

What is Embedded Teaching and Learning?

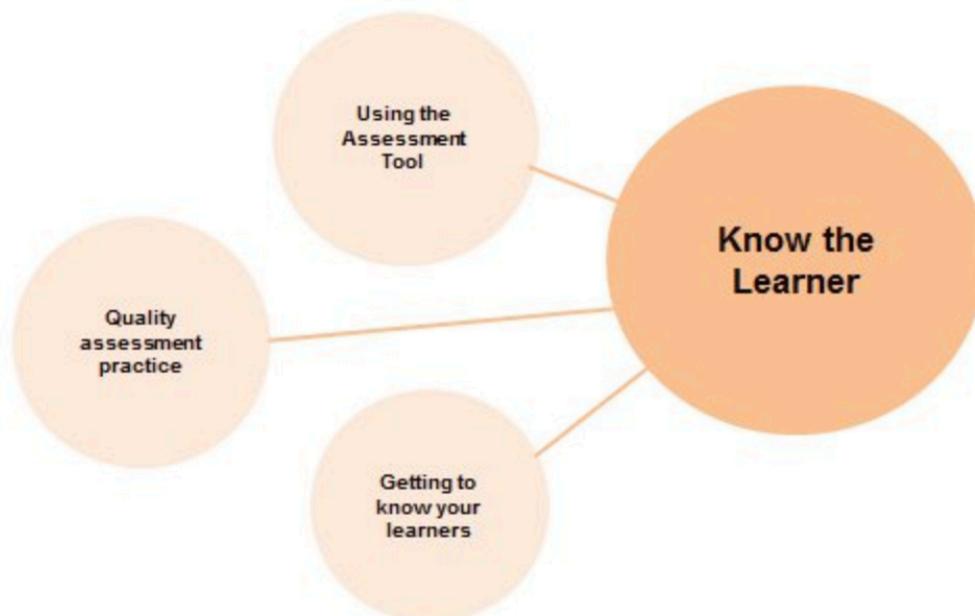
Embedded teaching and learning combine the development of literacy and numeracy with vocational and other skills. The literacy and numeracy skills developed provide learners with the competence, confidence and motivation necessary for them to succeed in the vocational programme, or at work and in life.



<http://www.literacyandnumeracyforadults.com/resources/356269>

Know The Learner

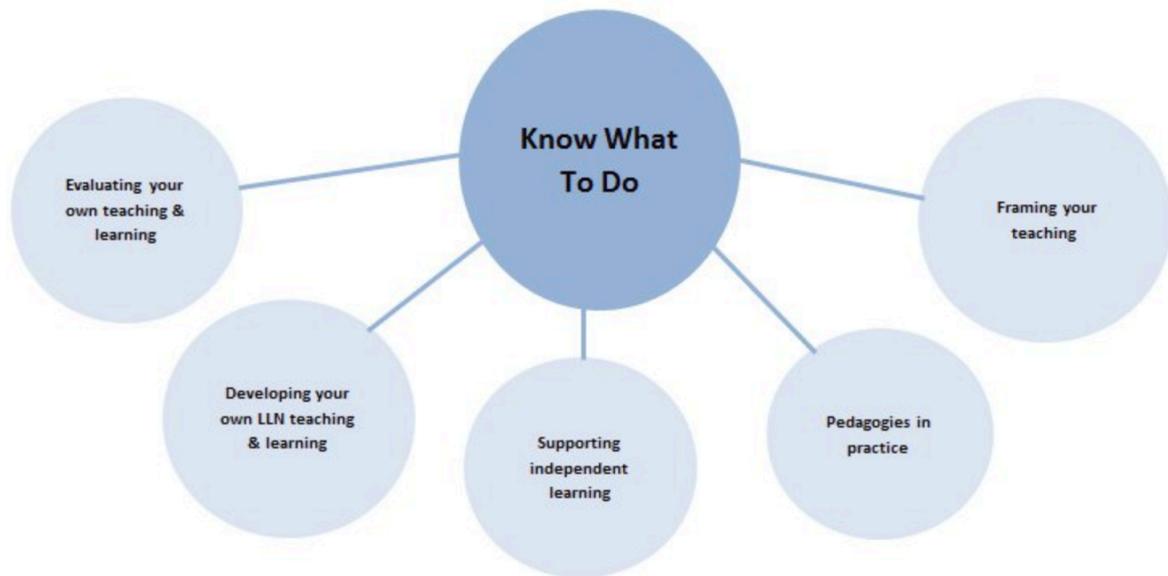
Identifying literacy and numeracy **strengths and needs** of adult learners and **attending to socio-cultural considerations** in relation to training and education programmes.



