieces. E) It can be used to describe walking 2 kilometers of a 5-kilometer trail.

Key: A, B, C, E

Explanation: $\frac{2}{5}$ = 40%, 2 parts out of 5 equal parts, suitable for continuous measures like distance.

Fill In the Blanks

8. If you spend 15 minutes out of an hour on a task, you have spent $\frac{15}{60}$, which

simplifies to $\frac{1}{4}$ of the _____.

Key: hour

Explanation: 15 minutes is $\frac{1}{4}$ of 60 minutes (1 hour).

Matching Type

9. Match the continuous whole scenarios on the left with their corresponding fractions on the right.

Questions:	Answers:
1. Walking 3 kilometers of a 12-kilometer trail	A. $\frac{1}{2}$
2. Drinking $\frac{1}{4}$ of a glass of water	B. $\frac{1}{4}$
3. Spending 30 minutes of a 2-hour task	C. $\frac{1}{4}$
4. Eating 2 slices of a 10-slice pizza	D. $\frac{1}{5}$

Key: 1-B, 2-B, 3-C, 4-D

Explanation: Match fractions based on part-to-whole ratios.

Answer the Following Questions

10. You have a 60-minute class, and you have already spent 25 minutes on a task. What fraction of the class time have you spent on the task?

Key: $\frac{5}{12}$

Explanation: Fraction = $\frac{25}{60} = \frac{5}{12}$.

11. If you cut a ribbon that is 8 meters long into 4 equal pieces, and you use 3 of those pieces, what fraction of the total ribbon length have you used?

Key: $\frac{3}{4}$

Explanation: Each piece = 2 m. Used 3 pieces = 6 m = $\frac{6}{8} = \frac{3}{4}$.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)
Multiple Choice Questions

1. What is the fraction representation of 3 out of 8 equal parts?

A) $\frac{3}{8}$ B) $\frac{5}{8}$ C) $\frac{3}{5}$ D) $\frac{8}{3}$

Key: A

Explanation: 3 parts out of 8 = $\frac{3}{8}$.

2. If you have $\frac{2}{3}$ of a cake and eat $\frac{1}{3}$ of it, what fraction of the whole cake remains?

A) $\frac{1}{3}$ B) $\frac{2}{3}$ C) $\frac{1}{2}$ D) $\frac{1}{6}$

Key: A

Explanation: You have $\frac{2}{3}$ of whole. Eat $\frac{1}{3}$ of whole from it, left = $\frac{2}{3}-\frac{1}{3}=\frac{1}{3}$ of whole.

3. What is $\frac{4}{5}$ of 20?

A) 12 B) 15 C) 16 D) 18

Key: C

Explanation: $\frac{4}{5}\times 20 = 4\times 4 = 16$.

4. If a pizza is divided into 10 equal slices and you eat 6 slices, what fraction of the pizza did you eat?

A) $\frac{3}{5}$ B) $\frac{6}{10}$ C) $\frac{3}{10}$ D) $\frac{4}{5}$

Key: B

Explanation: Ate 6 out of 10 = $\frac{6}{10}=\frac{3}{5}$.

5. You have walked 7 kilometers of a 15-kilometer trail. What fraction of the trail have you walked?

A) $\frac{7}{15}$ B) $\frac{8}{15}$ C) $\frac{7}{10}$ D) $\frac{8}{10}$

Key: A

Explanation: Fraction = $\frac{7}{15}$.

6. What is $\frac{1}{4}$ of 100?

A) 20 B) 25 C) 30 D) 40

Key: B

Explanation: $\frac{1}{4} \times 100 = 25$.

ADVANCED LEVEL

More than One Answer Type

7. Which of the following statements correctly describe the fraction $\frac{3}{4}$ in relation to a continuous whole? (Select all that apply)

A) It represents 75% of the whole.
B) It means that 3 out of 4 equal parts of the whole are used or considered.
C) It shows that the whole is divided into 3 equal parts.
D) It indicates that the whole is divided into 4 equal parts.

