Math Review Task
Grade 6

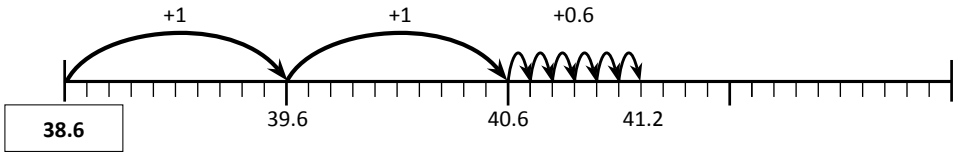
Addition and Subtraction:

Mental strategies – jump strategy with decimals

The jump strategy is also useful when adding decimals. Look at how we do this with 38.6 + 2.6:

1 First we jump up by the whole numbers.

2 Then we jump up by the tenths.

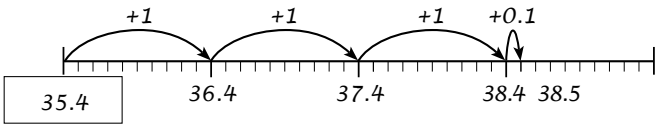


38.6 + 2.6 = 41.2

1 **Use the jump strategy to add the decimals:**

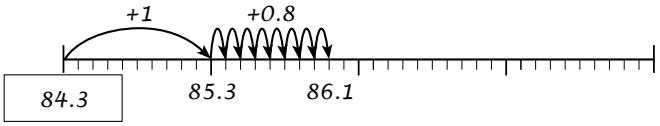
a 35.4 + 3.1

35.4 + 3.1 = 38.5



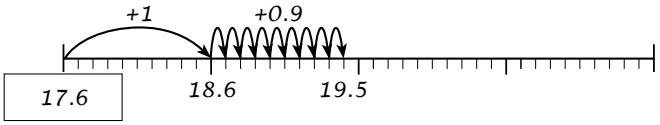
b 84.3 + 1.8

84.3 + 1.8 = 86.1



c 17.6 + 1.9

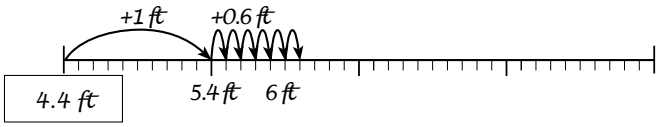
17.6 + 1.9 = 19.5



2 **Use the jump strategy to answer the following:**

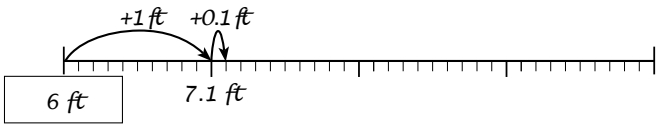
a You win a spitball competition, beating your nearest competitor, Spitball Steve, by 1.6 ft. Your mother would be so proud. If Spitball Steve spat 4.4 ft, how far did you shoot?

6 ft



b After weeks of practice, Spitball Steve perfects his technique and beats your previous winning shot by 1.1 ft. How far does he spit?

7.1 ft



Math Review Task
Grade 6

Mathletics

Addition and Subtraction:

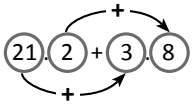
Mental strategies – split strategy with decimals

Sometimes it is easier to split both numbers. Look at how we do this with 21.2 + 3.8

1 We split the numbers into whole numbers and decimals.

2 We then rearrange the problem, adding the whole numbers and decimals separately.

3 We add the 2 answers.



= (21 + 3) + (0.2 + 0.8)
= 24 + 1
= 25

1 **When adding decimals, it is helpful if you are able to quickly identify pairs that add together to give a whole number. In each grid below, look for 4 pairs that add to give a whole number and color in the squares. Pairs are next to each other vertically, horizontally, or diagonally.**

a

1.7	1.5	3.8	3.1
1.3	1.2	3.2	3.6
6.3	6.4	5.1	5.5
6.2	6.6	5.6	2.5

b

1.4	0.3	0.7	0.9
2.4	2.6	1.2	3.2
1.5	1.7	3.5	1.5
1.6	1.2	1.8	1.1

c

1.6	1.1	2.3	1.5
1.2	1.4	1.5	2.7
1.7	2.5	2.9	3.3
2.1	1.8	3.2	3.5

2 **Solve these problems using the split strategy. Make notes as you go:**

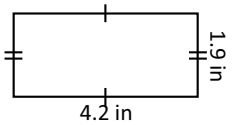
a 32.3 + 2.3 = 34.6

b 21.7 + 3.8 = 25.5

c 46.2 + 7.1 = 53.3

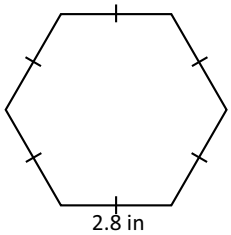
3 **Find the perimeter of each shape. Shapes are not drawn to scale. Use the split strategy to help you:**

a



P: 12.2 in

b



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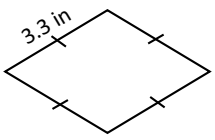
c



P: 13.2 in

Math Review Task
Grade 6

Addition and Subtraction:

Mental strategies – compensation strategy with decimals

Follow these steps for the compensation strategy when adding decimals:

1 Round the number closest to a whole number.

2 Compensate for rounding:

31.4 + 5.8 → 31.4 + 6 = 37.4 – 0.2 = 37.2 *I rounded up by 0.2, which means I added extra, so I need to subtract 0.2.*

51.4 + 8.3 → 51.4 + 8 = 59.4 + 0.3 = 59.7 *I rounded down by 0.3, which means I did not add enough, so I need to add 0.3.*

1 **Use the steps of these compensation strategies to add these decimals:**

a 9.5 + 2.8 = 12.3

9.5 + 3 (– 0.2)

12.5 (– 0.2) = 12.3

b 6.4 + 3.1 = 9.5

6.4 + 3 (+ 0.1)

9.4 (+ 0.1) = 9.5

c 8.3 + 1.8 = 10.1

8.3 + 2 (– 0.2)

10.3 (– 0.2) = 10.1

d 2.4 + 0.9 = 3.3

2.4 + 1 (– 0.1)

3.4 (– 0.1) = 3.3

Follow these steps for the compensation strategy when subtracting decimals:

1 Round the number closest to the whole number.

2 Compensate for rounding:

52.5 – 3.9 → 52.5 – 4 = 48.5 + 0.1 = 48.6 *We rounded up by 0.1, which means we subtracted extra, so we need to add 0.1.*

65.4 – 8.3 → 65.4 – 8 = 57.4 – 0.3 = 57.1 *We rounded down by 0.3, which means we did not subtract enough, so we need to subtract 0.3.*

2 **Use the steps of these compensation strategies to subtract the decimals:**

a 5.3 – 3.8 = 1.5

5.3 – 4 (+ 0.2)

1.3 (+ 0.2) = 1.5

b 7.2 – 2.9 = 4.3

7.2 – 3 (+ 0.1)

4.2 (+ 0.1) = 4.3

c 68.3 – 1.8 = 66.5

68.3 – 2 (+ 0.2)

66.3 (+ 0.2) = 66.5

d 32.5 – 9.8 = 22.7

32.5 – 10 (+ 0.2)

22.5 (+ 0.2) = 22.7

Math Review Task
Grade 6

Mathletics

Addition and Subtraction:

Mental strategies – bump strategy

1. Bump the number closest to a multiple of ten. This makes the problem easier to do in our heads.
2. Adjust the other number so the difference between the 2 numbers stays the same. This keeps the problem the same.
3. Solve this easier problem. This then gives us the answer to our original problem.

