

Math 4 Success

FRACTIONS

LEVEL 8 Lesson 1

Naming fractional values in fifths, sixths, eighths, tenths, and twelfths:

$$\overline{5} \quad \overline{6} \quad \overline{8} \quad \overline{10} \quad \overline{12}$$

Examples:

Write the fraction for each:

1. Bob ate 3 eggs of a dozen: $3/12$
2. Five of eight students passed the test: $5/8$
3. Two out of five students had a pet:



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

1. **CONCEPT:**

Naming fractional value in fifths, sixths, eighths, tenths, and twelfths

2. **BEHAVIORAL OBJECTIVE:**

The student, given regions or sets of fractional values involving fifths, sixths, eighths, tenths, and twelfths, will be able to name the fractional value shown.

3. **MATHEMATICAL IDEAS:**

- a) A fraction is a name for a fractional number.
- b) A fraction may be used two ways:
 - 1) to show a part of a whole,
 - 2) to tell the part of a set.

- c) Sets with the same cardinal number are equivalent.
- d) If a set is separated into equivalent subsets, each of the subsets represents a fractional part of the set.
- e) The number line may be used to show fractional numbers as well as whole numbers.

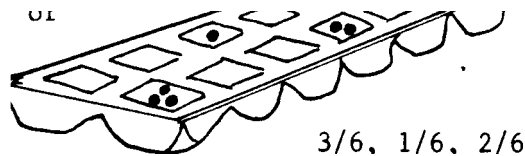
4. KEY WORDS:

fraction	fifths	tenths	one unit
numerator	sixths	twelfths	region / whole
denominator	eighths	equal	set / subset

5. ACTIVITIES:

- a) Egg Carton Fractions
 1. Discuss a set of 12 followed by a discussion of equivalent subsets.
 2. Subsets of 4 or 6 may be shown by dividing carton with bands of colored yarn.
 3. Prior to class time, prepare several cartons by turning the cartons over and placing gummed stickers of different colors on the bottom of the egg cups. Colors may be applied in subsets of 2, 3, 4, or 6.
 4. Near Easter, plastic eggs of many colors may be purchased. Fill egg cartons with plastic eggs with colors selected to illustrate desired fractional parts.
 5. This activity is an excellent readiness activity for renaming fractions (e.g., $3/12$ equivalent to $1/4$). Encourage students to discuss all possible names for each of egg carton activities. Some will have only one name as $5/12$. Ask students to find others with only one name.
 6. Cut an egg carton to provide a set of eight and a set of four. For discussion, compare this with $1/3$ and $2/3$ of regular carton.

- b) Pop-A-Fraction. Use strings of "poppet" beads (5, 6, 8, 10, and 12 beads long). Two students can work together. One pops the beads apart, the other records the fractions made. When the fractions have been recorded, you may want to have the students rename them to the lowest denominators and check their accuracy by using the beads. Variations: Use wooden beads on a double string (see "Potato Chip Can" LEVEL 7 Multiplication). The beads can be pushed back and forth easily and will stay in place. Sections of egg cartons could also be strung on string and used this way.
- c) Shake-A-Fraction. Acquire 5 egg cartons. Put 5 beans or counters in one and write $?/5$ on the lid. Do the same for 6, 8, 10, and 12. Students shake the closed carton, then open it and record the fraction of counters that have fallen into any section of the box. NOTE: In this activity, the egg carton is **not** representing a set. It is only a tool to disperse the beans or counters. The denominator is determined by the number of beans or counters being used.



- d) Match-Up. Place fraction picture cards face up on the table. Distribute the numerical fraction cards to match the correct picture. Patterns are on following pages.
- e) Fraction Mosaic. Use scrap plywood, hard board, or heavy box lids. Help students measure and mark into fractional sections. Glue different textures (beans, rice, sand, macaroni, etc.) onto different sections to form a mosaic design.
- f) Write to Read. Using the wipe-away playing board (make from master, and laminate or cover with clear

contact paper) and dice, players take turns rolling dice and recording fractions on board (the smaller number rolled is the numerator, the larger the denominator). When all the squares on the board have been filled, each fraction is covered with a counter or square of tag board. Students take turns removing the counter and reading the fraction aloud. If a player reads the fraction correctly, he keeps the counter. If not, he replaces the counter. The player who collects the most counters is the winner. NOTE: Regular dice will allow fractions only through 6ths. If you want practice with higher denominators, cover one die with masking tape and write larger numbers on its faces. If larger dice are desirable, make a die by covering a half-pint milk carton with white contact paper. Write desired numbers in black.

- g) Fraction Designs. Use worksheet provided (robot and creative designs) to help students see different fractions within the same figure. An extended activity would be creation of original designs, using fractional modules.
- h) PARTners. Use Fraction Cards made for Activity d). Use both number and picture cards. Deal four cards to each player. As each player takes his turn, he melds (places any pairs on the table - a pair is a number card and its matching picture card). After he has made his meld, he may ask the player on the right for either a picture card or a number card to complete another pair. If the person asked does not have it, he says "Go look for a partner." The player then draws one card from the deck. If that is the card needed, he melds the matching cards and plays again. If he is unable to meld, he adds the card to those in his hand, and it becomes the next player's turn.
- i) To provide enjoyment as well as application of fractions, you may place the following riddles on the board. Explain that the letters in each word are to be used in order.

