Sample lesson plans to demonstrate the high reliability literacy teaching procedures

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Notes re assessing literacy knowledge

In each task area, arrange tasks in order of difficulty, for example, for 2, have three sentences that go from easy to hard for each year level.

Note alternatives to task 1: have students
• write up to 10 key words that you dictate
• say what they mean
• suggest synonyms where appropriate.

Note alternatives to task 4: give students 3-4 sentence paragraphs and ask them to
• underline the topic sentence in each
• write the topic sentence for each.

Use the set of tasks to assess pre- and post- level knowledge for a unit. Use this to assess changes in learning.

Functions of the circulatory system

1. Under each of the following words or phrases, write another word or phrase that means the same.

<table>
<thead>
<tr>
<th>your word or phrase</th>
<th>vessels</th>
<th>transports wastes</th>
<th>fight diseases</th>
<th>maintains</th>
<th>exchange nutrients</th>
</tr>
</thead>
</table>

2. Write each of the following sentences in your own words. Replace every word, except those in italics, with another word. You can use the words in italics in the sentences you write

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Sentence in your own words</th>
</tr>
</thead>
<tbody>
<tr>
<td>The blood transports wastes away from the cells.</td>
<td></td>
</tr>
<tr>
<td>Arteries which pass close to the skin are sites at which it is possible to detect a pulse count.</td>
<td></td>
</tr>
<tr>
<td>The circulatory system maintains correct body temperature.</td>
<td></td>
</tr>
</tbody>
</table>

3. Read each of the following sentences. Decide a question it answers and write this question beside the sentence in the right hand box.

<table>
<thead>
<tr>
<th>Sentence</th>
<th>A question the sentence answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>The heart is located in the centre of the chest between the two lungs.</td>
<td></td>
</tr>
<tr>
<td>The network of blood vessels that carry blood to all parts of our body is called the vascular system.</td>
<td></td>
</tr>
<tr>
<td>The build up of fat in the coronary arteries is a major cause of heart attacks.</td>
<td></td>
</tr>
</tbody>
</table>
4. Match each the topic sentence in the left hand column below with a sentence from its paragraph in the right hand column.

<table>
<thead>
<tr>
<th>topic sentence</th>
<th>letter for sentence</th>
<th>sentence</th>
<th>its letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood is the only tissue of the body which is a liquid.</td>
<td></td>
<td>The volume of blood pumped into them by the heart is large</td>
<td>A</td>
</tr>
<tr>
<td>Capillaries are where nutrients and wastes are exchanged between the blood and body cells</td>
<td></td>
<td>Plasma is a clear yellowish fluid in which the blood cells are suspended</td>
<td>B</td>
</tr>
<tr>
<td>Arteries always carry oxygen-rich blood away from the heart to the rest of the body.</td>
<td></td>
<td>They have very thin walls and allow substances to pass through easily</td>
<td>C</td>
</tr>
</tbody>
</table>

5. Write in the words that finish each of the sentences below:

Blood circulates through the body. It carries ________ and ________ to all cells. As well, it carries ________ away from cells. It is moved by the ________. It is carried to all parts of the body by three types of vessels; ________, ________, and ________.

The blood that is rich in oxygen is carried from the heart by the ________. These have _______ walls. This allows them to take a lot of ________.
Area of a circle

1. Under each of the following words or phrases, write another word or phrase that means the same.

<table>
<thead>
<tr>
<th>your word or phrase</th>
<th>radius</th>
<th>circumference</th>
<th>area</th>
<th>squared</th>
<th>diameter</th>
</tr>
</thead>
</table>

2. Write each of the following sentences in your own words.

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Sentence in your own words</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ A = \pi r^2 ]</td>
<td></td>
</tr>
<tr>
<td>[ d = 2\pi r ]</td>
<td></td>
</tr>
<tr>
<td>To find the area of a circle you square the radius and multiply it by ( \pi ).</td>
<td></td>
</tr>
</tbody>
</table>

3. Read each of the following sentences. Decide a question it answers and write this question beside the sentence in the right hand box.

<table>
<thead>
<tr>
<th>Sentence</th>
<th>A question the sentence answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ A = \pi r^2 ] [ d = 2\pi r ] To find the area of a circle you square the radius and multiply it by ( \pi ).</td>
<td></td>
</tr>
</tbody>
</table>

4. Write the formula you will use to work out each of the following. Each formula needs to include the variables mentioned in the problem

<table>
<thead>
<tr>
<th>problem</th>
<th>formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>A circle has a diameter of 7 cm. Find the area of a circle of radius 12 cm</td>
<td></td>
</tr>
<tr>
<td>A circle has a radius of are 12 sq cm. Find its radius.</td>
<td></td>
</tr>
</tbody>
</table>

5. Write in the words that finish each of the sentences below:

Tina and Jack are in a Year 8 maths class. They are learning to work out the area of circles. In one task, they are told the radius of a circle. To work out the area of this circle they will _____________. Another problem asks them to find the area of a semi-circle. Tina does this correctly by using the formula \( A = \pi r^2 \) and then _______ her answer. They are told the area of another circle but not its radius. To work this out they _____________________.

| Tina and Jack are in a Year 8 maths class. They are learning to work out the area of circles. In one task, they are told the radius of a circle. To work out the area of this circle they will _____________. Another problem asks them to find the area of a semi-circle. Tina does this correctly by using the formula \( A = \pi r^2 \) and then _______ her answer. They are told the area of another circle but not its radius. To work this out they _____________________.

3
**Year 7 SOSE The Giant Panda Trends**

**Direction of lesson introduced** : Problem examined in lesson : How to protect an endangered species.

Look at these pictures. This is …. This is …… All of these animals were living in this area when white men first came to live here. None of these types of animals are alive now.

Look at these pictures. In recent years we almost lost these animals.

Today we will look at what causes a type of animal to die out and what we can do to stop this from happening. If we don’t do particular things now, some of the untamed animals living around here now won’t be around in 50 years time.