Embedded Literacy and Numeracy

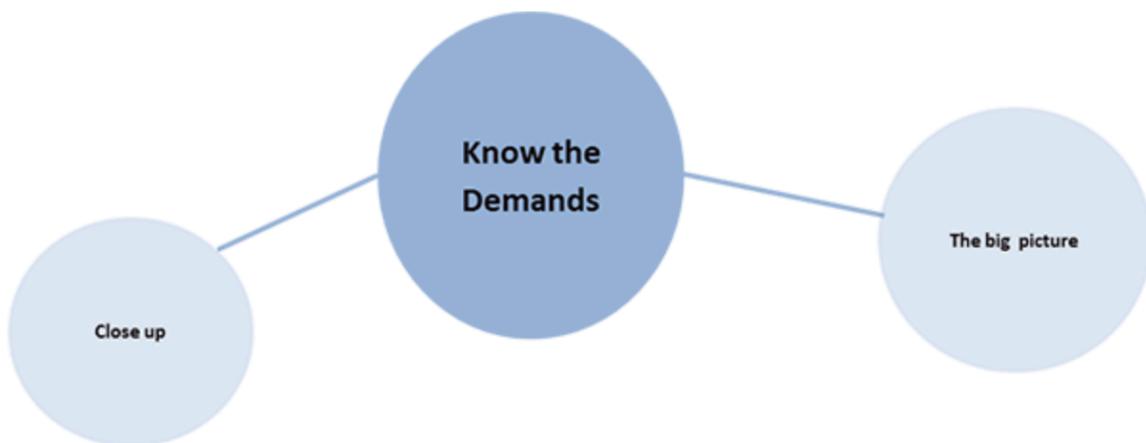
Know What To Do

Planning, facilitating and evaluating literacy, language, and numeracy learning to assist all learners to meet the demands they face.