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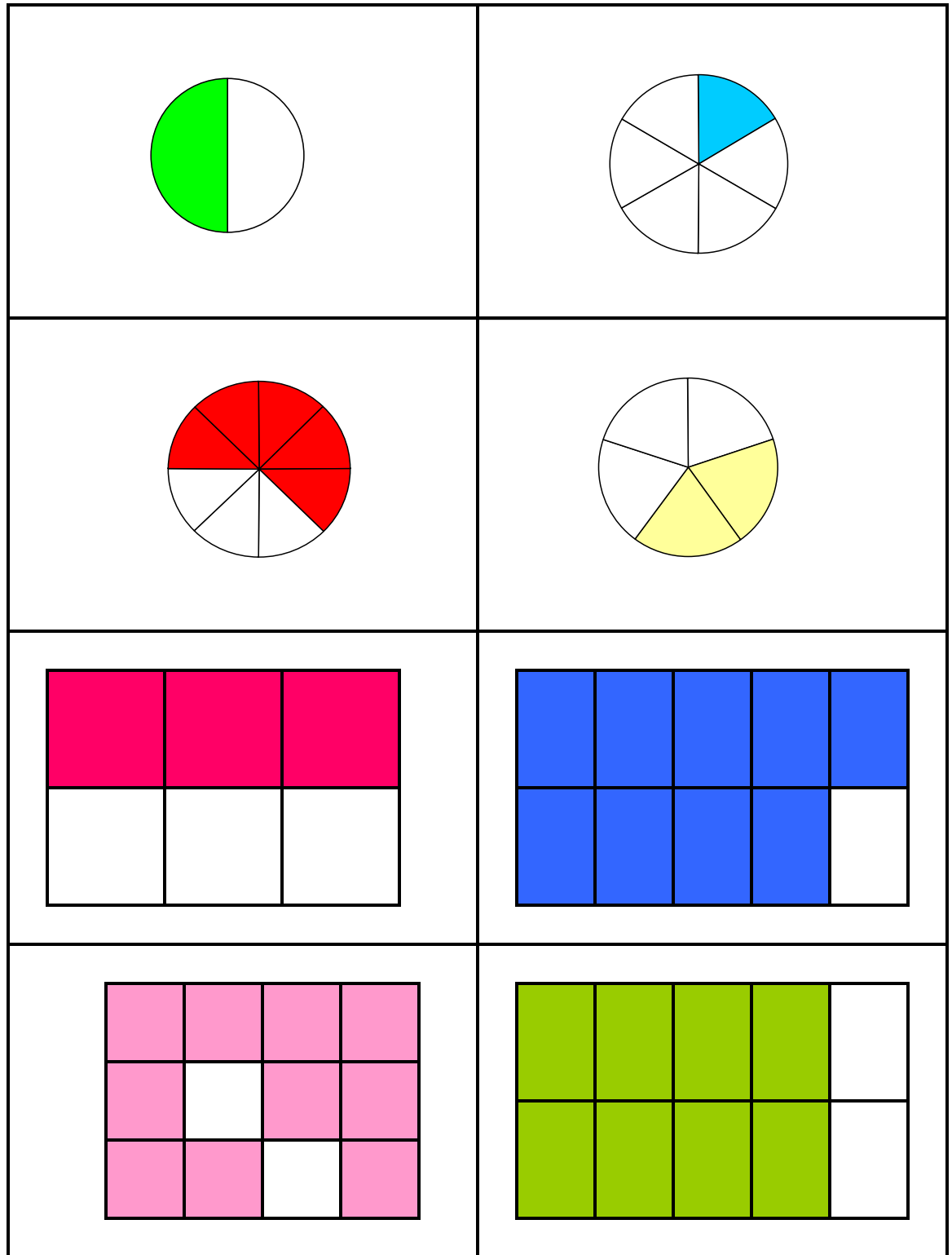
1. Take $\frac{1}{3}$ of MAT, $\frac{1}{5}$ of APRIL, $\frac{2}{6}$ of THELMA.
(The answer is MATH)
2. Take $\frac{2}{5}$ of FRANK, $\frac{2}{3}$ of ACT, $\frac{1}{2}$ of TIDE, $\frac{2}{5}$ of ONION. (The answer is FRACTION)

The students can make riddles of their own on 3 x 5 cards.

