Term 3-week 7 Extra for Experts on Number

Monday

WALT solve division word problems involving decimals

We know we have achieved it when we can

- Read the problem and know which are the key words
- Know which operation to use
- Can write the equation and solve it
- Write the answer with the correct unit.

Click on the links below and watch the video clips to learn how to divide a decimal number by a whole number

https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-arithmetic-operations/cc-6th-dividing-decimals/v/dividing-a-decimal-by-a-whole-number

Do not use a calculator to solve these problems. For question 2, you don't have to do doubling or halving just do either long division or short division to get the answer.

Exercise J: Dividing Decimals by Whole Numbers

1. Evaluate, without using a calculator:

   a. $46.8 \div 2$ b. $2.55 \div 5$

   c. $0.012 \div 3$ d. $0.84 \div 6$

   e. $56.7 \div 7$ f. $0.45 \div 9$

2. Use doubling or halving etc for these divisions.

   a. $3.6 \div 20 =$ _____ $\div 10 =$ _____

   b. $47 \div 5 =$ _____ $\div 10 =$ _____

   c. $9.6 \div 300 =$ _____ $\div 100 =$ _____

   d. $1 \div 250 =$ _____ $\div 1\,000 =$ _____

   e. $15.3 \div 90 =$ _____ $\div 10 =$ _____

   f. $7.5 \div 250 =$ _____ $\div 1\,000 =$ _____

3. Work out answers to these divisions, showing all working.

   a. $68.22 \div 9$ b. $14.406 \div 7$

   c. $278.41 \div 11$ d. $103.86 \div 9$

   e. $877.7 \div 2$ f. $103.1 \div 4$

4. Write the answers to these divisions in short form. Use a calculator or long division.

a. $56.1 \div 9$

b. $40 \div 6$

c. $83.2 \div 3$

d. $104 \div 11$

e. $5.2 \div 12$

f. $1.03 \div 9$

5. Use division to convert the following fractions to decimals.

a. $\frac{3}{4}$

b. $\frac{12}{5}$

Mum shares $47.70 among her three children. How much does each child receive?

Eight fillets of fish weigh 1.75 kg. What is the average weight of one fillet of fish?

8. A 6-pack of juice cartons costs $7.50. How much does each carton of juice cost?

9. Petra is making a mini quiche using a quarter of the ingredients in a large quiche recipe. If the large recipe requires 0.56 kg of butter, how much butter does Petra need for her mini quiche?

10. A 614.4 km journey is divided into three equal stages. How long is each stage?

11. Dad buys 8 test pots of paint, a total of 0.44 L. How many litres of paint would be in 20 test pots?

Extension-

Find two video links to learn how to divide a whole number by a decimal number.

Find two video links to learn how to divide by a decimal number by another decimal number.

Tuesday

L.I: Converting between fractions, decimals and percentages.

S.C: Using an appropriate strategy, convert between fractions, decimals and percentages as instructed.

1. Complete the table

Fraction	Decimal	Percentage
21/100	0.21	21%
61/100		
		37%
	0.85	
		6%
	0.07	
	0.6	
		14%
9/10		
1/2		

2. Convert the following fractions to decimals.
    a. 4/5 =
    b. 11/20 =
    c. 3/25 =
    d. 41/50 =
    e. 31/200 =
    f. 29/500 =
3. Convert the following decimals to fractions. Simplify your answers.
    a. 0.2 =
    b. 0.75 =
    c. 0.48 =
    d. 0.025 =
    e. 0.105 =
    f. 0.06 =
4. Convert the following percentages to fractions. Simplify your answers.
    a. 37% =
    b. 89% =
    c. 15% =
    d. 90% =
    e. 2% =
    f. 75% =
5. Convert the following to percentages.

a. 45/100 =
b. 3/100 =
c. 129/100 =
d. 4/10 =
e. 35/10 =
f. 1 =

6. Convert the following percentages to decimals.
    a. 19% =
    b. 25% =
    c. 90% =
    d. 7% =
    e. 160% =
    f. 200% =
7. Convert the following decimals to percentages:
    a. 0.76 =
    b. 0.4 =
    c. 0.08 =
    d. 0.35 =
    e. 1.4 =
    f. 1.25 =
8. Put in order from smallest to largest: 0.5%, 0.05, 5.5%, 1/500

Wednesday

<u>Learning Intention: To understand that Numbers are made from Factors and can be broken back down to Factors.</u>

All numbers have Factors, except 0 and 1. (Even an integer could be seen as a number times -1)

Factors: a number or quantity that when multiplied with another produces a given number or expression.

