# LETTER HOME

Using Decimals

Dear Family Member:

In this unit the class will work with decimals. Our activities will focus on developing a better understanding of the meaning of decimals and on being able to translate between decimals and their fractional equivalents.

We will use decimals by measuring length in meters, decimeters, centimeters, and millimeters. These measurement units are illustrated in the picture below. Linking our study of decimals with measurements and modeling them with base-ten pieces, fraction circle pieces, and number lines will help your child visualize the relative size of decimal numbers. These models will also help your child understand simple computations with decimals.
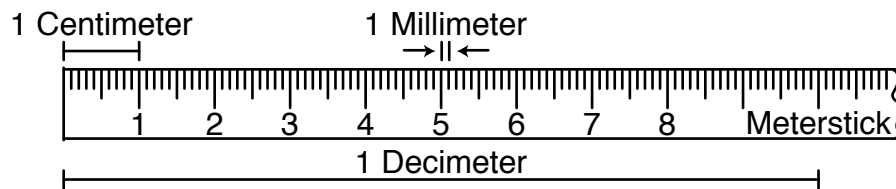
1 Meter is 10 Decimeters
1 Decimeter is 10 Centimeters
1 Centimeter is 10 Millimeters

Meters, decimeters, centimeters, and millimeters

We will conduct an experiment, *Downhill Racer,* in which students roll toy cars or skates down ramps and measure how far the cars roll as we raise the ramp to different heights. For this experiment, have your child bring a toy car, roller skate, or other "rolling toy" to school. Toys that roll straight and far work best. Please label your child's toy with his or her name so that there is no confusion when returning the toy.

You can help your child by providing additional mathematics opportunities at home. For example:

- **Measure.** Help your child measure objects around the house in meters, decimeters, and centimeters.

- **Search.** Talk about decimals in everyday life. Car odometers, labels on packages, and statistics in newspapers offer opportunities for discussing the meaning of decimals.

- **Play Show That Decimal Fraction.** Write or show a decimal fraction and have your child show that decimal fraction at least three other ways.
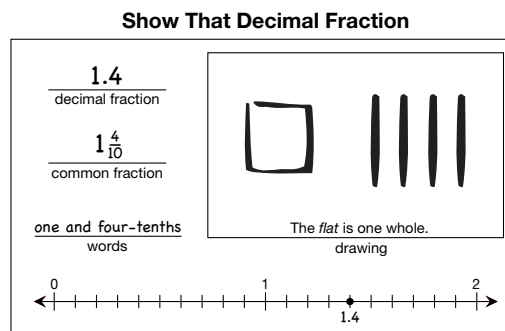

Figure 4: *Playing Show That Decimal Fraction using 1.4*

- **Hundredths, Hundredths, Hundredths.** In this game, the first player makes a number with base-ten pieces (or shorthand) and the second player writes the fraction as a common fraction and a decimal fraction. Game directions are in the *Student Guide*.

Game Board

Base-Ten Shorthand	Common Fraction	Decimal Fraction
	$2\frac{31}{100}$	2.31

- **Play Start, Hop, Stop!** Players use a spinner to determine moves on a number line. Directions, spinners, and game boards are in the *Student Activity Book*.

Math Facts and Mental Math

This unit continues the systematic review and assessment of the division facts.

Division Facts. Students review the division facts related to the last six multiplication facts (24 ÷ 4, 24 ÷ 6, 28 ÷ 4, 28 ÷ 7, 32 ÷ 4, 32 ÷ 8, 42 ÷ 6, 42 ÷ 7, 48 ÷ 6, 48 ÷ 8, 56 ÷ 7, 56 ÷ 8) to maintain and increase fluency and to learn to apply multiplication and division strategies to larger numbers.

You can help your child review these facts using the flash cards that are sent home or by making a set of flash cards from index cards or scrap paper. Study facts in small groups each night. As your child goes through the flash cards, put the cards in three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For the Facts I Need to Learn, work on strategies for figuring them out. Good strategies include:

<u>Start with the multiplication fact.</u> If your child does not know the multiplication fact related to the division fact, start by developing strategies to solve that multiplication fact.

<u>Turn-around facts.</u> To solve 28 ÷ 7: I know 7 × 4 = 28, so 28 ÷ 7 = 4.

