Index

Acknowledgement

Funding
The Australian Core Skills Framework Community Services and Health Workplace English Language, Literacy and Numeracy Training Resource Kit was funded under the Workplace English Language and Literacy Program (WELL) by the Commonwealth Government through the Department of Education, Employment and Workplace Relations (DEEWR).

Australian Government
Department of Education, Employment and Workplace Relations

Content
Donated by the Human Services Training Advisory Council (HSTAC)
www.hstac.com.au

Human services
TRAINING ADVISORY COUNCIL INC

Australian Core Skills Framework Levels
Donated by the Council for Aboriginal Alcohol Program Services Inc.
www.caaps.org.au/

Printing & Graphic Design
ASAP Press - Sydney 02 9279 4600
asapprint
creating the perfect impression

Layout and Additional Content
Community Services and Health Workplace English Language and Literacy Broker Program

For more information:
Workplace English Language and Literacy Program
www.deewr.gov.au/Skills/Programs/LitandNum/WorkplaceEnglishLanguageandLiteracy

Australian Core Skills Framework
www.deewr.gov.au/SKILLS/PROGRAMS/LITANDNUM/ACSF

Community Services and Health Workplace English Language and Literacy Broker Program
www.cshisc.com.au/index.php?option=com_content&task=view&id=386&Itemid=518

Community Services & Health Industry Skills Council

WELL
Community Services and Health Workplace English Language and Literacy Program

Workplace English Language, Literacy and Numeracy Resource Kit

History

Today's numbers, also called Hindu-Arabic numbers, are a combination of just 10 symbols or digits: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. These digits were introduced in Europe during the XII century by Leonardo Pisano , an Italian mathematician. Pisano was educated in North Africa, he later carried to Italy the now popular Hindu-Arabic numerals. Hindu numeral system is a pure place-value system, that is why you need a zero.

Before adopting the Hindu-Arabic numeral system, people used the Roman figures, which derived from Etruscan period.
The Roman Numeration is based on a system based on fives.

To write numbers the Romans used an additive system: V + I + I = VII (7) or C + X + X + I (121), and also a substractive system: IX (I before X = 9), XCIV (X before C = 90 and I before V = 4, 90 + 4 = 94). Latin numerals are still in used today!

1	2	3	4	5	6	7	8	9	10
I	II	III	IV	V	VI	VII	VIII	IX	X

11	12	13	14	15	16	17	18	19	20
XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX

21	22	23	24	25	26	27	28	29	30
XXI	XXII	XXIII	XXIV	XXV	XXVI	XXVII	XXVIII	XXIX	XXX

31	32	33	34	35	36	37	38	39	40
XXXI	XXXII	XXXIII	XXXIV	XXXV	XXXVI	XXXVII	XXXVIII	XXXIX	XXXX

Even and Odd Numbers

The even numbers are blue the odd numbers are green

1 one	2 two	3 three	4 four	5 five	6 six	7 seven	8 eight	9 nine	10 ten
11 eleven	12 twelve	13 thirteen	14 fourteen	15 fifteen	16 sixteen	17 seventeen	18 eighteen	19 nineteen	20 twenty
21 twenty one	22 twenty two	23 twenty three	24 twenty four	25 twenty five	26 twenty six	27 twenty seven	28 twenty eight	29 twenty nine	30 thirty
31 thirty one	32 thirty two	33 thirty three	34 thirty four	35 thirty five	36 thirty six	37 thirty seven	38 thirty eight	39 thirty nine	40 forty
41 forty one	42 forty two	43 forty three	44 forty four	45 forty five	46 forty six	47 forty seven	48 forty eight	49 forty nine	50 fifty
51 fifty one	52 fifty two	53 fifty three	54 fifty four	55 fifty five	56 fifty six	57 fifty seven	58 fifty eight	59 fifty nine	60 sixty
61 sixty one	62 sixty two	63 sixty three	64 sixty four	65 sixty five	66 sixty six	67 sixty seven	68 sixty eight	69 sixty nine	70 seventy
71 seventy one	72 seventy two	73 seventy three	74 seventy four	75 seventy five	76 seventy six	77 seventy seven	78 seventy eight	79 seventy nine	80 eighty
81 eighty one	82 eighty two	83 eighty three	84 eighty four	85 eighty five	86 eighty six	87 eighty seven	88 eighty eight	89 eighty nine	90 ninety
91 ninety one	92 ninety two	93 ninety three	94 ninety four	95 ninety five	96 ninety six	97 ninety seven	98 ninety eight	99 ninety nine	100 hundred
1,000 one thousand	2,000 two thousand	5,000 five thousand	10,000 ten thousand	100,000 hundred thousand	200,000 two hundred thousand	300,000 three hundred thousand	400,000 four hunderd thousand	500,000 five hundred thousand	1,000,000 one million

Addition/Subtraction Table

Work with your trainer.