(89) + (24)
↓ ↓
+1 –1
90 + 23 = 113

The bump strategy is when the number closest to ten gets impatient to start the addition process. The other number must adjust to compensate.

1 **Let's practice identifying the number you should bump. Circle the number closest to a multiple of ten.**

a (69), 35 **b** 34, (89) **c** 63, (29) **d** 85, (27) **e** (17), 35 **f** 14, (99)

2 **Use the bump strategy for these addition problems, bumping the first number each time. Write the rearranged sum underneath. The first one has been done for you.**

a 79 + 15 (+1, –1) → 80 + 14 = 94

b 88 + 26 (+2, –2) → 90 + 24 = 114

c 32 + 56 (–2, +2) → 30 + 58 = 88

d 83 + 12 (–3, +3) → 80 + 15 = 95

e 61 + 24 (–1, +1) → 60 + 25 = 85

f 226 + 52 (+4, –4) → 230 + 48 = 278

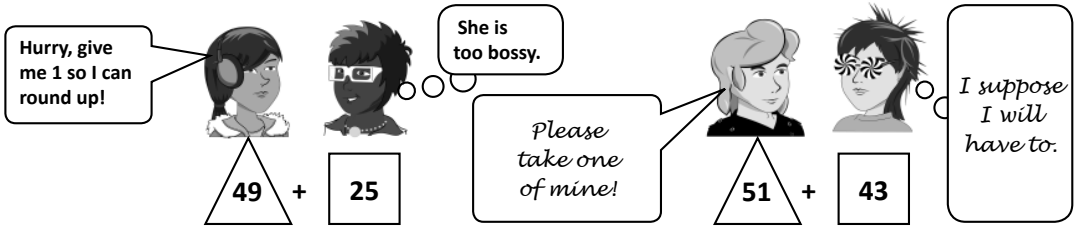
g 142 + 13 (–2, +2) → 140 + 15 = 155

h 304 + 38 (–4, +4) → 300 + 42 = 342

i 421 + 65 (–1, +1) → 420 + 66 = 486

j 275 + 32 (+5, –5) → 280 + 27 = 307

3 **Read the top of this page again to remember how best to think of the bump strategy. Pretend the numbers in the sums below are people. What would they say to each other? Look at the first example, then write your own for the next sum. You need to think carefully because the second sum is different. Can you see why?**



Math Review Task
Grade 6

Mathletics

Addition and Subtraction:

Applying strategies – addition and subtraction

1 **In this activity, you will follow the steps to solve this riddle:**

Step 1: Solve these problems using a mental strategy:

579 + 35 = *614*	462 + 10 = *472*	247 + 30 = *277*	686 + 40 = *726*	116 + 20 = *136*
♥	*	💣	☺	★

Step 2: Solve these problems using a mental strategy:

500 – 28 = *472*	320 – 43 = *277*	900 – 174 = *726*	500 – 364 = *136*	700 – 86 = *614*
E	R	D	S	A

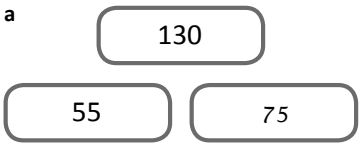
Step 3: Match the letters and symbols that have the same answer from Step 1 and 2. Write the letters in the grid below to solve the riddle:

♥	☺	☺	💣	☹	★	★
A	*D*	*D*	*R*	*E*	*S*	*S*

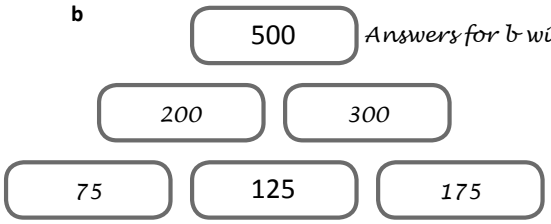
What item of clothing does a house wear? *Address*

2 **Fill in the missing numbers on these pyramids. The numbers below must add to the number directly above:**

a

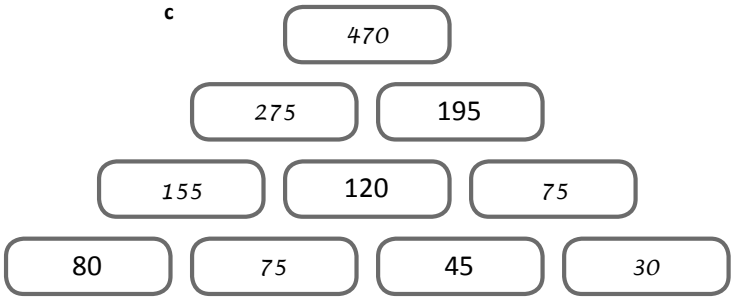


b



Answers for b will vary.

c



Math Review Task
Grade 6

Addition and Subtraction:

Written methods – adding and subtracting decimals

When we add and subtract decimals, we follow the same rules we use when working with whole numbers. We need to make sure we line up the place values and the decimal point.

$$\begin{array}{r} {}^{3}\not{4}\ {}^{1}1 \cdot {}^{1}\not{2}\ {}^{1}6 \\ -\ 1\ 8 \cdot 1\ 7 \\ \hline 2\ 3 \cdot 0\ 9 \end{array}$$

1 **Estimate and solve these addition problems. Remember to put the decimal point into your answers.**

a e: 80

$$\begin{array}{r} {}^{1}6\ 4 \cdot {}^{1}1\ 6 \\ +\ 1\ 7 \cdot 1\ 7 \\ \hline 8\ 1 \cdot 3\ 3 \end{array}$$

b e: 96

$$\begin{array}{r} {}^{1}8\ {}^{1}4 \cdot {}^{1}9\ 6 \\ +\ 1\ 2 \cdot 3\ 9 \\ \hline 9\ 7 \cdot 3\ 5 \end{array}$$

c e: 120

$$\begin{array}{r} {}^{1}9\ {}^{1}8 \cdot {}^{1}6\ 2 \\ +\ 1\ 9 \cdot 3\ 8 \\ \hline 1\ 1\ 8 \cdot 0\ 0 \end{array}$$

d e: 50

$$\begin{array}{r} 3\ {}^{1}1 \cdot {}^{1}6\ 6 \\ +\ 1\ 7 \cdot 6\ 9 \\ \hline 4\ 9 \cdot 3\ 5 \end{array}$$

