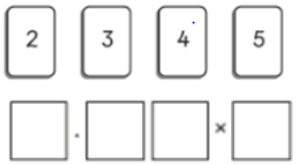
Year 6 maths – Summer 2 Week beginning: 13.7.20

Theme	CONSOLIDATION LESSON Fractions Comparing Fractions	CONSOLIDATION LESSON Decimals Multiplying Decimals	CONSOLIDATION LESSON Decimals Dividing Decimals	CONSOLIDATION LESSON Factors	CONSOLIDATION LESSON Multiplication
Factual fluency (to aid fluency)	**Practise the four operations** **Activity**	**Practise using decimals in word problems** **Activity**	**Practise decimal division** **Activity**	**Practise the four operations with decimals** **Activity**	**Practise the four operations word problems** **Activity**
Problem/ activity of the day **Remember, just like in class, you can still show the depth of your knowledge** LINK	**(Lesson 1 resources below)** **MAKING LINKS:** You have compared fractions in years 4, 5 and 6. **THINK: (support below)** Can you help me to order these fractions from smallest to greatest? $1\frac{4}{7}$ $2\frac{2}{3}$ $1\frac{1}{2}$ **SEE: (model below)** Check the solution below. **DO:** Use what you have learnt today to solve: PART 1: Complete the questions in part 1 below. Check your answers below before moving on to: PART 2: Complete the questions in part 2 below.	**(Lesson 2 resources below)** **MAKING LINKS:** Today you are going to multiply decimal numbers. You have learnt this in year 6. **THINK: (support below)** Can you use these digit cards to create a multiplication calculation using a decimal number? Solve it.  **SEE: (model below)** Check the solution below. **DO:** Use what you have learnt today to solve: PART 1: Complete the questions in part 1 below. Check your answers below before moving on to: PART 2: Complete the questions in part 2 below.	**(Lesson 3 resources below)** **MAKING LINKS:** Today you are going to divide decimal numbers. You have learnt this in year 6. **THINK: (support below)** My friend says division of decimal numbers is the same as division of whole numbers. Is she correct? **SEE: (model below)** Check the solution below. **DO:** Use what you have learnt today to solve: PART 1: Complete the questions in part 1 below. Check your answers below before moving on to: PART 2: Complete the questions in part 2 below.	**(Lesson 4 resources below)** **MAKING LINKS:** Today we are going to investigate factors. You learned about factors in year 5 and 6. **THINK: (support below)** Factor Track. Starting on the (yellow) 60, make your way round to the (red) 'end' square. You can move any factor of the number you are on except 1. So think of the factors of 60 and move that number of squares. You must land exactly on each green square, so you can't go round corners in one move. Go round the track in as few moves as possible. **SEE: (model below)** You could use division to think of the factors of each number, 60 ÷ 2 = 30 so 2 is a factor of 60. **DO:** Use your understanding of factors to go around the track in as few moves as possible.	**(Lesson 5 resources below)** **MAKING LINKS:** This week we are going to investigate multiplication. **THINK: (support below)** **Enjoy this old riddle. Can you solve it using multiplication?** As I was going to St. Ives, I met a man with seven wives. The seven wives had seven sacks and the seven sacks had seven cats. The seven cats had seven kits. Wives, sacks, cats, kits: how many were going to St. Ives? **SEE: (model below)** Check the support below. **DO:** Use what you have learnt today to CREATE your own maths riddle. You may want to use different numbers to multiply in the same kind of riddle as above?

See below for resources to support you to THINK-SEE-DO

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DAY 1 RESOURCES:

THINK: Can you help me to order these fractions from smallest to greatest?