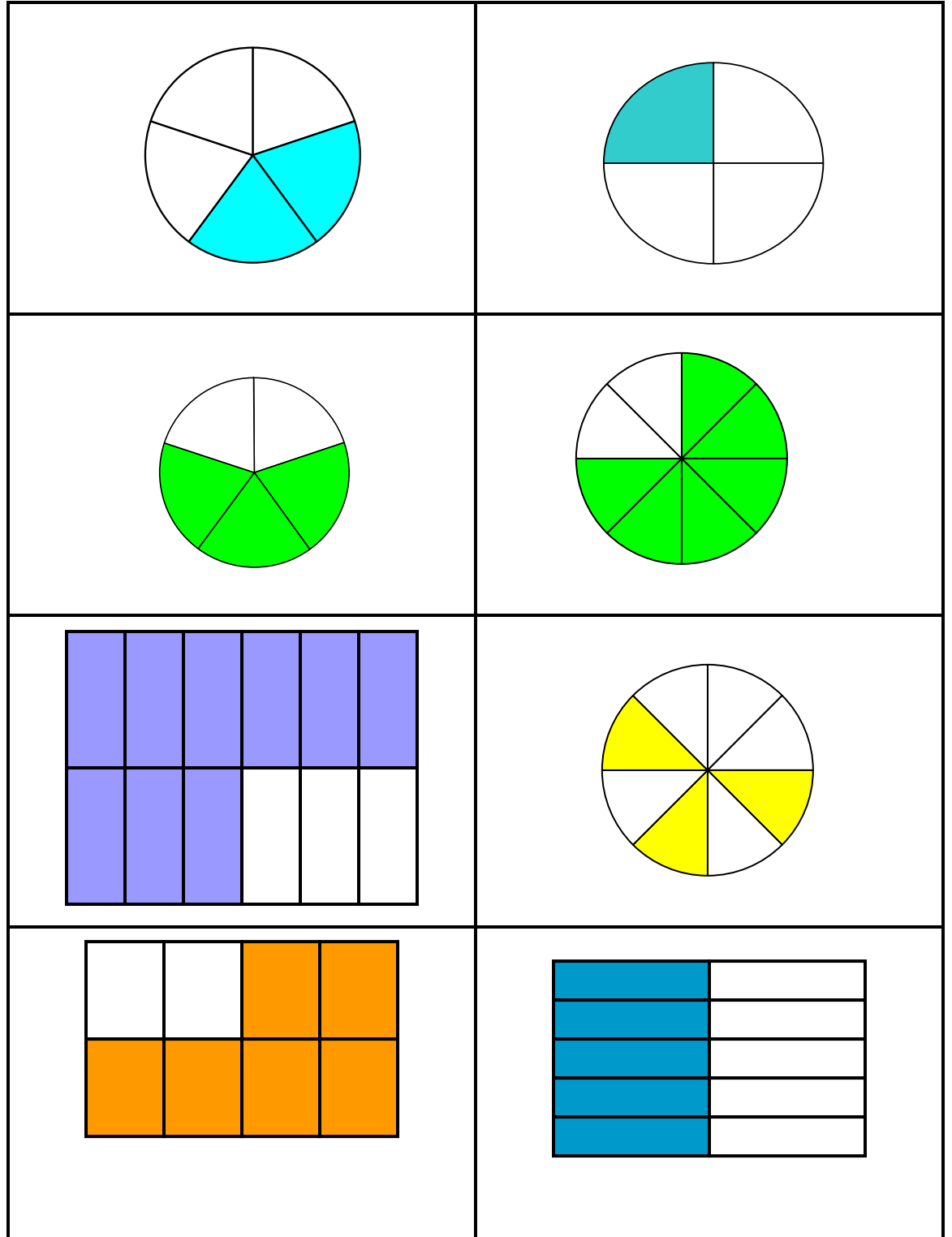
Fraction Game Board
Activity G

1. Roll the dice.
2. Record the fraction.
3. Repeat until all the squares are filled.
4. Cover each fraction with a counter.
5. Take turns lifting a counter and reading the fraction.
6. If you can read the fraction, keep the counter.
7. The one with the most counters wins.