2 **Estimate and solve these subtraction problems. Remember to put the decimal point into your answers.**

a e: 4

$$\begin{array}{r} 8\ {}^{3}\not{4} \cdot {}^{1}6 \\ -\ 4 \cdot 2\ 7 \\ \hline 4 \cdot 1\ 9 \end{array}$$

b e: 2

$$\begin{array}{r} {}^{8}\not{9} \cdot {}^{1}1\ 8 \\ -\ 7 \cdot 3\ 6 \\ \hline 1 \cdot 8\ 2 \end{array}$$

c e: 1

$$\begin{array}{r} 9 \cdot {}^{0}\not{1}\ {}^{1}1 \\ -\ 8 \cdot 0\ 2 \\ \hline 1 \cdot 0\ 9 \end{array}$$

d e: 2

$$\begin{array}{r} {}^{8}\not{9} \cdot {}^{1}8\ 8 \\ -\ 7 \cdot 9\ 3 \\ \hline 1 \cdot 9\ 5 \end{array}$$

e e: 3

$$\begin{array}{r} {}^{5}\not{6} \cdot {}^{1}6\ 9 \\ -\ 3 \cdot 9\ 9 \\ \hline 2 \cdot 7\ 0 \end{array}$$

f e: 1

$$\begin{array}{r} {}^{7}\not{8} \cdot {}^{10}\not{1}\ {}^{1}1 \\ -\ 7 \cdot 3\ 2 \\ \hline 0 \cdot 7\ 9 \end{array}$$

3 **Abdul bought three magazines for $6.25, $3.25, and $4.95. How much did he spend altogether?**

$14.45

Math Review Task
Grade 6

Mathletics

Addition and Subtraction:

Written methods – adding and subtracting decimals

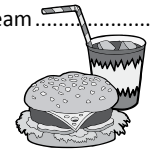
4 **Calculate the totals of these bills:**

Café Uno

Mochaccino	$	13.12 5
Grilled ham and cheese	$	7.50
Choc chip cookie	$	2.75
	$	13.50

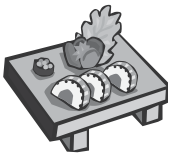
Bill's Burgers

Drinks	$	12.50
Double cheese burger	$	7.00
Fries	$	3.75
Ice cream	$	3.60
	$	16.85



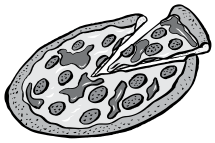
Sushi Heaven

Teriyaki chicken	$	14.16 0
Avocado and salmon	$	5.15
Cucumber and tuna	$	4.25
	$	14.00



Pete's Pizza

Hawaiian pizza	$	19.12 5
Vegetarian pizza	$	8.75
Margarita pizza	$	8.50
	$	26.50



5 **Use the bills to find the answers to the following:**

a Which was cheaper, eating at Bill's Burgers or Pete's Pizza? By how much?

Bill's Burgers was cheaper by $9.65.

b If you ate at Cafe Uno, Sushi Heaven, and Pete's Pizza all in one week, how much would you spend on eating out?

$54.00

c Which restaurant bill was the cheapest and which was the most expensive? What is the difference in price?

Cafe Uno – cheapest

Pete's Pizza – most expensive. It cost $13 more.

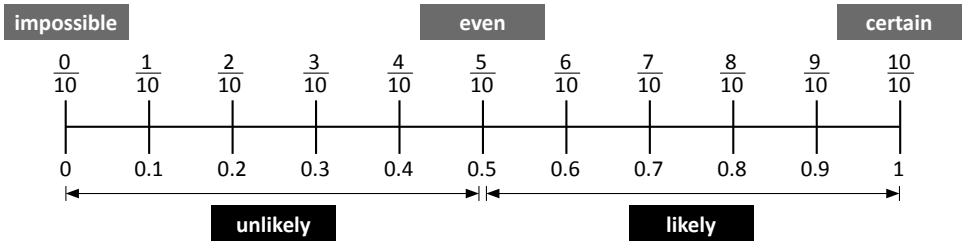
Math Review Task
Grade 6

Mathletics

Chance and Probability:

Chance and probability – probability scale

Probability measures how likely something is to happen.

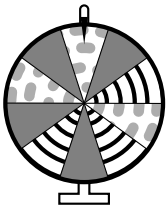


1 **Probability measures how likely something is to happen. Events that are certain to happen are given a probability of 1. Events that will never happen are given a probability of 0. Events that could happen are rated between 0 and 1.**

Event	Probability as a fraction	Probability as a decimal
When you flip a coin, it will land on heads.	$\frac{1}{2}$ or $\frac{5}{10}$	0.5
You will grow wings and fly today.	$\frac{0}{10}$	0.0
A spinner with 10 even segments with the numbers 1 to 10 will land on 3.	$\frac{1}{10}$	0.1
5 people line up and every second person in the line has gloves on. What is the chance that one person is not wearing gloves?	$\frac{3}{5}$ or $\frac{6}{10}$	0.6
You have 20 cards. 5 have hearts, 5 have stripes and the rest are blank. What is the chance you will choose a blank card?	$\frac{10}{20}$ or $\frac{5}{10}$ or $\frac{1}{2}$	0.5

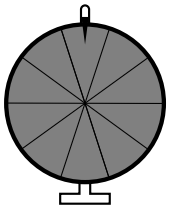
2 **What is the probability of spinning a striped segment on each of these wheels? Write your answer as a rating between 0 and 1 using decimals.**

a



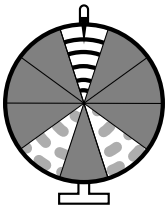
0.3

b



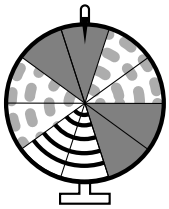
0.0

c



0.1

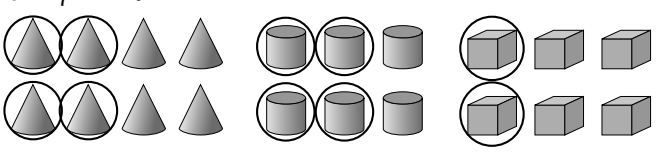
d



0.2

3 **Reuben is going to put ten blocks in a bag and ask a friend to choose one without looking. Circle the blocks he could put in the bag to make the probability of choosing a cube $\frac{2}{10}$.**

Sample answer:



Answers will vary. 2 cubes and a total of 8 cones and cylinders.

Math Review Task
Grade 6

Mathletics

Chance and Probability:

Chance and probability – using samples to predict probability

Surveys are used to collect data about certain topics or questions. Once the data is collected, it is presented in a table so it is easy to understand. Surveys can be conducted to ask all kinds of questions.

We can use probability to see an even bigger picture than the survey tells us.
This table shows the data collected when 50 people were surveyed to find their favorite milkshake flavor.