$1\frac{4}{7}$ $2\frac{2}{3}$ $1\frac{1}{2}$

DO: Use what you have learnt today to solve:

Part 1: Arrange the fractions in ascending order:

$1\frac{1}{3}$ $1\frac{3}{4}$ $1\frac{1}{2}$

Check your answers before moving onto:

Part 2: complete the questions below:

1) $3\frac{2}{3}$, $3\frac{4}{5}$, $3\frac{1}{2}$ _____ , _____ , _____	2) $7\frac{5}{6}$, $7\frac{4}{9}$, $7\frac{7}{12}$ _____ , _____ , _____
3) $1\frac{7}{16}$, $1\frac{1}{4}$, $1\frac{3}{8}$ _____ , _____ , _____	4) $9\frac{2}{15}$, $9\frac{2}{3}$, $9\frac{5}{6}$ _____ , _____ , _____
5) $14\frac{3}{10}$, $14\frac{9}{20}$, $14\frac{11}{30}$ _____ , _____ , _____	6) $5\frac{3}{4}$, $5\frac{5}{6}$, $5\frac{1}{2}$ _____ , _____ , _____
7) $8\frac{2}{11}$, $8\frac{4}{5}$, $8\frac{4}{7}$ _____ , _____ , _____	8) $6\frac{7}{8}$, $6\frac{1}{9}$, $6\frac{9}{10}$ _____ , _____ , _____
9) $2\frac{3}{22}$, $2\frac{5}{11}$, $2\frac{4}{13}$ _____ , _____ , _____	10) $10\frac{15}{16}$, $10\frac{11}{12}$, $6\frac{13}{14}$ _____ , _____ , _____

Deepening:

Write your own explanation for ordering fractions. Share your answer with your teacher.

SEE: When comparing numbers we first check to see which amount is the greatest. If all the numbers are similar we then compare like numbers with like. Hundreds with hundreds, tens with tens, ones with ones, tenths with tenths, same denominator with same denominator!

These numbers are all made up of **ones** and **fractions**.
We are ordering them in ascending order so least to greatest.
If we compare the ones, we can see quickly the middle number is the greatest as it contains 2 ones:

$1\frac{4}{7}$ $2\frac{2}{3}$ $1\frac{1}{2}$

The remaining numbers both contain 1 one so we must next look at the fractions and compare them.

To compare fractions we must make them the same 'type'. We do that by converting them to fractions with the same denominator, the common denominator.

$1\frac{4}{7}$ $2\frac{2}{3}$ $1\frac{1}{2}$

We have sevenths and halves.
What multiple is common to both these denominators? 14!
So we can convert both fractions to 'fourteenths'.
To convert **sevenths** to **fourteenths** we **multiply** both the numerator and denominator **by 2**.
To convert **halves** to **fourteenths** we **multiply** both the numerator and denominator **by 7**.

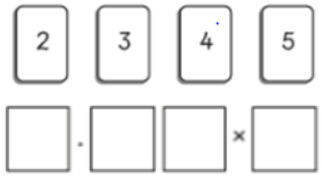
$\frac{4}{7} = \frac{8}{14}$ and $\frac{1}{2} = \frac{7}{14}$

Now we can order the fractions: $1\frac{1}{2}$, $1\frac{4}{7}$, $2\frac{2}{3}$

If we had three fractions with different denominators we would have to find a multiple common to all three denominators!

DAY 2 RESOURCES:

THINK: Use these digit cards to create a multiplication calculation using a decimal number. Solve it.



DO:

Use what you have learnt today to solve:

Part 1: complete the question below:

3.02 × 3 =

1.53 × 26 =

Check your answers before moving onto:

Part 2:

8.72 × 7	5.49 × 8	5.04 × 4	4.33 × 8	9.50 × 5
6.00 × 2	7.64 × 3	5.98 × 4	9.72 × 8	2.66 × 3
6.11 × 5	1.54 × 4	7.21 × 2	5.82 × 9	7.08 × 4
3.90 × 2	7.23 × 7	3.41 × 7	7.05 × 9	3.89 × 3

Deepening:

Explain how to multiply decimal numbers using the compact method. Share your explanations with your teacher.

SEE:

Remember:

Multiply the numbers just as if they were whole numbers!

1. Line up the **numbers** on the right - do not align the **decimal** points.
2. Starting on the right, **multiply** each digit in the top **number** by each digit in the bottom **number**, just as with **whole numbers**.
3. Add the products.

T	O	·	$\frac{1}{10}$s	$\frac{1}{100}$s
	2	.	3	4
x				5
	0	.	2	0
	1	.	5	0
1	0	.	0	0
1	1	.	7	0

Or use the compact method!