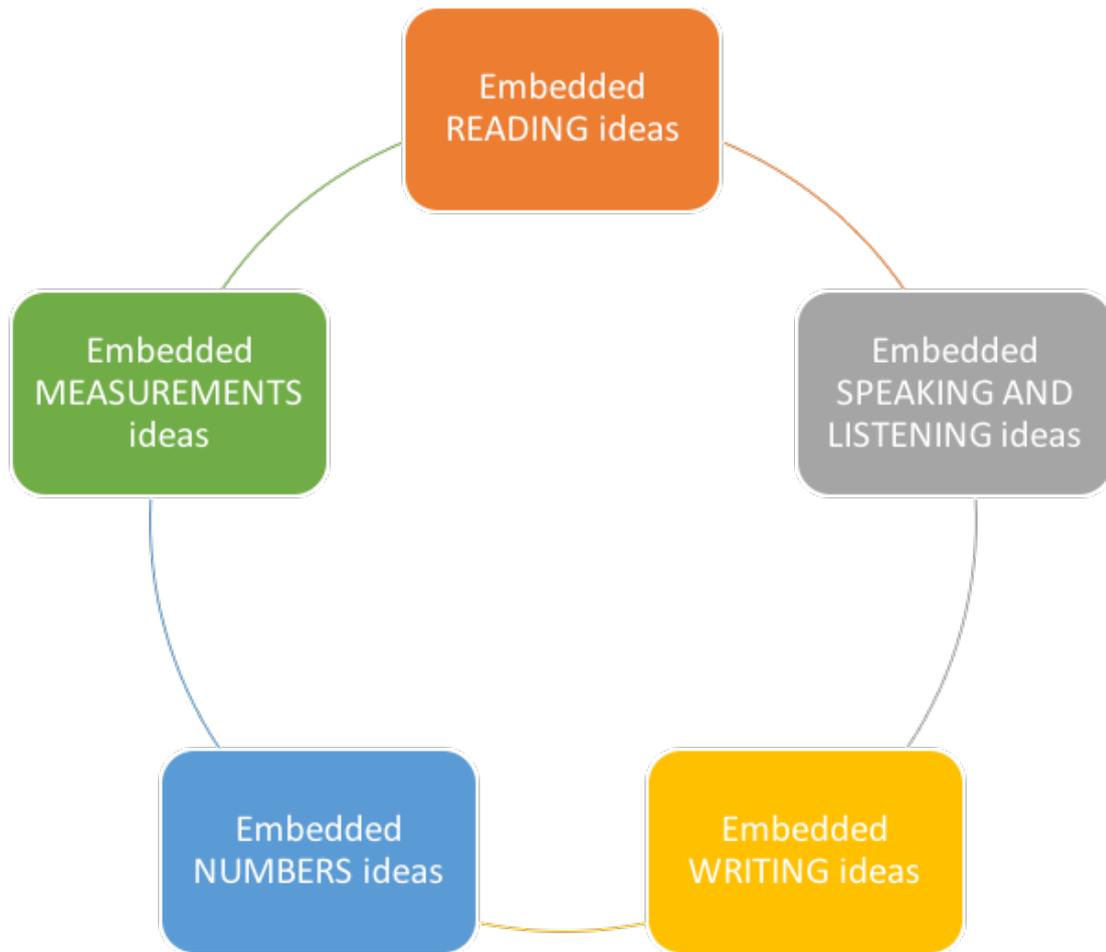
Know The Demands

Identifying the LN demands faced by their learners (vocational, educational, cultural etc) and enable them to place these demands within a broader socio-historical framework.



Embedding literacy and numeracy - groupwork exercises

We're going to look at embedded approaches to literacy and numeracy in the classroom. This requires the learners and teachers to look at opportunities for building literacy and numeracy skills within the appropriate level of the programme and vocational contexts.



Embedded READING Idea - Identifying difficult vocabulary

Purpose of this exercise:

- 1. You can pre-teach difficult vocabulary
- 2. Learner will have an increased ability to read/understand text
- 3. You can deliver additional content regarding key concepts



3-syllable exercise

- 1. Refer to the text below ‘Section B – Timber Framed Houses’ sourced from the Fiji Home Builders Manual.
- 2. List and identify the 3-syllable texts in this text (hint: there is more than 10)
- 3. Write them in the table below

Source: <http://www.fnu.ac.fj/ntpc/>

SECTION B TIMBER FRAMED HOUSES

B1 GENERAL

All timber members must be sized in accordance with Tables 1 to 20 as appropriate for the member, stress grade, and design situation. Care must be taken to ensure that the correct tables are used for the appropriate design windspeeds.

B2 ASCERTAINING STRESS GRADE

Many of the tables in the Manual are based on a knowledge of the stress grade (see definition) of the timber used. Where timber is not stress graded mechanically or visually the approximate stress grade can be determined from the density of the timber. Table B2 gives these approximate values for different timber densities whether of softwood or hardwood. These values may be used in the absence of more precise information, to refer to all the other tables to use which the relevant stress grade is required.

<http://www.engineersfiji.org.fj/resources/>

Note: THE NEXT PAGE HAS THE ANSWERS / WAIT UNTIL YOU FINISH STEP 3

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4. Check your answers with the table below – did you get them all, refer to the bold letters below. Also, finish the table below with the words split into their syllables.

Accordance Ac-cor-dance	Appropriate Ap-pro-pri-ate	Situation Sit-u-a-tion	Ascertaining As-cer-tain-ing
Manual Man-u-al	Definition De-fi-ni-tion	Mechanically Mech-an-i-cal-ly	Visually Vis-u-al-ly
Approximate	Determined	Densities	Information
Relevant			

5. If there is time, take a look at the following table that has mixed the definitions of the above words and match them up

Accordance	the way something is positioned as compared to its surroundings
Appropriate	Relating to or produced by a machine or mechanism
Situation	a time or a tangible item which is close to something else but not exactly like it.
Ascertaining	to verify or confirm something.
Mechanically	how tightly or loosely packed a substance is
Visually	Something that is decided or resolved
Approximate	something that is right for the purpose.
Determined	news or knowledge received or given
Densities	By means of sight
Information	connected or related to the current situation
Relevant	to have come to an understanding, or to be in agreement.

Note: THE NEXT PAGE HAS THE ANSWERS / WAIT UNTIL YOU FINISH STEP 5

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ANSWERS TO STEP 5

Accordance - to have come to an understanding, or to be in agreement.