Chocolate	Strawberry	Vanilla	Banana
19	16	8	7

We can use probability to predict the number of people who will choose each flavor in a larger survey.
When 100 people are surveyed, it is likely that chocolate will be the favorite milkshake flavor of 38 people.
When 1,000 people are surveyed, it is likely that chocolate will be the favorite milkshake flavor of 380 people.

1 **Aria has had enough of selling clothes. If one more woman asks her, "Do I look fat in this?", she will scream. She holds a crazy closing down sale and sells the following items in 1 hour:**

Shirts	Jackets	Skirts	Dresses
18	14	7	3

Predict how many:

a jackets would sell in 2 hours: 28

b skirts would sell in 2 hours: 14

c shirts would sell in 3 hours: 54

d dresses would sell in 4 hours: 12

e shirts and jackets would sell in 4 hours: 128

f items of clothing would sell in 8 hours: 336

2 **Here is a table showing the results from a survey of 50 boys and 50 girls who were asked, "Which fruit do you like best?" Rate the probability that a person selected randomly will be:**

a a boy: $\frac{50}{100}$ or $\frac{1}{2}$

b a girl who likes apples: $\frac{17}{100}$

c someone who likes pears: $\frac{21}{100}$

	Girls	Boys
Apple	17	11
Banana	8	14
Orange	13	16
Pear	12	9

d Is the probability of someone choosing a banana greater than or less than $\frac{1}{2}$? Less

Math Review Task
Grade 6

Mathletics

Chance and Probability:

Chance and probability – using tables

When we work out all the possible outcomes of an event that could happen, we are finding out the theoretical probability. When we do the experiment and look at the probability of what actually happened, we call it experimental probability.

Theoretical probability is:
$$\frac{\text{number of favorable outcomes}}{\text{total number of possible outcomes}}$$

Experimental probability is:
$$\frac{\text{number of times the event occurred}}{\text{total number of trials}}$$

1 **When we roll 2 dice together, we can get a number of totals. Fill in this table to show the possible outcomes when 2 regular dice are rolled and added together:**

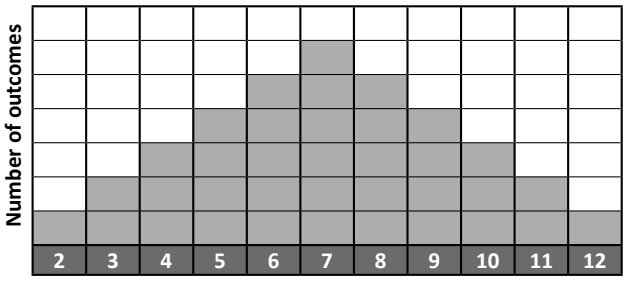
	Die 1					
Die 2	+	1	2	3	4	5	6
	1	2	3	4	5	6	7
	2	3	4	5	6	7	8
	3	4	5	6	7	8	9
	4	5	6	7	8	9	10
	5	6	7	8	9	10	11
	6	7	8	9	10	11	12

a How many different ways can the dice be rolled? 36

b Which total occurred the most often? Shade this in the grid.

c Which totals occurred the least often? Circle this in the grid.

2 **Graph the outcomes from the table above in the grid below.**
Express the theoretical probability of the following as a fraction:



a 7 = $\frac{6}{36} = \frac{1}{6}$

b 9 = $\frac{4}{36} = \frac{1}{9}$

c 2 = $\frac{1}{36}$

d 10 = $\frac{3}{36} = \frac{1}{12}$

3 **Now try this experiment. You will work with a partner and roll 2 dice 36 times. First make your predictions as to how often you will roll each answer. Write this in the first row. This is the** *theoretical* **probability. Now actually roll two die 36 times. In the bottom row, tally the number of times each total appears. This is the** *experimental* **probability.**

Total	2	3	4	5	6	7	8	9	10	11	12
Number of times you expect to see each total	1	2	3	4	5	6	5	4	3	2	1
Number of times you actually get each total											

4 **Look at the difference between the two rows. Is this what you expected?** *Answers will vary.*

Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

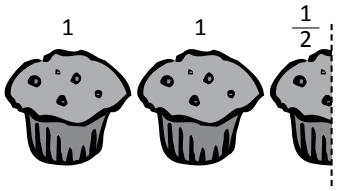
Fractions – mixed numbers and improper fractions

Mixed numbers are made up of whole numbers and fractions.

$2\frac{1}{2}$ is a mixed number.

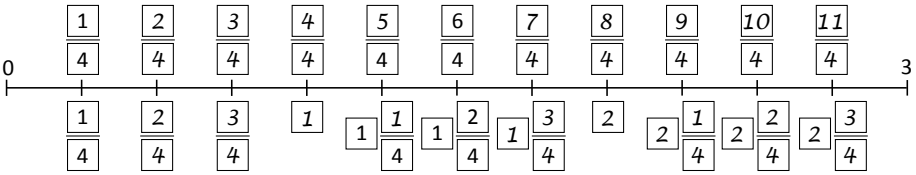
Mixed numbers can also be expressed as improper fractions.

$2\frac{1}{2}$ can also be written as $\frac{5}{2}$.

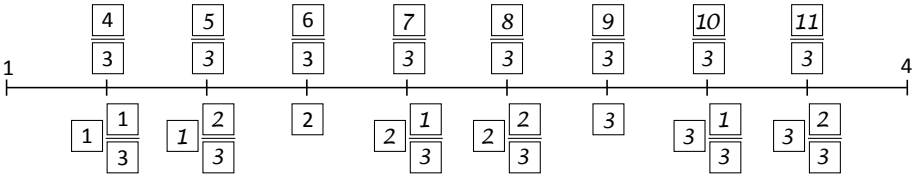


1 **Complete the number lines by filling in the boxes:**

a



b



2 **Use the number lines above to help you find the mystery fractions. Score 5 points for a correct answer. Lose 3 points for a wrong answer. For some questions, more than 1 answer is correct. The first one has been done for you.**

My Score

Q1 This improper fraction is equivalent to 2.

A1 $\frac{6}{3}$ *or* $\frac{8}{4}$

Q2 This improper fraction comes directly before $1\frac{2}{4}$.

A2 $\frac{5}{4}$

Q3 This improper fraction is one third greater than $3\frac{1}{3}$.

A3 $\frac{11}{3}$

Q4 This mixed number is the same as $\frac{10}{4}$.

A4 $2\frac{2}{4}$

Q5 This improper fraction is equivalent to 3.

A5 $\frac{9}{3}$

Q6 This mixed number comes directly after $\frac{9}{3}$.

A6 $3\frac{1}{3}$

Q7 This improper fraction is equivalent to 4.

A7 $\frac{12}{3}$

Q8 This improper fraction is equivalent to 6.

A8 $\frac{12}{2}$

Q9 This improper fraction is equivalent to $2\frac{2}{3}$.