<u>Reasoning from known facts.</u> To solve 32 ÷ 4: I know 32 ÷ 2 = 16, so 32 ÷ 4 is half of 16. 32 ÷ 4 = 8.

For Facts I Can Figure Out, use the flash cards to practice the facts for fluency.

For Facts I Know Quickly, help your child use mental math strategies to multiply 10s and 100s: 2400 ÷ 60 = 40; 480 ÷ 6 = 70; 24,000 ÷ 400 = 60.

Thank you for taking time to talk with your child about what he or she is doing in math.

Sincerely,

Name _____   Date _____

Unit 10: Home Practice

Part 1 Triangle Flash Cards: Last Six Facts

Study for the quiz on the division facts related to the last six multiplication facts (24 ÷ 4, 24 ÷ 6, 28 ÷ 4, 28 ÷ 7, 32 ÷ 4, 32 ÷ 8, 42 ÷ 6, 42 ÷ 7, 48 ÷ 6, 48 ÷ 8, 56 ÷ 7, 56 ÷ 8). Take home your Triangle Flash Cards and your list of facts you need to study.

Here's how to use the flash cards. Ask a family member to choose one flash card at a time. Your partner should cover the corner containing either the square or the circle. This number will be the answer to a division fact. Solve a division problem with the two uncovered numbers.

Your teacher will tell you when the quiz on these facts will be. Also, remember to study only those facts you cannot answer correctly and quickly.

Part 2 Missing Numbers and Big Numbers

1. What number must n be to make each number sentence true? After you have decided on a number for n, check your work by multiplying.

   A. $n \times 20 = 80$ **B.** $300 \times n = 1800$ **C.** $90 \times n = 2700$

   D. $50 \times n = 10{,}000$ **E.** $n \times 50 = 1500$ **F.** $70 \times n = 210$

2. **A.** Write the following numbers in order from smallest to largest.

   45,676   54,673   45,788   48,654   47,998   45,089

   B. Round 48,654 to the nearest thousand. _____

   C. Round 45,089 to the nearest hundred. _____

3. Use convenient numbers to estimate the answers to the following problems. Record number sentences to show your thinking.

   A. $608{,}965 + 28{,}696$ **B.** $2{,}657{,}223 + 3{,}908{,}700$ **C.** $378{,}904 - 99{,}645$

Part 3 · School Supplies

Linda and her brother are buying school supplies. Notebooks are on sale for 39¢ each. Pencils are 4 for $1.00. A set of markers costs $2.98. Folders are 10 for $1.00.

1. Linda needs 3 notebooks, 1 set of markers, 1 folder, and 8 pencils. Estimate the cost of Linda's school supplies. Use a number sentence to show your thinking.

2. Linda's brother needs 5 notebooks, 1 set of markers, 3 folders, and 4 pencils. Estimate the cost of his school supplies. Use a number sentence to show your thinking.

3. What is the exact cost of each child's supplies? (There is no tax.)

4. What is the difference in price between the two children's supplies? Use a number sentence to show how you solved the problem.

Part 4 · Addition, Subtraction, and Multiplication

Solve the following problems using paper and pencil or mental math. Estimate to make sure your answers are reasonable. Use the Strategies Menus in the *Student Guide* Reference section to help you.

1. **A.** $68 - 49 =$ **B.** $167 + 67 =$ **C.** $284 + 238 =$ **D.** $432 - 197 =$

   E. $47 \times 9 =$ **F.** $26 \times 7 =$ **G.** $34 \times 9 =$ **H.** $23 \times 8 =$

2. Explain your estimation strategy for Question 1F.

3. Explain a possible mental math strategy for Question 1D.

Part 5 Playing at the Park

1. **A.** When Shannon and her family arrived at the park on Saturday, Shannon counted 3 children on *each* of the following: the slide, the swings, the monkey bars, and the merry-go-round. How many children were at the park when Shannon arrived?

    B. If there were 8 more children than adults at the park, how many adults were at the park?

2. A used-car dealer is across the street from the park. Shannon's dad looked at some cars while Shannon and her sister played at the park. He liked two different cars. One car costs $4550 and the other costs $3775. What is the difference in price of the two cars?