Look at these:

2 x 5 = 10

2 and 5 are factors of 10.

Factors of 12 in order are: 1,2,3,4,6,12 or 1 x 12, 2 x 6, 3 x 4.

Numbers can be factorised as shown

Factors of 36: (1,2,3,4,6,9,12, 18, 36)

To factorise accurately, you need to know your tables, so that you can divide:

Example: Factorising 36. Where have you seen this number? 6 x 6, 4 x9 3 x 12, and of course 1 x 36.

Any more? You can divide by 2: 2 x 18.

Now you have all the factors of 36

Part 1

List the factors of:

1. 22
2. 26
3. 28
4. 34
5. 38
6. 52
7. 62
8. 78
9. 80
10. 92
11. 98
12. 104
13. 110
14. 126
15. 130

(You can insert your answers here)

Learning Intention: To understand Primes and to Find Prime Factors of a Number

Primes from 1 to 100

There are 3 main rules:

1 is not a Prime

2 is the only even prime

A Prime is a number with only two factors, itself and 1.

Another hint: If the number appears in your times tables as a product, or answer, it is NOT a Prime.

In this chart, the highlights are all Primes.

Here is one way to list Prime Factors:

Factor Trees

Here is another way:

Factor	Into:
2	48
2	24
2	12
2	6
3	3
	1

Note that when the answer is 1, Stop.

The Prime Factors are: 2 x2 x 2 x2 x 3 = 48

Or Using Exponents: 2^4 x 3

Part 2

Using Exponents where needed, show the Prime Factors of:

1. 22
2. 26
3. 28
4. 34
5. 38
6. 52
7. 62
8. 78
9. 80
10. 92
11. 98

12. 104
13. 110
14. 126
15. 130

(You can insert your answers here)

Thursday

Integers

L.I. to understand and use integers when adding and subtracting.

S.C. – be able to list integers in order of size from smallest to largest.

- to be able to add and subtract integers correctly.
- to be able to solve real life word problems involving integers.

Watch the youtube clip below to revise your knowledge.

https://www.youtube.com/watch?v=OAoLCXpao6s

1. **Put the following integers in order of size from smallest to largest.**

a. -20, 21, 19, -19, -22, -29
b. 5, -56, 50,-49, -39, 22
c. -54, -2, 2, 54, -43, 150
d. 60, -20, -90, 140, 401,-230

2)Greater than or less than?

Insert the correct symbol in between the two numbers given below to make the number sentences correct.

a. -18 -14 b) -49 -50 c) 16 -17 d) -101 -110

3**) Adding and subtracting integers.**

Remember when adding a *positive number* always move to the right on the number line.

When subtracting a *positive number* always move to the left on the number line.

Adding a negative number is the same as subtracting a positive.

Subtracting a negative is the same as adding a positive.

Complete these equations.

1. 10 + -3 = 2) -3 + 4= 3) -5 + 3 =

4) -4 - 3 = 5) 6 + -4 = 6) 10 - -3 =

7) 6 - -3 = 8) -7 + -3 = 9) 5 – 9 =

10) -7 - -2 = 11) 100 - -25 = 12) -65 + - 20 =

13) 45 + -82 = 14) -27 + -36 = 15) -31 - -20 =

Practising using integers in everyday situations

1. Work out the final balance for each person. Highlight the names of the people who are overdrawn (negative final balance).

a. Ted has $20 in his account. He withdraws $30. Final balance_____

b. Seni has -$20 in her account. She deposits $45. _____

c. Katie has $15 in her account. She withdraws $10. _____

d. Alan has -$25 in his account. He withdraws $5.

e. Dave has -$38 in his account. He deposits $30.

2.Give the floor level for each person. Ground level is 0. Floors below ground are written as negative numbers. Highlight the 2 people on the same floor.

a) Hiu-Yan was on ground floor and went down 2 floors. _____

b) Caitlin was at level -4 and went up 5 floors. _____

c) Frank was on level 7 and went down 9 floors. _____

d) Hans was on level -2 and went up 1 floor. _____

e) Hepi was on level -5 and went up 5 floors. _____

<u>EXTRA FOR EXPERTS/ Early finishers</u>

Choose the temperature from Column B that best matches the item in column A

A

1. A sick person with a fever
2. Normal body temperature.
3. A hot sunny day.
4. A cold winter day.
5. Inside a refrigerator.
6. Inside a home freezer.
7. A moderate oven.
8. A very hot oven.
9. A hot iron.
10. South Pole.

