Trainer Pack

Module 5a

Promoting active learning in embedded literacy, language and numeracy

Promoting active learning in embedded LLN
This is a whole-day training event (5 1/2 hours). Trainers should be aware that the “Putting it into practice” session at the end of the training is extremely important and should not be rushed.

**Target Group**

**Job role:** Practitioners of vocational or other programmes and *Skills for Life* practitioners who are delivering embedded programmes. Organisations may choose to send pairs of practitioners who are working together in the delivery of embedded programmes.

**Sector:** Any

**What will the session be like?**

The training session will provide participants with opportunity to:

- focus on active learning approaches and why they are effective
- review practical strategies that support differentiation in group teaching and learning situations
- engage in and evaluate a range of active teaching and learning approaches to use in embedded teaching and learning sessions

**Participants will look at:** how effective, active teaching and learning strategies translate into activities to support embedded literacy, language and numeracy learning.

**Aims**

The module aims to: enable practitioners to extend their range of active and group teaching techniques to support their learners’ literacy, language and numeracy skills development.

**Outcomes**

By the end of the module participants will be able to:

- use a variety of strategies to promote active learning, including:
  - Bloom’s Taxonomy to formulate appropriately challenging objectives
  - differentiated activities for group teaching and learning
  - visual organisers as active thinking tools
  - effective questioning strategies
  - ‘decisions – decisions’ activities
- plan how they will use a variety of active learning strategies to support embedded LLN in their own teaching and learning sessions.
<table>
<thead>
<tr>
<th>Session</th>
<th>Content</th>
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</table>
| **1. Introduction** | Welcome, housekeeping and introductions  
Aims and outcomes for the session |
| **2. What is active learning and why does it work?** | ‘Oil change’ – using an active learning activity example to draw out:  
- the key characteristics of active learning  
- how activities can be used to involve and empower learners  
- how they can be used in embedded teaching and learning |
| **3. Bloom’s Taxonomy** | Introduction to Bloom’s Taxonomy – an aid to setting appropriately challenging questions and objectives.  
Applying Bloom’s Taxonomy to practical teaching and learning situations. |
| **4. Differentiation** | Defining differentiation  
Approaches to teaching and learning: using the differentiation mind map  
Which teaching and learning strategies differentiate best in group teaching situations?  
- Evaluating and ranking teaching methods by their capacity to differentiate  
- considering and sharing methods for improving differentiation using teaching methods that do not differentiate well |
| **5. Using visual organisers as active thinking tools** | Exploring and evaluating a range of visual organisers and their potential to improve learners’ understanding |
| **6. Questioning techniques** | Which questioning strategy? Analysing and evaluating commonly used approaches to questioning |
| **7. Active tasks for group work** | ‘Decisions, decisions’ activities  
Introduction to types of activity  
Fractions challenge – a differentiated ‘decisions, decisions’ activity |
| **8. Putting it into practice** | Prioritising and planning when and how to put active learning strategies into practice in embedded teaching and learning sessions. |
How is the course assessed?

There is no formal assessment of outcomes. However, participation in this session, followed by the implementation of new ideas, evaluation of, and reflection on, the impact of the change in teachers’ practice could contribute to participants’ Personal Continuing Professional Development Plans. This can form part of the requirement to complete at least 30 hours of CPD each year (pro rata for part time staff) in order for teachers to remain in good standing. Evidence of this professional development, and reflection on its impact, will be required for the professional development portfolio (See HO7).

This course maps to these professional standards:

Level 5 Award in Developing Embedded Approaches to Literacy, Language and Numeracy for Teachers in the Lifelong Learning Sector:

- **Unit 3** – ‘Planning embedded approaches for developing subject focussed knowledge and skills (element 4)

- **Unit 4** – ‘Implementing embedded approaches for developing subject focussed skills’ (elements 2&3)

- **Unit 6** – Planning embedded approaches for developing literacy and language skills (element 4)

- **Unit 7** – Implementing embedded approaches for developing literacy and language skills (elements 2&3)

- **Unit 9** – Planning embedded approaches for developing numeracy skills (element 4)

- **Unit 10** – ‘Implementing embedded approaches for developing numeracy skills’ (elements 2&3)

Trainer experience

Trainers must have:

- at least three years’ experience of teaching adult literacy, language and/or numeracy in Learning and Skills Council-funded provision

- at least one year’s experience of training

- a Certificate in Education or equivalent, together with specialist qualifications in teaching adult literacy, language and/or numeracy, or in working with learners with learning difficulties and/or disabilities

- undertaken the core curriculum training in literacy, numeracy, ESOL, the pre-entry curriculum and/or the Access for All guidance document, or appropriate other training
### Reference material for trainers
See **HO8** for - Useful Websites

### Equipment required
- Computer
- Data projector
- Screen
- Flipchart
- Marker pens (ensure that these are ‘dry wipe’ so that they can be used with R4: laminated sheets acting as mini whiteboards)
- Tissues (for wiping mini whiteboards)
- Sticky notes
- Sets of highlighter pens: green, yellow and pink

### Resources needed for reference during the session
**Provided by managing partner:**
None

**Provided by Development Adviser:**
It would be helpful, but not essential, to have copies of the following books:

**Provided by host organisation:**
- Examples of Standards Unit materials appropriate to subject/vocational area(s) represented
- Examples of Embedded Learning materials appropriate to subject/vocational area(s) represented
- Maths4Life booklets:
  - Fractions
  - Number
  - Measurement
  - Time and Money
  [www.nrdc.org.uk/publications.asp](http://www.nrdc.org.uk/publications.asp)

### Resources needed for participants to use during the session
**Provided by managing partner:**
- Delegate packs with Power Point presentations
- Sets of “Oil Change” activity cards (R1)
- Sets of “Three Bears” question cards (R2)
- Improving differentiation (HO3)
- Sets of “Which teaching strategies differentiate best?” activity cards (R3)
- Laminated A3 sheets of white paper – to act as mini whiteboards x10 (R4)
- Sets of “Fractions” activity cards (R5)

**Provided by Development Adviser:**
None

**Provided by host organisation:**
None
### Session plan and Resources for: Promoting active learning in embedded LLN

<table>
<thead>
<tr>
<th>Time</th>
<th>Content</th>
<th>Resources</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>15m</td>
<td><strong>Welcome</strong></td>
<td>TN1, PP2-3</td>
<td>Preparation and introduction Aims and objectives Reflection and Action Log</td>
</tr>
<tr>
<td></td>
<td>Welcome, housekeeping, introductions</td>
<td></td>
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<tr>
<td></td>
<td>Introduce Reflections and Actions Log</td>
<td>(Flip chart and sticky notes)</td>
<td></td>
</tr>
<tr>
<td>45m</td>
<td><strong>What is active learning and why does it work?</strong></td>
<td>TN2, R1, PP4, PP5</td>
<td>What is active learning and why does it work?</td>
</tr>
<tr>
<td></td>
<td><strong>Activity: ‘Oil change’</strong></td>
<td></td>
<td>Oil change activity cards</td>
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<tr>
<td></td>
<td>Purpose: to encourage participants to identify the characteristics and benefits of an active learning approach.</td>
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<td></td>
<td>• Participants work in small groups to sort cards showing stages in the process of changing oil in a car.</td>
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<td></td>
<td>• Discuss and record ways in which the activity promotes active learning and ways in which could be adapted.</td>
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<td></td>
<td>Background information on active learning:</td>
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<tr>
<td></td>
<td>• A definition of active learning</td>
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<td></td>
<td>• Learning pyramid – illustrating the effectiveness of different teaching and learning methods</td>
<td></td>
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<tr>
<td></td>
<td>• The main characteristics of active learning.</td>
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<tr>
<td>45m</td>
<td><strong>Using Bloom’s Taxonomy as an aid to setting appropriately challenging questions and objectives</strong></td>
<td>TN3, PP7, HO1, R2</td>
<td>Using Bloom’s Taxonomy as an aid to setting appropriately challenging questions and objectives</td>
</tr>
<tr>
<td></td>
<td>Introduction to Bloom’s Taxonomy</td>
<td></td>
<td>Bloom’s Taxonomy</td>
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<tr>
<td></td>
<td><strong>Activity: Applying Bloom’s Taxonomy to the story of ‘Goldilocks and the three bears’</strong></td>
<td>PP7, HO1, R2</td>
<td>Bloom’s Taxonomy</td>
</tr>
<tr>
<td></td>
<td>Purpose: to gain further insight into the practical application of Bloom’s Taxonomy</td>
<td></td>
<td>Three Bears question cards</td>
</tr>
</tbody>
</table>

Amended September 2009
### Activity:

**Purpose:** To enable participants to devise differentiated objectives for their own area

Each participant writes a ‘knowledge’ objective that they commonly set their learners on a Sticky note. They work in pairs/small groups to help each other devise more challenging versions of the objective – using Bloom’s Taxonomy as a guide.