Appropriate - something that is right for the purpose.

Situation - the way something is positioned as compared to its surroundings

Ascertaining - to verify or confirm something.

Mechanically - Relating to or produced by a machine or mechanism

Visually - By means of sight

Approximate - a time or a tangible item which is close to something else but not exactly like it.

Determined - Something that is decided or resolved

Densities - how tightly or loosely packed a substance is

Information - news or knowledge received or given

Relevant - connected or related to the current situation

6. **For future activities, utilise the PDF exercise ‘Read-with-understanding-11-Word-and-definition-barrier-activity’**
7. **Present back to the group your experience of this activity and why it would be useful in terms of identifying difficult vocabulary**
8. **The next page is a ‘template’ should you wish to do this as a group exercise**

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STEP 3: WRITE DOWN THE WORDS THAT HAVE 3+ SYLLABLE

STEP 4: SPLIT THE WORDS ABOVE INTO SYLLABLES

STEP 5: PRINT OUT PAGE AND MATCH THEM UP

Accordance	the way something is positioned as compared to its surroundings
Appropriate	Relating to or produced by a machine or mechanism
Situation	a time or a tangible item which is close to something else but not exactly like it.
Ascertaining	to verify or confirm something.
Mechanically	how tightly or loosely packed a substance is
Visually	Something that is decided or resolved
Approximate	something that is right for the purpose.
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Densities	By means of sight
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Relevant	to have come to an understanding, or to be in agreement.

Embedded SPEAKING AND LISTENING Idea – Speaking frames

A speaking frame helps learners to figure out what and how they say something in a conversation. These examples are a good way to encourage learners to reflect.

Purpose

- Learn the way they speak – and best ways to interact in different contexts
- Learn gestures and other body language that help or hinder successful communication
- Learn what they bring to the conversation in terms of attitude and approach
- Learn what they can already say – and now need to say – scripting where necessary.

Speaking Frame exemplars

Speaking Frames that may (or may not) be familiar to your learners

Oral Presentations 

Official functions 

Introductions 

Meetings 

Apologies 

Thank yous 

Interviews 

Interacting as a family 

Powhiri
Mihi
Pepeha
Karanga 

Speaking Frames that may (or may not) be unfamiliar to your learners.

Asking questions
Answering questions
Seeking clarification
Negotiating meaning
Paraphrasing
Summarising
Giving feedback
Pair work
Group work
Co-operative learning
Tutor learner interaction

Speaking up
Resolving conflict
Showing assertiveness
Negotiating peacefully

Asking for further information
Requesting extensions for assignments
Acknowledging peers/tutor for help in the learning process



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Below are situations of speaking and listening demands.

Everyday examples – common	<ul style="list-style-type: none">• Greeting customers• Talk to other staff peers• Talking and listening with employer• Reporting progress of the day• Co-ordinate with other tradespeople
Regular examples	<ul style="list-style-type: none">• Ordering stock / resources from suppliers• Discussing progress of a project or job/task• Listening to training or resource updates• Participate in team meetings• Giving verbal instructions or updates
Occasional examples	<ul style="list-style-type: none">• Discussing problems or situations• Discussion issues with suppliers involved in a job• Answering questions with peers• Talking to a range of people around training

Speaking Frame - benefits

- Models familiar and unfamiliar speaking processes
- Develops confidence and encourages clarity of expression
- Provides opportunity to use technical vocabulary or specialised words and create glossaries or word lists relevant to context
- Helps learners understand meaning of new language and expressions
- Models appropriate use of language and register

Source: <http://www.literacyandnumeracyforadults.com/resources/355717>

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Speaking Frame activity – Roleplay and Observation

People are good at conversing (speaking and listening) about themselves (intrinsic motivation). For this particular activity, selecting an example from occasional examples (which is a problem - extrinsic motivation) will be used

- 1. Find a place where you won't disturb other groups. You will need to take these notes, butcher paper (if you wish) and a pen**
- 2. Read the scenario below and split your group into the 'Roleplayers' and the 'Observers'**

WORKPLACE SCENE: *YOU ALL WORK AT A LOCAL BAKERY WHERE THERE ARE KITCHEN HANDS, AN ASSISTANT PASTRY CHEF AND THE SENIOR PASTRY CHEF.*



Source: <http://fjisisun.com.fj/2015/04/04/rosy-hearts-expands-into-damodar-city/>

!! Collect the role types from the Facilitator !!