Key: A, B, D

Explanation: $\frac{3}{4}$ = 75%, 3 parts out of 4 equal parts.

Fill In the Blanks

8. In the fraction $\frac{3}{4}$, the numerator represents the _____ parts we have of the whole.

Key: 3

Explanation: Numerator is the number of parts considered.

Matching Type

9. Match the fraction problems on the left with their correct descriptions on the right.

Questions:	Answers:
1. $\frac{1}{2}$	A. One part out of five equal parts
2. $\frac{3}{4}$	B. Three parts out of four equal parts
3. $\frac{2}{5}$	C. Two parts out of eight equal parts
4. $\frac{5}{8}$	D. One part out of two equal parts

Key: 1-D, 2-B, 3-C
Explanation: Match fractions to descriptions.

Answer the Following Questions

10. You have a 2-liter bottle of juice. If you pour out 0.5 liters of juice, what fraction of the bottle's total volume did you pour out?

Key: $\frac{1}{4}$

Explanation: $\frac{0.5}{2} = \frac{1}{4}$.

11. A marathon is 42 kilometers long. If you have run 21 kilometers so far, what fraction of the marathon have you completed?

Key: $\frac{1}{2}$

Explanation: $\frac{21}{42} = \frac{1}{2}$.

FRACTION OF A COLLECTION

TEACHING TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)
Multiple Choice Questions

1. If a box contains 50 toys and 30 of them are cars, what fraction of the toys are cars?

A) $\frac{30}{50}$ B) $\frac{20}{50}$ C) $\frac{3}{5}$ D) $\frac{30}{20}$

Key: A, C

Explanation: Fraction = $\frac{30}{50} = \frac{3}{5}$.

2. A class has 24 students, and 8 of them are girls. What fraction of the students are girls?

A) $\frac{8}{24}$ B) $\frac{1}{3}$ C) $\frac{8}{16}$ D) $\frac{2}{3}$

Key: A, B

Explanation: $\frac{8}{24} = \frac{1}{3}$.

3. In a batch of 45 cookies, if 15 are oatmeal, what fraction of the cookies are oatmeal?

A) $\frac{15}{45}$ B) $\frac{1}{3}$ D) $\frac{15}{30}$ D) $\frac{3}{5}$

Key: A, B

Explanation: $\frac{15}{45} = \frac{1}{3}$.

4. If a basket has 25 apples and you eat 5, what fraction of the apples is left?

A) $\frac{5}{25}$ B) $\frac{20}{25}$ C) $\frac{5}{20}$ D) $\frac{1}{5}$

Key: B

Explanation: Left = 20 apples, fraction = $\frac{20}{25}$.

5. A deck of 52 cards contains 13 hearts. What fraction of the cards are hearts?

A) $\frac{13}{52}$ B) $\frac{1}{4}$ C) $\frac{13}{39}$ D) $\frac{1}{13}$

Key: A, B

Explanation: $\frac{13}{52} = \frac{1}{4}$.

6. In a garden of 60 plants, 24 are roses. What fraction of the plants are roses?

A) $\frac{24}{60}$ B) $\frac{2}{5}$ C) $\frac{4}{10}$ D) $\frac{3}{5}$

Key: A, B, C

Explanation: $\frac{24}{60} = \frac{2}{5} = \frac{4}{10}$.

ADVANCED LEVEL

More than One Answer Type

7. Fruit in a Basket: There are 20 apples in a basket, and you put 8 apples in your lunchbox. Which of the following fractions represent the apples in the lunchbox in relation to the total number of apples in the basket? (Choose all that apply)

A) $\frac{8}{20}$ B) $\frac{2}{5}$ C) $\frac{4}{10}$ D) $\frac{3}{8}$

Key: A, B, C

Explanation: $\frac{8}{20} = \frac{2}{5} = \frac{4}{10}$.

Fill In the Blanks

8. You have a shelf with 10 books. If you take 4 of them to read, the fraction representing the books you took is $\frac{4}{10}$. Simplified, this fraction is $\frac{2}{5}$. Fill in the blank:

The fraction of the books you took is _____ , which simplifies to $\frac{2}{5}$.