+,-	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

Multiplication/Division Table

Work with your trainer.

x, ÷	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

Using numbers at work

NUMERACY • LEVEL 1 •

Word list

exact = right or correct.

estimate = a guess that is almost right.

range = the smallest number, the largest number and all the numbers in between e.g. five to sixty degrees Celsius (5 °C-60 °C), the three to five group (3-5 year olds). The dash (-) between the numbers shows that it is a range

Watch – Observe

When do people in your workplace use exact numbers?

When do they guess or estimate the number?

When do you hear people use the term 'range'? What kind of range are they talking about?

For example:

- age range
- temperature range
- weight range.

When do we use it? Context

We use exact numbers when it is important to get it right:

- when it might affect a person's health or safety
- when we need to keep accurate patient notes and records

Using numbers at work

Some of the times when we use exact numbers include:

- in patient notes and records
- making an appointment
- writing down our work hours.

We estimate numbers when being a little wrong is not very serious.
We might estimate when we are:

- working out how long a trip will take – 'We'll be there in about two hours.'
- asking for supplies – 'We need some cardboard to make posters for the clinic.'

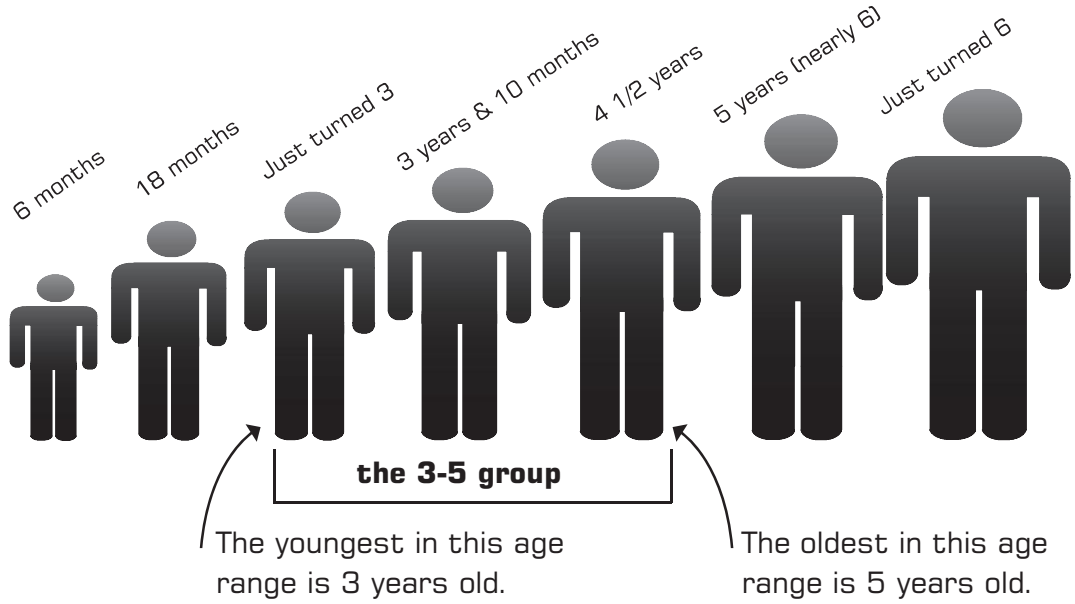
Your Doctor's appointment is at 10am on Monday 6th.

History

In the past, people used lots of different ways to measure height and length. They might use the length of their thumb, the length of their arm or foot, the length of their step. This was not very exact.

Today, most countries in the world use exact measurements – like using centimetres or metres to measure length. In Australia, these units of measurement are called metric units.

We often **group** children by age. We might put all the three, four and five year old children into a group called the three to five year olds.



The rest of the group are all the children in between these ages.

Using numbers at work

Food needs to be kept in a safe **temperature range.**

In the fridge

Less than 5°C

Safe temperature

In the oven

More than 60°C

Safe temperature

On the Table

Between 5°C & 60°C

5°C - 60°C

Danger zone!

Why?

Getting something exactly right can be very important. If we know that what we are doing might affect someone's health and safety, then we need to make sure that the numbers are exact.

But sometimes it is not so important and we can estimate. We can guess a number close to the exact number.

A good estimate can save time and money.

Number ranges put similar things into a group:

- all the temperatures at which food is not safe
- all the healthy weights for a person of this height

Services for children often put children of about the same age in a group (e.g. 3-5 year olds). Grouping children into age ranges makes it easier to plan activities and to make sure there are enough carers for each group.

Why?

For some tasks, we have to use exact numbers. For other tasks, we can estimate numbers.