**Students stimulate and categorise what they know** Look at these pictures again. Before they all died, things were changes around them. These changes caused them to be ‘endangered’ or threatened.

Students discuss and answer the following questions as a whole group activity

**What do we mean by ‘endangered animals’?**
**What are some endangered animals in Australia? We will make a list.**

| Imagine you are a platypus swimming in a river. What things might threaten your life? | • Chemicals in water from industries poison you
• The food you eat is killed and you starve
• People hunt you and kill you |

Collate student responses

<table>
<thead>
<tr>
<th>What threatened you</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platypus</td>
</tr>
</tbody>
</table>
| • The river becomes polluted
• Imported animals such as cats attack you
• You run out of food |
| Tasmanian devil     |
|                     |

**What are words we use when we are talking about endangered animals?** As students suggest these, the class writes down the words. Any 2-, 3- syllable word is said stretched out to help them spell them. Words suggested included
- extinct
- endangered
- species
- environment
- hereditary
- nutrition

After writing each word students checked their spelling.

Discuss each term
• what it means; students suggests their understanding
Assemble these on the list

<table>
<thead>
<tr>
<th>Word</th>
<th>What it means</th>
<th>Other words</th>
</tr>
</thead>
<tbody>
<tr>
<td>extinct</td>
<td>not living</td>
<td>instinct</td>
</tr>
<tr>
<td>endangered</td>
<td>under threat, pressure to live</td>
<td>danger</td>
</tr>
<tr>
<td>species</td>
<td>a type of animal with its own features</td>
<td>special specimen</td>
</tr>
<tr>
<td>habitat</td>
<td>where something lives, its environment</td>
<td></td>
</tr>
<tr>
<td>heritage</td>
<td>what an animal gets from its parents, grandparents</td>
<td>inherited, inheritance, hereditary</td>
</tr>
</tbody>
</table>

**Introduction of new ideas**

*We are going to look at one endangered species, the Giant Panda.*

*What do you know about the Panda already? Picture in your mind a Panda. What do you know about what it does, where it lives.*

Note and collate students’ responses:
- lives in China
- eats bamboo
- there are some in zoos
- black and white
- like bears
- kill people

Ask students to suggest the questions that each idea answered and note these:

<table>
<thead>
<tr>
<th>Idea</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>lives in China</td>
<td>Where it lives?</td>
</tr>
<tr>
<td>eats bamboo</td>
<td>What it eats</td>
</tr>
<tr>
<td>there are some in zoos</td>
<td>Are any in captivity?</td>
</tr>
<tr>
<td>black and white</td>
<td>What are they like?</td>
</tr>
<tr>
<td>like bears</td>
<td>What are they like?</td>
</tr>
<tr>
<td>kill people</td>
<td>What do they do?</td>
</tr>
</tbody>
</table>

*You are going to read a text about the Giant Panda. Work in pairs to suggest questions you think the text might answer. Write these down.* These were discussed by the class.

*What would it be like living in China? We discussed what it*  
- population doubled in less than 100 years to 1 billion people  
- people need houses that they build out of bamboo  
- industry has increased in China

*How might these things affect the Giant Panda?*

We showed these on a diagram

<table>
<thead>
<tr>
<th>Diagram Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>More industry near the forest</td>
<td>The bamboo Pandas eat being used for building</td>
</tr>
<tr>
<td></td>
<td>Trees in the forest are being cut down for fuel</td>
</tr>
<tr>
<td></td>
<td>Panda community living in the wild in a forest</td>
</tr>
</tbody>
</table>

**Students read the text aloud.**

The student group inspected and scanned over the text to be read. Each key feature at the overlal level was noted. Individual students

- read aloud the heading and sub-heading,
- noted the sections in the text
discussed the idea of topic sentences and how they could use them to help them, read the topic sentence in each paragraph
noted the bullet points in the first paragraph and discussed what this meant
noted the illustrations, the comment beneath it.

Students took turns to read the text aloud: a student
- aloud each sentence
- paraphrased it
- said the question that the sentence answered
- discussed each topic sentence.

As each paragraph was read, the main points were noted on the white board.

- Pandas need special environmental - bamboo forests in China
- Pandas eat only four types of bamboo - main one is arrow bamboo
- It takes 50 - 60 years for bamboo plant to mature. It takes 15 years before it is ready to eat

**Students review what they have learnt.**

The students reviewed the key ideas they had learnt re Pandas.
We drew a diagram to show life span of Bamboo and how it might affect Pandas
In pairs students listed the questions they could answer now about Pandas.

They worked in pairs to write an article headlined “What is threatening Pandas”.

**Students work on an open-ended question.**

In small groups students worked on the problem of how the Panda as an endangered species may be helped. They imagined they were asked for advice from the Chinese Government on how to improve the living conditions for Giant Pandas. They discussed the content raised in the lesson and wrote down several suggestions, for example

- alternative ways of building to using bamboo
- having protected areas for Pandas, Panda wild life parks
- having special bamboo farms to grow bamboo crops for Pandas
- changing the diets of Pandas.
Year 7 Art

Aim of lesson: Look at van Gogh’s "Night Cafe in Artes", discuss interesting words

Literacy teaching procedures to be demonstrated

• helping students get their knowledge ready for learning and literacy by
  • organising what they already know
  • introducing key terms, words they know

• how to spell / write/ read unfamiliar words by
  • having them read and write the key words
  • read parts of the text aloud

• how to display their change in knowledge by reading and writing the key words in summary that they read text aloud and silently

Helping students get their knowledge of possible changes in the labour market by the following

Direction of lesson introduced: We are looking how artists use colour in their art, to help us have particular feelings. This will help you improve your art work.

Framework for organising what students know

Show van Gogh's "Night Cafe in Artes" and ask students to

put the painting into words
discuss the feelings it sets out to produce: What feelings does it make you have?

Types of colours: students answer the following questions
• what colours do you see in the painting?
• what are the different types of colours?

Students categorise what they know: Grouping the colours - red, orange, yellow, green, blue and purple - the colour spectrum. Students finish off the dictated sentence

The colour spectrum has the colours in the order ..........................................