A9 $\frac{8}{3}$

Q10 This mixed number is one third less than $\frac{8}{3}$.

A10 $2\frac{1}{3}$

Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

Fractions – simplifying fractions

4 **Write the following fractions in their simplest form:**

a $\frac{28}{49} = \frac{4}{7}$ **b** $\frac{12}{20} = \frac{3}{5}$ **c** $\frac{24}{42} = \frac{4}{7}$ **d** $\frac{13}{39} = \frac{1}{3}$

e $\frac{32}{36} = \frac{8}{9}$ **f** $\frac{9}{15} = \frac{3}{5}$ **g** $\frac{16}{48} = \frac{1}{3}$ **h** $\frac{15}{55} = \frac{3}{11}$

If you are not sure what the GCF is, guess, check and improve is a useful strategy. Try your choice out and then look at your new fraction.

Could it be any simpler? Is 1 the ONLY number that could go into both the numerator and the denominator?

5 **Solve the following problems. Write your answers in the simplest form:**

a Luke scored $\frac{16}{20}$ on a test. What fraction was incorrect? $\frac{1}{5}$

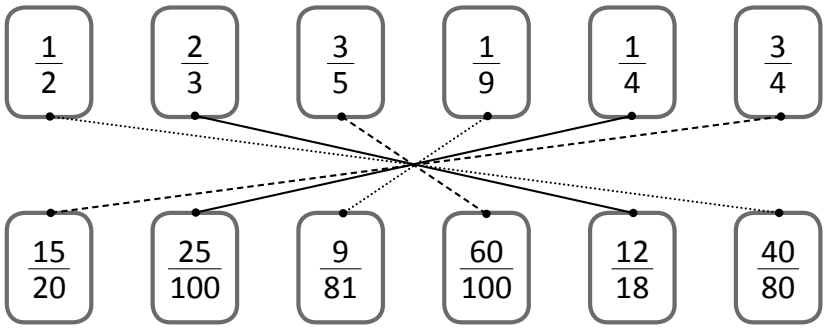
b Marika scored $\frac{12}{20}$ on the same test. What fraction did she get right? $\frac{3}{5}$

c 25 out of the 75 kids in 6th grade ride their bikes to school. What fraction does this represent? $\frac{1}{3}$

d Out of the 26 students in 6F, 14 rate Math as their favorite subject. What fraction is this? $\frac{7}{13}$

e What fraction did not choose Math as their favorite subject? $\frac{6}{13}$

6 **Color and match the fractions on the bottom row with their simplest form:**



Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

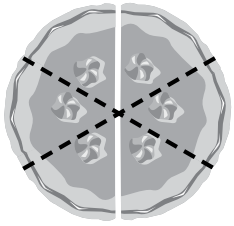
Fractions – renaming and ordering fractions

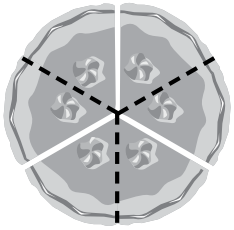
Sometimes we have to order and compare fractions with unrelated denominators such as $\frac{1}{4}$, $\frac{1}{6}$ and $\frac{1}{5}$.

To do this, we have to find one common denominator we can convert all the fractions to.

1 **You have 2 cakes for a class party. One has been cut into halves and one into thirds. The problem is that you want each slice to be a fair fraction of the cakes.**

a Continue cutting the cakes so that each cake has the same number of fair slices:

$\frac{1}{2}$ 

$\frac{1}{3}$ 

b If you had one of these new slices, what fraction of the cake would you receive? $\frac{1}{6}$

That is an example of how we rename fractions. We find a way to re-divide the wholes so that they have the **same number of parts**. To do this efficiently we find the smallest shared multiple. This is then called the **Lowest Common Denominator (LCD)**:

$\frac{1}{2}$ The multiples of 2 are 2, 4, **6**, 8, …

$\frac{1}{3}$ The multiples of 3 are 3, **6**, 9, 12, 15, …

6 is the LCD so we convert both fractions to sixths:

$\frac{1}{2} \overset{\times 3}{=} \frac{3}{6}$ $\qquad$ $\frac{1}{3} \overset{\times 2}{=} \frac{2}{6}$

2 **Rename these fractions by first finding the shared LCD and then converting the fractions. Use the multiplication table on the right to help you find the LCD:**

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

$\frac{6}{12}$ $\frac{3}{12}$ $\frac{4}{12}$

b $\frac{3}{6}$ $\frac{1}{2}$ $\frac{1}{3}$

$\frac{3}{6}$ $\frac{3}{6}$ $\frac{2}{6}$

c $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{6}$

$\frac{4}{12}$ $\frac{3}{12}$ $\frac{2}{12}$

× 2	× 3	× 4	× 5	× 6
2	3	4	5	6
4	6	8	10	12
6	9	12	15	18
8	12	16	20	24
10	15	20	25	30
12	18	24	30	36
14	21	28	35	42
16	24	32	40	48
18	27	36	45	54

Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

Decimals – reading and writing decimals

When we write decimals we follow this place order:

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
			2 •	2	5	6

Numbers **before** the decimal point are whole numbers.

Numbers **after** the decimal point are parts of a whole number.

The further the digit is to the left in the number, the greater its value. The further it is to the right, the smaller its value.

1 **What is the value of the digits in bold? Mark the correct column:**

	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
a 5.89**2**				•		✓	
b 13.0**5**				•		✓	
c **7**63.22		✓		•			
d **8**9.021				✓ •			
e 100.00**1**				•			✓
f 560.**4**5				•	✓		
g **3**12.956			✓	•			

2 **Read each number and write it as a decimal:**

a four ones and one hundred twenty two thousandths — *4.122*

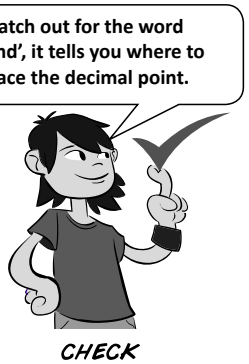
b one hundred eleven and sixty five hundredths — *111.65*

c three hundred and forty two thousandths — *300.042*

d four thousand and twelve hundredths — *4000.12*

e twelve and 13 thousandths — *12.013*

f two hundred thirteen and forty-three hundredths — *213.43*



3 **These answers are all close but incorrect. Write the correct answers:**

a twenty seven tenths is written as 0.27 — No it's not, it's written as *2.7*

b forty eight hundredths is written as 0.048 — No it's not, it's written as *0.48*

c 9,000 thousandths is written as 0.009 — No it's not, it's written as *9.0*

d eleven and 12 hundredths is written as 11.012 — No it's not, it's written as *11.12*

e 167 hundredths is written as 16.7 — No it's not, it's written as *1.67*

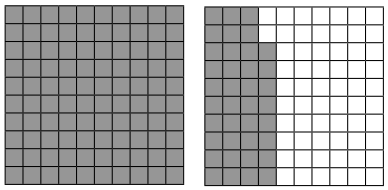
Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

Decimals – renaming decimals

We can express the same decimal in different ways.
This shows 138 hundredths.
We can also express this as 1 whole, 3 tenths 8 hundredths ***or*** 13 tenths 8 hundredths ***or*** 1 whole 38 hundredths.