Multiply each digit and remember to add any numbers you have renamed.

T	O	·	$\frac{1}{10}$s	$\frac{1}{100}$s
	1		2	
	2	.	3	4
x				5
1	1	.	7	0

DAY 3 RESOURCES:

THINK:

My friend says division of decimal numbers is the same as division of whole numbers. Is she correct?

DO:

Part 1: complete the questions below:

2.316 ÷ 3 =

0.296 ÷ 4 =

Check your answers before moving onto:

Part 2:

$2\overline{)1.421}$ $3\overline{)0.510}$ $2\overline{)0.921}$ $6\overline{)7.638}$

$9\overline{)3.928}$ $2\overline{)9.920}$ $8\overline{)9.388}$ $9\overline{)4.334}$

$5\overline{)1.717}$ $8\overline{)0.595}$ $4\overline{)2.396}$ $3\overline{)6.131}$

Deepening:

What is the missing number? How do you know?

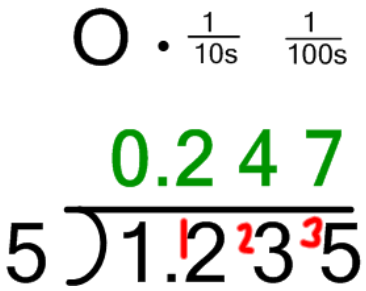
Explain and share with your teacher on 'seesaw'.

4.8 ÷ ?? = 1.2

SEE:

Divide the decimal number as you would a whole number.

Remember to move and rename any amounts that you cannot subtract multiples of the divisor from.



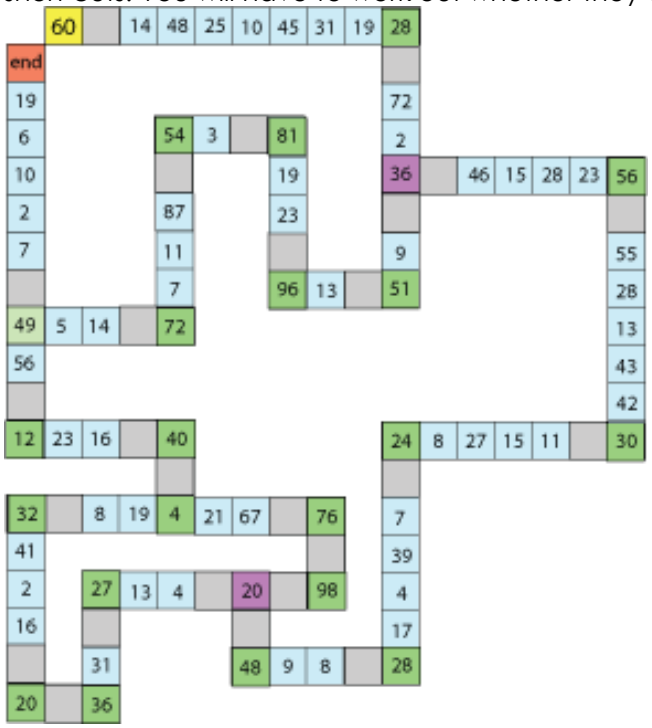
Remember to ask yourself, can we take more multiples of the divisor?

I can take 0 fives from 1.
Leaving 1 to move to the next place.
Now, I can take 2 fives from 12.
Leaving 2 to move to the next place.
Next, I can take 4 fives from 23.
Leaving 3 to move to the next place.
Finally, I can take 7 fives from 35.