Introduction of new ideas

Link the colours with feelings. Which make you feel warm or hot? Which make you feel cold?

Types of colours
• primary
• secondary

They list the new knowledge on the table

<table>
<thead>
<tr>
<th>warm / cold</th>
<th>red</th>
<th>orange</th>
<th>yellow</th>
<th>green</th>
<th>blue</th>
<th>purple</th>
</tr>
</thead>
<tbody>
<tr>
<td>primary / secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

They colour in the colour wheel in their notes and note
• colours that are opposite each other - complementary colours
• colours that are beside each other - analogous colours

Look at painting What do you feel if you have complementary colours beside each other? What do you feel if you have analogous colours beside each other?

Students read the text aloud. Before they begin to read, students are reminded
• this text is difficult; it has long sentences
• read each sentence slowly
  • say it in your own way
  • decide what question it will answer
• how to read each paragraph
  • read topic sentence
  • scan para for key words such as harsh, disturbing
  • read each sentence
  • consolidate

As they read the text aloud, they
• heard each sentence paraphrased
• said the question that each paragraph answered
• discussed the idea of topic sentences and how they could use them to help them

Point out how reading text about new ideas allows them to
• think through the new ideas more easily
• get a feel for the ideas, how to say them, how to say key words

**Students read a summary of the ideas silently and note down the key words** Students fill in the definitions on the right hand side of the text they read.

**Students review what they have learnt.**
• key ideas they have learnt
• questions they could answer now

**Debriefing of session**

Help students improve their word knowledge by saying each word in syllables, teach them how to do this to spell words they are not sure of, keep modelling it for them. Gradually build up word banks.

Help students learn how to read each sentence:
• read each sentence slowly
• say it in your own way
• decide what question it will answer

Help students learn how to read each paragraph
• read topic sentence what is para likely to be about? What ideas would you expect?
• scan para for key words such as harsh, disturbing
• read each sentence
• consolidate

As they read the text aloud, they
• heard each sentence paraphrased
• said the question that each paragraph answered
• discussed the idea of topic sentences and how they could use them to help them

Point out how reading text about new ideas allows them to
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**Students review what they have learnt.**
• key ideas they have learnt
• questions they could answer now
**Direction of lesson introduced**: We are interested in looking at how the ways people work have changed over the last 25 years.

**Framework for organising what students know**

<------------------------>
1975 2000
Think of people working in an office. How might a secretary do things differently now?

<------------------------>
1975 2000
typewriter computer
fixed phone mobile phone, fax
Think of people making a car at GMH

**Students categorise what they know**: What things might have changed in how workers work over the last 25 years? Students suggested

- how work was done
- who works - more women
- how they spend their time working

Each response was elaborated to link with the main points to be learnt.

**Introduction of new ideas**: The new ideas were introduced in familiar ideas and then the jargon. The students wrote down the new jargon for each as it was introduced and these key words were then written on board. Each key word was said in syllables to assist spelling.

<table>
<thead>
<tr>
<th>New ideas</th>
<th>Key phrases students wrote</th>
</tr>
</thead>
<tbody>
<tr>
<td>new technology allowed workers to do things differently. The computer has allowed this to happen. Students discussed how old they were when mobile phones, faxes first became available</td>
<td>technological advances driven by the development of the computer</td>
</tr>
<tr>
<td>Australia had a 'pot of money' to keep it going - the economy. The way this was used began to be changed. The reason for the change - other countries were developing in particular directions and Australia needed to move it these directions to be more competitive. What were main industries 40 years ago; what earned money for Aus? - farming, mining</td>
<td>Australian economy restructured to make it more competitive:</td>
</tr>
</tbody>
</table>

Four changes

- first, the financial system was deregulated; foreign banks could trade in Aus, this allowed money to move more easily between Aus and other countries
- second, there was a tax on all items brought into Aus to sell. You could buy a pair of shoes made in Aus or overseas. You would pay more for the shoes from OS because the government had a tax on them. Why do you think they did this? Name for this: tariff protection for goods produced in Australia. The government did reduce or removed the tariff. How would this affect the cost of OS goods? Examples - clothing and footwear
- third, the transport and communications industries went through micro economic reform. Examples - fax, teleconferences
- fourth, how ways for deciding workers' pay + conditions was changed.

**Extend the new ideas**: We discussed the effects of each of these changes on how business is done in Australia. Students used their list of key words to ask the question *What might this mean for industry and Australia?*
<table>
<thead>
<tr>
<th>technological advances driven by the development of the computer</th>
<th>how people work, unemployment, need new avenues for training where they work: large centralised factories ----technology has allowed delocalisation communication with other countries - start of globalisation</th>
</tr>
</thead>
</table>
| **financial system was deregulated:**                        | • foreign companies could invest more easily in Aus, set up in Aus, buy Aus companies  
• tariff protection for goods produced in Australia were reduced or removed.  
• micro economic reform of transport and communications  
• ways of deciding workers’ pay, conditions changed. |
| • foreign banks could trade in Aus | • Aus companies could expand overseas  
• cheaper goods from overseas  
• some Aus businesses not be able to survive  
• some Aus businesses would have to change how they do things |
| • tariff protection for goods produced in Australia were reduced or removed. | people could order things they need, make changes in what was made, sold and bought and how |
| • micro economic reform of transport and communications | less likely to have big strikes. Could decide the pay and conditions more quickly |

**Students read the text aloud.** As they read the text aloud, they

- heard each sentence paraphrased  
- said the question that each paragraph answered  
- discussed the idea of topic sentences and how they could use them to help them

Point out how reading text about new ideas allows them to

- think through the new ideas more easily  
- get a feel for the ideas, how to say them, how to say key words