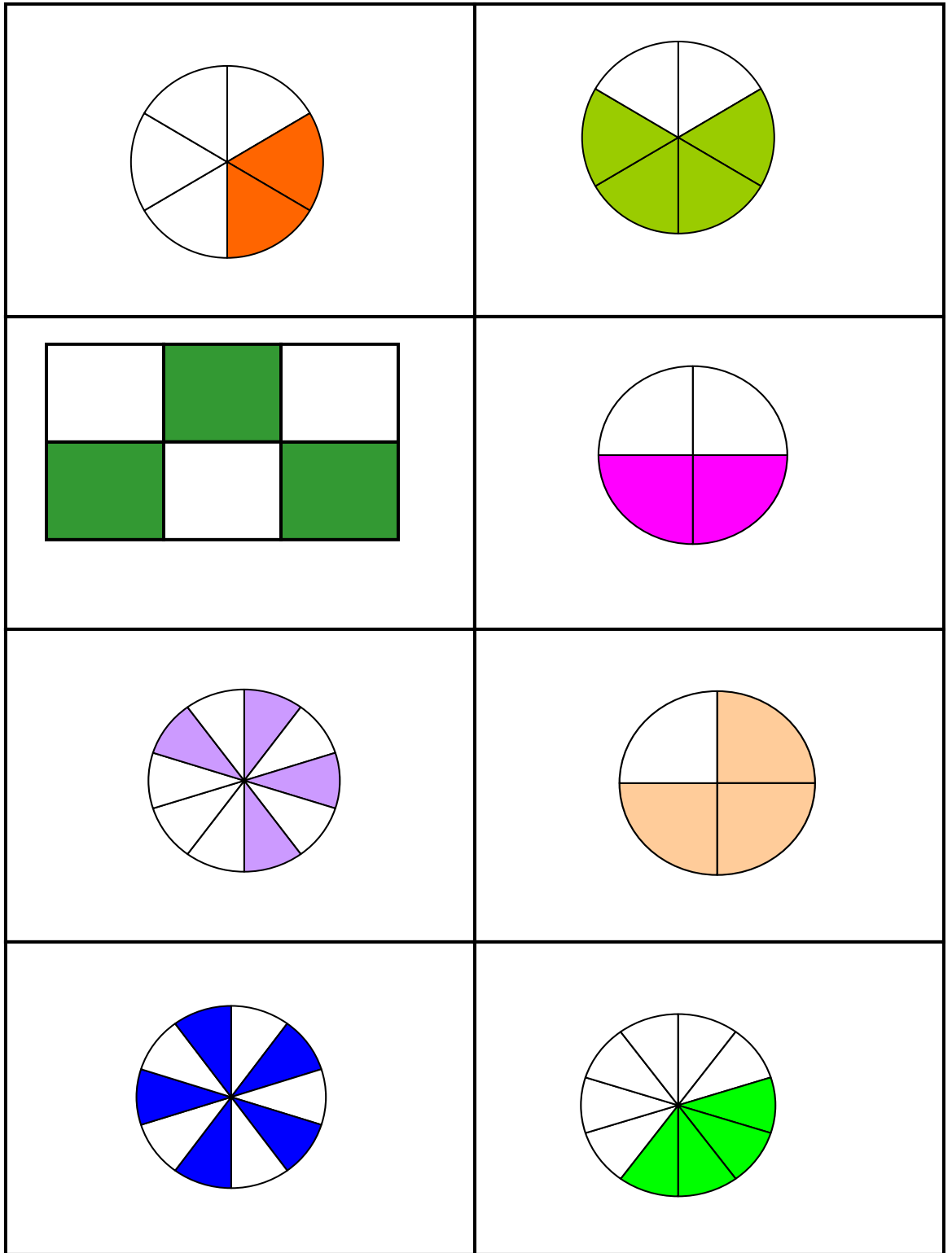
Patterns for Fraction Cards



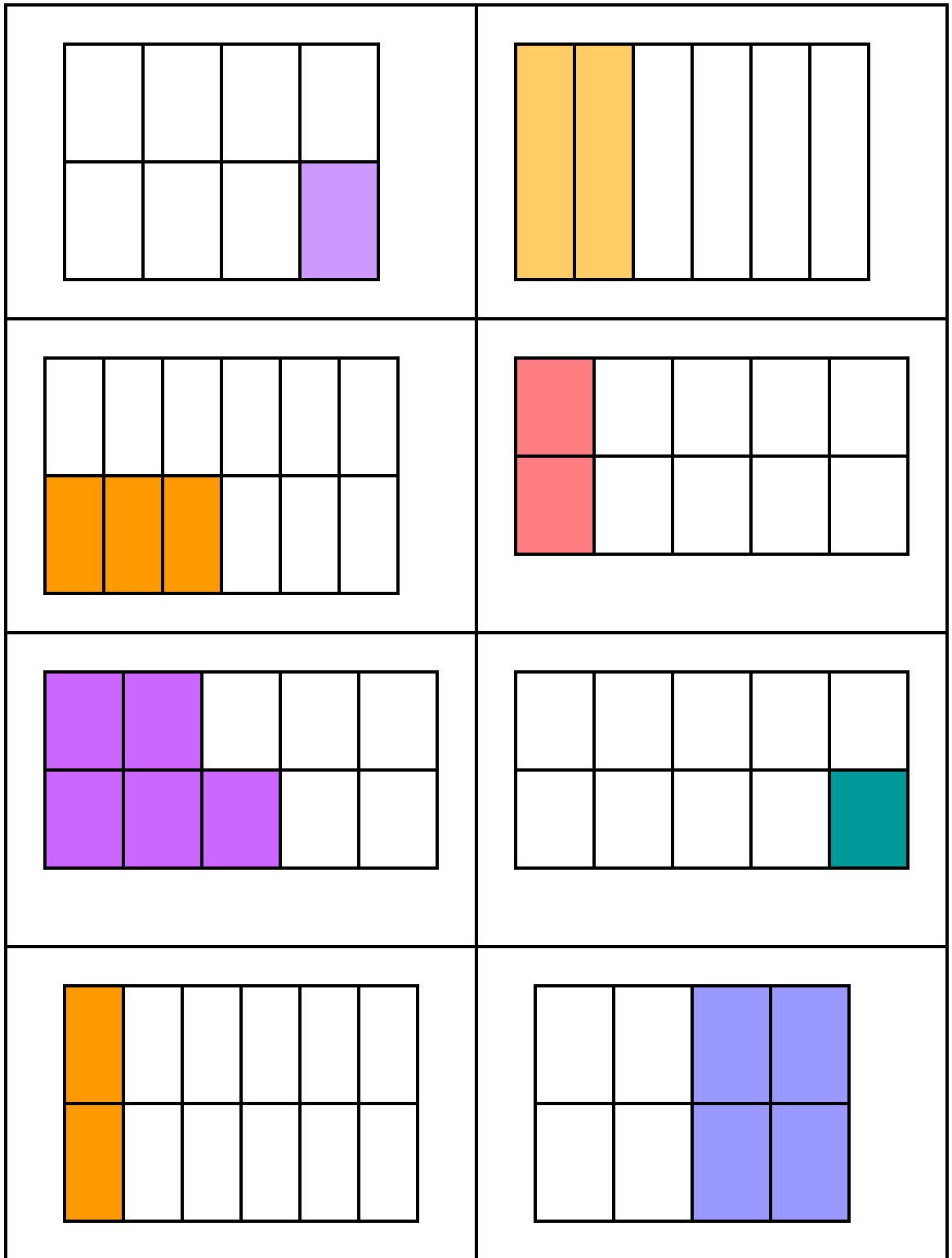
Patterns for Fraction Cards



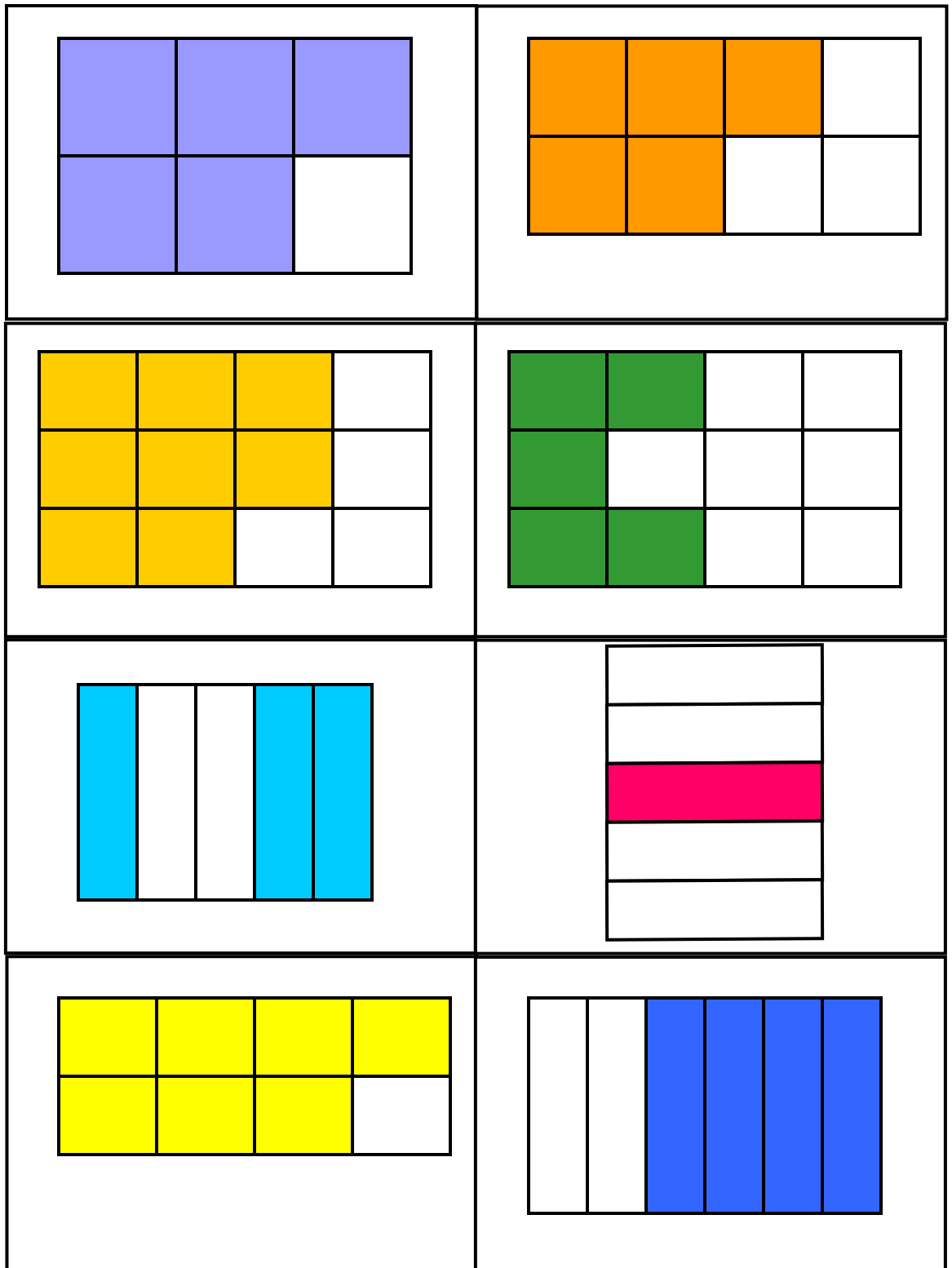
LEVEL 8 Lesson 1



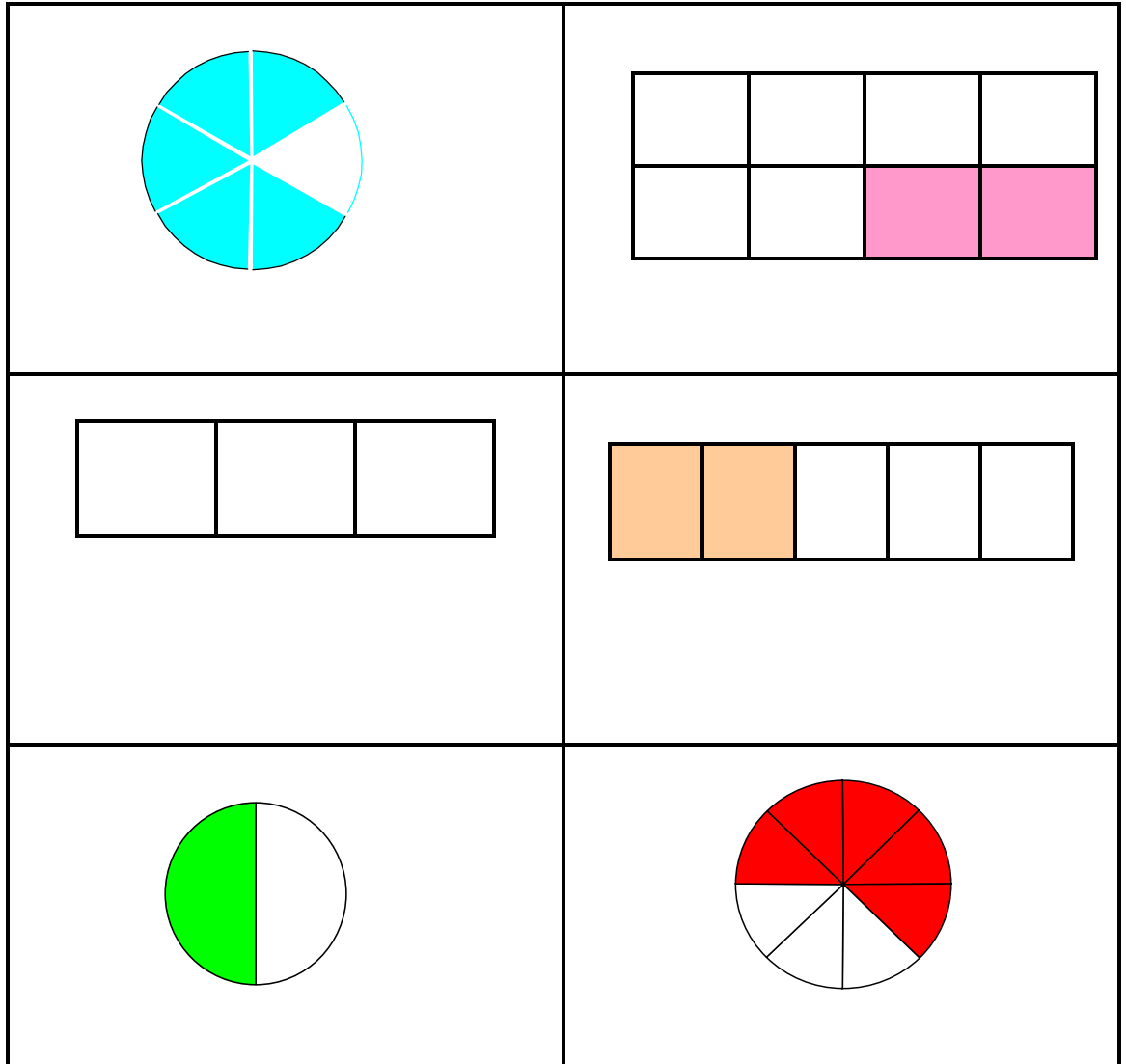
Patterns for Fraction Cards



Patterns for Fraction Cards



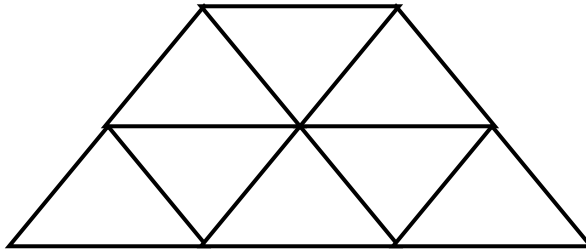
Patterns for Fraction Cards



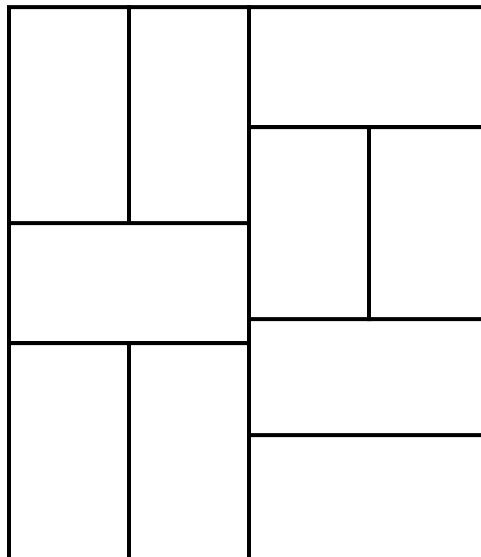
FRACTIONS

Worksheet # 1

Name _____



- (1) Color $\frac{1}{8}$ of the pattern blue.