B

A) 230 degrees C

B) 29 degrees C

C) -18 degrees C

D) - 45 degrees C

E) 39 degrees C

F) 10 degrees C

G) 200 degrees C

H) 180 degrees C

I) 4 degrees C

J) 37 degrees C

SCORING

In some games or sports such as Indoor Cricket, positive and negative integers are used. When a player goes 'out' in Indoor Cricket 5 is taken off the team's total.(they score -5). Sometimes a team may finish with a negative score.

Which teams would finish with a negative score?

1. 'Sloggers" had a score of 34 when the last Batsman was caught on the last ball of the match.
2. 'Battlers' had played hard to score 38 runs. The last 2 batters, went out 4 times each without adding further points on to the score.
3. ' Strikers' had a score of 12 when the last 2 came in to bat. They went out twice each, but also added a further 6 onto the score.
4. Sally and Anne calculated that they needed to make 24 runs in the last over to win. The score was 16 when they went out to bat. Sally hit two 4s and was caught once, while Anne made a three plus 2 singles and was caught out twice.

Friday

Extra for experts

We are learning to understand how to work out equivalent fractions.

Equivalent fractions:

A fraction is part a whole.

Example: A pie is cut into four equal pieces. Each piece of the pie is one quarter of the whole pie. Written as $^1/_4$, it means 1 out of 4.

If a pie was cut into 8 equal pieces, how many pieces would make up a quarter of the pie?

Answer: 2 out of 8 = $^2/_8$.

The fractions $^1/_4$ and $^2/_8$, are equivalent fractions, as they represent the same part or fraction of a whole.

Discuss other fractions that are equivalent to $^1/_4$.

To create equivalent fractions, multiply (or divide) the top and bottom numbers of the fraction by the same number. An equivalent fraction to $^1/_4$ can be created by multiplying by 5, or any other number.

Example: $^1/_4 \times {}^5/_5 = \frac{1\times5}{4\times5} = {}^5/_{20}$. Another equivalent fraction would be ... $^1/_4 \times {}^9/_9 = \frac{1\times9}{4\times9} = {}^9/_{36}$

Task 1: creating equivalent fractions

Complete each calculation to create equivalent fractions. The first one has been done for you.

1. 1/2 x 8/8= 8/16
2. 1/5 x 5/5=
3. 1/7 x 4/4=
4. 2/7 x 4/4=
5. 2/3 x 7/7=
6. 3/8 x 7/7=
7. 5/6 x 5/5=
8. 3/8 x 3/3=
9. 4/9 x 5/5=
10. 6/11 x 3/3=
11. 3/7 x 11/11=

Task 2: Expressing a fraction as a decimal

Expressing a fraction as a decimal:

The top number of a fraction is called the numerator. The bottom number is called the denominator.

Example: In the fraction $^5/_8$, 5 is the numerator and 8 is the denominator.

Fractions can be converted into decimals by dividing the numerator by the denominator.

Example: Convert $^5/_8$ to a decimal.

$$8\overline{)5.000} = 0.625$$

Zeros will need to be added after the decimal point. You keep dividing until there is no remainder or there are at least 3 digits after the decimal point.

Answer: The fraction $^5/_8$ converted to a decimal is 0.625.

Some fractions can be simplified by dividing the numerator and denominator by the same number.

Example: $^{50}/_{100}$ (divide by 10) = $^5/_{10}$ (divide by 5) = $^1/_2$ This will make the conversion to a decimal easier.

Some fractions create interesting decimals, with a recurring pattern of digits.

Example: $^2/_9 = 0.2222^{\cdot}$ This small dot means that the 2's go on forever.

$^3/_{11} = 0.27\dot{2}\dot{7}$ Both the digits 2 and 7 repeat in this decimal.

Convert these fractions to decimals. Some fractions can be simplified. *Example: 8/10 = 4/5.* The first one has been done for you.

1. 1/4= 0.25
2. 3/8=
3. 1/10=
4. 2/5=
5. 5/8=
6. 8/10=
7. 5/100=
8. 4/5=
9. 4/8=
10. 3/10=
11. 3/5=
12. 6/8=
13. 4/12=
14. 7/10=
15. 1/2=
16. 5/20=
17. 12/16=
18. 6/10=
19. 8/12=
20. 9/15