**Students read a summary of the ideas silently and note down the key words**

<table>
<thead>
<tr>
<th>Labour market trends</th>
</tr>
</thead>
<tbody>
<tr>
<td>The way in which business is done in Australia has changed over the past 25 years. There have been six major changes.</td>
</tr>
<tr>
<td><strong>The first change</strong> has been in how production has been affected by advances in _________. This has been driven by the development of the _____________.</td>
</tr>
</tbody>
</table>
| **The second change** has been in how the Australian ____________ operates. This change were made so that Australia would be more ____________ _____________. There were several major reforms:  
• first, the financial system was ____________________; this meant that ________  
• second, the ____________________________ for goods produced in Australia were reduced or removed. Examples are  
• third, the transport and communications industries went through ________________ ____________. Examples are ____________________________  
• fourth, the agreements for deciding workers’ pay and conditions were changed. This was referred to as _____________________________. |

**Students discuss how the changes have worked.** What would they look for to see if they had led to an improvement in how competitive Australia is?
**Students review what they have learnt.**
- key ideas they have learnt
- questions they could answer now

**Debriefing of session** Ways of improving presentation

About a week before this activity in future have students get information from their parents, etc, about what things were like 25 years ago, for example
- what people used in their work
- what they used to communicate
- how they did banking

Represent key ideas using icons, for example

```
E$$$$conomy
changing
in out

big union -----> work place groups
computers
overseas banks
mobile phones, faxes
```

Have students discuss the movements before they need to read about them. They can use this as a set of memory prompts.
Year 7 Woodwork  Names of tools

Literacy teaching procedures to be demonstrated

• helping students get their knowledge ready for learning and literacy by organising what they know.
• how to spell / write/ read key words.

Helping students get their knowledge of possible changes in the labour market by the following

Direction of lesson introduced : Need to read / write the names of tools accurately.

Framework for organising what students know

Students were given a word bank of the names of tools, each with a number, and a set of matching pictures. They needed to match each word with its picture by writing the number on the picture.

Students took turns to read word aloud and to spell it. Where necessary, students heard each word said in syllables.

Students categorise their knowledge  Students look at a timber product and say how the piece of timber has been changed to make the product

• bits have been cut off
• bits have been added, stuck on

To do this, need different types of tools;

| tools for cutting         | cutting tools   |
| tools for making holes   | boring tools    |
| tools for showing where to add the pieces, how much to add/ cut off | marking / measuring tools |
| tools for adding bits    | assembling tools |

The students heard the name of each tool, categorised it and wrote its name in its column.

<table>
<thead>
<tr>
<th>cutting tools</th>
<th>boring tools</th>
<th>marking / measuring tools</th>
<th>assembling tools</th>
</tr>
</thead>
</table>

Debriefing of session  Other ways of including literacy activities in woodwork

• every 3rd-4th lesson could begin with a 5-10 minute reading activity in which students read text that sums up what they have been doing for the last 3-4 sessions - they can have text that they read and then do cloze
• use word matching activities such as Bingo in which students make up Bingo boards by writing down names of tools, etc and then see pictures of tools and need to name them and then read the name on their board
• when students need to use a set of actions, for example, to make an item, the detailed steps are written down and students read these and use them to guide their way through the task. They can use this in a diagnostic way when they get stuck, etc
• every 3rd-4th lesson could finish with a 5-10 minute reading activity in which students read text that sums up what they have been doing for the last 3-4 sessions - they can have text that they read and then do cloze
• when students need to do a project for example, Why plantation timber is better than rain forest timber to use in construction,

when they need to read information, they can paraphrase and summarise each paragraph and say what questions it answers, for example
how is it better economically, cheaper to harvest?  
why is it better to use in construction?  

• when students are learning the names and uses of each tool they can hear the names of 4-5 tools said and write down the names and use following table to answer 4 W and H questions about them:

<table>
<thead>
<tr>
<th>What is tool like?</th>
<th>When is it used?</th>
<th>How is it used?</th>
<th>Why is it used?</th>
<th>What type of tool is it?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What am I? Students can be given the name of a tool and in small groups write a description of the tool by answering these questions. They read aloud their description and class members have to guess which tool it is as soon as they can. The winning team takes least time to guess the tools.
Year 8 SOSE Rainforests under threat

Literacy teaching procedures to be demonstrated

- helping students get their knowledge ready for learning and literacy by
  - organising what they already know
  - introducing key terms, words they know

- how to spell / write/ read unfamiliar words by
  - having them read and write the key words
  - read parts of the text aloud

- how to display their change in knowledge by reading and writing the key words in summary that they read text aloud and silently

Helping students get their knowledge of possible changes in the labour market by the following

**Direction of lesson introduced**: We are interested in looking at how the ways people work have changed over the last 25 years.

**Students retrieve what they know**: You have already spent some time learning about rainforests. Let's review that.

What is a rainforest?
Why are rainforests important? The lungs of the earth - they convert carbon dioxide to oxygen

**Introduction of new ideas** Types of rain forests

- temperate rain forests. Dandenong Ranges rain forest. What is it like? Key words you would used? Where would you expect to find other temperate rain forests? What climates would you need? Areas of high rainfall (sides of mountains) - south west Tasmania

- tropical rain forests. Daintree rain forest. What is it like? Key words you would used? Where would you expect to find other tropical rain forests? What climates would you need?

**Students introduced to key concepts: read and write them** Students write down the key words which are then written on board. Each key word is said in syllables to assist spelling new ideas were introduced in familiar ideas and then the jargon.
- land surface
- equator
- rain forest
- logging
- agriculture
- impenetrable

Students discuss and write their own description of each word.

**Students read the text aloud**. Before they begin to read, students are reminded
- this text is difficult; it has long sentences
- look at each paragraph, read topic sentence, say it in their own words and say what it might be about and decide questions it might answer.