1 **Rename these fractions:**

a 37 hundredths is also [3] tenths + [7] hundredths

b 53 hundredths is also [5] tenths + [3] hundredths

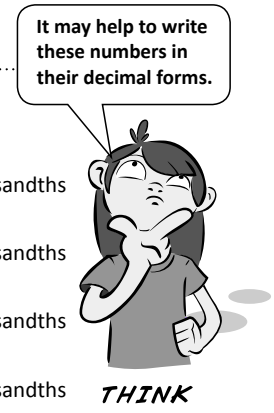
c 99 hundredths is also [9] tenths + [9] hundredths

d 6 tenths 3 hundredths is also [63] hundredths

e 4 tenths 9 hundredths is also [49] hundredths

f 4 tenths 9 hundredths 8 thousandths is also [498] thousandths

g 0 tenths 5 hundredths 8 thousandths is also [58] thousandths



2 **Now try these. Fill in the missing information:**

a 4 wholes = 40 tenths = 400 hundredths = 4,000 thousandths

b 7 wholes = 70 tenths = 700 hundredths = 7,000 thousandths

c 2.5 wholes = 25 tenths = 250 hundredths = 2,500 thousandths

d 9 wholes = 90 tenths = 900 hundredths = 9,000 thousandths

3 **Rename these numbers as many ways as you can. Use the abbreviation: H for hundredths, T for tenths and W for wholes:**

5.67	**2.52**	**9.81**
5 W 67 H	2 W 52 H	9 W 81 H
5 W 6 T 7 H	2 W 5 T 2 H	9 W 8 T 1 H
56 T 7 H	25 T 2 H	98 T 1 H
567 H	252 H	981 H

Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

Calculating – adding and subtracting fractions

How do we add or subtract fractions? Look at this example:
We had a movie marathon this weekend. On Saturday, we watched movies for $7\frac{1}{4}$ hours and on Sunday we watched for $5\frac{1}{4}$ hours. How many hours did we spend watching movies in total?

$$7\frac{1}{4} + 5\frac{1}{4} =$$

First we add the whole numbers: 7 + 5 = 12. Then we add the fractions: $\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$
Then we add the two answers together: $12 + \frac{1}{2} = 12\frac{1}{2}$
We use the same process to subtract fractions.

1 **Solve these problems:**

a $\frac{1}{3} + 2\frac{1}{3} = \square\frac{\square}{\square}$ — 2 $\frac{2}{3}$

b $2\frac{3}{4} - 1\frac{2}{4} = \square\frac{\square}{\square}$ — 1 $\frac{1}{4}$

c $1\frac{2}{5} + 3\frac{1}{5} = \square\frac{\square}{\square}$ — 4 $\frac{3}{5}$

d $\frac{1}{5} + 6\frac{2}{5} = \square\frac{\square}{\square}$ — 6 $\frac{3}{5}$

e $1\frac{3}{12} - \frac{1}{12} = \square\frac{\square}{\square}$ — 1 $\frac{2}{12}$

f $7\frac{4}{12} - 3\frac{2}{12} = \square\frac{\square}{\square}$ — 4 $\frac{2}{12}$

2 **Express these as fraction sentences. Solve them:**

a Sarah and Rachel go to a salt water taffy stand. Sarah buys $3\frac{1}{4}$ boxes of strawberry taffy and Rachel buys $2\frac{1}{4}$ boxes of mixed taffy. How much do they buy in total?

$3\frac{1}{4} + 2\frac{1}{4}$
$= 5\frac{2}{4} = 5\frac{1}{2}$ boxes

b You have $2\frac{3}{4}$ boxes of chocolates and you eat $1\frac{1}{4}$ boxes. How many boxes do you have left?

$2\frac{3}{4} - 1\frac{1}{4}$
$= 1\frac{2}{4} = 1\frac{1}{2}$ boxes

c Before World Math Day, Akhil practices Live Mathletics for $4\frac{1}{3}$ hours on Monday and $2\frac{1}{3}$ hours on Tuesday. How many hours of practice has he put in altogether?

$4\frac{1}{3} + 2\frac{1}{3} = 6\frac{2}{3}$ hours

d Makoa really gets into a sports for a while then drops it and moves on to his latest craze. As a consequence, he has five and a half shelves of old sports equipment. His mother makes him take some of it to the local thrift store. This leaves him with 2 full shelves. How much has he taken to the shop?

$5\frac{1}{2} - 2 = 3\frac{1}{2}$

3 **What numbers could go in the boxes?** *Answers will vary.*

a $\square\frac{\square}{\square} + 1\frac{\square}{\square} = 5\frac{3}{4}$

b $\square\frac{\square}{\square} - \square\frac{\square}{\square} = 3\frac{1}{6}$

Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

Calculating – multiplying fractions by whole numbers

We can use repeated addition to multiply fractions by whole numbers.

$3 \times \frac{2}{8}$ ⟶ 3 sets of two eighths is $\frac{2}{8} + \frac{2}{8} + \frac{2}{8} = \frac{6}{8}$

$3 \times \frac{2}{8} = \frac{6}{8}$

1 **Use repeated addition to multiply these fractions. Show each of the steps:**

a $3 \times \frac{3}{12}$

$= \frac{3}{12} + \frac{3}{12} + \frac{3}{12}$

$= \frac{9}{12}$

b $3 \times \frac{2}{7}$

$= \frac{2}{7} + \frac{2}{7} + \frac{2}{7}$

$= \frac{6}{7}$

c $5 \times \frac{1}{8}$

$= \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

$= \frac{5}{8}$

d $3 \times \frac{2}{9}$

$= \frac{2}{9} + \frac{2}{9} + \frac{2}{9}$

$= \frac{6}{9}$

2 **Try these. Convert your answers to whole numbers:**

a $6 \times \frac{1}{2}$

$= \frac{6}{2}$

$= 3$

b $5 \times \frac{2}{5}$

$= \frac{10}{5}$

$= 2$

c $8 \times \frac{2}{4}$

$= \frac{16}{4}$

$= 4$

d $15 \times \frac{3}{5}$

$= \frac{45}{5}$

$= 9$

3 **Sam thinks that $6 \times \frac{2}{6}$ is the same as $5 \times \frac{2}{5}$. Is he right? Show how you know:**

$6 \times \frac{2}{6}$

$= \frac{2}{6} + \frac{2}{6} + \frac{2}{6} + \frac{2}{6} + \frac{2}{6} + \frac{2}{6}$

$= \frac{12}{6} = 2$

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

$= \frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5}$

$= \frac{10}{5} = 2$

Yes, they are the same.