Write the best word for each job shown below – exact or estimate.

Make an appointment. exact

Get more paper for the printer. extimate

Fill in your time sheet.

Get supplies for your clinic.

Write down the weight of a baby.

Write down a person's pulse rate.

Write down the time the medication was taken.

Put condoms in the Well Men's Clinic basket.

Get chairs ready for the Mums and Bubs session.

Do

Dosage

Your baby weighs 5 kg. What is:

Age	Average weight	Dose
1 - 3 Months	4.2 - 6.0 kg	0.6 - 0.9 mL
3 - 6 Months	6.0 - 7.8 kg	0.9 - 1.2 mL
6 - 12 Months	7.8 - 10.2 kg	1.2 - 1.5 mL
1 - 2 Years	10.2 - 12.6 kg	1.5 - 1.9 mL

The smallest dose of medicine you can give him?

The biggest dose of medicine you can give him?

Using numbers at work

NUMERACY • LEVEL 1 •

Do

Tom estimated the weight of a dog. He checked his guess by measuring the dog's weight on the scales.

Which of these is most likely the exact measure of the dog's weight? Place a tick next to the right answer.

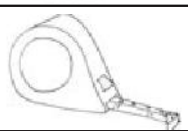
about 10 kilograms	9.5 kg	medium size

Mary needs to replace a flyscreen. She estimated the length of the window and then measured it using a tape measure.

Which of these is most likely the estimate of the window length? Place a tick next to the right answer.

105 cm	about a metre	1.05m

We can use different instruments to measure exact numbers. Draw a line to match the job to the instrument you might use.

Measure a new piece of pipe for plumbing repairs.	
Check water temperatures in houses.	
Measure how much drug to give a dog.	
Write down the time a water sample was taken.	
Measure the right amount of pesticide.	

Workplace English Language, Literacy and Numeracy Resource Kit

WELL Community Services and Health Workplace English Language and Literacy Program

Write

Use the chart above to work out the safe dose of medicine for each child. Write your answer in the dose column.The first one has been done for you.

Age	Average Weight	Dose
2 Months	5 kg	0.6 - 0.9 mL
10 Months	9.6 kg	___ - ___ mL
4 Months	6.8 kg	___ - ___ mL
1 1/2Years	11 kg	___ - ___ mL
8 1/2 Months	10 kg	___ - ___ mL

Do

You are taking these children to a local play group. The play group is split into three areas – the babies (0-18 months), the toddlers (18 months-3 years) and the pre-schoolers (3-5 years).

Which group should each child join?

Emma	5 months	Ben	2 years	Tina	4 years
Chris	4 years	Kim	18 months	Sally	2 3/4 years
Zeb	2 1/4 years	Tom	5 years	Amy	11 months

Babies	**Toddlers**	**Pre-schoolers**
0 -18months	18 months - 3years	3 - 5 years
Amy	Ben	Chris
Emma	Sally	Tom
Kim	Zeb	Tina

Working with numbers: Using a calculator

Watch – Observe

When do you see people working with numbers or doing sums? When do you see people using a calculator? Find a calculator in your workplace.

When do we use it? *Context*

In the workplace, we do sums when we work out:

- how much pesticide to use
- how many supplies we will need.

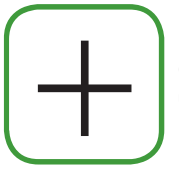
Sometimes you work the sum out 'in your head'. Ask yourself:

- What is the unit (e.g. millilitres)?
- Do I add, subtract, multiply or divide?
- Does the answer make sense?

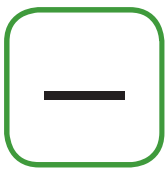
Sometimes you can use a calculator to help you work with numbers, but first you need to have a good idea of what the answer is.

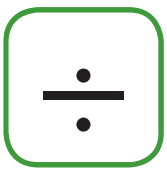
When you have finished working something out on a calculator, always ask yourself, 'Does the answer make sense?'

Calculators can help you to:

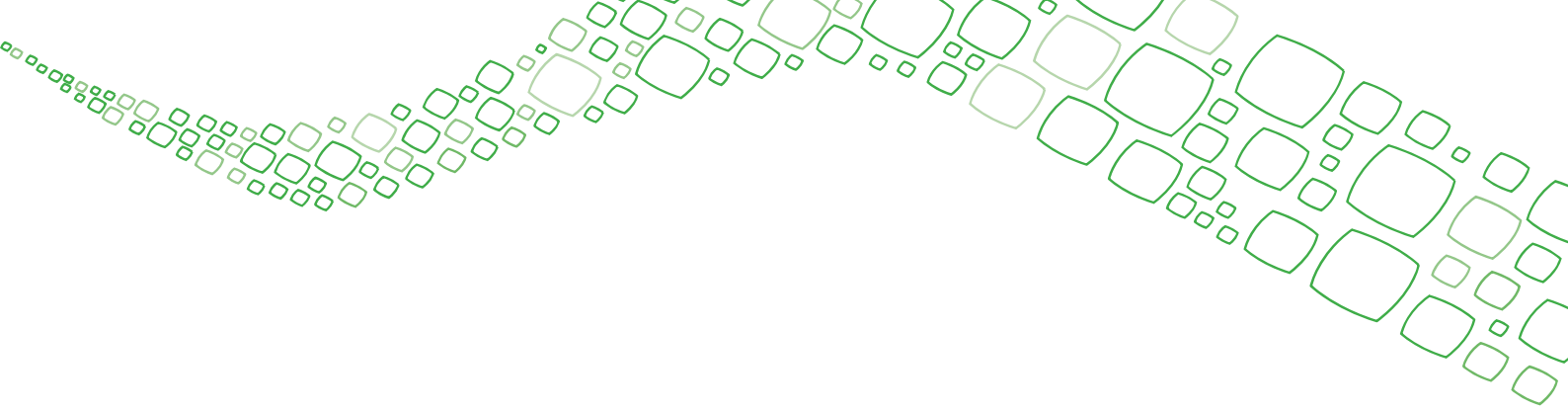

add
or
plus


multiply
or
times


subtract,
minus or
take away


divide by
or share
equally

NUMERACY • LEVEL 1 •



Working with numbers: Using a calculator

NUMERACY • LEVEL 1 •

Do

Copy the words into the right place on the table.

divide by, share equally	times, multiply
plus, add, add up, total	equals, makes, is
minus, take away, subract	decimal point

Symbol	Words for the symbol
+	
-	
x	
=	
÷	
.	

Think about – Reflect

Think about when you have to use numbers at work.

When do you add up to get a total amount?

When do you take away?

When do you multiply (times)?

When do you divide?

Workplace English Language, Literacy and Numeracy Resource Kit

WELL Community Services and Health Workplace English Language and Literacy Program

Working with numbers: Using a calculator

Do

Find a calculator, and turn it on. Write the number you can see: .....

Read

The dose of a drug is 15 mg/kg every 4 hours. To work out how much to give you have to:

- weigh the patient
- write down the weight in kilograms (kg)
- multiply (x) the weight by 15. The answer is how many milligrams (mg) of medicine to give.

Tom weighs 21 kg. To work out his dose, on the calculator, press 21x15= Answer on screen: 315

2	1	x	1	5	=	315

This means Tom can have no more than 315 mg every 4 hours.

Fill in

Fill in the keys you press to find the dose for: Jack, who weighs 10 kg. (Remember you have to multiply (x) the weight by 15)

		x			=	

Answer on screen _____

Ann, who weighs 31 kg.

		x			=	

Answer on screen _____

Peter, who weighs 4.5 kg.

			x			=

Answer on screen _____

Working with numbers: Using a calculator

Do

Draw a line to match the term with the right symbol.

divide by, share equally	%
equals, makes, is	+
plus, add, add up, total	–
minus, take away, subtract	x
times, multiply	=
decimal point	÷
percent	.

Do

Find a calculator and turn it on. Write the number you can see:

(C) Press the 'clear' button. You are now ready to start.

Watch – Observe

When Wonem Art Centre sells a painting, the art centre takes 40% of the money and the artist gets 60%.

To work out how much money the artist would get if a painting sold for $1000. on the calculator, press **1000 x 60%**

Answer on screen: 600 This means the artist gets $600.

For each painting sold, fill in the keys you press on the calculator to find out the amount of money the artist gets.

Working with numbers: Using a calculator

Do

For a painting that sold for $800

☐☐☐☐☐☐☐

Answer on screen _____

This means the artist gets _____

Watch – Observe

To change the Wonem Health Centre constitution, at least 75% of the members need to vote YES at the Annual General Meeting (AGM).

To work out how many people need to vote YES if 23 people are at the AGM, on the calculator, press **23x 75%**

Answer on screen: 17.25

This means 17 people need to vote to change the constitution.

Do

If 44 people are at the AGM, fill in the keys you press on the calculator to find out the number of people that need to vote YES.

☐☐☐☐☐☐

Answer on screen _____

Using clocks and watches

NUMERACY • LEVEL 1 •

Word list

a.m. = morning (before 12 midday).

p.m. = afternoon and evening (after 12 midday).

analog clock = clock with hands that move around a circle.

digital clock = clock that shows numbers and if it is a.m. or p.m.