**Summary:**

- **Bloom’s Taxonomy and its value in setting appropriate objectives and promoting deep learning**

### Differentiation – which teaching strategies differentiate best?

**Review:**

- Definitions and strategies

**Activity:**

**Purpose:** To evaluate teaching methods by their capacity to differentiate

- Participants sort teaching method cards into categories:
  - A. Can differentiate well
  - B. Can differentiate reasonably well
  - C. Does not differentiate well

### Car battery

**This battery has 6 signs to do with using and working on it safely**

**Summary:**

- **Surface and deep learning**

### Maths4Life cartoon

**Activity:**

**Purpose:** To use Bloom’s Taxonomy to help differentiate and to achieve deep learning

### Using Bloom’s Taxonomy to help differentiate and to achieve deep learning

### The Story: Goldilocks and the Three Bears

**Bloom’s Taxonomy (with added question prompts)**

- **Car battery**
- **Surface and deep learning**
- **Maths4Life cartoon**
- **Using Bloom’s Taxonomy to help differentiate and to achieve deep learning**

### Improving differentiation while using ‘weak’ teaching methods
<table>
<thead>
<tr>
<th>Duration</th>
<th>Section</th>
<th>Trainer Notes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>45m</td>
<td><strong>Using visual organisers as active thinking tools</strong></td>
<td>TN5</td>
<td>Using visual organisers as active thinking tools</td>
</tr>
<tr>
<td></td>
<td><strong>Introduction to visual organisers</strong></td>
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<td></td>
<td><strong>Activity:</strong></td>
<td>PP16-17</td>
<td>Using visual organisers as thinking tools</td>
</tr>
<tr>
<td></td>
<td><strong>Purpose:</strong> to explore and evaluate a range of visual organisers and</td>
<td>HO4</td>
<td>Choosing and using visual organisers</td>
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<td></td>
<td>their potential to improve learners' understanding</td>
<td></td>
<td>Mini whiteboards</td>
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<td></td>
<td>- Participants work in small groups to choose the most</td>
<td>R4</td>
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<td></td>
<td>appropriate visual organiser for a number of topics</td>
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<td>(3.15)</td>
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<tr>
<td>45m</td>
<td><strong>Questioning Techniques</strong></td>
<td>TN6</td>
<td>Questioning techniques</td>
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<tr>
<td></td>
<td><strong>The role of effective questioning in interactive group work</strong></td>
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<td></td>
<td><strong>Activity:</strong></td>
<td>PP18-19</td>
<td>Which questioning technique?</td>
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<td></td>
<td><strong>Purpose:</strong> to consider the advantages and disadvantages of a number</td>
<td>HO5</td>
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<td></td>
<td>of questioning techniques</td>
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<td></td>
<td>- Participants work in groups to evaluate a range of questioning</td>
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<td></td>
<td>techniques against one of 5 different criteria – then bring</td>
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<td>together and compare results.</td>
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<tr>
<td>45m</td>
<td><strong>Active tasks for group work – ‘Decisions, decisions’ activities</strong></td>
<td>TN7</td>
<td>Active tasks for group work – ‘Decisions, decisions’ activities</td>
</tr>
<tr>
<td></td>
<td><strong>Introduction to ‘Decisions, decisions’ activities</strong></td>
<td></td>
<td>‘Decisions, decisions’ activities</td>
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<td></td>
<td><strong>Activity:</strong></td>
<td>PP20</td>
<td>Matching</td>
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<tr>
<td></td>
<td><strong>Purpose:</strong> to evaluate a ‘Decisions, decisions’ activity</td>
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<td>Grouping</td>
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<tr>
<td></td>
<td>- Participants group (fractions) cards according to a range of</td>
<td>PP21</td>
<td>Ranking and sequencing</td>
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<td>criteria.</td>
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<td>PP22</td>
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<td>PP23</td>
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### Putting it into practice

Reminder of learning outcomes for the session.

**Activity:**

**Purpose:** to plan when and how to put ideas and strategies to practical use in embedded teaching and learning sessions.

Ask participants to return to their Reflections and Actions Log and:

1. **Prioritise implementation using a Diamond 9 activity**
2. **Share their ideas and actions with at least one other participant. Give and receive feedback.**
3. **Negotiate future ‘buddy’ support**
4. **Introduce Review and Reflection Sheet that can be used to record changes in practice and reflections**
5. **Share next steps**

Draw participants’ attention to HO8

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<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>HO6</th>
<th>R5</th>
<th>PP24</th>
<th>PP25</th>
<th>PP26</th>
<th>TN8</th>
<th>PP27</th>
<th>HO7</th>
<th>HO8</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>45m</td>
<td><strong>Putting it into practice</strong></td>
<td>Handout</td>
<td>Slide</td>
<td>Slide</td>
<td>Slide</td>
<td>Slide</td>
<td>Trainer notes</td>
<td>Slide</td>
<td>(Flip chart and sticky notes)</td>
<td>Handout</td>
<td>Putting it into practice</td>
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<td>5.30</td>
<td><strong>Objectives</strong></td>
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<td><strong>Reflection and Action Log</strong></td>
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<td><strong>Review and Reflection Sheet</strong></td>
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<td><strong>Useful websites</strong></td>
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**Evaluations and close**

**Evaluation forms**
**Preparation**

Before the start of the session prepare the following for each participant:

- A half sheet of flip chart paper (approximately A3 in size)
- 9 sticky notes

The sticky notes will be used at the end of each section of the training for participants to record an idea from that section that they will use within their own teaching and learning. At the end of the training session they will use the sticky notes in a ‘Diamond 9’ activity to plan how they will put the ideas into practice (see TN8).

Welcome the participants, make introductions, deal with matters of housekeeping and explain the focus of the day.

Go through PP2-3 to introduce the aim and learning outcomes for the day.

Give each participant a sheet of flip chart with the 9 sticky notes attached. Explain that this is their ‘Reflections and Actions Log’. They will be asked to record at least one idea from each section of the training that they can use in their own teaching and learning sessions. You will allow time at the end of each section for them to do so. Encourage participants to record their thoughts, ideas, and actions to help them to develop their embedded practice.

Remind participants (or remind your provider contact at a subsequent meeting) that it is very important that the Project Lead monitors how the outcomes of this training are taken forward – perhaps by asking staff to share at team meetings examples of how they have put ideas into practice.

N.B. There are six sections in the training session and nine sticky notes: so there is scope for participants to record more than one idea from a particular section.

Move briskly on to the next activity.
Skills for Life Support Programme

Aim

The aim of the course is:

to enable practitioners to extend their range of active and group teaching techniques, in order to support their learners’ literacy, language and numeracy skills development.

Objectives

Use a variety of strategies to promote active learning, including:

- plan how you will use a variety of active learning strategies to support embedded LLN in your own teaching and learning sessions
- Bloom’s Taxonomy to formulate appropriately challenging objectives
- differentiated activities for group teaching and learning
- graphic organisers as active thinking tools
- effective questioning strategies
- ‘decisions - decisions’ activities

PP2-3 PowerPoint slides

Aim and objectives
‘Oil change’ activity

Resources required:
Card sets made from R1 (1 set for each group of 3 – 4 participants)
Flipchart, pens

The aim of this ‘icebreaker’ activity is to encourage participants to identify the characteristics and benefits of an active learning approach.

1) Ask participants to work in pairs or small groups (no more than 4). Hand each group a set of cards (R1) showing different stages in the process of changing oil in a car (ensuring that they are in jumbled order). Ask the pairs/groups to sort the cards into the correct order. You may wish to set a time limit on this activity to add focus.

2) Go through the correct sequence so that participants have the ‘answer’.

3) Explain that this has been an example of an active learning activity. Then ask: “What was going on? What made this an active learning activity? In what ways does it promote learning?”

Tease out and flipchart responses, for example:
• It’s engaging
• presenting as a challenge makes it motivating
• you can draw on prior knowledge/experience – or that of peers
• pair/group work encourages discussion
• develops speaking and listening skills
• the written instructions are supplemented by visual cues
• you can explore different possibilities and reflect on best options
• different solutions can be explored.

4) Explain that this activity was devised by a LLN tutor from Northampton College, working in partnership with a Motor Vehicle tutor, to address the difficulty that learners were having in translating practical car maintenance skills in coherent written form into a Job Sheet.

The embedded LLN skills that she identified as being developed through this activity were:
• SLlr/E3.3 Listen for detail in explanations, instructions and narratives in different contexts.
• SLC/E3.1 Speak clearly to be heard an understood using appropriate clarity, speed and phrasing.
• SDL/E3.3 Respect the turn taking rights of others during discussions.
• RT/E3.7 Scan texts to locate information.
• RT/E3.9 Relate an image to print and use it to obtain meaning.

### Amended September 2009
Skills for Life Support Programme

- Wt/E3.3 Sequence chronological writing.
- Rw/E3.1 Recognise and understand relevant specialist key words
- MSS1/E3.3 Read, measure and record time
- MSS1/E3.7 Read, estimate, measure and compare capacity using standard and non-standard units
- MSS1/E3.8 Choose and use appropriate units and measuring units

You may wish to give a ‘broad brush’ summary of these skills or have previously written them on flipchart to reveal at this point – or copy the references into an additional PowerPoint slide.

Summarise the discussions by showing:

**PP4**
Firstly this gives a definition of active learning from Geoff Petty. Emphasise that active teaching strategies promote learning.

When you click again on the slide a ‘provocative’ statement – often used as an argument against moving towards more active teaching and learning approaches – appears. Gauge participants’ reaction to this statement before moving to the next slide, which emphasises the research evidence for the effectiveness of active learning strategies.

**PP5**
This ‘pyramid’ is based on research done by the National Training Laboratories, Maine, USA, in the 1960s. It illustrates that some teaching and learning methods are more effective than others in enabling learning. The diagram depicts the recall rate using different instructional methods. The upper four methods (listening, reading, audio-visual and demonstration) show learners receiving information but retaining little. The lower three methods (discussion group, practice by doing and teaching others or immediate use of learning) require learners to apply their learning, so the learning experience becomes increasingly interactive, engaging and multi-sensory.

**PP6**
Outlines the main characteristics of effective active learning (as described by Petty).

N.B. You can find out more about the research and theory behind active learning in
- Geoff Petty’s book ‘Evidence-based teaching’

**Reflection activity**
Ask participants to discuss with a partner ways in which the ‘oil change’ activity could be adapted and used for a process or procedure in their own skills area. Then ask each participant to record their idea on one of the sticky notes from their ‘Reflections and Actions Log’

N.B. You may wish to encourage more experienced participants to consider ways in which they could extend the activity to make it even more active – for example, by getting learners to use digital cameras to take photographs and make their own cards, or importing them into Microsoft® Photo Story to make an instructional video.
What is active learning and why does it work?

- “We learn by doing. Research shows that active learning is much better recalled, enjoyed and understood.
- Active methods require us to ‘make our own meaning’, that is, develop our own conceptualisations of what we are learning. During this process we physically make neural connections in our brain, the process we call learning.
- Passive methods such as listening do not require us to make these connections or conceptualisations.”

(Petty 2004)

The “teaching pyramid”

<table>
<thead>
<tr>
<th>Teaching methods and effective learning</th>
<th>Learning retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening</td>
<td>5%</td>
</tr>
<tr>
<td>Reading</td>
<td>10%</td>
</tr>
<tr>
<td>Audio-visual</td>
<td>20%</td>
</tr>
<tr>
<td>Demonstration</td>
<td>30%</td>
</tr>
<tr>
<td>Discussion group</td>
<td>50%</td>
</tr>
<tr>
<td>Practise by doing</td>
<td>75%</td>
</tr>
<tr>
<td>Teaching others, immediate use of learning</td>
<td>90%</td>
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</table>
Characteristics of effective active learning

Suitably challenging goals – they should:
• require the learner to think and process ideas, not to merely reproduce them.

Learners should:
• take responsibility for learning and be proactive.