3. Shannon treated her little sister and her mother to a treat. At a nearby stand she bought two cans of juice at 65¢ each and three popsicles at 85¢ each. She gave the vendor $5.00. How much change will Shannon receive?

4. While playing in the park, Shannon's family saw a 5 kilometer race. 235 people were signed up to participate, but only 178 arrived the day of the race. How many people did not show up for the race?

5. **A.** Last summer, the park district raised money for new playground equipment. In June, $565 was raised. In July, $438 was raised. In August, $395 was raised. How much money was raised altogether for new playground equipment?

    B. How much money do they need to raise in September to reach their goal of $1500?

Part 6 Decimals

1. Decimal numbers are represented in base-ten shorthand below. The flat is one whole. Label each of the following with its correct number. Then, put the numbers in order from least to greatest.

A.

B.

C.

D.
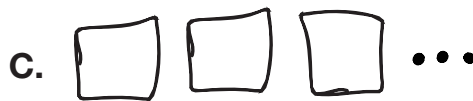
2. Write a decimal for each of the following. Then, show your decimal using base-ten shorthand. The flat is one whole. Find a number that is:

   A. Between 8 and 9

   B. Between 4 and 4.5

   C. Just a little bigger than 8

   D. Between $\frac{1}{2}$ and 2

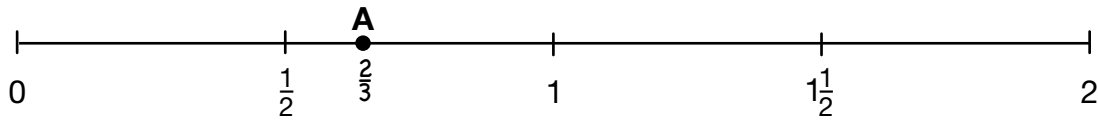**For Questions 3 and 4, put the measurements in order from shortest to longest.**

3. 0.6 m   23 cm   1 dm   0.45 m   55 dm

   _____

4. 1.5 m   1 m and 8 dm   1.03 meter   1.24 meter

   _____

Part 7 Comparing and Ordering Fractions

1. Estimate where these fractions belong on the number line below. The first is done for you.

   A. $\frac{2}{3}$ **B.** $\frac{7}{4}$ **C.** $\frac{8}{10}$ **D.** $1\frac{1}{4}$ **E.** $\frac{3}{8}$

2. Put the correct sign (<, >, =) between the fraction pairs below.

   A. $\frac{2}{3}$ ☐ $\frac{1}{2}$ **B.** $\frac{3}{6}$ ☐ $\frac{4}{8}$ **C.** $\frac{5}{6}$ ☐ $\frac{5}{8}$

   D. $\frac{9}{8}$ ☐ $\frac{5}{8}$ **E.** $\frac{7}{7}$ ☐ $\frac{3}{3}$ **F.** $\frac{3}{4}$ ☐ $\frac{5}{6}$

Part 8 Matching Decimals and Representations

Circle the decimal that matches the picture or fraction.

1.

    A. 3   **B.** 0.3   **C.** 0.03   **D.** 0.003

2.