4 **Sam's dad helped him with his homework. And we all know how that works out … Here is what his dad did. Is he right? If not, explain to him where he went wrong.**

$3 \times \frac{3}{8}$

$\frac{3}{8} + \frac{3}{8} + \frac{3}{8} = \frac{9}{24}$

$3 \times \frac{3}{8} = \frac{9}{24}$

He must not add denominators.

$3 \times \frac{3}{8}$

$= \frac{9}{8}$

$= 1\frac{1}{8}$

Math Review Task
Grade 6

Mathletics

Fractions, Decimals and Perdentages:

Calculating – multiplying decimals

How do we multiply decimals using a written strategy?
First we estimate: 5 × 3 = 15. Our answer will be around 15.
3 × 5 tenths is 15 tenths. We rename this as 1 whole and 5 tenths.
We write the 5 in the tenths column and move the one to the wholes column.
3 × 4 is 12. We also add the 1.
3 × 4.5 = 13.5
We check the answer against our estimate. Do they fit?

	$^{1}4$	. 5
×		3
	1 3	. 5

1 **Multiply these decimals:**

a

	$^{1}2$	. 6
×		2
	5	. 2

b

	$^{2}3$	. 7
×		4
	1 4	. 8

c

	$^{1}5$	. 2
×		5
	2 6	. 0

d

	$^{3}8$	. 4
×		8
	6 7	. 2

e

	$^{1}1$ $^{1}4$	. 5
×		3
	4 3	. 5

f

	$^{3}2$ $^{3}4$	. 5
×		7
	1 7 1	. 5

2 **Now try these:**

a

	3	. $^{1}2$	3
×			4
	1 2	. 9	2

b

	5	. 3	3
×			3
	1 5	. 9	9

c

	$^{3}8$	. $^{1}4$	2
×			8
	6 7	. 3	6

d

	$^{2}7$	. $^{2}4$	4
×			6
	4 4	. 6	4

e

	$^{1}6$	. $^{3}2$	8
×			4
	2 5	. 1	2

f

	$^{3}3$	. $^{4}4$	5
×			8
	2 7	. 6	0

3 **Use the templates to set up and solve these money problems:**

a Yasmin buys 3 cartons of choc milk. Each carton costs $2.45. How much money does she spend?

		$^{1}2$	. $^{1}4$	5
×				3
	$	7	. 3	5

b Lisa buys 4 magazines. Each magazine costs $4.95. How much does she spend on magazines in total?

		$^{3}4$	. $^{2}9$	5
×				4
	$	1	9 . 8	0

c Omar wants to buy 3 games for his computer. Each game is $14.95. He has saved $45. Does he have enough money?
Yes

		$^{1}1$ $^{2}4$	. $^{1}9$	5
×				3
	$	4	4 . 8	5

Math Review Task
Grade 6

Fractions, Decimals and Perdentages:

Calculating – dividing decimals

2 **Solve these decimal word problems using a mental or written strategy of your choice:**

a You and six friends win a jackpot totalling $248.15. If you share the prize equally, how much will each of you receive?

```
      3 5 . 4 5
   ┌──────────
7  │ 2 4 8 . 1 5
   − 2 1
     ─────
       3 8
     − 3 5
       ─────
         3 1
       − 2 8
         ─────
           3 5
         − 3 5
           ─────
             0
```

Each of us will receive $35.45.

b Two of these friends decide that money is the root of all evil and forgo their share. How much do you each receive now?

```
      4 9 . 6 3
   ┌──────────
5  │ 2 4 8 . 1 5
   − 2 0
     ─────
       4 8
     − 4 5
       ─────
         3 1
       − 3 0
         ─────
           1 5
         − 1 5
           ─────
             0
```

Each of us will receive $49.63.

c To celebrate you go out and buy five ice creams, costing a total of $11.25. What was the cost of an individual ice cream?

```
      2 . 2 5
   ┌──────────
5  │ 1 1 . 2 5
   − 1 0
     ─────
       1 2
     − 1 0
       ─────
         2 5
       − 2 5
         ─────
           0
```

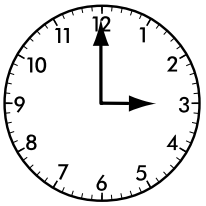
The cost of an individual ice cream is $2.25.

Math Review Task
Grade 6

Mathletics

Time:

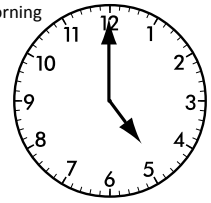
Telling time – analog and digital



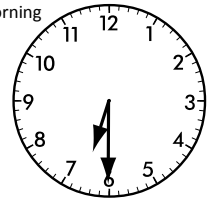
An analog clock has two hands – an hour hand and a minute hand.

A digital clock shows time using digits. The hour always comes first.

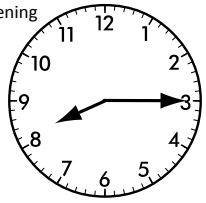
1 **Read the time on the analog clocks and express as digital times:**

morning 

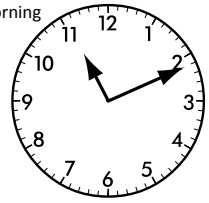
a 5:00 am

morning 

b 6:30 am

evening 

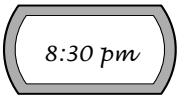
c 8:15 pm

morning 

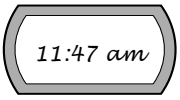
d 11:11 am

2 **Express these times on the digital clocks:**

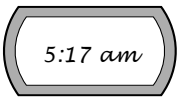
a Half past eight in the evening



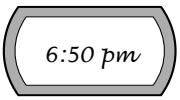
b 13 minutes to noon



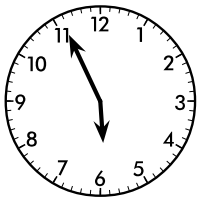
c 17 minutes past five in the morning



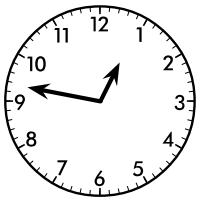
d 10 to 7 in the evening



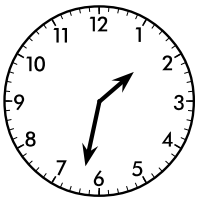
3 **Show these digital times on the clocks:**