Feedback should:
• include learner self-assessment
• be formative and constructive in order to improve the learning process.

Teaching and learning methods should:
• require the learner to search for, or ‘construct’ meanings
• link meanings to prior learning.
N.B. The information on the following pages shows oil change procedure in the correct order.

The pages should be printed in colour and each stage cut into an individual card – as indicated by the dotted lines – to be used in the activity.
Park your vehicle on level ground. Run the engine until warm. Jack up and support vehicle with axle stands.

Clean all road dirt and grease from around the sump plug and place oil change pan or suitable container underneath drain hole.
Using the appropriate size spanner or socket remove the sump plug.

**Warning: Oil may be hot**

Drain engine of all motor oil and dispose of it in an environmentally friendly manner.
Unscrew your old oil filter and clean mounting base. Remember to have a container in position for draining oil once filter is removed. 

**Warning: Oil may be hot**

Apply a film of new oil to the rubber gasket of the new oil filter. Make sure gasket is seated in the groove on the filter.
Screw the new filter onto the mounting base until the gasket just touches. Now tighten one full turn.

Clean sump plug and replace. Remember to fit a new copper washer.
Fill engine with recommended motor oil to the maximum level marked on the dipstick.

**Caution: Do not overfill**

Observe that the oil pressure light comes on. Run engine until light goes out, then raise the revs for 10-15 seconds. Then turn off engine.

Check oil level on the dipstick. Top up with motor oil to the maximum mark.

Start engine again and check for leaks.
<table>
<thead>
<tr>
<th>res no.</th>
<th>style</th>
<th>title</th>
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<tbody>
<tr>
<td>TN3</td>
<td>Trainer</td>
<td>Using Bloom’s Taxonomy as an aid to setting appropriately challenging questions and objectives</td>
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</table>

Introduce this section by referring back to PP6 and say that we are now going to look at strategies for setting learners suitable challenging goals: we are going to consider Bloom’s Taxonomy – a theory many participants will have heard of, but may not have applied readily to their teaching practice.

1) Show PP7 and draw participants’ attention to HO1 that shows Bloom’s Taxonomy for the cognitive domain in detail.

You may find it helpful to illustrate how the framework can be used to plan structured activities, by using an example such as the following (although you may prefer to use your own):

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>To be able to check your own working and problem-solving strategies or those of another, and recognise errors and omissions.</th>
<th>Harder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthesis</td>
<td>To be able to recognise a question as an arithmetic problem, and decide how best to solve it (e.g. to know which operation to use and when to divide).</td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td>To be able to break down an arithmetic problem expressed in words and to recognise the component parts.</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>To be able to succeed with 225 divided by 15 = and other similar examples.</td>
<td></td>
</tr>
<tr>
<td>Comprehension</td>
<td>To be able to explain how to divide with a calculator.</td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>To be able to recognise the divide sign on the calculator.</td>
<td>Easier</td>
</tr>
</tbody>
</table>

Draw participants’ attention to the fact that in order to meet all learners’ needs there should be a mix of mastery tasks and developmental tasks.

All learners can acquire mastery tasks in a short period of time regardless of their prior learning. They are an essential foundation for further learning, but, without challenge, many learners may not progress beyond this stage.

Developmental tasks stretch learners and develop the skills required for successful learning, for the world of work and for progression to the next educational level. They also create deep learning, that is, real understanding.

Without attention to Bloom’s Taxonomy when developing learning activities, there is a danger that only ‘surface’ learning will take place.
2) Explain that we’re now going to gain further insight into the practical use of Bloom’s Taxonomy by applying it to the story of ‘Goldilocks and the Three Bears’.

**Activity**

**Resources required:**
Sets of cards produced from R2 (1 set for each group of 3 – 4 participants)

Show PP8, which gives a quick reminder of the story. Then, asking participants to work in pairs/small groups, give out sets of the Three Bears Question Cards (R2).

Ask the pairs/groups to match the questions to the appropriate level in Bloom’s Taxonomy.

Show PP9 as a reminder of Bloom’s Taxonomy and give an overview of key prompt words at each level.

Allow approximately 5 minutes for this activity before seeking feedback. Go through the answers, stressing the words such as ‘list, ‘compare’, ‘evaluate’ that give a clue as to level. Emphasise that Bloom’s Taxonomy is not a strict hierarchy, but a framework for designing differentiated teaching and learning and setting more challenging objectives.

Allow time for comments/discussion. (You may wish to point out that in the Functional Skills standards, from Level 1, there is an explicit requirement for learners to evaluate/make judgements on fitness for purpose.)

3) Say that we are now going to apply Bloom’s Taxonomy to a common Health & Safety scenario.

Show PP10, which shows a car battery and draws attention to the safety signs on the battery before moving on to PP11.

This slide shows a close up of the safety signs and contains 4 graduated Health & Safety questions/objectives. Go through each question individually, encouraging participants to draw out what makes each question more challenging than the previous one. Then show the complete sequence.

Discuss how such differentiated questions could be used within a single session to give individual learners suitable challenging objectives – or could be used over time to encourage deeper, rather than surface learning.

4) **Activity**

**Resources required:**
Sticky notes
Flipchart paper

Ask each participant to think of a ‘knowledge’ objective that they commonly set their learners and write it on a Sticky note. Ask them to work in pairs/small groups to help each other devise more challenging versions of the objective – using Bloom’s Taxonomy as a guide. They should write each new objective on a separate Sticky note then stick the sequence on flip-chart paper provided for each table.

You will collect each table’s flip chart to display during break time.
5) Summarise this section by showing PP12-14:

PP12
Illustrates the difference between surface and deep learning. Many learners operating at the lower levels of Bloom’s Taxonomy can recall how to do a sum but cannot analyse a real-life problem to identify which mathematical operation is required to solve it.

(It may be worth pointing out that the Functional Skills standards – at all levels – require the application of skills to real-life scenarios.)

PP13 (optional)
This is a cartoon taken from the Maths4Life materials. It illustrates the difference between teaching and learning.

PP14
Summarises the messages of this section with a reminder that Entry-level learners need simple developmental tasks but similarly, Level 4 learners need mastery tasks to recall key points.

Reflection activity
Ask participants to think of a situation within their own teaching and learning where they could use Bloom’s Taxonomy to formulate questions that address different levels of skills/knowledge within a group and/or extend their learners’ thinking skills. Then ask each participant to record their idea(s) on one of the sticky notes from their ‘Reflections and Actions Log’
Using Bloom’s Taxonomy as an aid to setting appropriately challenging questions and objectives

Bloom’s Taxonomy

Hard

- evaluation
- synthesis
- analysis
- application
- comprehension
- knowledge

Easy

The story: Goldilocks and the Three Bears

Goldilocks wanders into the house of the Three Bears. She tastes their porridge, finding one bowl “too hot”, one bowl “too cold” and one bowl “just right”. Goldilocks also tries out their chairs, finding one chair “too big”, one “too small” and one “just right”. Then she tries out the bears’ beds, finding one bed “too hard”, one “too soft” and one “just right”. She falls asleep in Baby Bear’s “just right” bed. When the bears return, they find someone has been eating their porridge, sitting in their chairs and sleeping in their beds. They discover Goldilocks in the “just right” bed, and she runs away.
Bloom’s Taxonomy

<table>
<thead>
<tr>
<th>Level</th>
<th>Skill</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>Knowledge</td>
<td>who, what, when, where, how?</td>
</tr>
<tr>
<td></td>
<td>Comprehension</td>
<td>describing in own words, organisation of facts and ideas. Retell...</td>
</tr>
<tr>
<td></td>
<td>Application</td>
<td>problem solving, applying information to another context or to produce a result</td>
</tr>
<tr>
<td></td>
<td>Analysis</td>
<td>separation of whole into component parts. Compare/contrast, classify...</td>
</tr>
<tr>
<td></td>
<td>Synthesis</td>
<td>combination of ideas to form a new whole. What would you predict/infer from...?</td>
</tr>
<tr>
<td></td>
<td>Evaluation</td>
<td>development of opinions, judgements or decisions</td>
</tr>
</tbody>
</table>

Skills for Life Support Programme

This battery has six signs to do with using and working on it safely.
Skills for Life Support Programme

- What does each sign mean?
- These signs are in 3 different colour patterns. What does each colour pattern mean?
- What precautions would you take to ensure your safety and that of others?
- If you were a workshop foreman, how could you help new staff to learn about safety signs?

---

Skills for Life Support Programme

**Surface, and deep learning**

80% of 12 year olds can correctly divide 225 by 15. But only 40% can solve the problem:

*If a gardener has 225 bulbs to place equally in 15 flower beds, how many would be in each bed?*
Using Bloom’s Taxonomy...

...to help differentiate and to achieve deep learning

- Low-level tasks do not develop deep knowledge and understanding.
- Higher-level tasks cannot be carried out without understanding.
- Staying at the bottom of Bloom’s Taxonomy can lead to surface learning, that is, learning without understanding.
- The full spectrum of Bloom’s Taxonomy should appear at every academic level.
A mix of mastery and developmental tasks is required at all academic levels.

Mastery tasks enable weaker learners to succeed.

Developmental tasks stretch the more able and ensure deep understanding for all learners.

Developmental tasks:
For example:
“Evaluate the importance of full to high employment.”

“Report on the leisure time opportunities in Worcester city.”

Developmental tasks:
• are difficult
• are highly dependent on prior learning
• encourage slow development and require considerable effort
• create transferable learning of important thinking skills
• are more interesting, even to weak learners
• are vocationally and academically relevant
• create deep learning.

Mastery tasks:
For example:
“Recognise and name the main constituents of a cell.”

“Copy and label a diagram of a power station.”