- 3. Roles in this activity:**
 - a. Roleplayers –** you will need to select TWO people from your group to do the role play. Your task is the roleplay out the scenario, you are to use as much of your character and personality as you wish. Think about your languaging, your body language, what you are saying and how to approach the scenario. The observers will be looking at your roleplay and making some comments.
 - b. Observers –** your task is to observe the roleplay that is taking place between the KitchenHand and the Senior Pastry Chef.
- 4. Scenario in this activity:**
 - a. Refer to the separate pages for each Role Play (for those who will be roleplaying, DO NOT look at the other roleplayers instructions.**

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KITCHEN HAND – INSTRUCTIONS

- *You have been a kitchen hand for two years at this bakery and you enjoy your role a lot. You look forward to learning from the senior people in the business as you see them as mentors for your own learning.*
- *You have found out that the Assistant Pastry Chef is sick for the rest of the week.*
- *Normally it is their job to finalise the food order for the following week with the Senior Pastry Chef.*
- *Your task is to approach the Senior Pastry Chef to confirm the order in time.*
- *Take the order form below and double check with the Senior Pastry Chef:*
 - *Does he need to order anything else*
 - *Is the order correct*
 - *Can he/she sign the order form below to authorise the order*

BAKERY ORDER FORM	
<i>Item Required</i>	<i>Quantity</i>
Flour, 5kg	1
Baking Powder, Box	3
Baking Soda, Box	2
Eggs, tray	6
Milk, 1 litre	8
Butter, pound	8
Icing sugar, packet	1

Order taken by: _____ *Date:* _____

Order authorised by: _____ *Date:* _____

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SENIOR PASTRY CHEF – INSTRUCTIONS

- *You have been a senior pastry chef for eight years at this bakery and you are near retiring age. You are very professional in your work, everything is immaculate and you expect the same of your staff. Sometimes, you can come across as abrupt, some may even think you are rude and disrespectful; but you have been in this industry long enough to now that quality is no compromise.*
- *The Assistant Pastry Chef has been your apprentice and is doing very well with your instructions and how things should be laid out. However, the Assistant Pastry Chef is quite sick and away for the rest of the week.*
- *There is an order of items that need to be confirmed and so you gave this job to the Kitchenhand to collate and bring it back to you.*
- *The Kitchenhand has completed the order and requested to meet with you to go through the order.*
- *As you are very busy, you don't have time to teach the Kitchen-Hand all the detail and you have to leave in 5 minutes before the bank closes for the day.*
- *Also, you have just remembered you need to adjust the order, so need to let the Kitchen Hand know of some changes:*
 - *Double the flour order*
 - *There is plenty of eggs left so half that order*
 - *You also need some more vanilla essence*
 - *Some of the bread is going to be stale by next week, so get enough*
- *If you are happy with the changes the Kitchen hand has made, sign the form and complete the conversation accordingly*

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ROLE OBSERVERS – Instructions

- *Your role is to observe the roleplay and then complete the 'speaking frame' box below*
- *Hints are in italics below, to act as a guide.*
- *If you need to know more, watch this following video <https://youtu.be/wmTtpVr5sEE>*

<i>Scenario</i>	Process	Body Language	What was said exactly	What can be done in future?
	<i>What was the process that took place at the start, middle and end of the conversation?</i>	<i>What type of body language was being used by each of the role players?</i>	<i>Give some bullet points on key words or statements</i>	<i>Discuss what each role-player could do in future</i>
Start				
Middle				
End				

Embedded WRITING Idea – Concept Map

A concept map is a structured brainstorm that has specific prompts. In this case, these prompts are used to describe what an object 'is', 'has', 'does' and where it is 'found'.