    A. $7   **B.** $0.70   **C.** $.7   **D.** $0.07

3. $\frac{75}{100} = \frac{3}{4}$

    A. 0.75   **B.** 0.075   **C.** 0.3   **D.** 0.04

4. $\frac{1}{2}$

    A. 0.2   **B.** 0.05   **C.** 0.5   **D.** 0.02

Triangle Flash Cards: Last Six Facts

- Work with a partner. Each partner cuts out the flash cards.
- To quiz you on a division fact, your partner covers the number in the square. Solve a division fact with the two uncovered numbers.
- Divide the used cards into three piles: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.
- Practice the last two piles again. Then, make a list of the facts you need to practice at home.
- Go through the cards again. This time your partner covers the numbers in the circles.
- Sort the cards into the three piles. Make a list of the facts you need to practice at home.
- Repeat the directions for your partner.
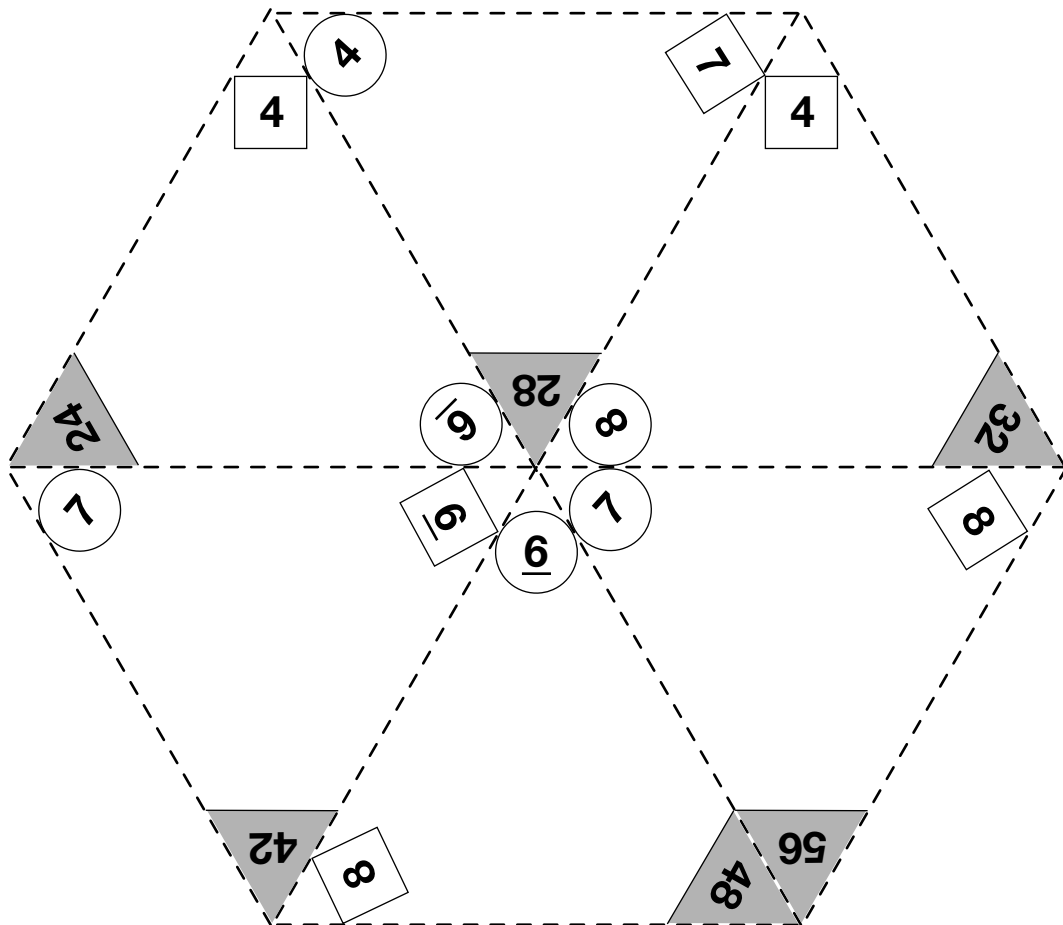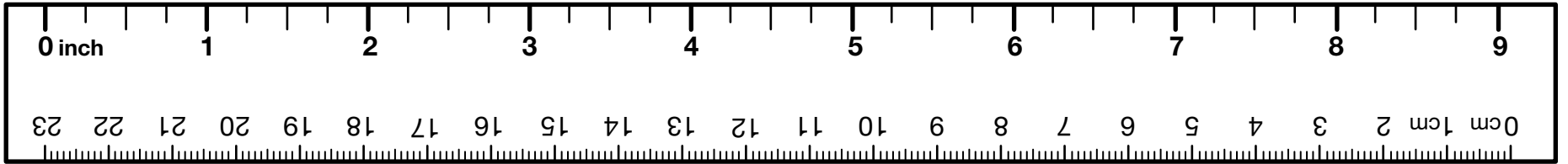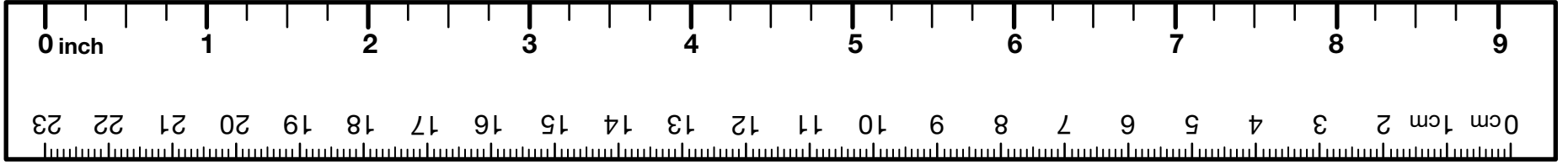
Division Facts I Know