Key: $\frac{4}{10}$

Explanation: Taken = $\frac{4}{10}$, simplified to $\frac{2}{5}$.

Matching Type

10. Match each description with the correct fraction.

Descriptions:	Fractions
1. Out of 30 pencils, 12 are red.	A. $\frac{25}{60}$
2. There are 40 students in a class, and 15 of them are boys.	B. $\frac{10}{25}$
3. In a basket of 25 oranges, 10 are ripe.	C. $\frac{15}{40}$
4. From a collection of 60 stamps, 25 are from foreign countries.	D. $\frac{12}{30}$

Key: 1-D, 2-C, 3-B, 4-A
Explanation: Match descriptions to fractions.

Answer the Following Questions

11. In a box of 40 chocolates, 15 are filled with caramel. What fraction of the chocolates are filled with caramel?

Key: $\frac{15}{40} = \frac{3}{8}$

Explanation: Fraction = $\frac{15}{40} = \frac{3}{8}$.

12. You have a collection of 50 stamps, and 18 of them are from foreign countries. What fraction of the stamps are from foreign countries?

Key: $\frac{18}{50} = \frac{9}{25}$

Explanation: Fraction = $\frac{18}{50} = \frac{9}{25}$.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)
Multiple Choice Questions

1. If a basket contains 20 oranges and 7 of them are ripe, what fraction of the oranges are ripe?

A) $\frac{7}{20}$ B) $\frac{13}{20}$ C) $\frac{7}{13}$ D) $\frac{20}{7}$

Key: A

Explanation: Ripe fraction = $\frac{7}{20}$.

2. In a box of 30 chocolates, if 12 are dark chocolate, what fraction of the chocolates are dark chocolate?

A) $\frac{12}{30}$ B) $\frac{18}{30}$ C) $\frac{12}{18}$ D) $\frac{1}{3}$

Key: A

Explanation: Dark chocolate fraction = $\frac{12}{30} = \frac{2}{5}$.

3. If a class has 25 students and 10 are boys, what fraction of the students are boys?

A) $\frac{10}{25}$ B) $\frac{15}{25}$ C) $\frac{10}{15}$ D) $\frac{2}{5}$

Key: A, B

Explanation: $\frac{10}{25} = \frac{2}{5}$.

4. A jar contains 40 marbles, out of which 15 are blue. What fraction of the marbles are blue?

A) $\frac{15}{40}$ B) $\frac{25}{40}$ C) $\frac{3}{8}$ D) $\frac{15}{25}$

Key: A, C

Explanation: $\frac{15}{40} = \frac{3}{8}$.

5. If a pizza is cut into 12 slices and 5 slices are eaten, what fraction of the pizza is left?

A) $\frac{5}{12}$ B) $\frac{7}{12}$ C) $\frac{5}{7}$ D) $\frac{7}{5}$

Key: B

Explanation: Left = 7 slices, fraction = $\frac{7}{12}$.

6. In a collection of 50 books, if 20 are fiction, what fraction of the books are fiction?

A) $\frac{20}{50}$ B) $\frac{30}{50}$ C) $\frac{2}{5}$ D) $\frac{20}{30}$

Key: A, C

Explanation: $\frac{20}{50} = \frac{2}{5}$.

ADVANCED LEVEL
More than One Answer Type

7. Classroom Students: In a class of 30 students, there are 12 girls. Which of the following fractions correctly describe the portion of the class that are girls? (Choose all that apply)

A) $\frac{12}{30}$ B) $\frac{2}{5}$ C) $\frac{3}{7.5}$ D) $\frac{4}{10}$

Key: A, B, D

Explanation: $\frac{12}{30} = \frac{2}{5} = \frac{4}{10}$.

Fill In the Blanks

8. There are 20 marbles in a jar, and 7 of them are blue. The fraction of blue marbles in the jar is $\frac{7}{20}$. Fill in the blank:
The fraction of blue marbles is _____ .