<table>
<thead>
<tr>
<th>Say it in their own words and</th>
<th>What it might be about</th>
<th>Questions it might answer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain forests were once believed to be very thick bush it was hard to get through</td>
<td>How it is easier to get into rain forests now</td>
<td>Why is it easier to get into rain forests now?</td>
</tr>
<tr>
<td>Rain forests cover about 6 per cent of the land of the Earth</td>
<td>Where the rainforests are</td>
<td>Where are the rainforests</td>
</tr>
<tr>
<td>Over half of the tropical rain forest area has been destroyed</td>
<td>How much has been destroyed</td>
<td>How fast is the forest being destroyed?</td>
</tr>
<tr>
<td>Building towns, farming and gathering timber for industry has caused forest to be destroyed.</td>
<td>The ways the forest has been destroyed</td>
<td>What causes the forest to be destroyed</td>
</tr>
</tbody>
</table>
As they read the text aloud, they
• heard each sentence paraphrased
• said the question that each paragraph answered
• discussed the idea of topic sentences and how they could use them to help them

Point out how reading text about new ideas allows them to
• think through the new ideas more easily
• get a feel for the ideas, how to say them, how to say key words

**Students read a summary of the ideas silently and write in the key words**

<table>
<thead>
<tr>
<th>Tropical Rain forests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees help us to live better in many ways. One way in which they do this is by producing air for us to ________. They do this by changing carbon dioxide to ______________. The carbon dioxide comes from sources such as __________, __________ or __________. They grow together most densely together in ______________. Because they help all animal life to survive, rain forests have been called the ______________. Where are these rain forests? Most of the world's rain forests are near the Equator. They are called _______ ________. They cover about 6% of ______________. About half of the world's rain forests are in just ______ countries. There are ________, ________ and ________. Over recent years at least ______ of the world's rain forests have been damaged or ______. Why are the rain forests being destroyed? The reason is ______________. Sometimes industries want the _________. On other times the land where the forest grows is needed for ______.</td>
</tr>
</tbody>
</table>

**Extend the new ideas** Students discuss how they think the problem of destroying tropical rain forests needs to be handled. What advice would they give to the governments of the countries with the rain forests? How might these countries be assisted so that they don't destroy an essential part of the world?

**Students review what they have learnt.**
• key ideas they have learnt
• questions they could answer now
**Year 7M Science How microscopes help us see small objects**

**Direction of lesson introduced**: In this session we are going to look at how we can see very small things.

**Students retrieve what they know**: What is the smallest thing in your body? How do you know they are there? What do people use to see them?

**Introduction of new ideas**

Your body is made up of very small building blocks called cells. Your blood is made up of millions of blood cells. Your skin is made up of very small bits called skin cells. You grow because these cells grow. Blood cells are different from skin cells.

All living things are made up of these tiny cells.

These cells are far too small for you to see them with your eye. What do you need to use to see them? A microscope:

- **microscope**: micro - very small, tiny
- **scope**: see

Other words with micro: microwave, microphone

Other words with scope: telescope

How a lens works. Class discussion with drawing showing

- how we can see anything because it gives out light
- how a convex lens spreads out the light that comes from a small item such as a beetle. What is a lens? piece of glass shaped in a certain way. What it does is make something seem much bigger. Word for what a lens does - it magnifies.

The object you are looking at gives out light. What the lens does is spread out the light.

How do microscopes work? They make things bigger by using lenses.

**Students introduced to key concepts: read and write them** Students write down the key words which are then written on board. Each key word is said in syllables to assist spelling new ideas were introduced in familiar ideas and then the jargon.

<table>
<thead>
<tr>
<th>What word means</th>
<th>An example</th>
</tr>
</thead>
<tbody>
<tr>
<td>building blocks</td>
<td>no example</td>
</tr>
<tr>
<td>cells</td>
<td></td>
</tr>
<tr>
<td>microscope</td>
<td>no example</td>
</tr>
<tr>
<td>lens</td>
<td></td>
</tr>
<tr>
<td>transparent material</td>
<td></td>
</tr>
<tr>
<td>spreads out</td>
<td></td>
</tr>
<tr>
<td>micro</td>
<td></td>
</tr>
</tbody>
</table>

Students discuss and write their own description of each word.

**Students read the text aloud**. Students read aloud the text p 162: A whole new world.

We began by looking at the page and how information was presented, as follows

- student read title and we discussed what it might mean
- student read topic sentence and we discussed what it meant
- students took turns to read each paragraph as follows: read topic sentence, say it in their own words.

As they read the text aloud, they
- heard each sentence paraphrased
• said the question that each paragraph answered
• discussed the idea of topic sentences and how they could use them to help them

Point out how reading text about new ideas allows them to
• think through the new ideas more easily
• get a feel for the ideas, how to say them, how to say key words.

**Students read a summary of the ideas silently and write in the key words**

<table>
<thead>
<tr>
<th>Seeing very small things</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the smallest thing in your body? Your body is made up of very small building blocks called _____. Your blood is made up of millions of ____ cells. Your skin is made up of very small bits called ____ cells. You grow because these cells grow. Blood cells are different from skin cells.</td>
</tr>
<tr>
<td>All living things are made up of these tiny cells. There are animal cells and plant _____.</td>
</tr>
<tr>
<td>These cells are far too ____ for you to see them with your eyes. To see them you need to use a _______. The word 'microscope' means 'seeing _______ things.</td>
</tr>
</tbody>
</table>

**Extend ideas** Students discussed
• the diagram of the microscope used by Hooke and compare it with a modern microscope.
• things discovered using a microscope
  • cells in 1665 by Robert Hooke
  • animals made of one cell
  • bacteria
  • all animals and plants made of cells
  • the nucleus in cells

Students write down the key words which are then written on board. Each key word is said in syllables to assist spelling new ideas were introduced in familiar ideas and then the jargon.

<table>
<thead>
<tr>
<th>What word means</th>
<th>An example</th>
</tr>
</thead>
<tbody>
<tr>
<td>magnify</td>
<td></td>
</tr>
<tr>
<td>increased</td>
<td></td>
</tr>
<tr>
<td>organism</td>
<td></td>
</tr>
</tbody>
</table>

Students discuss and write their own description of each word.

**Students read a summary of the ideas silently and write in the key words**

| Microscopes make things seem much bigger by ________ them. They do this by using _______. A lens is piece of transparent material such as _______. It is shaped in a certain way so that it spreads out the _______ from the object you are looking at. |
| Many things have been discovered using a microscope. Robert Hooke in 1665 discovered _______. Soon after this, animals made of _______ were discovered. Later people discovered parts of cells such as the _______ in cells. |

**Students review what they have learnt.**
• key ideas they have learnt
• questions they could answer now

**Debriefing** We discussed
• procedures for increasing the ways in which reading can be used in teaching science
• how to help students understand what they read.