- **Circle the facts you know well.**
- **Keep this table and use it to help you divide.**
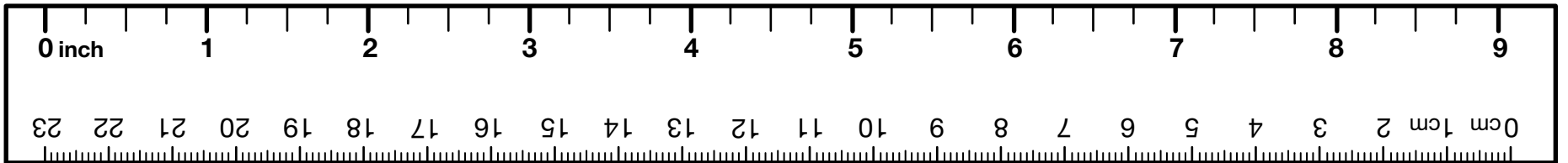- **As you learn more facts, you may circle them too.**

DIVISION

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Centimeter and Inch Ruler

0 inch 1 2 3 4 5 6 7 8 9

0cm 1cm 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

0 inch 1 2 3 4 5 6 7 8 9

0cm 1cm 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

0 inch 1 2 3 4 5 6 7 8 9

0cm 1cm 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Kid Decimals Chart

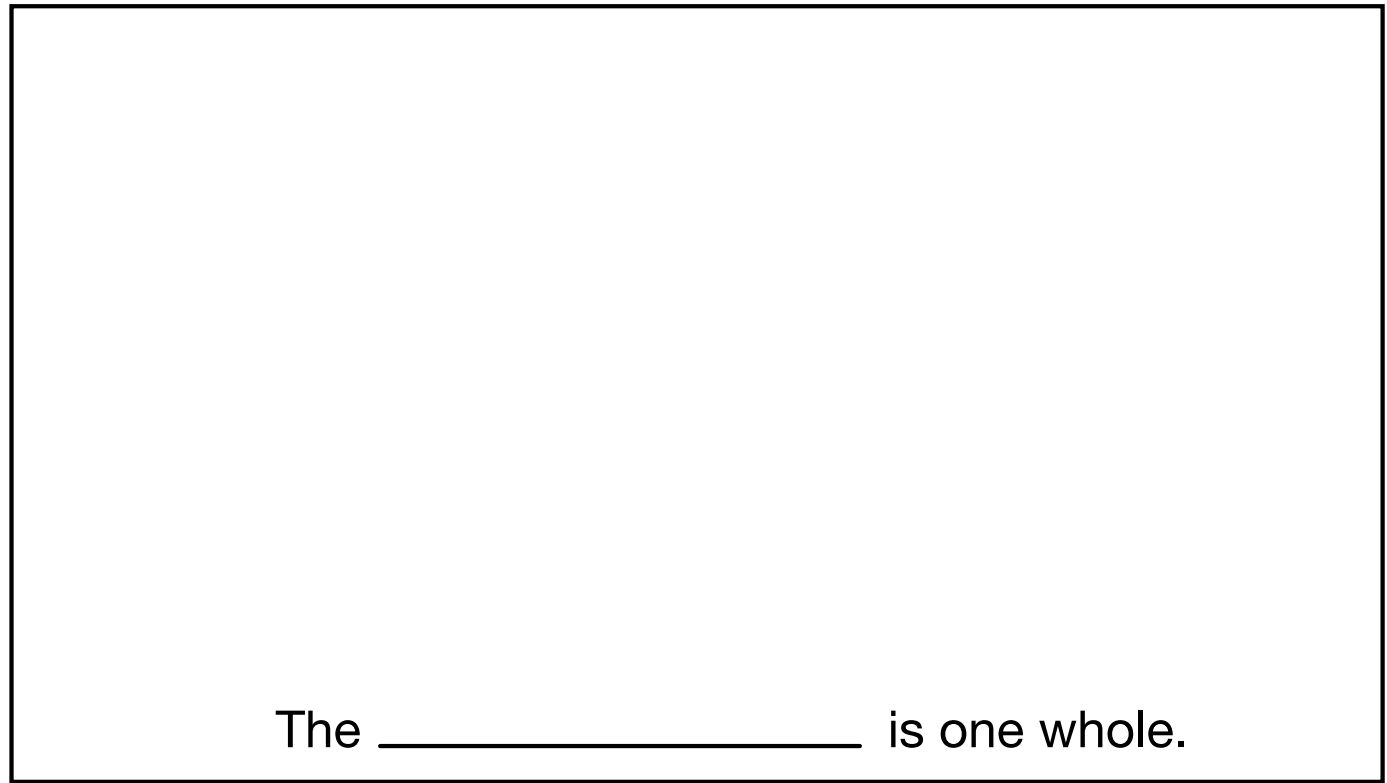| Number of Students in the Whole Group	Number of Students in Part of the Group	Decimal Fraction in Words	Decimal Fraction	Common Fraction
10				
10				
10				
10				
10				