DAY 4 RESOURCES:

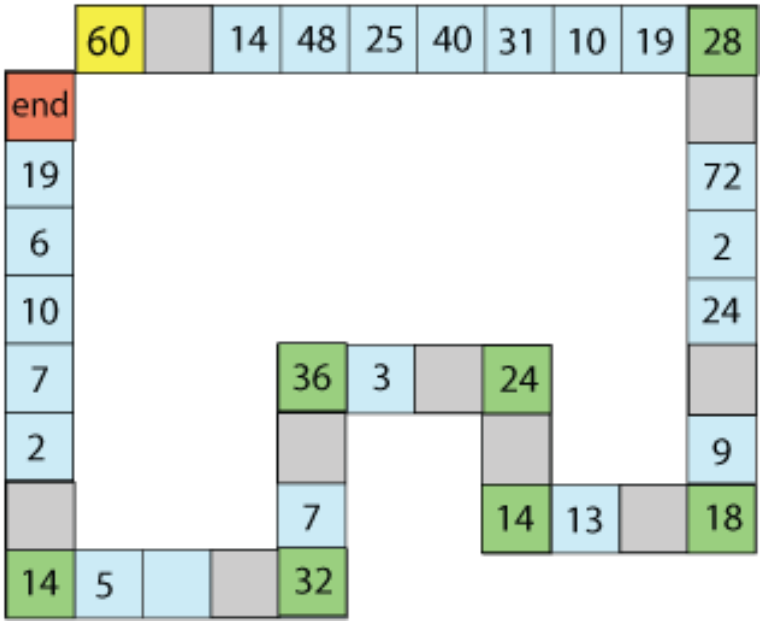
THINK:
Factor Track. Starting on the (yellow) 60, make your way round to the (red) 'end' square.
You can move any factor of the number you are on except 1.
You must land exactly on each green square, so you can't go round corners in one move. Go round the track in as few moves as possible.

DO: Deepening:
If you feel ready, try this more complicated track where there are possible short cuts. You will have to work out whether they are worthwhile.



Rules: You can move any factor, except 1, of the number you are on. You start on the [yellow] 60 and make your way round to the [red] 'end' square. You may not go round corners so you must get exactly to a green square.

DO: **Factor Track** is not a race but a game of skill!
The idea is to go round the track in as few moves as possible, keeping to the rules. You might try writing down all factors of the numbers in the green squares. Keep a note so you know which routes you have tried? To start, think of the factors of 60 and move that number of squares. You could use division to think of the factors of each number, 60 ÷ 2 = 30 so 2 is a factor of 60.



Rules:
You start on the (yellow) 60 and must make your way round to the (red) 'end' square.
You can move any factor of the number you are on, except 1.
You must land exactly on each green square, so you can't go round corners in one move.

Have a go at moving round this 'training' track following the rules.
Can you do it in fewer moves?
What is the best route to take to do it in the least number of moves?
Which squares do you need to land on?

DAY 5 RESOURCES:

THINK: Enjoy this old riddle. Can you solve it using multiplication?

As I was going to St. Ives, I met a man with seven wives. The seven wives had seven sacks and the seven sacks had seven cats. The seven cats had seven kits. Wives, sacks, cats, kits: how many were going to St. Ives?

DO:

Create your own maths riddle.

You could use the same format as the riddle above or make up your own.
It must be solved with addition, subtraction, multiplication or division!

Interesting?
The following version is found in a manuscript (Harley MS 7316) dating from approximately 1730.

As I went to St. Ives
I met Nine Wives
And every Wife had nine Sacks,
And every Sack had nine Cats
And every Cat had nine Kittens

How many could be going to St. Ives now?

SEE:

Some people say the answer is 1 since only the narrator says he was going to St. Ives but imagine if they were all going.

How many would be going there?
Continue calculating:
1 x narrator
1 x man
7 x wives
If 7 wives had 7 sacks each, how many 7s would that be? 7 x 7?
Keep going!

Narrator	Man	Wives	Sacks	Cats	Kits (kittens)
1	1	7 Each wife has 7 sacks.			

ANSWERS – part 1:

Day 1	Day 2	Day 3	Day 4	Day 5
Part 1: $1\frac{1}{3}$, $1\frac{1}{2}$, $1\frac{3}{4}$	Part 1: 3.02 × 3 = 9.06 1.53 × 26 = 39.78	Part 1: 2.316 ÷ 3 = 0.772 0.296 ÷ 4 = 0.074	See below.	See below.