Mastery tasks:
• are easy; 100% of learners can get them 100% right
• are not dependent on prior learning
• can be attained in a short time, perhaps minutes.
| Knowledge                          | List the characters in the story. |
|                                   | What were the bears eating?       |
|                                   | Where was Goldilocks when the bears found her? |

| Comprehension                     | Retell the events in the story in your own words. |
|                                   | Why was Goldilocks afraid of the bears? |
|                                   | Why was Goldilocks sleeping in Baby Bear's bed? |

| Application                       | Tell what might have happened if you had been Goldilocks. |
|                                   | Relate the story from the point of view of Baby Bear. |
|                                   | Use the information from the story to help you build a model of the bears' house. |

| Analysis                          | Compare Goldilocks' experience with that of Little Red Riding Hood. |
|                                   | Identify parts of the story that could happen to you. |
|                                   | Make a list of all the events in the story that indicate it is a fairy tale. |

| Synthesis                         | Combine art and drama to create a new ending for the story. |
|                                   | Suppose that Goldilocks had found the home of the Seven Dwarves. What might have happened? |
|                                   | What if Goldilocks had brought a friend to the home of the Three Bears? What might have happened? |

| Evaluation                        | Judge whether or not Goldilocks made a good decision by running away from the bears. Explain. |
|                                   | Pretend that Goldilocks was on trial for "breaking and entering." Decide whether or not you would find her guilty. Justify your decision. |
|                                   | Evaluate Goldilocks' behaviour as a guest in the bears' house. |
TN4

Trainer notes Which teaching strategies differentiate best?

N.B. HO3 should be a separate handout, not part of the participant pack

1) Firstly, establish participants’ understanding of the term ‘differentiation’. Ask them to brainstorm the differences between learners that they come into contact with every day.

Take feedback and record key points on a flip chart, e.g. learners will differ in terms of their:

- motivation
- prior experience and knowledge
- learning support needs
- literacy, language and numeracy level
- learning preferences etc

PP15

Introduce the Standards Unit definition of differentiation. Ask if participants agree with it or want to add anything from their own experience.

Draw participants’ attention to HO2 – Differentiation mind map – which identifies approaches to teaching and learning that can be adapted easily. They also relate to active learning and Bloom’s Taxonomy. (Participants may have already met this mind map in the ‘Using resources effectively to embed LLN’ session). Explain to participants that this is a useful overview that they may wish to use when planning variety into their future teaching and learning sessions.

2) Activity

Resources required:
Sets of cards produced from R3 (1 set for each group of 2 – 3 participants)

Participants should work in groups of two or three. Provide each group with a set of cards, produced from R3, that describe some commonly used teaching methods. Note that blank cards are provided for participants to add their own suggested teaching methods.

(If time is limited, the cards can be divided between adjacent pairs and each pair asked to explain their decisions to the other pair. This gives everyone a chance to reflect on all the approaches.)

The task for the group is to place each card in one of the following categories assuming the teaching method described is used in isolation:

A. Can differentiate well
B. Can differentiate reasonably well
C. Does not differentiate well

Ask participants to discuss each strategy and then to sort them under the three headings. (If some groups complete the task ahead of the others ask them to rank them for differentiation within each category – the best at the top, the worst at the bottom.)
Review the results by asking participants to walk round other groups’ classifications and to identify some key characteristics about which methods differentiate well or poorly.

Take feedback and comments. Note, as a generalisation, that:

- methods which differentiate best are those which are active, learner-centred and often open ended
- methods which differentiate least well are those which are teacher-centred and where the learner is passive.

3) Ask each group to select the teaching method that they consider to differentiate least well. Ask them to decide how they could make it differentiate better if they delivered it differently or incorporated other methods.

For example, ‘teacher talks or lectures’ would differentiate better if punctuated with questions and answers, or short sessions of group work, especially if the questions were high order and if sufficient ‘wait time’ and help was given to allow all learners to answer them.

Take feedback from participants on their suggestions.

Now distribute HO3, ‘Improving differentiation while using “weak” teaching methods’. Draw out some key points – relating particularly to the observations made by participants during the above tasks.

Reflection activity
Ask participants to spend a few minutes looking at the Differentiation mind map (HO2) and/or the summary of differentiation strategies in HO3. Ask them to choose at least one strategy (preferably one that they don’t use frequently at the moment) that they will try out with their learners. Ask each participant to record their idea(s) on another one of the sticky notes from their ‘Reflections and Actions Log’
One definition of differentiation

“Differentiation is the process of identifying and addressing the different needs, interests and abilities of all learners to give them the best possible chance of achieving their learning goals.”

*Improving differentiation in business education*
*Standards Unit Pilot Centres, Standards Unit DfES 2004*
**Differentiation**

**Differentiate by task, outcome and time allowed**

**Differentiate feedback, then set individual tasks and targets**

**Accommodate different learning preferences and support needs**

- Use Bloom’s Taxonomy and mix ‘mastery’ and ‘development’ tasks.
- Graduate tasks, for example from easy to hard on a worksheet.
- Set open tasks because stronger learners interpret them in a more demanding way. Expect more from more able learners.
- Differentiate resources, for example, use texts of different depth, breadth and/or difficulty.
- Differentiate time allowed by bite-sized progressive tasks.

**Set different tasks**

- Use ability groups.
- Use help sheets or writing frames.
- Use extension tasks.
- Use assignments with different criteria and targets.
- Use resource-based learning.
- Use independent learning.

**Differentiate feedback**

- Encourage reflection and self-assessment and ask learners to set themselves targets.
- Use ‘medal and mission’ feedback.
- Use activities with built-in feedback.

**Set learning plans**

- Individualised goals and targets based on initial and diagnostic assessment.
- One-to-one action plans.
- Use approaches and resources that appeal to a variety of learning style preferences, e.g., visual, auditory, kinaesthetic.

**Support learning**

- Make effective use of available learning support.
- Buddy up learners who can help each other.
- Use group work so that peers can support each other.
- Use e-learning to motivate and support learning.

**Peer checking**

- Make explicit use of peer checking.

**Peer tutoring**

- Make explicit use of peer tutoring.

**Learning teams**

- Make explicit use of learning teams.

Amended September 2009
Many of the teaching methods that do not differentiate well are those used to deliver information. Teachers cannot avoid using such methods, so it is worth considering how to make them differentiate better. General principles to suggest might be:

- setting tasks that are carefully graduated in difficulty
- setting explaining tasks
- setting higher-order tasks such as problem solving or evaluation.

The categorisation of the teaching method depends on exactly how it is used, so the following answers are only suggestions and assume the method is employed in a conventional way.

Note that the categories use the word ‘can’. ‘Can differentiate well’ is not the same as ‘does differentiate well’ in every context and circumstance. Every method, if used badly, will not differentiate well!

**A. Can differentiate well**

These methods might include:

- assertive questioning
- buzz groups (assertive style)
- learners creating a leaflet, poster or handout
- learners completing individual writing tasks – it depends on the task though
- graduated-question worksheets
- formative tests and quizzes
- experiments or practical ‘discovery styles’
- learners creating a handout
- case studies
- visits or visitors
- explaining tasks
- learners giving presentations
- guided discovery.

**B. Can differentiate reasonably well**

These methods might include:

- the teacher asking questions and leaving adequate ‘wait’ time for learners to answer them
- buzz groups
- paired learner practice
- peer checking
- teacher-led, whole-class discussions
- researching – this method does better if weak learners, or those not working well, are identified and given the help they need.
C. Do not differentiate well

These methods might include:
- teacher talks or lectures
- the teacher questioning learners, the learners answering
- teacher demonstrations
- learners watching a video or film – if this is done without questions or activities
- learners answering past exam questions – though this could differentiate well if the questions were graduated and of varied difficulty, allowing all learners to succeed and be stretched
- tests and quizzes
- experiments or practical ‘recipe styles’
- reading.

Improving differentiation while using ‘weak’ methods

What follows takes the methods that are often placed in category ‘C’, ‘Do not differentiate well’, and suggests how they could be adapted to differentiate better. The suggestions are debatable and depend on the precise way in which they are carried out and how the method is used.

Teacher talks or lectures

Teacher talks or lectures can be improved by keeping them short and punctuating them with questions and answers. This is especially effective if high-order questions are used with long wait times, and if the ‘assertive style’ answering approach is used.

Many teachers ‘teach to the middle’ all the time, but it is more effective to also ‘teach to the top’ and ‘teach to the bottom’ at least some of the time. For example, a teacher can sometimes make a challenging point, and sometimes state the obvious, or explain a point in a ‘simplistic way’ – with a warning that the explanation was rather simplistic, if necessary.

The teacher questioning learners, the learners answering

Mix mastery and developmental questions; use substantial ‘wait time’ and have high expectations of the quality of the answers; use ‘assertive questioning’ and so on.

Teacher demonstrations

The teacher could use questions such as, “Why am I doing it like this?” or “What would happen if I did it like that instead?”. The teacher can also ask learners to “Talk me through…” The learners then give the teacher instructions with reasoning, and the teacher follows these instructions, supporting the learners’ points if necessary.

Learners watching a video or film

Give learners questions that the film will answer before showing it. Make some questions mastery and some developmental.

Reading

Develop a range of differentiated materials at different reading levels, including some at a level below the learners’ current reading level and some that are almost at the level above. Then let learners choose, or alternatively prescribe, some texts to some learners. Use readability indices such as SMOG (simplified measure of gobbledygook), FOG or Flesch Reading Ease score (available in MS Word) to index and benchmark your learning resources.
<table>
<thead>
<tr>
<th>res no.</th>
<th>style</th>
<th>title</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3</td>
<td>Resource</td>
<td>Card set for ‘Which teaching strategies differentiate best?’ activity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher talks or lectures</th>
<th>Teacher questioning learners, the learners answering</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher gives a verbal input, explaining and describing etc, perhaps with the assistance of an overhead projector or board.</td>
<td>This involves “questions and answers” used in the traditional way. The teacher asks a question, then learners either put up their hands or call out the answer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher demonstrations</th>
<th>The teacher asks questions and leaves ‘thinking time’ before learners answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher shows learners how to do something. This could be a practical procedure. It could also be showing learners how to do something on the board or OHT. For example, a teacher showing learners how to punctuate a sentence or solve a numeracy problem.</td>
<td>The teacher asks a thought provoking, high order question, or at least an open question, and then leaves learners to work on it in pairs for, say a few minutes. Then the teacher asks for answers from volunteers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Buzz group</th>
<th>Assertive questioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners work in a small group for a few minutes to answer a question or complete a task. The teacher asks for volunteers to give their groups’ answers.</td>
<td>Learners are asked an open question. Learners work on this individually, or better in pairs, for one to five minutes. Teacher asks learners if they have an answer. If they don’t, help is given. Teacher nominates learners to give their answers, (not volunteers).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learners watch a video or film</th>
<th>Worksheets</th>
</tr>
</thead>
<tbody>
<tr>
<td>This involves watching the video or film. No other activity is set.</td>
<td>Learners are given a worksheet with a range of graduated questions: that is, questions that start easy and get harder.</td>
</tr>
<tr>
<td>Teacher-led whole class discussion</td>
<td>Learners creating a leaflet, poster or handout</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>The teacher asks learners a question and then volunteer learners, or nominated learners give their answer to the class. Some learners may also ask questions or make contributions.</td>
<td>Learners are given a ‘design brief’ such as ‘design a leaflet/poster/handout to summarise and explain the main reasons for using different types of engine oil.’ They work alone or in pairs to create it and then use it to explain their conclusions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Paired learner practice</th>
<th>Pair checking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners work in pairs to complete a written task that requires them to practise a skill demonstrated by the teacher. For example, doing calculations, punctuating a sentence etc.</td>
<td>Learners check each other’s work. For example check each other’s calculations, punctuation etc after this work has been done individually.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Explaining tasks</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners study worked examples (e.g. percentages, ratios) and then explain the ‘how’ and the ‘why’ of the method to each other in their own words. Or learners explain the key points of a lesson to each other at the end of that lesson. In both cases the teacher then gives model explanations.</td>
<td>Learners read texts relevant to the topic.</td>
</tr>
</tbody>
</table>

| Other method (please state) | Other method (please state) |
### Header cards

<table>
<thead>
<tr>
<th>Methods that can differentiate well</th>
<th>Methods that can differentiate reasonably well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods that do not differentiate well</td>
<td></td>
</tr>
</tbody>
</table>
Skills for Life Support Programme