Show That Decimal Fraction

_____
decimal
fraction

_____
common
fraction

_____
words

The _____ is one whole.

drawing

0   1   2
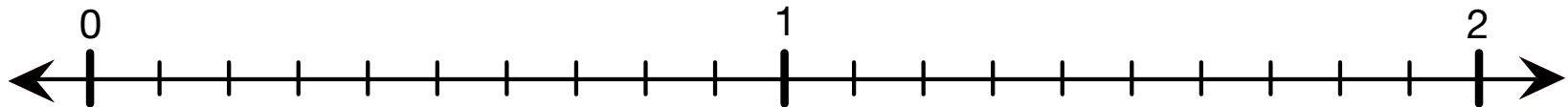
100 Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Name _____   Date _____

Hundredths and Tenths Quiz

1. Linda measured the distance her car rolled to the nearest hundredth of a meter. The distance is marked (L), for Linda, on the metersticks below.
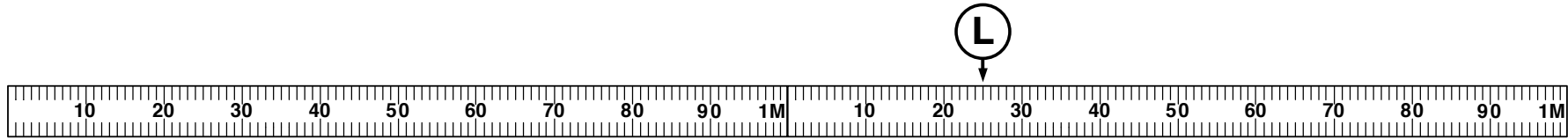
A. Write the distance as a decimal fraction.

B. Roberto's car rolled 0.82 m. Show this distance on the metersticks above and label it (R).

C. Whose car rolled farther? Show or tell how you know.

.

Name _____   Date _____

D. Which statements are true about how far Roberto's car rolled? Label the statements true or false. Roberto's car rolled:

_____ eighty-two hundredths of a meter.

_____ 0.82 cm.

_____ 0.82 tenths of a meter.

_____ 8 tenths and 2 hundredths of a meter.

_____ eighty-two centimeters.

2. Make numbers with base-ten pieces. Write them using common fractions and decimals. Use decimals in the number sentences. Fill in the missing information.