Watch – Observe

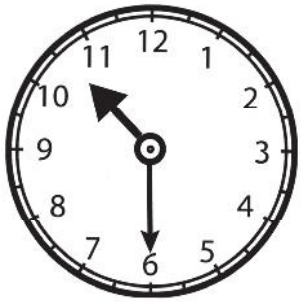
Look at different watches and clocks in your workplace. Do they show the numbers in different ways?

When do we use it? *Context*

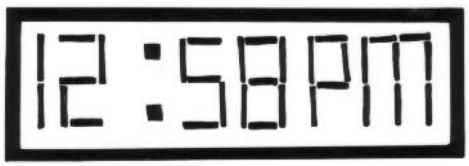
In the workplace we use clocks and watches when we write down:

- the time we start work
- the time we finish work
- appointment times.

There are two different sorts of clocks and watches:



analog clock



digital clock

Workplace English Language, Literacy and Numeracy Resource Kit

WELL Community Services and Health Workplace English Language and Literacy Program

Using clocks and watches

History

Before there were clocks, people used the sun to help them keep track of time during the day – like we still do today. People also used candles and sand to measure time, by knowing how long it took the candle to burn down, or by knowing how long it took sand to fall through a hole (as in an egg timer).

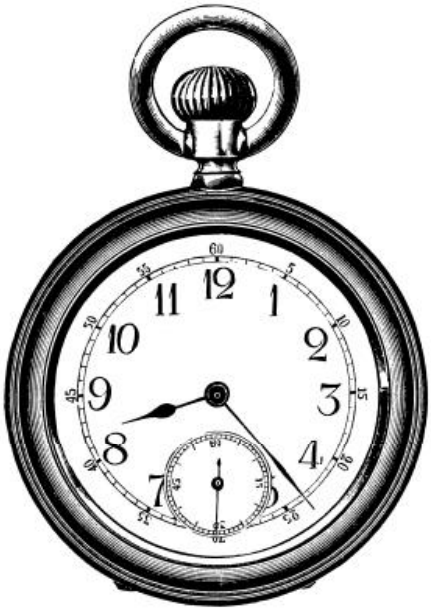
Why?

For many tasks in the workplace, it is important to check the time carefully. For example:

- The meeting will start in 15 minutes.
- Please take Mr White's pulse for one minute.

We have to keep some records for legal reasons. We often use digital clocks when it is important to record an exact time – such as on time sheets or when a baby is born.

Being exact about time is not always that important. You might tell your family that dinner will be ready by 6.30 p.m. But does it matter much if it is a few minutes late or early?



The 24 Hour clock

Watch – Observe

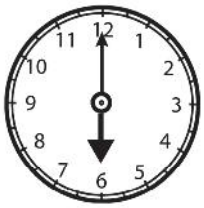
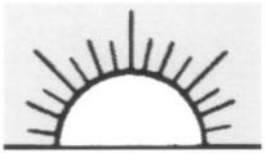
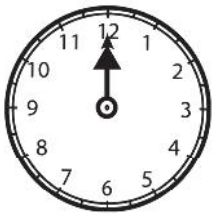
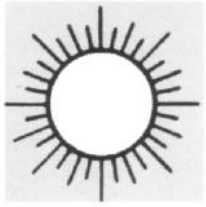
Do people in your workplace

- read or check the time?
- write using the 24 hour clock?

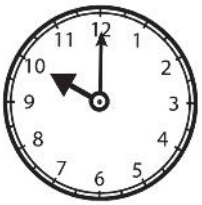
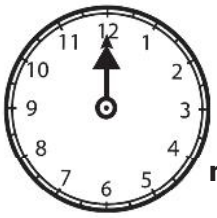
When do we use it? *Context*

In some workplaces (such as health centres and hospitals), people write the time using the 24 hour clock.

One day and night has 24 hours in it.

Analog clock		24 hour clock
 **6.00am**		**0600 hours**
 **12.00 midday**		**1200 hours**

Using clocks and watches

 **10.00pm**		**2200 hours**
 **12 midnight**		**2400 hours**

When we use the 24 hour clock we don't use the same numbers twice. In the afternoon we add the hours and minutes on to 12 (because midday = 12 hours). So the time is written like this:

12 hour clock (analog or digital)	**24 hour clock**
9 o'clock in the morning	0900 hours
11.45 a.m.	1145 hours
4 o'clock in the afternoon	1600 hours (12 + 4 hours)
10.20 p.m.	2220 hours (12 + 10 hours and 20 minutes)

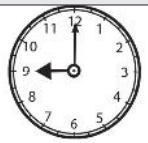
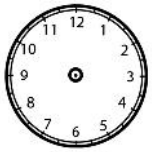
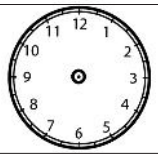
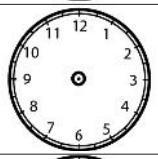
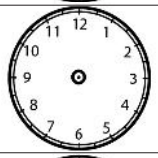
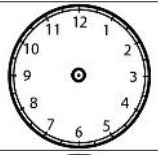
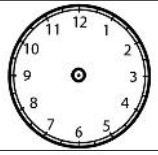
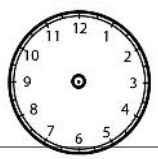
Why?