<table>
<thead>
<tr>
<th>res no.</th>
<th>style</th>
<th>title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN5</td>
<td>Trainer notes</td>
<td>Using visual organisers as active thinking tools</td>
</tr>
</tbody>
</table>

PP16

As you introduce this topic show PP16, which shows some examples of visual organisers.

Visual organisers are powerful, active and immediately engage the large number of learners who have a strong visual learning preference. They also enhance the thinking and learning process for all other learners.

Our most successful learners, at present, are those who have a right-brained, auditory learning preference and who respond well to the linear teaching strategies used by a majority of teachers.

Most teachers use a limited range of visual representations frequently, for example mind maps. These often become descriptive activities, low on Bloom’s Taxonomy, rather than using high-level skills of analysis, synthesis and evaluation.

The use of visual organisers encourages learners to search for meaning and to summarise it in ways that promote higher-level skills and encourage deep learning. Many of these tools can be used together in a sequence to organise knowledge into a structure that supports writing.

Talk through the examples in HO4 offering illustrations, if necessary.

Draw particular attention to page 3 of HO4. This contrasts an analytical concept map with a descriptive concept map. A descriptive concept map cuts a topic, such as transport, into parts – such as land, sea and air transport – which may be a very useful way of examining the topic. However, Geoff Petty suggests that there is an alternative way of examining a topic by using a holistic concept map (see Chapter 10 in ‘Evidence-based Teaching – a practical approach’ Geoff Petty, Nelson Thornes (2006)) This involves looking at the whole topic of transport from different points of view, such as ‘environmental damage’, ‘cost per mile’ or ‘passenger convenience’ or other factors or issues. Geoff Petty uses the term ‘spectacles’ when learners are asked to analyse topics from different perspectives and to identify and analyse a number of different characteristics. This results in deep understanding of the topic because learners must explain, reason and compare and contrast different criteria in order to reach a conclusion. (We shall use this strategy in the ‘Which questioning strategy?’ activity.)

Findings can be summarised and described in visual form. Learners can then also plan a logical order in which to record their findings by transferring key words, notes or sentences about each feature or point of view into a table. This can become a structure for creating notes or writing, or for forming a writing framework (or scaffold) for a topic if necessary.
Activity

Resources required:
PP17
HO4

Show PP17 and ask participants to work in small groups to choose the most appropriate visual organiser for the seven topics shown on the slide. Allow approximately 10 – 15 minutes for this activity. (To save time you may wish to ask groups or pairs to focus on just two or three topics.)

Encourage participants to add other ideas of their own and to develop suggestions for visual organisers in their subjects.

After the allocated time has passed take feedback on the methods participants have chosen. Ask them to explain and justify why they have made these choices. Draw out the following points:

There is not necessarily a ‘right’ answer and various methods might work.

- Several visual organisers might be used together for different purposes.
- Visual organisers are useful for:
  - introducing a topic
  - learning tasks
  - group activities (learners like looking at each other’s representations)
  - summarising at the end of a lesson
  - structuring notes and writing.

Visual organisers are valuable, generic (transferable) tools and can be used in many situations. However, learners will need to be explicitly taught how to use them effectively before they become confident. Initially, it is best to use familiar content material to teach the skill – see the suggestions for introducing visual organisers on page 1 of HO4.

Activity:

Resources required:
R4 – A3 laminated sheets acting as mini whiteboards
Dry wipe marker pens
Tissues (for wiping the boards clean)

Ask participants to work in pairs. Hand out the ‘mini whiteboards’ and dry wipe marker pens. (You may wish to ask if participants have experience of using mini whiteboards in their teaching and learning sessions).

Say that you are going to give them 10 minutes to come up with a visual organiser representing what they have learned from the session so far.

After 10 minutes ask each pair to hold up their ‘mini whiteboards’ to show you and to show each other. Take feedback on the activity. Remind participants that a visual organiser may be a good way of asking their learners to summarise a topic.
Reflection activity
Ask participants to review the suggestions for introducing visual organisers and the examples in HO4. Ask them to identify at least one example of a visual organiser that they could use to support teaching and learning within their own area – and how they might introduce this. Ask each participant to record their idea(s) on one of the sticky notes from their ‘Reflections and Actions Log’
Using visual organisers as thinking tools

Use of visual organisers

Which visual organisers would be most appropriate for the following tasks?

1. Explain similarities and differences between maintenance and refurbishment in construction.
2. Explain how you could recognise the effectiveness of a personal fitness programme over a three-month period.
3. Describe a hazardous scenario in the workplace, what might happen as a consequence, and the steps you would take to deal with the situation.
4. Analyse different types of compost by type, cost, water retention ability and environmental impact.
5. Describe the procedures followed when an employee makes an official complaint.
6. Compare and contrast the characteristics of hard and soft timber for a) interior joinery and b) exterior joinery.
7. Describe the main kinds of computer printer, giving examples.
Visual organisers are powerful, active and immediately engage the large number of learners who have a strong visual learning preference. They also enhance the thinking and learning process for all other learners.

The use of visual organisers encourages learners to search for meaning and to summarise it in ways that promote higher-level skills and encourage deep learning. Many of these tools can be used together in a sequence to organise knowledge into a structure that supports writing.


Suggestions for introducing effective visual organisers

- Discuss with learners what visual organisers are and how they can be used to organise and summarise ideas and information.

- Show relevant examples of visual organisers such as flow diagrams, concept maps/spidergrams, Venn diagrams, tree diagrams, comparison tables, and charts.

- Use a visual organiser yourself to introduce a session, or fill in a visual organiser as you teach the session. Insert key words and ideas as you go.

- Give learners a blank visual organiser and ask them to fill it in with key words and ideas as the session progresses.

- Discuss some important key features such as use of:
  - key words for the topic
  - symbols such as arrows and connecting lines to signal relationships between ideas
  - potential to construct a framework for note making or writing.

- Show how the visual organiser can be used to make a framework for note making or planning writing.
Some examples of visual organisers

**Venn Diagram**

- Examples of input devices
  - non-examples

**Same and different Venn Diagram**

- noun
- verb

Encourage learners to use sticky notes or cards to sort and categorise examples. This helps them to discuss, to think and to reason ‘aloud’. For whole group work, use an interactive whiteboard.

**Same and different or comparison tables**

(e.g. with/without, before/after, strengths and weaknesses)

<table>
<thead>
<tr>
<th>Compare and contrast terry towelling nappies and disposable nappies</th>
<th>Different</th>
<th>Same</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry towelling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristic, feature, issue, ‘spectacle’</th>
<th>Islamic dietary laws</th>
<th>Jewish dietary laws</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prohibited items</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foods associated with religious festivals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food hygiene</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Amended September 2009
Learners make a plan using key words and making notes for writing. This enables them to make a descriptive writing scaffold.

Analytical mind map

Analytical criteria for this topic may include:
- cost per mile
- environmental impact
- convenience
- journey times

Learners summarise findings in a table using key words and making notes. This enables them to create an analytical writing scaffold.

<table>
<thead>
<tr>
<th>Criterion, factor, part, 'spectacle' etc</th>
<th>Description, explanation, change, characteristic etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Learners write here</td>
</tr>
<tr>
<td>B</td>
<td>Learners write here</td>
</tr>
<tr>
<td>C</td>
<td>Learners write here</td>
</tr>
<tr>
<td>D</td>
<td>Learners write here</td>
</tr>
<tr>
<td>etc</td>
<td>Learners write here</td>
</tr>
<tr>
<td>Evaluative conclusion</td>
<td>Learners write here</td>
</tr>
</tbody>
</table>
Skills for Life Support Programme

Continuum – in this case for wine

sweet  dry

Crossed continuum

expensive

cheap

Summarised as a comparison table

<table>
<thead>
<tr>
<th></th>
<th>Expensive</th>
<th>Cheap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Visual writing planning or visual display of an argument using sticky notes

so

this means

pros

cons
Skills for Life Support Programme

<table>
<thead>
<tr>
<th>res no.</th>
<th>style</th>
<th>title</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4</td>
<td>Resource</td>
<td>Mini whiteboards</td>
</tr>
</tbody>
</table>

Laminated A3 sheets of white paper – to act as mini whiteboards
Introduce this section by showing **PP18**

**PP18**

Whole group instruction is a teacher/trainer-centred activity, but it can be carried out well and interactively. The challenge for teachers/trainers is to intersperse input with learner interaction and feedback so that they can monitor learning and check understanding.

Common disadvantages of non-interactive, whole-group teaching are:
- there is no practice for learners, with little or no use of knowledge or reasoning
- there is no feedback – how will you know if anything has been learned?
- some learners opt out – some learners will not be listening
- some learners have poor concentration – even motivated learners ‘switch off’ after 20 minutes.

One of the best ways for teachers to get feedback on learning is to use effective questioning techniques.

**Activity**

Resources required:
5 sets of highlighter pens – green, yellow, pink

**HO5**

The purpose of the activity is to enable participants to consider the advantages and disadvantages of a number of questioning techniques. The table in **HO5** lists and describes various techniques. Comment that the activity itself models a ‘spectacles’ visual organiser approach to analysis and evaluation.