While students are reading aloud a text, after reading each sentence or group of sentences we can ask them to
• say it in their own words, that is, paraphrase it.
• visualise what it is saying
• say a question that it answers
• summarise 2 or more sentences, a paragraph.

We need to give them feedback each time they do this to help them see how close / accurate their responses are.

As well as this, we can teach them to read the title and topic sentences and discussed what they mean.

We also discussed what teachers can do to help students remembering key ideas long-term. We can

• ask them to say what they are going to remember as concisely as possible.
• link these ideas with what they know; What do these ideas remind you of? How are they like / different from things you already know?" 
• have them draw a picture of the main ideas, use a concrete model, make a mental picture of them
• say when they will use the ideas in the future.
• imagine themselves remembering them.
• say what is helping them to remember it.
Year 8  Health Peers and peer group pressure

**Direction of lesson introduced**: In this session we are going to look at how the groups you belong to affect how you operate and how you can learn from working effectively in these groups.

**Students retrieve what they know**: What is the smallest thing in your body? How do you know they are there? What do people use to see them?

You are passing through a time of your life when things are changing for you. What are some names for this period:
- teenager
- adolescence

Think of child of 7 or 9 and an adult of 40. How are they different?

<table>
<thead>
<tr>
<th>child of 7 or 9</th>
<th>adult of 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>sexually immature</td>
<td>sexually immature</td>
</tr>
<tr>
<td>weak</td>
<td>strong</td>
</tr>
<tr>
<td>depend on adult</td>
<td>independent</td>
</tr>
<tr>
<td>rely on adult</td>
<td>self reliant</td>
</tr>
<tr>
<td>not in control</td>
<td>in control</td>
</tr>
<tr>
<td>don't know much</td>
<td>know more</td>
</tr>
</tbody>
</table>

**Introduction of new ideas**

You are in the middle - moving from being child, dependent to being independent adult.

<table>
<thead>
<tr>
<th>child of 7 or 9</th>
<th>You are here</th>
<th>adult of 40</th>
</tr>
</thead>
</table>

Part of this involves learning to operate in peer groups. In these groups you learn to rely and trust peers, friends rather than your parents or other adults.

**Small group activity**: Which groups do you belong to? Students listed some of the groups to which they belonged. In a class discussion we discussed what they learnt in each group. The groups they suggested and some of the learning outcomes were recorded in the following table:

<table>
<thead>
<tr>
<th>group</th>
<th>learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>football team</td>
<td>skills, how to play by the rules</td>
</tr>
<tr>
<td>class</td>
<td>ways of doing things</td>
</tr>
<tr>
<td>family</td>
<td>values</td>
</tr>
<tr>
<td>KFC colleagues</td>
<td>how to do things in work place</td>
</tr>
<tr>
<td>cricket team</td>
<td></td>
</tr>
<tr>
<td>scouts</td>
<td></td>
</tr>
</tbody>
</table>

The students discussed whether each group helped them learn:
- how to handle situations, how to deal with and solve problems and you can try these
- learning how to talk with peers in useful ways
- learning how to work together, do things together - gangs become important
- learning to support each other

These were listed as positive things they could learn from their peers.

They noted that different types of groups
• have a particular purpose, eg sports team
• based on wanting to do things the same way - a clique

**Students wrote down key concepts:** Students wrote down the following key concepts from the white board.

Positive things you learn from your peers
• learning how to handle situations - you discuss how they deal with problems and you can try these
• learning how to talk with peers in useful ways
• learning how to work together, do things together - gangs become important
• learning to support each other

**Students introduced to key concepts: read and write them** Students wrote down the following key words which were dictated and then written on board. Each key word was said in syllables to assist spelling new ideas were introduced in familiar ideas and then the jargon.

<table>
<thead>
<tr>
<th>What word means</th>
<th>An example</th>
</tr>
</thead>
<tbody>
<tr>
<td>teenager</td>
<td>no example</td>
</tr>
<tr>
<td>adolescence</td>
<td></td>
</tr>
<tr>
<td>independent</td>
<td>no example</td>
</tr>
<tr>
<td>peer group</td>
<td></td>
</tr>
<tr>
<td>rely</td>
<td></td>
</tr>
<tr>
<td>options</td>
<td></td>
</tr>
<tr>
<td>clique</td>
<td></td>
</tr>
</tbody>
</table>

Students discuss and write their own description of each word.

Negative ways in which your peer group can affect you

• when you feel pressured to do or say things you don't want to do. You may do these things because you don't want to lose your friends and you don't know how to say "No"

**Students read a summary of the ideas silently and write in the key words**

You are passing through a time of your life when things are changing for you. Names for this period include being a _______ and _________. You are moving from being a dependent _______ to being an independent _________.

Part of this involves learning to operate in peer _______. You are learning to rely on and to ______ peers or ______ rather than parents or adults.

Positive things you learn from your peers
• learning how to handle _______. You can discuss how to deal with _______
• learning how to talk with peers in useful ways, how to ____________.
• learning how to _______ together
• learning to support each other

Negative ways in which your peer group can affect you

• when you feel pressured to do or say things you _____________. You may do these things because you don’t want to lose your friends and you don’t know how to say “No”.