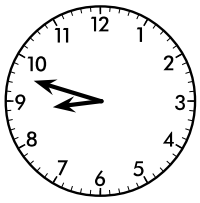
a 5:56



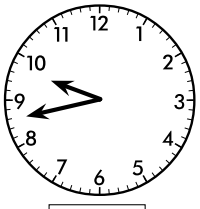
b 12:47



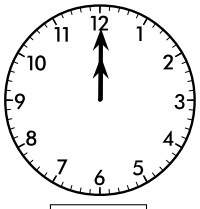
c 1:32



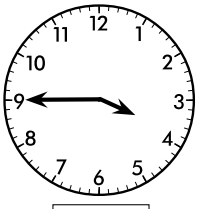
d 8:48



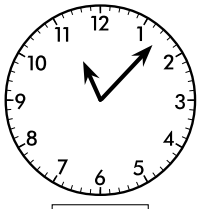
e 9:43



f 12:00



g 3:45



h 11:07

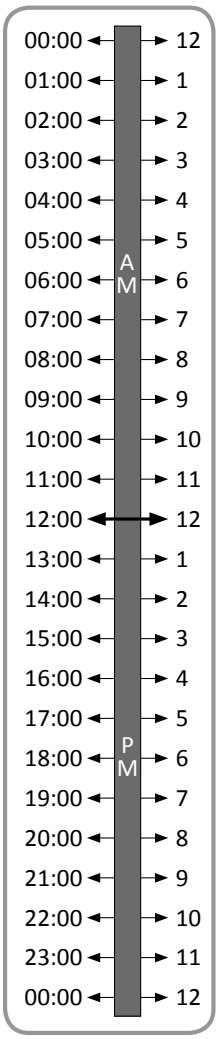
Math Review Task
Grade 6

Mathletics

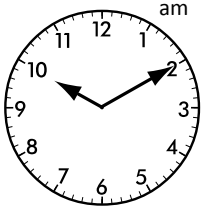
Time:

Telling time – 24 hour time

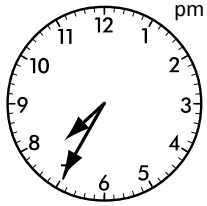
We can also use the 24 hour time model to express time.
We number the hours from 0 to 23 because there are 24 hours in a day.
When it gets to the 24th hour, it starts again at 0.
Can you think of situations when it is better to use 24 hour time rather than digital time?



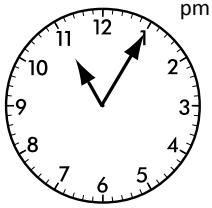
1 **Express these times in 24 hour time:**



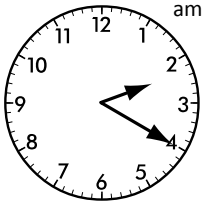
a 10:10



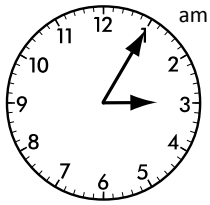
b 19:35



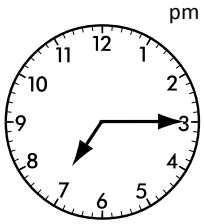
c 23:05



d 02:20



e 03:05



f 19:15

2 **Use 24 hour time to write:**

a 4:25 am	04:25	**b** 9:35 pm	21:35
c 12:25 am	00:25	**d** 12:40 pm	12:40
e 3:30 am	03:30	**f** 2:45 pm	14:45
g 8:15 pm	20:15	**h** 10:20 am	10:20

3 **Convert these 24 hour times into digital form. Write am or pm next to the time:**

a	13:15	=	1:15 pm	**b**	05:14	=	5:14 am
c	23:30	=	11:30 pm	**d**	02:45	=	2:45 am

Math Review Task
Grade 6

Mathletics

Time:

Calculating time – time trails

We can use our knowledge of basic time facts to help us convert between hours, seconds and minutes.

By knowing these facts:	We can convert times such as:
1 minute = 60 seconds	3 minutes = 180 seconds (3 × 60)
1 hour = 60 minutes	$1\frac{1}{2}$ hours = 90 minutes (60 + 30)
1 day = 24 hours	1 week = 168 hours (7 × 24)
1 year = 52 weeks	2 years = 104 weeks

1 **How many seconds or minutes? You may use a calculator if you wish:**

a 7 minutes = [420] seconds

b 86 minutes = [5,160] seconds

c 360 seconds = [6] minutes

d 420 seconds = [7] minutes

e 240 seconds = [4] minutes

f 48 minutes = [2,880] seconds

2 **Convert the following into more appropriate units:**

a 240 minutes = [4] hours

b 360 minutes = [6] hours

c 360 seconds = [6] minutes

d 420 minutes = [7] hours

e 420 seconds = [7] minutes

f 540 seconds = [9] minutes

3 **Use a calculator to help you work out how many:**

a minutes in a day 1,440

b minutes in a week 10,080

c minutes in a year 524,160 (1440 × 7 × 52) or 525,600 (1440 × 365)

d minutes you have been alive Answer will vary.

4 **Did you know that the giant tortoise has a life span of 177 years?**

How many days is this? 64,605 (64,649.25 if you count leap years)

Math Review Task
Grade 6

Mathletics

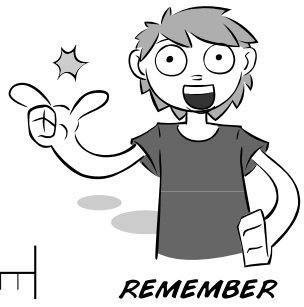
Time:

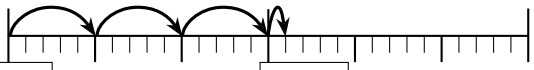
Calculating time – word problems

Timelines can help us with more difficult word problems.

Question: Tina went to watch a movie that started at 5:38 pm and finished at 7:10 pm. How long did the movie go for?

Steps:
1. First count on in hours in your head to get as close to the finish time as possible and write it in the first box. (The finish time is 7:10 pm so we need to add one hour to 5:38 pm make it 6:38 pm.)
2. Count on in 10 minute and 2 minute jumps until you get to the finish time.





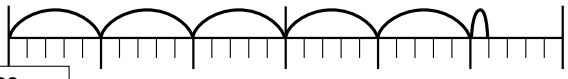
5:38 pm + 1 hour = **6:38 pm** **7:10 pm**

Answer: 1 hour and 32 minutes

1 **Show how you use the timeline by adding the jumps to each timeline.**

a Grade 12 were doing a writing assessment that started at 11:20 am and finished as 1:12 pm. How much time were they allowed?

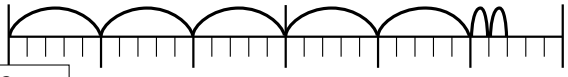
1 hr 52 mins



11:20 am + 1 hour = **12:20 pm**

b Tammy entered a shopping center garage at 11:32 am and left at 3:26 pm. How long was Tammy shopping for?

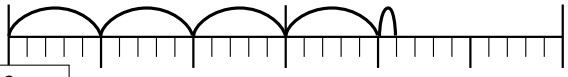
3 hrs 54 mins



11:32 am + 3 hours = **2:32 pm**

c Last spring break, the Gilmore family got stuck in a traffic jam and were delayed. If they arrived at 5:52 pm and were due to arrive at 3:10 pm, how long were they delayed?

2 hrs 42 mins



3:10 pm + *2* = *5:10 pm*

d On Saturday I went to a movie that started at 5:15 pm and finished at 7:52 pm. How long was this movie?

2 hrs 37 mins

5:15 pm + *2* = *7:15 pm*