Show **PP19**, then refer participants to **HO5** and ask them to work in five small groups. Members of each group should discuss how the techniques stand up to scrutiny against one of the following five criteria (or ‘spectacles’) and rate each technique as:

- Green = good
- Yellow = OK
- Pink = poor

Criteria:
- **Teacher or trainer gets feedback** – teacher or trainer gets representative feedback on the quality of learners’ reasoning and understanding; they have an opportunity to think and tailor strategies for individuals or groups.
- **Learners get feedback** – a high proportion of learners receive feedback on the quality of their understanding, ideally improving it as a result.
- **Participation rate** – a high proportion of learners are engaged in trying to answer question;
- **Thinking time** – learners are likely to spend time thinking about the question and the quality of their answer;
- **Learner comfort** – learners are not put on the spot and are unlikely to feel humiliated by the teacher, trainer or other learners;
Ask each group to assume that each strategy is used habitually (that the teacher and learners are familiar with the technique).

Each group should complete one activity sheet (for the criteria they have been allocated).

Allow 10 – 15 minutes for this and then ask each group to display their activity sheet showing the ratings against their given criterion. Participants do a ‘gallery walk’ to get an overview of the ratings against all the criteria. Take feedback and comments.

Some suggested answers are given below. In many cases there is no definitive answer, as the effectiveness of the technique will depend on a number of factors.

<table>
<thead>
<tr>
<th>Questioning techniques</th>
<th>Teacher or trainer gets feedback</th>
<th>Learners get feedback</th>
<th>Learner participation rate</th>
<th>Learner thinking time</th>
<th>Learner comfort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question and answer: Volunteers answer. Teacher or trainer asks a question. Learners volunteer to answer.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
<tr>
<td>Question and answer: Nominees answer. Teacher or trainer asks a question and nominates person to answer.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
<tr>
<td>Buzz groups: Volunteers answer. Learners work in small groups to answer a thought-provoking question. Teacher or trainer asks each group in turn to contribute to part of the answer. A volunteer answers for their group.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
<tr>
<td>Buzz groups: Nominees answer. As above, but the teacher or trainer nominates the learner in each group who will contribute that group’s answer(s) after the discussion.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
<tr>
<td>Assertive questioning: Groups work on thought-provoking questions. Teacher or trainer asks individuals to give their group’s answer. As a whole class they then discuss the groups’ different answers and agree a ‘class answer’. Only then does the teacher or trainer reveal the correct answer.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
<tr>
<td>Pair checking: Teacher or trainer asks a question, then learners work alone to answer it. In pairs learners then compare answers, giving their partner one good point and one way their answer could be improved while the teacher or trainer observes and listens carefully.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
<tr>
<td>Giving answer: Teacher or trainer gives several answers, some correct and some not correct. Learners work in groups to identify the correct answer. Teacher or trainer asks individuals to justify their chosen answer. This can be linked with assertive questioning and pair checking.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
<tr>
<td>Using mini-whiteboards: The teacher or trainer asks a group a question and asks them to write their answers on the mini-whiteboard. The whole group is then asked to hold up their answers and the teacher/trainer checks the answers.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Pink</td>
<td>Green</td>
<td>Pink</td>
</tr>
</tbody>
</table>

Draw out the following points.

- The most commonly used methods (1 and 2) are least satisfactory.
- Effective methods allow collaboration, stimulate enquiry and communication, and allow thinking time.
- Effective feedback in whole-group teaching can create a self-correcting classroom.

Now ask participants to consider how and when each of the questioning techniques might best be used. This can be recorded in the blank space on the grid under the heading ‘When to use technique?’ Some suggestions might be:

- introducing a topic for the first time to a group
- imparting theory/information
- developing understanding
- provoking thought and the development of ideas
- encouraging analysis and evaluation
- revising a topic area
- sharing ideas.
This list can be added to.

More information and ideas on developing effective questioning techniques can be found on the QIA Gold Dust website http://golddust.bdalearning.com/

**Reflection activity**
Ask participants to identify a questioning technique that they would like to practise in their own teaching and learning – and how and when they might use it. Ask each participant to record their idea(s) on one of the sticky notes from their ‘Reflections and Actions Log’
<table>
<thead>
<tr>
<th>res no.</th>
<th>style</th>
<th>title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP18-19</td>
<td>PowerPoint slides</td>
<td>Questioning techniques</td>
</tr>
</tbody>
</table>

**Getting interactivity into whole-group instruction**

- Whole-group instruction is a teacher/trainer-centred activity.
- The challenge is to intersperse input with learner interaction and feedback.
- Common characteristics of poor practice:
  - There is no practice for learners
  - There is no feedback
  - Some learners opt out
  - Some learners have poor concentration.

**What are these questioning techniques good for?**

**Consider:**
- Participation rate
- Teacher's feedback
- Learners' feedback
- Learner comfort
- Thinking time.
Effective questioning is a powerful way of bringing about, and checking on, understanding.

To use questions effectively you should:

- ask open questions which cannot be answered with ‘yes’ or ‘no’. These questions encourage learners to think and give reasons for their response and to give longer answers
- ask closed questions only to elicit factual answers – avoid them unless they are absolutely appropriate
- use a tone of voice that shows interest, concern and friendliness
- ask only one question at a time and wait for the answer – learners need time to think
- ask questions that can help learners to explore a topic more deeply from all sides
- be careful about the level of language used to make sure that your questions are understood, and give thought to a learner’s ability to provide an answer.

The table on the following pages examines a range of questioning techniques.

Work in a small group to discuss how the techniques stand up to scrutiny against one of the following five criteria and rate each technique as: Green = good Yellow = OK Pink = poor

Criteria:

- **Teacher or trainer gets feedback** – teacher or trainer gets representative feedback on the quality of learners’ reasoning and understanding; they have an opportunity to think and tailor strategies for individuals or groups
- **Learners get feedback** – a high proportion of learners receive feedback on the quality of their understanding, ideally improving it as a result
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- **Thinking time** – learners are likely to spend time thinking about the question and the quality of their answer
- **Learner comfort** – learners are not put on the spot and are unlikely to feel humiliated by the teacher, trainer or other learners.

Assume that each strategy is used habitually (that the teacher and learners are familiar with the technique).
**Skills for Life Support Programme**

**What are these techniques good for?**

<table>
<thead>
<tr>
<th>Questioning techniques</th>
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<th>Learners get feedback</th>
<th>Learner participation rate</th>
<th>Learner thinking time</th>
<th>Learner comfort</th>
<th>When to use technique?</th>
</tr>
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<tbody>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Giving answer: Teacher or trainer gives several answers, some correct and some not correct. Learners work in groups to identify the correct answer. Teacher or trainer asks individuals to justify their chosen answer. Teacher or trainer asks individuals to justify their chosen answer. This can be linked with assertive questioning and pair checking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using mini-whiteboards. The teacher or trainer asks a group a question and asks them to write their answers on the mini-whiteboard. The whole group is then asked to hold up their answers and the teacher/trainer checks the answers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Show **PP20** as you introduce this section:

We have seen that high-order tasks promote deep learning at all levels. Higher-order tasks help weaker learners develop real understanding (deep learning). They can also challenge the most able.

High-order tasks such as evaluation, synthesis, analysis and so on are not necessarily difficult. The distinction between high- and low-order tasks is not their difficulty but the mental processes involved. In particular, high-order tasks require understanding.

Low-order tasks only require recall, and understanding may be minimal or even non-existent.

‘Decisions, decisions’ activities involve simple high-order tasks. Learners usually work in small, collaborative groups, though they can work alone. Tasks often involve cards with single words, sentences, and short descriptions – such as vocational scenarios – diagrams, photographs, and mathematical expressions – almost anything. The task is then to match, group or rank these cards in some way, or to treat the cards as labels and place them on a diagram or map.

‘Decisions, decisions’ activities are great fun, develop deep learning, allow misunderstandings to be checked and corrected, and give feedback to the teacher on levels of understanding.

The activities can be designed to take very little or a lot of time. They can also be effectively adapted for use on an interactive whiteboard.

Remind participants that we have already done a number of ‘Decisions – Decisions’ activities during the course of the session: ‘Oil change’, ‘Three Bears questions’, ‘Which teaching methods differentiate best’.

**PP21-23** give more detail on some common types of ‘Decisions – Decisions’ activities:

**PP21** Matching

**PP22** Grouping

**PP23** Ranking and sequencing

Point out that there is much more information in **HO6** in the participant packs.

**Activity**

**Activity**

**Resources required – **R5:**

- Approximately 5 ‘Classifying Fractions A1’ sheets (printed on **yellow** card)
- Matching number of ‘Classifying Fractions A2’ (printed on white paper) cut up into individual cards
- Approximately 5 ‘Classifying Fractions B1’ sheets (printed on **green** card)
- Matching number of ‘Classifying Fractions B2’ (printed on white paper) cut up into individual cards
- Approximately 5 ‘Classifying Fractions C1’ sheets (printed on **blue** card)
Matching number of ‘Classifying Fractions C2’ (printed on white paper) cut up into individual cards

Introduce the activity by saying that you are going to ask participants to work in pairs to do a differentiated ‘Decisions – Decisions’ activity that involves classifying fractions.

Establish which participants feel confident/less confident about tackling a numeracy/fractions activity. Be reassuring and say that you will try to give pairs an appropriately challenging activity. With less confident groups you may wish to revise terms such as ‘denominator’ and ‘numerator’ – perhaps showing some examples.

Give least confident pairs Set A1/A2, and the most confident Set C1/C2 – in between, Set B1/B2

Pairs should sort the fractions on the cards according to Denominator/Numerator and the size of the number – demonstrate, if necessary. Blank cards are provided so that when they have completed the initial sort they can write more fractions to fit into any sections of their grid. (N.B in the full Maths4Life activity there is a blank grid and a set of blank cards so that the activity can be extended to give learners the opportunity to make up all the examples themselves.)

Allow approximately 15 – 20 minutes for participants to carry out the activity (giving a more challenging set to those who whizz through A1/A2 etc.). Then bring participants together to discuss the activity – what learning is taking place?

Draw out that it encourages learners to:
• practise terminology
• develop speaking and listening skills
• find strategies for comparing fractions/decimals
• identify and compare reasons for dividing them into sets and sub-sets
• discuss their thinking

How does this compare with doing a comparable worksheet?