**Extend ideas** Learning how to be your own person. How can teenagers be their own persons in groups?
• by letting their friends know how they feel, eg, when they feel pressured
• by being able to say when they don’t agree with something other members are doing or planning
• by attempting to choose your friends

When might teenagers want to say "No" to a group
• pressure to smoke
• drink alcohol
• vegetarian eat meat

The group discussed the following case study: Tom is being pressured to travel in a car with a driver who has been drinking alcohol.
How might group try to pressure Tom? The class discussed each of the following and gave examples of each:
• bad logic
• use put down
• make him feel guilty
• dare him
• reject him
• threaten him
• say 'everyone else is doing it'

How can he say No? The class discussed how Tom could refuse by doing each of the following:
• say why he objects to it -
• play down pressure
• say the consequences he doesn't want - lung cancer, short breath (he likes sport)
• suggest alternatives

Students read a summary of the ideas silently and write in the key words
Ann is at a party. Some of her friends are pressuring her to go in a car driven by a young driver who has been drinking beer. How might her friends try to pressure her? Give an example of each of the following

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>use bad logic</td>
<td></td>
</tr>
<tr>
<td>use put down</td>
<td></td>
</tr>
<tr>
<td>make her feel guilty</td>
<td></td>
</tr>
<tr>
<td>dare her</td>
<td></td>
</tr>
<tr>
<td>reject her</td>
<td></td>
</tr>
<tr>
<td>threaten her</td>
<td></td>
</tr>
<tr>
<td>say 'everyone is doing it'</td>
<td></td>
</tr>
</tbody>
</table>

How would you advise her to say "No"? What types of reasons could she give to say "No"?
**How many people live in Australia?**

**Challenge:** Where do most Aus live? narrow coastal strip from Brisbane to Adelaide - population density is higher in this area than in inland Aus. To say how many people there are living in an area of land we talk about the number of people who live in a square kilometre of land.

Australia is highly urbanised - most Australians live in cities and towns - 85%

Write down these words

Where do most Aus live?

<table>
<thead>
<tr>
<th></th>
<th>say what it means in your own words</th>
</tr>
</thead>
<tbody>
<tr>
<td>narrow coastal strip</td>
<td>strip of land near the coast</td>
</tr>
<tr>
<td>population density</td>
<td>how many people live in an area of land</td>
</tr>
<tr>
<td>inland</td>
<td>away from the sea</td>
</tr>
<tr>
<td>square kilometre</td>
<td></td>
</tr>
<tr>
<td>urban</td>
<td>town or cities</td>
</tr>
<tr>
<td>urbanised</td>
<td>people living in town or cities</td>
</tr>
</tbody>
</table>

- Brisbane
- Adelaide
- south east

Reading activity read text
Do cloze

What questions does this answer?

Why do they live in these areas? Why did early European visitors settle here?

- reliable pure water south eastern Aus has rivers that supply good water
- areas that will provide food. The area behind and surrounding the coast or a river is called its "hinterland." These areas provide food for humans and their animals, the materials people need for building. This area has good pasture, forests
- so that transport is easy - early transport by sea- to be close to transport - south eastern Aus has good s, ports.

Write down these words

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>climate</td>
</tr>
<tr>
<td>reliable water supply</td>
</tr>
<tr>
<td>hinterland</td>
</tr>
<tr>
<td>fertile</td>
</tr>
<tr>
<td>harbour</td>
</tr>
</tbody>
</table>

Reading activity read text
Do cloze

Before white men came to Aus, there were over 600 Aboriginal groups. Where did most Aboriginal people live? What was the population density like? look at map on page 122. They had the same density as today. They didn't need to build big cities. Why do you think they lived here?

- food was plentiful, hunting was easier
One way Aboriginals used to manage their environment was by burning large areas of grass and bush. Why would burning the bush help them to live? This helped them to live by

- encouraging fresh green growth
- provided ash for the soil
- attracted animals and plants to the burnt areas after fires
- animals trapped in fire could be hunted and trapped easily

What effects did the burning have?

- created the eucalyptus forests that existed when white men arrived in Aus
- may have caused some animal and plant species to disappear

Another thing Aboriginals did was to dam rivers and build rock traps to catch fish.

Reading activity read text
Do cloze
Australia's Human Environment Part 1

Most Australians live in a narrow coastal strip of land that in the _______________ of Australia. This strip stretches from Brisbane to Adelaide. The term we use to talk about the number of people living in an area is its ____________ ___________. The population density is higher in this area than in ___________ Australia.

Most Australians live in cities and towns; we say that Australia is highly ____________.

Australia's Human Environment Part 2

Why do they live in these areas? The early European visitors settled here because it had

• a pleasant climate - Europeans coming to Australia wanted a climate they would be used to.
• a reliable supply of pure ___________.
• fertile areas to provide ______. The area behind and surrounding the coast or a river is called its '________'. These areas provide food for humans and their animals and the materials people need for building. It has good pasture and forests.
• good harbours and ports that made _______ easy.

Australia's Human Environment Part 3

Before white men came to Australia, there were over _____ Aboriginal groups. Most Aboriginal people also lived in ____________ Australia. Aboriginals didn't need to build big ___________. They lived here because food was ________. One way Aboriginals used to manage their environment was by _________________. This helped them to live by encouraging fresh ________. Providing ____ for the soil and attracting animals and plants to ________. Another thing Aboriginals did was to ________ rivers and build __________ to catch fish.

<table>
<thead>
<tr>
<th>Key terms</th>
<th>say what it means in your own words</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Challenge question: Last session we worked on number patterns such as \( t_n = 3, 7, 11, \ldots \).

What things do you know about it?

<table>
<thead>
<tr>
<th>What questions can you ask about it?</th>
<th>What is the maths term for it?</th>
<th>What is the symbol we use for it</th>
</tr>
</thead>
<tbody>
<tr>
<td>what is the difference between terms?</td>
<td>common difference</td>
<td>( d )</td>
</tr>
<tr>
<td>what is the first term?</td>
<td>initial term, first term</td>
<td>( a )</td>
</tr>
<tr>
<td>what is the ( n )th term?</td>
<td></td>
<td>( t_n )</td>
</tr>
<tr>
<td>what is second term?</td>
<td></td>
<td>( t_2 )</td>
</tr>
</tbody>
</table>

Introduce new idea

\( t_n \) - What does \( t_n \) mean? How would you say it in your own words? How would you write the symbol for the second term/third term...?

In the sequence \( t_n = 3, 7, 11, \ldots \), write symbol under each term:

\[
t_n = 3, 7, 11,
\]

\[
a, t_1, t_2, t_3
\]

Apply these symbols to other sequences.