Purpose of Concept Maps

- orients learners to new content
- provides you with a picture of their current knowledge
- provides a physical representation of the learners knowledge
- to compare with later learning

1. Watch the following YouTube Video

<https://www.youtube.com/watch?v=sZJj6DwCqSU>

2. Pick an example from the following list and do a concept map activity. You can use whiteboard or butcher paper – your choice

Teaching in Fiji	TVET teaching	Communication	Gardening
Reading	Fishing	Painting	Recycling
Music	History	Health	Leadership

3. List other examples that you can use a concept map for, in a vocational setting

4. Present back what you have discovered

5. Discuss why the concept map would be a helpful exercise to embed writing into learning activities



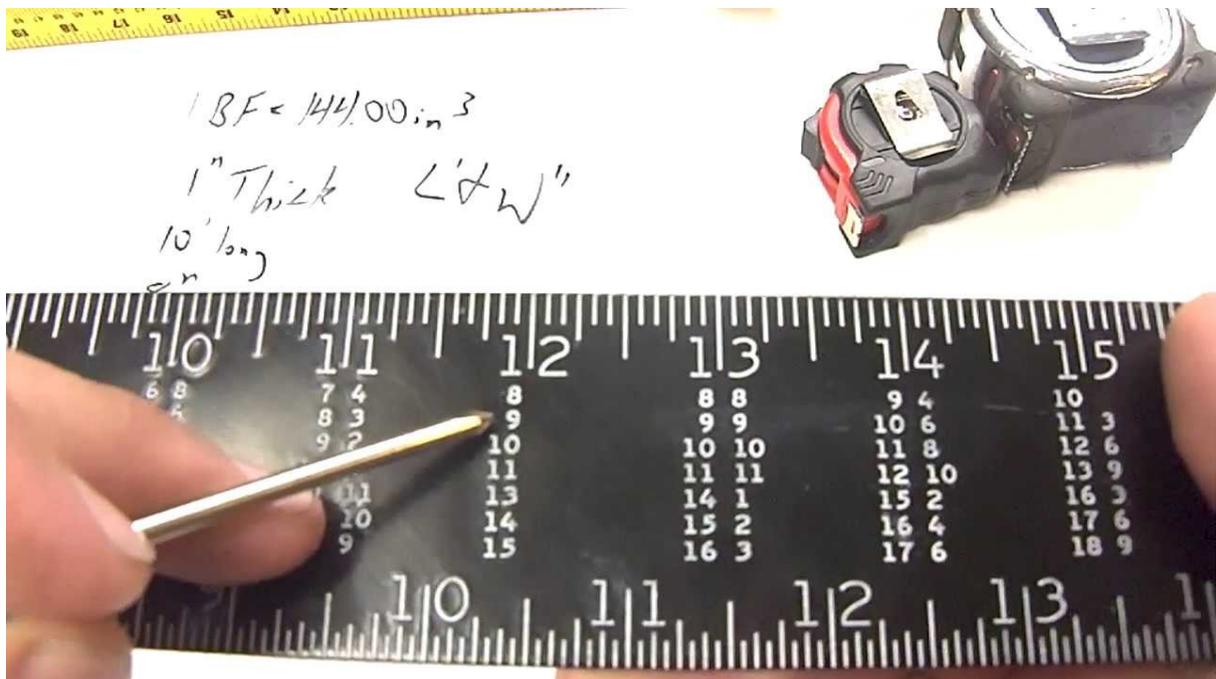
Source: <https://www.mindmeister.com/blog/why-mind-mapping/>

1. Embedded NUMBERS Idea – Trades specific numeracy questions

Trade-specific numeracy questions are designed to quickly get information about what learners already know and what knowledge gaps they appear to have. It's inevitable that not all learners will have all of the numeracy skills they need. Finding out what they don't know allows you to plan embedded numeracy activities to help fill the gaps.

Activity of describing numbers

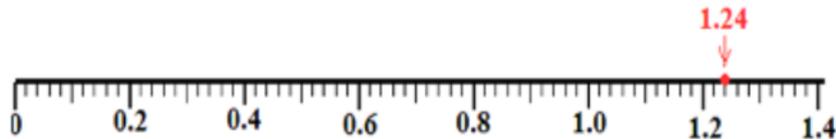
1. **Pair up in your group and one of the four examples on the next two pages**
2. **Go through the calculations together – remember, the exercise is the activity, so if you can't conclude an answer, move on to the next question**
3. **Present back to the wider group**
 - a. What questions were challenging and why?
 - b. What questions were achievable to answer and why?
 - c. Of the challenging questions, what could be done to source learning and answers about those questions?
 - d. If these types of questions were asked at the beginning of a teaching programme, would this be useful and why?
4. **Come up with another 1-3 questions for your particular example and test it with the rest of your wider group**