- (2) Color $\frac{1}{8}$ of the pattern red.
- (3) Color $\frac{1}{4}$ of the pattern green.
- (4) Color $\frac{1}{2}$ of the pattern orange.



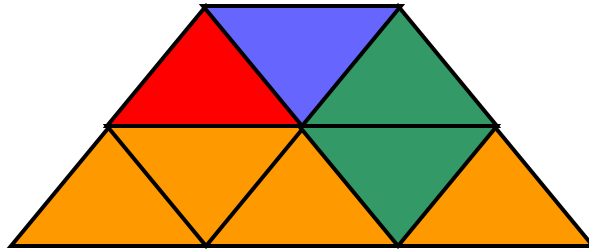
- (1) Color $\frac{1}{2}$ of the blocks yellow.
- (2) Color $\frac{1}{5}$ of the blocks blue.
- (3) Color $\frac{1}{10}$ of the blocks green.
- (4) Color $\frac{1}{10}$ of the blocks red.
- (5) Color $\frac{1}{10}$ of the blocks blue.

FRACTIONS

Answers to Worksheet # 1

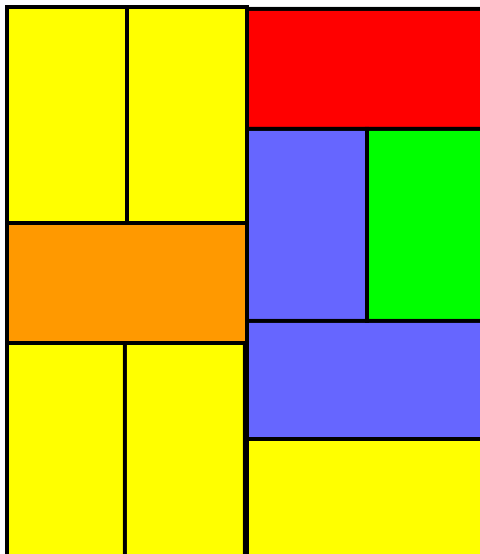