ANSWERS – part 2 and deepening:

Day 1

Part 2:

1) $3\frac{2}{3}$, $3\frac{4}{5}$, $3\frac{1}{2}$
$3\frac{1}{2}$, $3\frac{2}{3}$, $3\frac{4}{5}$

2) $7\frac{5}{6}$, $7\frac{4}{9}$, $7\frac{7}{12}$
$7\frac{4}{9}$, $7\frac{7}{12}$, $7\frac{5}{6}$

3) $1\frac{7}{16}$, $1\frac{1}{4}$, $1\frac{3}{8}$
$1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{7}{16}$

4) $9\frac{2}{15}$, $9\frac{2}{3}$, $9\frac{5}{6}$
$9\frac{2}{15}$, $9\frac{2}{3}$, $9\frac{5}{6}$

5) $14\frac{3}{10}$, $14\frac{9}{20}$, $14\frac{11}{30}$
$14\frac{3}{10}$, $14\frac{11}{30}$, $14\frac{9}{20}$

6) $5\frac{3}{4}$, $5\frac{5}{6}$, $5\frac{1}{2}$
$5\frac{1}{2}$, $5\frac{3}{4}$, $5\frac{5}{6}$

7) $8\frac{2}{11}$, $8\frac{4}{5}$, $8\frac{4}{7}$
$8\frac{2}{11}$, $8\frac{4}{7}$, $8\frac{4}{5}$

8) $6\frac{7}{8}$, $6\frac{1}{9}$, $6\frac{9}{10}$
$6\frac{1}{9}$, $6\frac{7}{8}$, $6\frac{9}{10}$

9) $2\frac{3}{22}$, $2\frac{5}{11}$, $2\frac{4}{13}$
$2\frac{3}{22}$, $2\frac{4}{13}$, $2\frac{5}{11}$

10) $10\frac{15}{16}$, $10\frac{11}{12}$, $6\frac{13}{14}$
$10\frac{11}{12}$, $10\frac{13}{14}$, $6\frac{15}{16}$

DEEPENING:
Share answers with your teacher.

Day 2

Part 2:

8.72 × 7 = 61.04	5.49 × 8 = 43.92	5.04 × 4 = 20.16	4.33 × 8 = 34.64	9.50 × 5 = 47.50
6.00 × 2 = 12.00	7.64 × 3 = 22.92	5.98 × 4 = 23.92	9.72 × 8 = 77.76	2.66 × 3 = 7.98
6.11 × 5 = 30.55	1.54 × 4 = 6.16	7.21 × 2 = 14.42	5.82 × 9 = 52.38	7.08 × 4 = 28.32
3.90 × 2 = 7.80	7.23 × 7 = 50.61	3.41 × 7 = 23.87	7.05 × 9 = 63.45	3.89 × 3 = 11.67

DEEPENING:
Share answers with your teacher.

Day 3

Part 2:
Answers may be rounded or truncated.

$2\overline{)1.421} = 0.7105$	$3\overline{)0.510} = 0.17$	$2\overline{)0.921} = 0.4605$	$6\overline{)7.638} = 1.273$
$9\overline{)3.928} = 0.4364$	$2\overline{)9.920} = 4.96$	$8\overline{)9.388} = 1.1735$	$9\overline{)4.334} = 0.48156$
$5\overline{)1.717} = 0.3434$	$8\overline{)0.595} = 0.07438$	$4\overline{)2.396} = 0.599$	$3\overline{)6.131} = 2.04367$

DEEPENING:
4.8 ÷ 4 = 1.2

Day 4

Part 2:
Starting at 60:
Divide 60 by 2 and move on 2 spaces.
Then divide 14 by 7 and move on 7 spaces.
7 is a factor of 28 so move on 7 spaces.
18 divides into 3 so move on 3 spaces.
14 divides into 2 so move on 2 spaces.
24 divides into 3 so move to 36.
36 divides into 3 to move to 32.
32 divides by 4 so move to 14.
14 divides by 7 to reach the end!

DEEPENING:
Check here for the solution: https://nrich.maths.org/7468/solution

Day 5

If everyone mentioned in the riddle were bound for St. Ives, then the number would be 2,802: the narrator, the man and his seven wives, forty-nine sacks, three hundred forty-three cats, and twenty-four hundred and one kits.