Source: <https://www.youtube.com/watch?v=4kjcO4LxxxU>

Assessment in an automotive context

1. Which measure is longer, 0.189mm or 0.2mm?
2. Ohms = $\frac{V}{A}$ Calculate the Ohms for 21V and 3A.
3. How many 250mL measures of oil are in a 4 litre container?
4. On the scale below indicate where readings of 1.3, 0.45, and 1.03 are



5. An odometer reading is given as

1	0	3	8	9	7
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After another 145km what will the new reading be?
6. Convert 1260 Ω to k Ω
7. What is the area of the inner circle



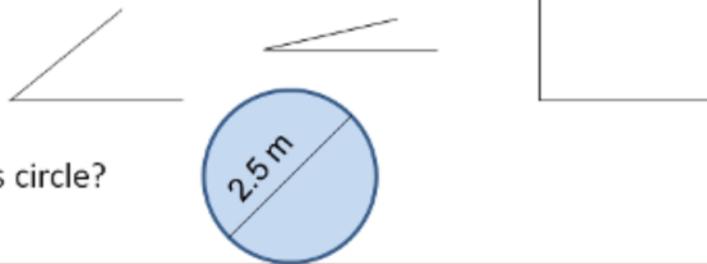
Assessment in a hairdressing context

1. $5 \times \$3 = \underline{\hspace{2cm}}$
2. $4 \times 20 \text{ minutes} = \underline{\hspace{1cm}}$ hours and $\underline{\hspace{1cm}}$ minutes
3. How many $\frac{1}{2}$ hour appointments in 3 hours?
4. You applied foils at 11.15 a.m. and you need to check the colour in 25 minutes. What time should you check the colour?
5. Which line is closest to 2 cm?
A. B.
6. Circle all 90 degree angles :



Assessment in a horticulture context

1. How would you estimate a metre length in a garden?
2. What is the area of a rectangular garden, 14m by 4m?
3. How many 250mL measures are in 3 litres?
4. If a fertiliser is applied at 300g per square metre, how much is required for 1 hectare?
5. On a plan the scale is 1 : 200 so a 3cm length on the plan is how many metres long?
6. Circle the 45° angle
7. What is the area of this circle?



Assessment in a cookery context

1. What temperature is showing on the thermometer?
2. Sirloin steak costs \$21.00 per kg. What is the cost of 4.5 kg?
3. How many 250 mL measures are in 3 litres?
4. What is 135% as a decimal?
5. An item costing \$40 is marked up 35%. What is the selling price?
6. The food cost for a recipe that serves 12 is \$60. What is the food cost per serve?
7. We take 350 g from a 1 kg bag of flour, how many grams are left in the bag?



Embedded MEASUREMENTS Idea – Trades specific numeracy questions

Many occupations require workers to either sketch or read from a plan or diagrams to:

- develop vocabulary to describe shapes, locations and spaces
- develop listening skills to interpret oral instructions or descriptions
- develop a sense of proportion and scale.

Activity of different shapes

- 1. In your group you will take turns at one person instructing and the rest drawing**
- 2. DO NOT SHARE YOUR PICTURE WITH THE REST OF YOUR GROUP**
- 3. Person 1 takes a copy of one of the pictures sheet attached on the next page**
 - a. The rest of the group has a sheet of paper and a pen
 - b. Person 1 describes to the others what to draw, by using explanations of shapes and directions (no body language)
- 4. Person 2 (and the rest of the group) need to draw the images on the sheet, guided by Person 1**
- 5. Change roles so that each person has a turn at an image**
- 6. When you have all had a turn at instructing and drawing, compare what has been drawn**
- 7. Ask and reflect on the following questions:**
 - a. how was the use of vocabulary?
 - b. What was difficult? What was easy?
 - c. Why would this be an important exercise to conduct?

DO NOT SHARE YOUR PICTURE WITH THE REST OF YOUR GROUP

Activity – Shape #1

DESCRIBE THIS IMAGE WITHOUT USING THE WORDS ‘SCISSORS’ – YOU HAVE TO USE WORDS THAT DESCRIBE SHAPE, LENGTH, ETC.



Source: <http://pluspng.com/png-hairdressing-scissors-2776.html>

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Activity – Shape #2

DESCRIBE THIS IMAGE WITHOUT USING THE WORDS 'CAR/AUTOMOBILE – YOU HAVE TO USE WORDS THAT DESCRIBE SHAPE, LENGTH, ETC.