Key: $\frac{7}{20}$

Explanation: Blue fraction = $\frac{7}{20}$.

Matching Type
9. Instructions: Match each example to the corresponding fraction.

Examples	Fractions
1. Out of 50 marbles, 20 are blue.	A. $\frac{7}{18}$
2. There are 18 books on a shelf, and 7 of them are novels.	B. $\frac{9}{30}$
3. In a set of 30 pencils, 9 are broken.	C. $\frac{15}{36}$
4. From a batch of 36 cookies, 15 are chocolate chip.	D. $\frac{20}{50}$

Key: $1-\frac{20}{50}, 2-\frac{7}{18}, 3-\frac{9}{30}, 4-\frac{15}{36}$

Explanation: Match each example to its part-to-whole fraction.

Answer the Following Questions

10. You have a collection of 30 pencils, and 12 of them are red. What fraction of the pencils are red?

Key: $\frac{12}{30}=\frac{2}{5}$

Explanation: Red fraction = $\frac{12}{30}=\frac{2}{5}$.

11. A group of 25 students is in a classroom. If 10 of the students are wearing glasses, what fraction of the students are wearing glasses?

Key: $\frac{10}{25}=\frac{2}{5}$

Explanation: Fraction = $\frac{10}{25}=\frac{2}{5}$.

FINDING FRACTIONS

TEACHING TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. If you have 80 marbles and give away $\frac{1}{8}$ of them, how many marbles did you give away?

A) 8 B) 10 C) 12 D) 15

Key: B

Explanation: $\frac{1}{8}$ × 80 = 10 marbles.

2. Find $\frac{3}{5}$ of 25.

A) 10 B) 15 C) 20 D) 12

Key: B

Explanation: $\frac{3}{5}$ × 25 = 3 × 5 = 15.

3. If a recipe calls for $\frac{3}{4}$ cup of flour and you want to use $\frac{1}{2}$ of the recipe, how much flour do you need?

A) $\frac{1}{2}$ cup B) $\frac{3}{8}$ cup C) $\frac{1}{4}$ cup D) $\frac{3}{4}$ cup

Key: B

Explanation: $\frac{1}{2} \times \frac{1}{2} = \frac{3}{8}$ cup.

4. A garden has 48 flowers, and $\frac{5}{12}$ of them are roses. How many roses are there?

A) 16 B) 20 C) 24 D) 25

Key: B

Explanation: $\frac{5}{12}$ × 48 = 5 × 4 = 20 roses.

5. If there are 90 students and $\frac{7}{9}$ of them are participating in a school event, how many students are participating?

A) 56 B) 63 C) 70 D) 72

Key: C

Explanation: $\frac{7}{9}$ × 90 = 7 × 10 = 70 students.

6. Find $\frac{1}{6}$ of 54.

A) 6 B) 8 C) 9 D) 10

Key: C

Explanation: $\frac{1}{6}$ × 54 = 9.

ADVANCED LEVEL

More than One Answer Type

7. If you have 30 marbles and you want to find the number of marbles represented by the following fractions, calculate: A) $\frac{2}{3}$ B) $\frac{5}{6}$ C) $\frac{7}{10}$ D) $\frac{4}{5}$ Options:

A) 20 B) 25 C) 21 D) 24

Key: A-20, B-25, C-21, D-24

Explanation: $\frac{2}{3}$ ×30=20, $\frac{5}{6}$×30=25, $\frac{7}{10}$ ×30=21, $\frac{4}{5}$×30=24.

Fill in the Blanks

8. There are 45 students in a school. If $\frac{2}{9}$ of them are in the art club, how many students are in the art club? Multiply 45 by $\frac{2}{9}$ _____.

Key: 10

Explanation: $\frac{2}{9}$ × 45 = 2 × 5 = 10 students.