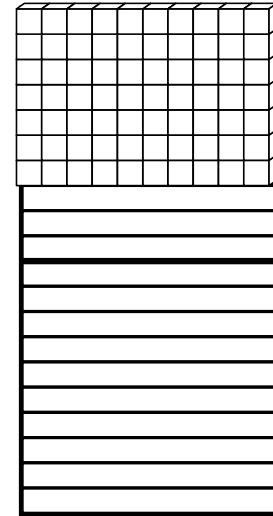|	Base-Ten Shorthand	Common Fraction	Decimal Fraction	Number Sentence
A.	�⬜⬜⬜⬜ ‖‖‖ ⁚⁚••••			20 + 3 + .3 + .07 = 23.37
B.			3.37	
C.		$3\frac{7}{100}$		
D.			0.75	
E.	⬜⬜⬜⬜⬜ ⁚•••••			

3. Put the Decimal Fractions from the chart in Question 2 in order from smallest to largest.

Name _____ Date _____

4. Maya built this number on her Tenths Helper chart. A flat is one whole.

    A. Write this number as a decimal fraction. _____

    B. Write this number as a common fraction. _____

Hundredths and Tenths Quiz Feedback Box	**Expectation**	**Check In**	**Comments**
Measure length to the nearest hundredth of a meter. [Q# 1A–B]	E4		
Use words and numbers to read and write decimals to hundredths. [Q# 1A–D, 2, and 4]	E6		
Represent decimals using: • base-ten pieces. [Q# 2, 4] • number lines (metersticks). [Q# 1]	E5		
Compare and order decimals. [Q# 1C, 3]	E8		

Name _____   Date _____

Roberto's Data

You will need a sheet of *Centimeter Graph Paper* and a ruler.

This is Roberto's data from the Downhill Racer lab.

H Ramp Height (in cm)	D Distance Rolled (in m)				Ordered Pairs (H, D)
	Trial 1	Trial 2	Trial 3	Average	
8	0.97	0.93	0.95		
16	1.75	1.79	1.80		
24	3.01	2.97	2.90		

1. Find the median distance (*D*) for each height. Write your answers in the Average column in the table. Record Roberto's data as ordered pairs in the table.

2. Why did Roberto carry out three trials for each height?

3. Graph Roberto's data.

4. Fit a line to Roberto's data.

Use your graph of Roberto's data to answer Questions 5–9. Show your thinking on your graph.

- Title?
- Labels?
- Units?

5. If the ramp height were 4 cm, predict how far Roberto's car would roll.

6. If the ramp height were 20 cm, predict how far Roberto's car would roll.

7. If Roberto's car rolled 2.5 m, predict the height of the ramp.

**8.** What should Roberto do so that his car rolls 3.5 meters?

9. Roberto's friend Keenya used Roberto's car and ramp to collect her data. Keenya moved her starting line higher than Roberto's.

   A. What do you think Keenya's graph will look like? Will her line be above or below Roberto's? Draw a line on your graph and label it "Keenya's Data."

   B. Show or tell how you decided where to draw the line for Keenya's Data.

Roberto's Data Feedback Box	Expec-tation	Check In	Comments
Make a point graph using ordered pairs with decimal values. [Q #3]	E2		
Make predictions by interpolating from data. [Q #6 and 7]	E3		
Make predictions by extrapolating from data. [Q #5 and 8]	E3		
Make generalizations from line graphs. [Q #9]	E3		

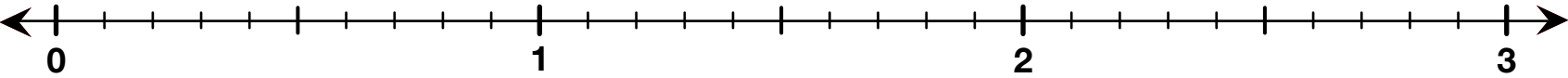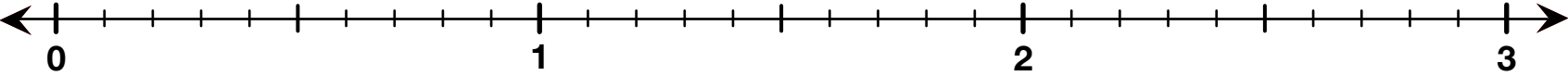|	Yes . . .	Yes, but . . .	No, but . . .	No . . .
MPE5. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking. [Q# 5–9]				