People use the 24 hour clock when it is really important to get the exact time. If you use the 24 hour clock you won't get mixed up between morning times and afternoon times.

Using clocks and watches

Watch – Observe

Fill in the gaps in the table.

Analog form	Digital form	Draw the hands on the clock
9 o'clock	9:00	
6 o'clock		
Half past 8		
		
	5.15	
Quarter to ten		
ten to 8		
	7.05	

NUMERACY • LEVEL 1 •

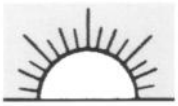
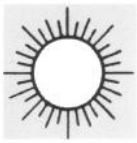
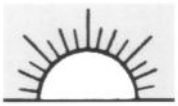
Workplace English Language, Literacy and Numeracy Resource Kit

WELL Community Services and Health Workplace English Language and Literacy Program

Using clocks and watches

Do

When you look at a meeting time, it is important to know whether the meeting is in the morning or afternoon. The letters 'a.m.' or 'p.m.' tell you this.

	**a.m.** = before midday
	**Noon** = middle of the day (12 o'clock)
	**p.m.** = after midday
	**Midnight** = middle of the night (12 o'clock)

Fill in the times on this table and write whether they are a.m. or p.m.

	How would you write this time?
ten o'clock in the morning	10:00 a.m.
five twenty five in the afternoon	
fifteen minutes after noon	
ten minutes before noon	
half past three in the afternoon	
twenty to twelve in the morning	

Using clocks and watches

Do

Before taking a water sample you let the water flow for 1-2 minutes.
Work with a colleague or your support person. Find a watch with a second hand.
Estimate (guess) how long 1 minute is. Ask a colleague to use the watch to measure how close to 1 minute your estimate is.

Work with your trainer

Read this story:

An antibiotic drip is started at 0800 hours and will go through in 8 hours.

What time will the drip go through?

Answer: The drip will go through and finish at 1600 hours.

There are lots of ways of working this out. Talk about them with your trainer.
Some things you need to think about are:

1. Will the drip finish in the morning or the afternoon?	It will be in the afternoon, because there are only 4 hours until the end of the morning (midday).
2. Count 8 hours from 0800 hours.	0800 hours + 8 hours = 1600 hours (4pm)

Practise – Do

Try the following:

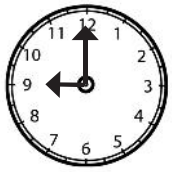
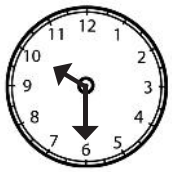
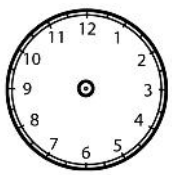
1. An antibiotic drip is started at 0900 hours and will go through in 4 hours. What time will the drip go through?

2. An antibiotic drip is started at 1030 hours and will go through in 8 hours. What time will the drip go through?

Using clocks and watches

Write

You can work out the 24 hour time by using your watch to count on from 12 noon. So if it is 2 o'clock in the afternoon you count 13 instead of 1 and 14 instead of 2. So you know it is 1400 hours.

Clock face	am or pm time	24 hour time	What things am I doing at this time of day?
 am	8am		
 am		0900	
 am	10.30 am		
 pm		1300	
 pm	5.30 pm		
		2200	

NUMERACY • LEVEL 1 •

Using clocks and watches

Do

Practise saying these times:

0910 hours = oh nine ten hours

1340 hours = thirteen forty hours

1245 hours =

1620 hours =

0805 hours =

1930 hours =

Say and write the times when you:

arrive at work =

see your first client =

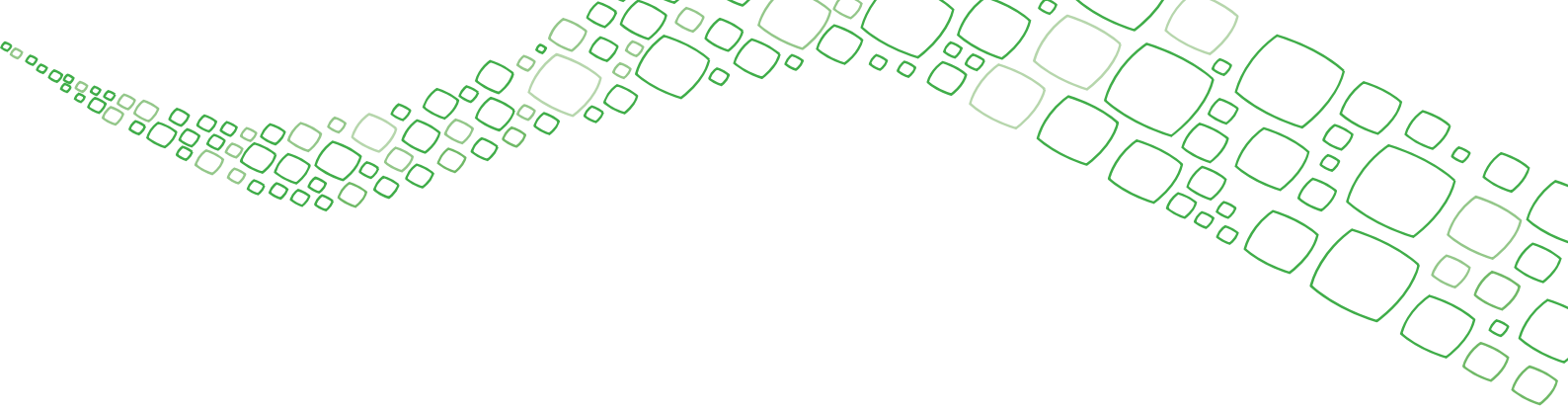
have lunch =

go home =

Fill in these tablets to show:

- when Anna needs Amoxil, and
- when Steven needs his pulse checked

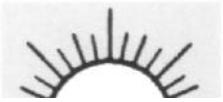
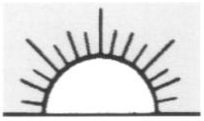
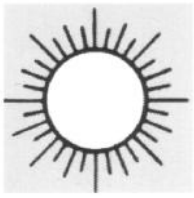
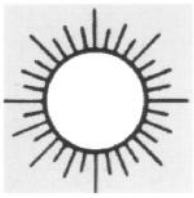
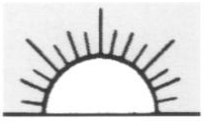
Anna needs Amoxil every 2 hours		Steven needs his pulse checked every 4 hours	
6 am	0600 hours	9am	0900 hours
8 am			



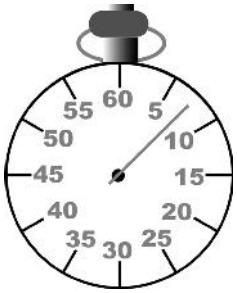
Using clocks and watches

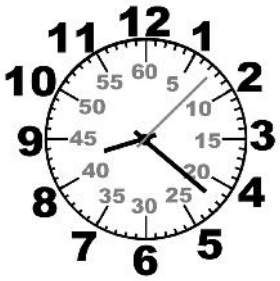
Time

24 hour times

	24 hour times	analog times
	0100 hours	1 o'clock a.m.
	0200 hours	2 o'clock a.m.
	0300 hours	3 o'clock a.m.
	0400 hours	4 o'clock a.m.
	0500 hours	5 o'clock a.m.
	0600 hours	6 o'clock a.m.
	0700 hours	7 o'clock a.m.
	0800 hours	8 o'clock a.m.
	0900 hours	9 o'clock a.m.
	1000 hours	10 o'clock a.m.
	1100 hours	11 o'clock a.m.
	1200 hours	12 midday
	1300 hours	1 o'clock p.m.
	1400 hours	2 o'clock p.m.
	1500 hours	3 o'clock p.m.
	1600 hours	4 o'clock p.m.
	1700 hours	5 o'clock p.m.
	1800 hours	6 o'clock p.m.
	1900 hours	7 o'clock p.m.
	2000 hours	8 o'clock p.m.
	2100 hours	9 o'clock p.m.
	2200 hours	10 o'clock p.m.
	2300 hours	11 o'clock p.m.
	2400 hours	12 midnight