Matching Type

9. Match each scenario with the correct fraction calculation.

Scenarios:	Fraction Calculations
1. A box contains 60 chocolates, and $\frac{1}{3}$ of them are dark chocolates. How many dark chocolates are there?	A. 24 books
2. A bookshelf holds 40 books, and $\frac{7}{10}$ of them are novels. How many novels are on the shelf?	B. 6 meters
3. You have a ribbon that is 15 meters long, and you use $\frac{2}{5}$ of it for a craft project. How much ribbon did you use?	C. 10 slices
4. A pizza is cut into 12 slices, and you eat $\frac{5}{12}$ of the pizza. How many slices did you eat?	D. 20

Key: 1-D, 2-A, 3-B, 4-C

Answer the Following Questions

10. If a cake is divided into 30 slices and you eat $\frac{9}{30}$ of the cake, how many slices did you eat?
Key: 9 slices

Explanation: $\frac{9}{30}$ × 30 = 9 slices.

11. A tank contains 80 liters of water. If you use $\frac{7}{8}$ of the water, how many liters of water did you use?
Key: 70 liters

Explanation: $\frac{7}{8}$ × 80 = 7 × 10 = 70 liters.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. If a cake is divided into 12 equal slices and you eat $\frac{1}{3}$ of them, how many slices did you eat?
A) 2 B) 3 C) 4 D) 5
Key: C

Explanation: $\frac{1}{3}$ × 12 = 4 slices.

2. What is $\frac{5}{8}$ of 32?
A) 20 B) 25 C) 15 D) 16
Key: A

Explanation: $\frac{5}{8}$ × 32 = 5 × 4 = 20.

3. If a bottle contains 60 liters of juice and you use $\frac{1}{4}$ of it, how many liters of juice did you use?
A) 10 B) 15 C) 20 D) 25
Key: B

Explanation: $\frac{1}{4}$ × 60 = 15 liters.

4. Find $\frac{3}{7}$ of 49.
A) 18 B) 21 C) 27 D) 14

Key: B

Explanation: $\frac{3}{7}$ × 49 = 3 × 7 = 21.

5. A book has 180 pages. If you have read $\frac{2}{9}$ of the book, how many pages have you read?

A) 30 B) 40 C) 45 D) 60

Key: B

Explanation: $\frac{2}{9}$ × 180 = 2 × 20 = 40 pages.

6. Find $\frac{4}{5}$ of 45.

A) 30 B) 36 C) 40 D) 25

Key: B

Explanation: $\frac{4}{5}$ × 45 = 4 × 9 = 36.

ADVANCED LEVEL

More than One Answer Type

7. Find the following fractions of the number 40: A) $\frac{1}{4}$ B) $\frac{2}{5}$ C) $\frac{3}{8}$ D) $\frac{5}{12}$ Options:

A) 10 B) 16 C) 15 D) 20

Key: A-10, B-16, C-15

Explanation: $\frac{1}{4}$ ×40=10, $\frac{2}{5}$×40=16, $\frac{3}{8}$×40=15. $\frac{5}{12}$×40 ˜ 16.67 (not 20).

Fill In the Blanks

8. A book has 150 pages. If you have read $\frac{5}{6}$ of the book, how many pages have you read? Multiply 150 by $\frac{5}{6}$: _____

Key: 125

Explanation: $\frac{5}{6}$× 150 = 5 × 25 = 125 pages.

Matching Type

9. Match each problem with its correct solution.

Problems:	Solutions
1. Find $\frac{3}{4}$ of 32.	A. $\frac{2}{9}$ cup
2. Determine $\frac{1}{5}$ of 50.	B. 4
3. If a recipe needs $\frac{2}{3}$ cup of flour and you want to make a third of the recipe, how much flour do you need?	C. 16
4. If a class has 24 students and $\frac{1}{6}$ of them are absent, how many students are absent?	D. 10

Key: 1-C, 2-D, 3-A, 4-B

Answer the Following Questions

Find $\frac{3}{4}$ of 36.

Key: 27

Explanation: $\frac{3}{4} \times 36 = 3 \times 9 = 27$.

Find $\frac{2}{5}$ of 50.

Key: 20

Explanation: $\frac{2}{5} \times 50 = 2 \times 10 = 20$.