Analyse specific instances

Work out \( t_4, t_5, t_6 \). How did you work out each one?

To work out \( t_4, t_5, t_6 \), how many times did you add on the common difference?

\[
t_n = 3, 7, 11, 15, 19, 23
\]

\[
t_1, t_2, t_3, t_4, t_5, t_6
\]

add on \( d \)

- 3 times
- 4 times
- 5 times

What would you do to work out eighth term, ninth term?

8th term: start with 3 and add on \( 7 \times 4 \) 
Write in symbols \( t_8 = 3 + 7 \times 4 \)

9th term: start with 3 and add on \( 8 \times 4 \) 
Write in symbols \( t_9 = 3 + 8 \times 4 \)

Generalise

What would you do to work out the twenty-eighth term, twenty-nineth term?

How would you work out the \( n \)th term? Begin with first term and add on \( (n-1) \) times 4.

\( t_n = 3 + (n-1) \times 4 \)

This allows us to work out the \( n \)th term for \( t_n = 3, 7, 11, \ldots \). How could we write a more general pattern?

\[
t_n = 3, 7, 11, 15, 19, 23
\]

\[
t_1, t_2, t_3, t_4, t_5, t_6
\]

add on \( d \)

- 3 times
- 4 times
- 5 times

general pattern \( a, a+d, a+2d, a+3d, a+4d, a+5d, \ldots \)

\( a + (n-1)d \)

How would you decide if a pattern of numbers is an arithmetic sequence? What features does it need to have? What will you tell yourself to look for? What tests will you apply?

Look at examples of sets of numbers. Select the ones that are arithmetic sequences.
What does $t_n = a + (n-1)d$ say? What does it tell you to do?

What questions could you ask about it?

- you are told $a$, $n$, $d$, work out $t_n$
- you are told $t_n$, $n$, $d$, work out $a$
- you are told $t_n$, $a$, $d$, work out $n$
- you are told $t_n$, $n$, $a$, work out $d$

You can get tasks that ask you to do each.

In small groups, make up an example of each

<table>
<thead>
<tr>
<th>told $a$, $n$, $d$, work out $t_n$</th>
<th>told $t_n$, $n$, $d$, work out $a$</th>
<th>told $t_n$, $a$, $d$, work out $n$</th>
<th>told $t_n$, $n$, $a$, work out $d$</th>
</tr>
</thead>
</table>

Look at the first few tasks. A student reads each one aloud and other students categorise it by saying

- what they are told
- what type it is

Extend to geometric sequences

How is number patterns such as $t_n = 3, 7, 11, ...$ different from $t_n = 3, 12, 48, ...$?

Use the questions you can ask about $t_n = 3, 7, 11, ...$ to ask questions about $t_n = 3, 12, 48, ...$.

<table>
<thead>
<tr>
<th>Questions about $t_n = 3, 7, 11, ...$</th>
<th>maths term and symbol</th>
<th>Questions about $t_n = 3, 12, 48, ...$</th>
<th>maths term and symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>difference between terms?</td>
<td>common difference, $d$</td>
<td>what you multiply by to get from one term to next</td>
<td>common ratio, $r$</td>
</tr>
<tr>
<td>first term?</td>
<td>initial term, first term, $a$</td>
<td>$t_n$</td>
<td>$a$</td>
</tr>
<tr>
<td>$n$th term?</td>
<td>$t_n$</td>
<td></td>
<td>$t_n = a r \ n-1$</td>
</tr>
<tr>
<td>second term?</td>
<td>$t_2$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What does $t_n = a \ r^{n-1}$ say? What does it tell you to do? What questions can you ask about it?

How could you decide if a a sequence is a geometric sequence?
Year 8 SOSE  Protecting property from bushfires

In this lesson students

- reviewed what they knew re bushfires. David reviewed the link between the three concepts oxygen <---> fuel <---> heat
- worked through a task in which they identified 12 potential dangers to a house during a bush fire
- reported their findings to the class
- drew a plan of their house and identified potential sources of danger re bushfires and a possible fire escape plan.

This was an interesting topic for the students. It was presented in a problem solving way.

From a literacy perspective, a future lesson on this topic could include the following

**Initial challenge**: the task to be examined is introduced as the challenge: A bushfire is approaching your house. You have 3-4 minutes to secure it to minimise the chance that it will be burnt down. What will you do?

**Collate students' existing knowledge on the board.** The initial discussion and picture of the house can be used to organise and collate these on the board. This would allow students' spelling to be targeted.

**Using the task to develop learn new ideas.** Before having students begin the task individually, I would have the class as a group

- discuss the main ideas, link what they know with it,
- say what they think the answers are,
- suggest what they would write for 1... 12.
- say what the outcome would be like

Some of the students seemed to have difficulty working independently through it and needed to see how they could align what they knew with what the task was asking. This should help them use what they knew on the task and stay focused.

**More abstract understanding** Following the specific example, as students' responses were being collected, the key ideas that underpinned them could be reviewed and written on the board so that the students could use these later.

**Application** A fire escape plan for their home. Some of the students had difficulty drawing a plan of their house. They did not seem sure exactly what to show. They needed to

- draw a rough plan, just to get the approximate positions of rooms
- decide how they need to modify it and draw a more accurate plan from this

They could discuss the key features of an escape plan. This would indicate the criteria they needed to attend to, for example,

- easy egress that was away from the direction of the fire
- easy access to water
- maximum protection from smoke and heat.

A key aspect of these suggestions is that several of the students need to improve their ability to work independently and to learn how to plan their way through tasks and to align what they know with the tasks. To help them learn to do this, lessons probably need to be broken into smaller units of guided instruction with a focus towards independence for each small activity. Given the focus on presenting the ideas in a problem solving way it is even more important that students learn how to problem solve in this context and learn to be more self managing and directing. The literacy perspective provides a basis for this structure. In this way students should be more likely to finish tasks successfully and learn how to do this, through the modelling provided.