Using clocks and watches





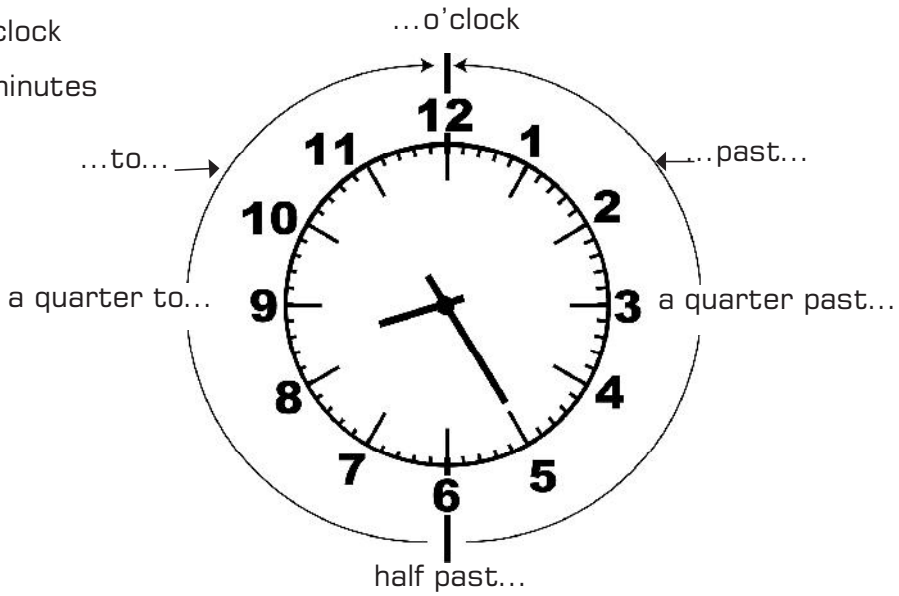
1 minute = 60 seconds

The seconds hand is the fastest.

Telling the time

Short (hour) hand = o'clock

Long (minute) hand = minutes

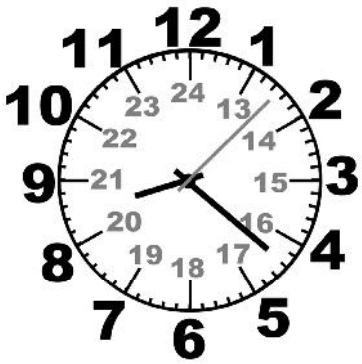


1 hour = 15 minutes (quarter past) +15 minutes (half past) + 15 minutes (quarter to) + 15 minutes (o'clock)	1 hour = 30 minutes (half past) + 30 minutes (o'clock)	5 minutes (5 past) + 5 minutes (10 past) + 5 minutes (quarter past)... 5 minutes (5 to).

NUMERACY • LEVEL 1 •

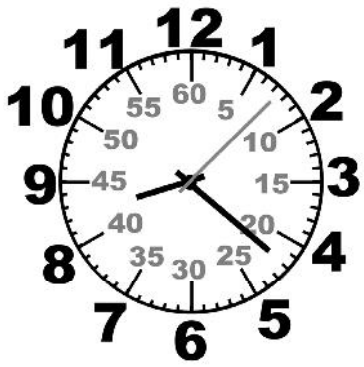
Using clocks and watches

Hours and minutes



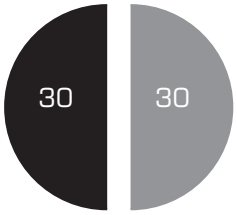
1 day = 24 hours (the short hand shows the hour)

1 hour = 60 minutes (the long hand shows the minutes)

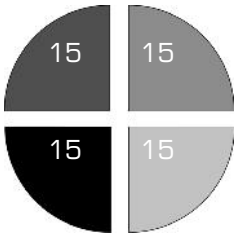


1 mark on the clock = 1 minute

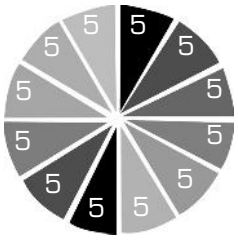
1 hour = 30 minutes + 30 minutes (60 minutes)



1 hour = 15 + 15 + 15 + 15 (60 minutes)



1 hour = 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 (60 minutes)



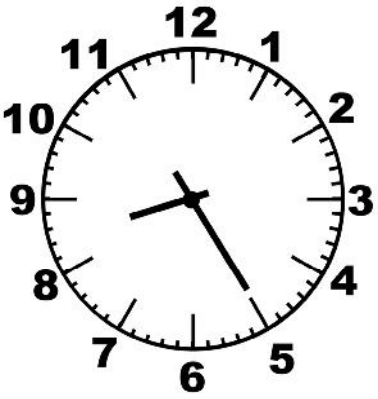
NUMERACY • LEVEL 1 •

Workplace English Language, Literacy and Numeracy Resource Kit

WELL Community Services and Health Workplace English Language and Literacy Program

Using clocks and watches

Hours and minutes



1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

Days, weeks and months

1 week = 7 days
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

1 fortnight = 2 weeks = 14 days	
Monday	Monday
Tuesday	Tuesday
Wednesday	Wednesday
Thursday	Thursday
Friday	Friday
Saturday	Saturday
Sunday	Sunday

1 year = 12 months = 52 weeks = 365 days	
January	31 days
February	28 days
March	31 days
April	30 days
May	31 days
June	30 days
July	31 days
August	31 days
September	30 days
October	31 days
November	30 days
December	31 days