Name _____ Date _____

_____
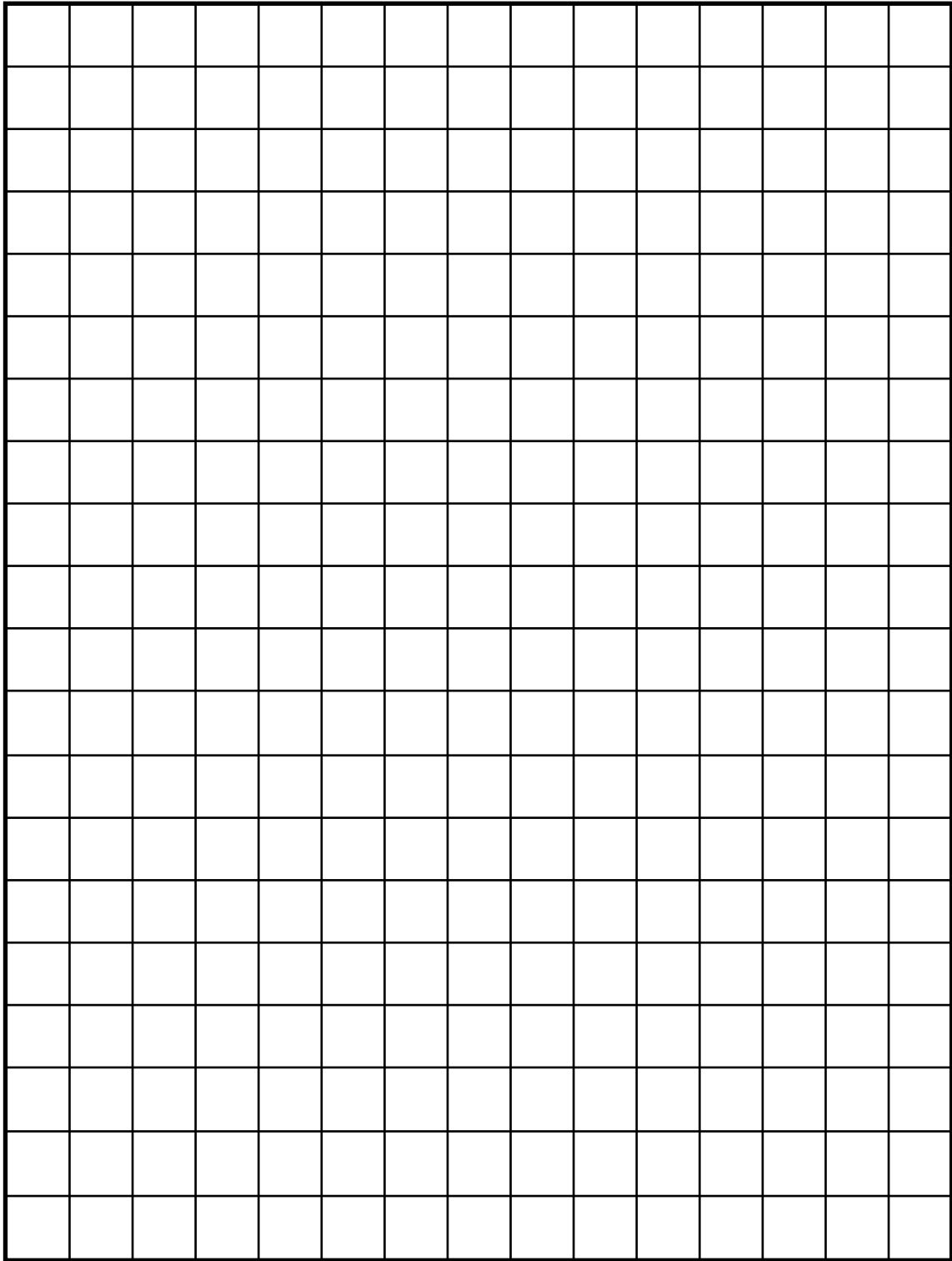
Name _____ Date _____

Start, Hop, Stop! Game Board

Turn #	Start	Stop	Number of Hops	Number Sentence
1.				

Turn #	Start	Stop	Number of Hops	Number Sentence
2.				

Name ——————————————————— Date ———————————

Turn #	Start	Stop	Number of Hops	Number Sentence
3.				

Turn #	Start	Stop	Number of Hops	Number Sentence
4.				

Total Number of Hops for Turns 1–4: _____