PP24-26 Show possible answers for each fractions set.

Now ask participants to look through the examples in HO6 and come up with at least one way in which they could use a ‘Decisions – Decisions’ activity in their teaching – particularly related to embedding LLN.

Ask participants to share their ideas with the whole group.

Reflection activity
Ask each participant to record their idea(s) on one of the sticky notes from their ‘Reflections and Actions Log’

Make sure that participants are aware of the Standards Unit materials and the resources from the Teaching and Learning Programme, which contain many ‘Decision – Decisions’ activities, adapted to a wide range of vocational areas. It will also be a good opportunity to show the wealth of ‘Decisions – Decisions’ activities in the Maths4Life materials

(N.B. You may wish to use an activity from the Standards Unit materials, the Teaching and Learning Programme or Maths4Life resources instead of the Fractions activity described above.)
Skills for Life Support Programme

<table>
<thead>
<tr>
<th>res no.</th>
<th>style</th>
<th>title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP20-26</td>
<td>PowerPoint slides</td>
<td>Active tasks for group work – ‘Decisions, decisions’ activities</td>
</tr>
</tbody>
</table>

Skills for Life Support Programme

‘Decisions, decisions’ activities

Matching

- Issue
- Question
- Solution
- Answer
- Recipe

Ranking

- First
- Last

Sorting

Labelling

- Africa
- Europe
- Asia
- Australia
- South America

Matching

Scan

To look over a text very quickly, trying to find information by locating key words.

\[ y = 4x - 7 \]

\[ x = \frac{(y + 7)}{4} \]

Match:

- Question and answer
- Problem and solution
- Technical word and meaning
- Parts and their function
Grouping

- run
- love
- talk
- sit
- write
- blue
- tree
- flute

Group:
- agree, disagree, don’t know
- sometimes true, always true, never true
- classify items.

Put some spurious cards in too!

Ranking and sequencing

Rank by time, order, or by a ‘continuum’ for example.
- Put the cards in time order.
- Rank actions to create a database query.
- Rank by least and most effective, important, useful, serious, and so on.

1/4  2/3  2 1/2

- Turn off electricity
- Check ABC
- Ring 999
### Answer A1

**CLASSIFYING FRACTIONS - A1**

<table>
<thead>
<tr>
<th>Denominator 1</th>
<th>Denominator 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>1/3</td>
</tr>
<tr>
<td>1/4</td>
<td>2/3</td>
</tr>
<tr>
<td>9/2</td>
<td>23/74</td>
</tr>
<tr>
<td>2/3</td>
<td>7/2</td>
</tr>
<tr>
<td>3/2</td>
<td>4/3</td>
</tr>
<tr>
<td>17/3</td>
<td></td>
</tr>
</tbody>
</table>

### Answer B1

**CLASSIFYING FRACTIONS - B1**

<table>
<thead>
<tr>
<th>Denominator 1</th>
<th>Denominator 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/5</td>
<td>5/11</td>
</tr>
<tr>
<td>2/5</td>
<td>5/12</td>
</tr>
<tr>
<td>3/5</td>
<td>5/10</td>
</tr>
<tr>
<td>8/5</td>
<td>5/2</td>
</tr>
</tbody>
</table>
Skills for Life Support Programme

Answer C1

Classifying Fractions - C1

<table>
<thead>
<tr>
<th>Denominator 1</th>
<th>Numerator 1</th>
<th>Denominator 2</th>
<th>Numerator 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/5</td>
<td>2/5</td>
<td>13/5</td>
<td></td>
</tr>
<tr>
<td>3/5</td>
<td>5/5</td>
<td>12/5</td>
<td></td>
</tr>
<tr>
<td>8/5</td>
<td>4/5</td>
<td>11/5</td>
<td>10/5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5/2</td>
<td></td>
</tr>
</tbody>
</table>

Amended September 2009
The following are required from this resource:

- Approximately 5 ‘Classifying Fractions A1’ sheets (printed on yellow card)
- Matching number of ‘Classifying Fractions A2’ (printed on white paper) cut up into individual cards
- Approximately 5 ‘Classifying Fractions B1’ sheets (printed on green card)
- Matching number of ‘Classifying Fractions B2’ (printed on white paper) cut up into individual cards
- Approximately 5 ‘Classifying Fractions C1’ sheets (printed on blue card)
- Matching number of ‘Classifying Fractions C2’ (printed on white paper) cut up into individual cards
CLASSIFYING FRACTIONS – A1

<table>
<thead>
<tr>
<th>Less than one</th>
<th>Denominator 2</th>
<th>Denominator 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than one</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## CLASSIFYING FRACTIONS – A2

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2</td>
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</tr>
<tr>
<td>4</td>
<td>7</td>
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</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2374</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CLASSIFYING FRACTIONS – B1

<table>
<thead>
<tr>
<th>Denominator 5</th>
<th>Numerator 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ( \frac{1}{2} )</td>
<td></td>
</tr>
<tr>
<td>Equivalent to ( \frac{1}{2} )</td>
<td></td>
</tr>
<tr>
<td>More than ( \frac{1}{2} )</td>
<td></td>
</tr>
</tbody>
</table>
### CLASSIFYING FRACTIONS – B2

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Equivalent Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\frac{2}{5})</td>
<td>(\frac{1}{5})</td>
</tr>
<tr>
<td>(\frac{5}{10})</td>
<td>(\frac{3}{5})</td>
</tr>
<tr>
<td>(\frac{4}{5})</td>
<td>(\frac{5}{11})</td>
</tr>
<tr>
<td>(\frac{5}{12})</td>
<td>(\frac{5}{2})</td>
</tr>
<tr>
<td>(\frac{8}{5})</td>
<td></td>
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<td></td>
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</tbody>
</table>
# CLASSIFYING FRACTIONS – C1

<table>
<thead>
<tr>
<th>Denominator 5</th>
<th>Numerator 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 0.4</td>
<td></td>
</tr>
<tr>
<td>More than 0.4 and less than 0.8</td>
<td></td>
</tr>
<tr>
<td>Equal to or more than 0.8</td>
<td></td>
</tr>
</tbody>
</table>
## CLASSIFYING FRACTIONS – C2

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/5</td>
<td>Proper Fraction</td>
</tr>
<tr>
<td>1/5</td>
<td>Proper Fraction</td>
</tr>
<tr>
<td>5/10</td>
<td>Proper Fraction</td>
</tr>
<tr>
<td>3/5</td>
<td>Proper Fraction</td>
</tr>
<tr>
<td>4/5</td>
<td>Proper Fraction</td>
</tr>
<tr>
<td>5/11</td>
<td>Improper Fraction</td>
</tr>
<tr>
<td>5/12</td>
<td>Improper Fraction</td>
</tr>
<tr>
<td>8/5</td>
<td>Improper Fraction</td>
</tr>
<tr>
<td>___</td>
<td>___</td>
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<td>___</td>
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</table>
We have seen that high-order tasks promote deep learning at all levels. Higher-order tasks help weaker learners develop real understanding (deep learning). They can also challenge the most able.

High-order tasks such as evaluation, synthesis, analysis and so on are not necessarily difficult. The distinction between high- and low-order tasks is not their difficulty but the mental processes involved. In particular, high-order tasks require understanding.

Low-order tasks only require recall, and understanding may be minimal or even non-existent.

‘Decisions, decisions’ activities involve simple high-order tasks. Learners usually work in small, collaborative groups, though they can work alone. Tasks often involve cards with single words, sentences, and short descriptions – such as vocational scenarios – diagrams, photographs, and mathematical expressions – almost anything. The task is then to match, group or rank these cards in some way, or to treat the cards as labels and place them on a diagram or map.

‘Decisions, decisions’ activities are great fun, develop deep learning, allow misunderstandings to be checked and corrected, and give feedback to the teacher on levels of understanding.

The activities can be designed to take very little or a lot of time. They can also be effectively adapted for use on an interactive whiteboard.

**Some examples of ‘Decisions, decisions’ activities**

**Matching**

\[ Y = X - 7 \]

Y has the same value as X with 7 taken from it

Match:
- technical terms and their meanings
- question and answer
- problem and solution
- parts and their functions.

As learners become more confident, include spurious cards because these make learners think!
**Grouping**

Choose one group from each row:
- rat, pen, tree, flute
- run, love, sit, write
- ask, and, blue

Group:
- agree; disagree; do not know
- sometimes true; always true; never true.

You can make a grouping activity whenever a topic includes a classification, for example different types of energy, diseases, tools, theories, models, and so on.

**Sequencing**

For example: what to do when someone has an electric shock.
Put the following cards in order.

- Turn off electricity
- Check airways
- Ring 999
- Give artificial respiration

Sequence:
- sentences or paragraphs of text, or calculations
- actions to create a database query.
Ranking

Putting cards in order of size, effectiveness, importance, time taken, and so on.

Rank the main causes of the ‘credit crunch’:

Any useful continuum can be used for ranking. For example, effectiveness, importance, cost, ease of implementation, efficiency, and so on.

Labelling

In this case the cards are labels that the learner must place correctly on a diagram or map, or even a worked example.

(You are quite right: Iran is not in Africa!) But well-chosen spurious cards can act as distracters to make good learning points. They can also be great fun. Consider them for all ‘decisions, decisions’ games.

Other labelling games include labelling diagrams, computer programs, worked examples, photographs, paintings, and so on.
Question typing

This can be used in any subject or at any level.

<table>
<thead>
<tr>
<th>Add</th>
<th>Subtract</th>
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<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Multiply</th>
<th>Divide</th>
</tr>
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<td></td>
<td></td>
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</tbody>
</table>

How many cars do I need if each car carries five people and I have 23 people to transport?

Learners place the cards in the correct section.

1. Teacher asks the bridging question: “How did you do that?”
2. Learners formulate their concept of how-to ‘type’ questions in their own words.
3. Teacher establishes the correct formulation, leaving it in the learner’s own words.
4. Teacher asks the second bridging question if necessary: “Where else could you use that approach?”
Answer typing

Learners are given cards with answers to questions or paragraphs of text to classify in a similar way as above. The classification categories are answers suitable for, for example, ‘state’, ‘describe’, ‘analyse’, ‘evaluate’, ‘none of these’, and so on. The aim is to learn assessment language.

Evidence typing

Learners are given cards of text describing evidence and they must classify them under which competence they would be appropriate evidence for. Some evidence is not appropriate for any competence. Similar approaches can be used to develop an understanding of assessment criteria.