Any combination as follows:



- (1) Color $\frac{1}{8}$ of the pattern blue.
- (2) Color $\frac{1}{8}$ of the pattern red.
- (3) Color $\frac{1}{4}$ of the pattern green.
- (4) Color $\frac{1}{2}$ of the pattern orange.

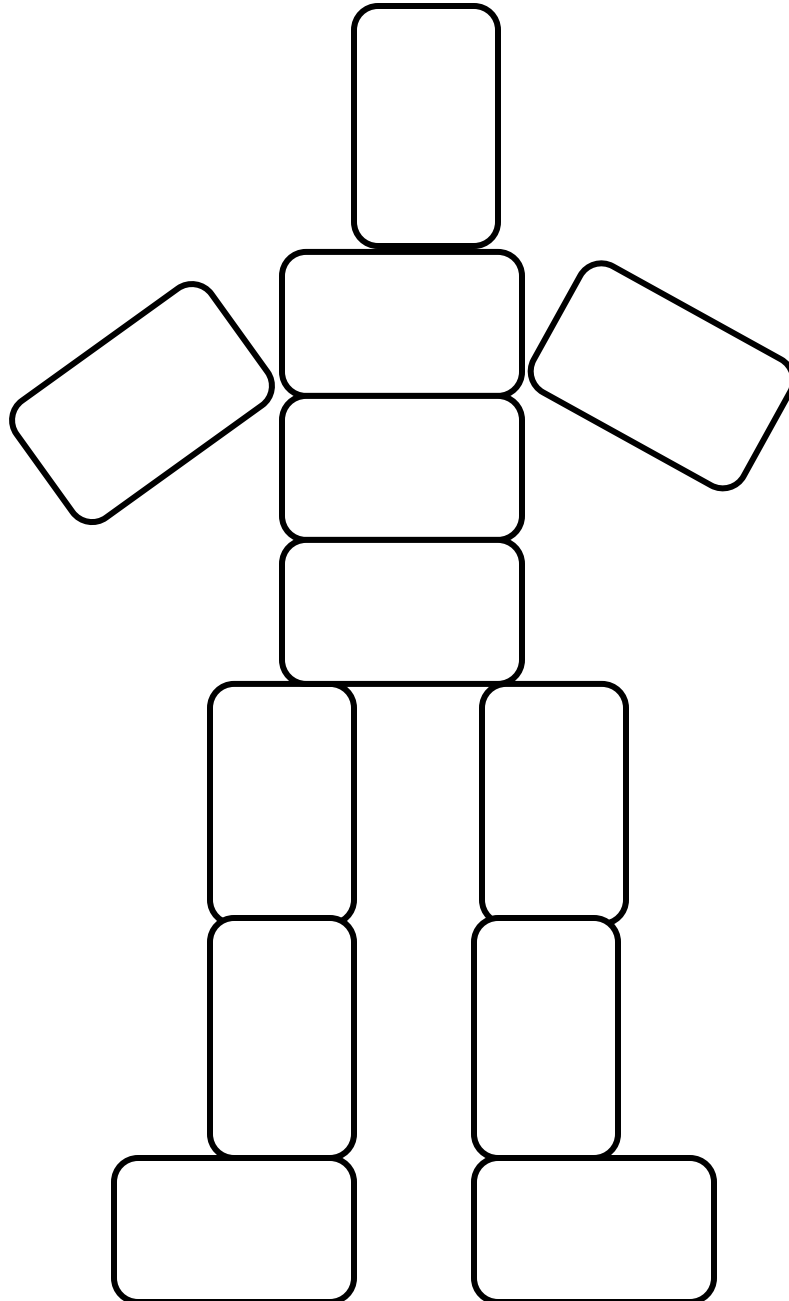
- (1) Color $\frac{1}{2}$ of the blocks yellow.
- (2) Color $\frac{1}{5}$ of the blocks blue.
- (3) Color $\frac{1}{10}$ of the blocks green.
- (4) Color $\frac{1}{10}$ of the blocks red.
- (5) Color $\frac{1}{10}$ of the blocks orange.



Fun Sheet # 2

Name _____

You may add a face and control panel to the robot.



The robot is built of 12 equal parts, so each section is $\frac{1}{12}$ of the robot. Find and color these fractions of the robot!

Color $\frac{1}{6}$ Red

Color $\frac{1}{3}$ Blue

Color $\frac{1}{4}$ Green

Color $\frac{1}{6}$ Black

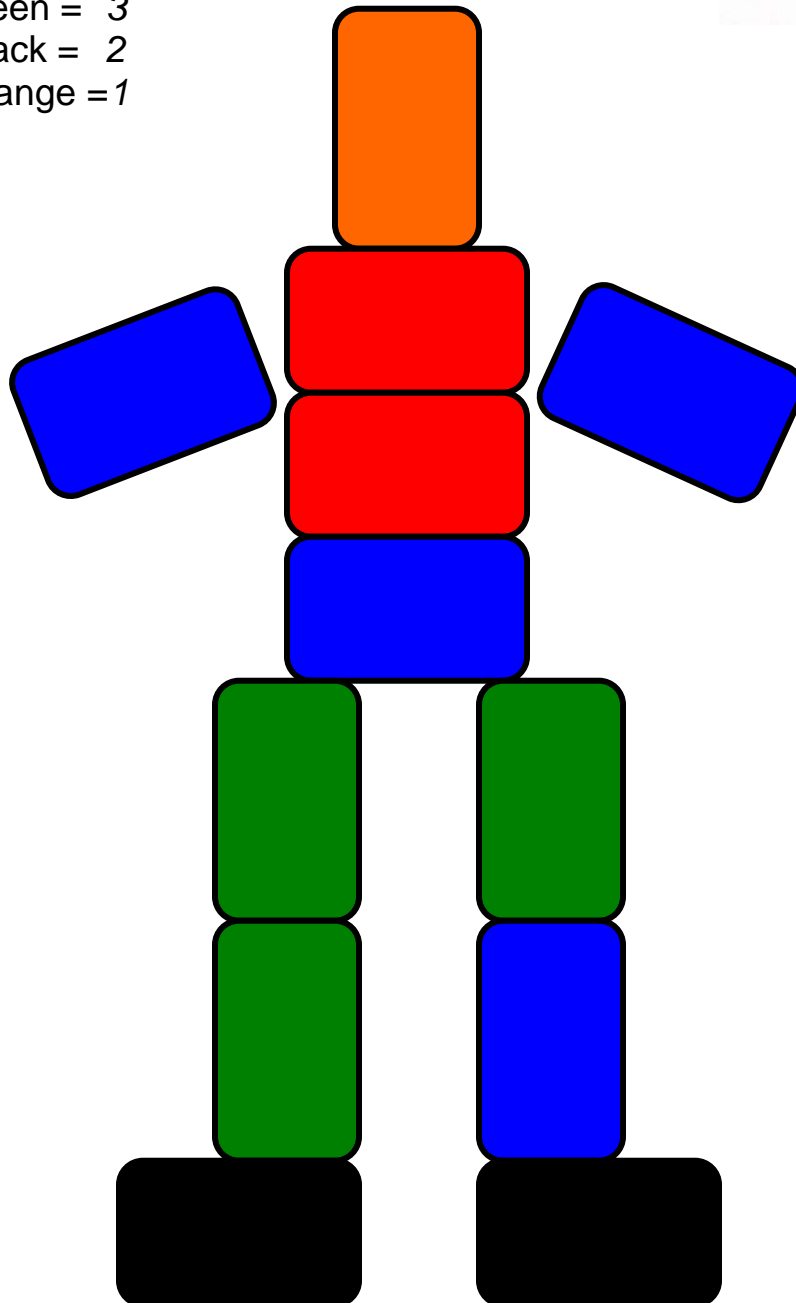
Color $\frac{1}{12}$ Orange

Are there any parts left uncolored? _____
How many 12^{ths} have you colored? _____

Answers to Fun Sheet # 2



$\frac{1}{6}$ red = 2
 $\frac{1}{3}$ blue = 4
 $\frac{1}{4}$ green = 3
 $\frac{1}{6}$ black = 2
 $\frac{1}{12}$ orange = 1



Are there any parts left uncolored? NO
How many 12^{ths} have you colored? 12

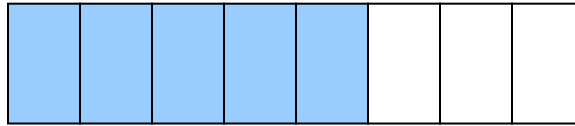
FRACTIONS

Worksheet # 3

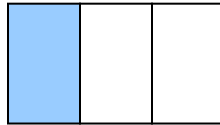
Name _____

Write the fraction for the shaded part of each figure.

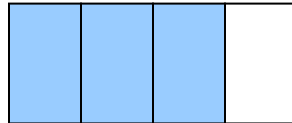
(1)



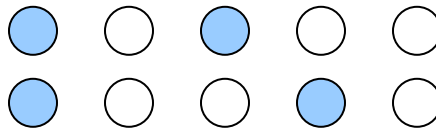
(2)



(3)



(4)



FRACTIONS

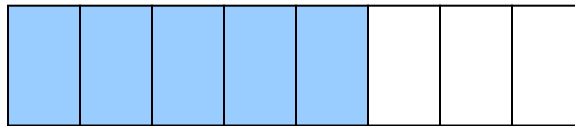
Answers to Worksheet # 3



Name _____

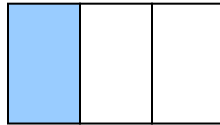
Write the fraction for the shaded part of each figure.

(1)



5/8

(2)



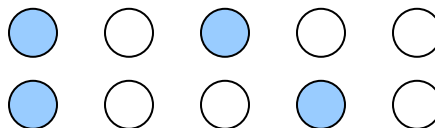
1/3

(3)



3/4

(4)



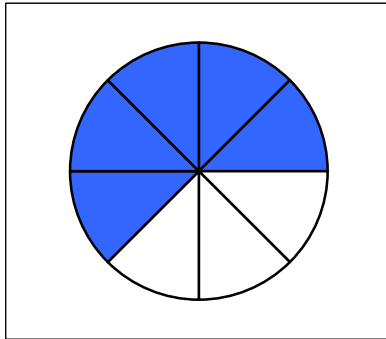
4/10

FRACTIONS

Worksheet # 4

Name _____

(1) Write the fraction for the shaded part of this figure.



Write a fraction suggested by each of the following sentences.

(2) Juan solved 3 out of 5 math problems. _____

(3) 6 out of every eight students passed the test. _____

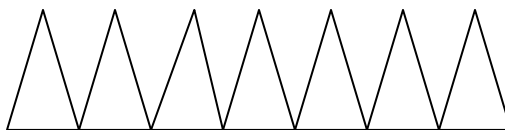
(4) Only one out of 5 kittens had white paws. _____

(5) Jen made 4 out of 6 basketball goals. _____

(6) Tim dropped 2 eggs out of a dozen. _____

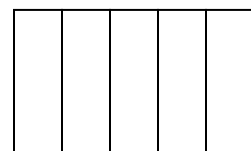
Shade in the fractional part for each shape:

(7)



Shade in $\frac{3}{7}$.

(8)



Shade in $\frac{2}{5}$.

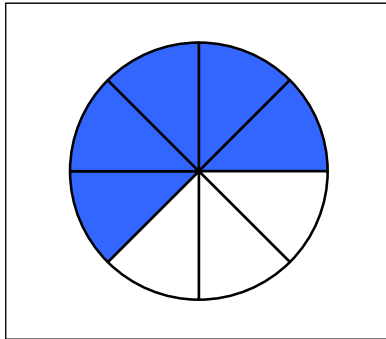
FRACTIONS

Answer to Worksheet # 4



Name _____

(2) Write the fraction for the shaded part of this figure.



5/8

Write a fraction suggested by each of the following sentences.

(2) Juan solved 3 out of 5 math problems. 3/5

(3) 6 out of every eight students passed the test. 6/8

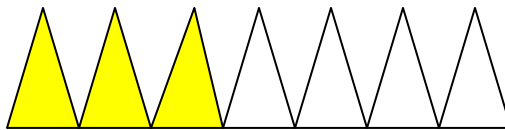
(4) Only one out of 5 kittens had white paws. 1/5

(5) Jen made 4 out of 6 basketball goals. 4/6

(6) Tim dropped 2 eggs out of a dozen. 2/12

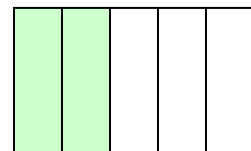
Shade in the fractional part for each shape:

(7)



Shade in $3/7$.

(8)



Shade in $2/5$.

FRACTIONS

Concept Test

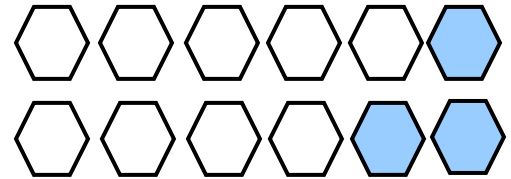
Name _____

Score _____

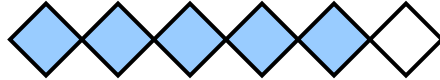
What part of each region is shaded? Write the fraction.



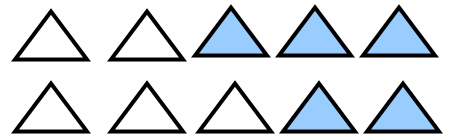
(1) _____



(4) _____



(2) _____



(5) _____



(3) _____

FRACTIONS

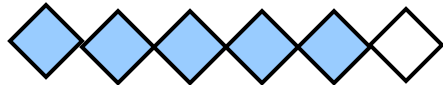
Answers to Concept Test



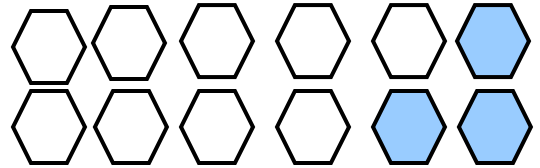
What part of each region is shaded? Write the fraction.



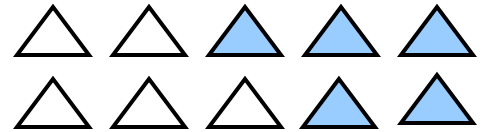
(1) 2/5



(2) 5/6



(4) 3/12



(5) 5/10



(3) 3/8