Grouping games: some examples

Groups are given a set of, say, 30 cards, each of which has a different phrase with an underlined word. For example, ‘The fox ran quickly into a hole’. Learners must sort the underlined words into nouns, adjectives and adverbs. Each group has the same set of cards.

This game, and the others below, are made more difficult and more fun if some of the cards cannot be grouped correctly. For example, incorporate some cards that have words that are not nouns, adjectives or adverbs.

Similar games can be devised for learners to practise classifying:

- metaphors, similes and personification
- examples of conduction, convection and radiation
- igneous, sedimentary and metamorphic rocks
- valid and invalid arguments for the increased crime rate in cities
- errors in punctuation under ‘comma’, ‘full stop’, and so on
- valid and invalid evidence for competences.

Classifications that are useful include:

- true; sometimes true; false
- often; sometimes; never
- agree; do not know; disagree.

- Maths learners are given cards with expressions such as ‘$x + 3 > 2$’ or ‘$y – 7 < y – 2$’ and which they have to sort these into three groups: ‘always true’, ‘sometimes true’ and ‘never true’.

- Learners with learning difficulties are given photographs and drawings of clothes that they might, or might not, take on a trip. These are grouped as: ‘everyone needs it’, ‘no one needs it’, ‘our group only needs one of these’.

- This game is good for ‘question typing’. For example, Physics learners are given cards with examination-style problems on them. They are not asked to do the problems but to sort them by what principle they would use to solve the problem. For example, ‘use momentum’, ‘use conservation of energy’, ‘use equations of linear motion’. Learners often find deciding the appropriate principle more difficult than doing the question, so this can greatly improve their performance. The same or similar approaches can be used in most subjects.
Ranking games: some examples

Ranking by time

- Business Studies learners are given a set of cards, each of which describes an activity that prepares for the launch of a new product. The learners are to sort the cards into the correct chronological order.
- Learners with learning difficulties are given photographs of various stages for making a cup of tea. Each stage has a short descriptive phrase such as ‘boil the water’. Learners must place these in the proper time order.
- Plumbing learners are given cards that describe the process of fitting a new central heating system. They must place them in the order that the tasks would be done.
- Learners of First Aid are revising how to respond to a medical emergency. They are given cards with phrases such as ‘ring 999’, ‘check airways and breathing’, ‘turn off the electricity’ and must place them in the correct order.

In all these games spurious cards are helpful to develop the concepts concerned.

Ranking in other ways

Learners can sort cards into orders of priority or characteristics, for example:

- “Place these diseases into order of infectiousness.”
- “Place these reasons for the war in order of importance.”
- “Place these wines in order of sweetness.”
- “Place these care plans in order of effectiveness.”
- “Place these marketing strategies in order of costliness.”

Cards can be ranked by any characteristic imaginable. Ranking is very highly adaptable and involves learners in evaluation, which is a high-order thinking skill.

Again there can be spurious cards, for example false reasons for the war.

You can match with the ranked cards, too. For example, you can have red ‘problem cards’ to match with the part of a process which might cause this problem if not carried out properly.

Matching games

As well as grouping, sequencing, ranking and labelling, learners can also be asked to match cards.

Science learners are given a set of cards describing energy transformations and another set describing processes. They have to match each ‘process card’ with the appropriate ‘energy change card’. So, they end up with pairs such as:

A rock falling off a cliff

Gravitational potential energy being converted into kinetic energy

Learners can also be asked to match:

- questions and answers
- problems and solutions
- words or phrases with their definitions.
All of these games are made more difficult, and more fun, by adding spurious cards that must be rejected – for example, giving two or three alternative definitions, only one of which is correct. Clearly, only your imagination limits the adaptation of such games to any conceivable topic or purpose.

Consider getting learners to write question and answer cards for other learners to match. Writing the questions and answers is an excellent activity in itself, as well as saving you time.

**Making use of ‘Decisions, decisions’ in my subject**

- Using the notes above, think of as many activities as you can in your subject under the categories of matching, grouping, sequencing, ranking and labelling.
- Choose a topic that you teach which is conceptually difficult and think of some ‘decisions, decisions’ activities for this. The game is particularly powerful for concepts that learners often confuse; for example, learners can be taught the difference between energy and power, or diffusion and osmosis, by sorting cards describing examples of both.
- Choose a ‘wordy’ topic, where there is a tendency for the teacher to spend a lot of time talking to learners, and try to devise a ‘decisions, decisions’ activity for this.
- Think of as many topics for games in your teaching as possible.

Matching:

Grouping:

Sequencing:

Ranking:

Labelling:

Show PP27 (which is a repeat of PP3) showing the learning outcomes for the session. Use the right-hand side of the mind map to review what has been covered in the session, then indicate the final learning outcome on the left hand side: ‘plan how you will use a variety of active learning strategies to support embedded LLN in your own teaching and learning sessions.’

Ask participants to return to the flipchart and sticky notes that they have been using as their ‘Reflections and Actions Log’ throughout the session. By now they should have recorded at least 6 ideas/active learning strategies that they can use to support embedded LLN in their own practice. Hopefully, most participants will have recoded ideas on all 9 sticky notes – indeed, some may have more. Spend a short time asking participants to discuss and review the training session and support each other in either identifying additional strategies or prioritising to ensure that they each have 9 sticky notes to use in the final activity.

Explain that participants are going to use a ‘Diamond 9’ activity to help prioritise and plan how they are going to implement the active learning strategies that they have identified to use in their own teaching and learning. Participants should arrange their 9 sticky notes on the flip chart in a ‘diamond’ as shown below. (You may wish to demonstrate with your own sticky notes). The aim is to decide the order in which they are going to put each of their chosen ideas into practice: the one they are going to implement first (hopefully within the next week) at the top, the next two below, and so on… Encourage them to note down an implementation date/timescale for each level of the Diamond 9.

They may need to take into consideration factors such as:
- how long it might take to access the required resources
- when a suitable topic occurs in their SOW
- whether they will use the strategy to introduce, reinforce or summarise a topic, etc.

(Of course, the Diamond 9 is another active learning strategy – ‘decisions-decisions'/visual organiser – that participants may wish to use with their learners when prioritising key factors).
Once participants have completed their Diamond 9, ask them to discuss their plan with a partner/small group. Ask them to give each other feedback on feasibility, practicalities, planning, support needs, resources etc. Participants should be encouraged to write notes on the flip chart around their Diamond 9 to fill out their Reflections and Action Log.

As the discussions are drawing to a close, suggest to participants that a useful way to build on the feedback and discussions they have with each other during the training session will be to ‘buddy up’ and continue to support each other when putting the active learning strategies into practice. Allow a few minutes for them to negotiate future contact with each other. This can also be recorded on their Reflection and Action Logs.

Draw participants’ attention to HO7 - Review and Reflection Sheet. Suggest that this will be a useful tool for reflecting on any changes in practice resulting from this training session. They could complete this form each time they try out a different strategy and exchange it with their ‘buddy/buddies’. It can also be used to demonstrate that they have reflected on the learning gained from the training as part of their CPD record.

Conclude this section by asking participants who are willing to share which active learning strategy they are going to implement first – saying why they have chosen this activity, when they intend to use it and what they will need to do to put it into practice.

Remind participants (or remind your provider contact at a subsequent meeting) that it is very important that the Project Lead monitors how the outcomes of this training are taken forward – perhaps by asking staff to share at team meetings examples of how they have put ideas into practice.

Conclude the training session by:

- Drawing participants’ attention to HO8 Useful websites
- Thanking participants and asking them to complete evaluation forms.

Close
Skills for Life Support Programme

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<tr>
<th>res no.</th>
<th>style</th>
<th>title</th>
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<tbody>
<tr>
<td>PP27</td>
<td>PowerPoint slides</td>
<td>Objectives (repeat of slide 3)</td>
</tr>
</tbody>
</table>

Objectives

Use a variety of strategies to promote active learning, including:

- Bloom’s Taxonomy
- To formulate appropriately challenging objectives
- Differentiated activities for group teaching and learning
- Graphic organisers as active thinking tools
- Effective questioning strategies
- ‘decisions – decisions’ activities

plan how you will use a variety of active learning strategies to support embedded LLN in your own teaching and learning sessions.
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<tbody>
<tr>
<td>HO7</td>
<td>Handout</td>
<td>Review and reflection sheet</td>
</tr>
</tbody>
</table>

Name of tutor: 

Strategy used: 

Time taken to prepare (in minutes): 

Learners: 

Date: 

Give a brief description of how you adapted this strategy for use with your learners: the resources you produced, the subject content, what questions you used with the strategy etc. 

How did you use the strategy (e.g. starter, main activity, in groups, as individual practice/reinforcement etc)? 

What was the response from learners (include quotes of things they said/did if appropriate)? 

What advice would you give to another tutor wishing to use this tool (shortcuts, pitfalls, changes you would make etc)? 

How would you rate (using the scale below) the success of the strategy you used in terms of: 

- Learner engagement [ ] 
- Learner enjoyment [ ] 
- Learner meeting objectives [ ] 
- Suitability of strategy for the topic [ ] 
- How much YOU enjoyed using this strategy [ ] 

(1) very negative (2) negative (3) positive (4) very positive
Skills for Life Support Programme

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<tbody>
<tr>
<td>HO8</td>
<td>Handout</td>
<td>Useful websites</td>
</tr>
</tbody>
</table>

**http://sflip.excellencegateway.org.uk/**
Skills for Life Improvement Programme website

**www.geoffpetty.com**

**http://tlp.excellencegateway.org.uk/teachingandlearning/**
QIA Teaching & Learning Programme Resources

**http://golddust.bdplearning.com/**
The Gold Dust resources are designed to support the development of generic skills, knowledge and understanding of trainee teachers in the lifelong learning sector. They have also been used very effectively by many of the providers who took part in the Gold Dust project as part of their organisation’s own continuing professional development programme.

**http://www.excellencegateway.org.uk/page.aspx?o=131034**
Useful materials for teaching and learning from the Vocational Learning Support Programme

**www.nrdc.org.uk**
The National Research and Development Centre for Adult Literacy and Numeracy. Essential research documents on embedding can be ordered or downloaded free of charge as well as the Maths4Life publications.

**www.bbc.co.uk/skillswise**
Interactive generic and embedded teaching and learning materials

**www.move-on.org.uk**
The Move On website

**http://www.excellencegateway.org.uk/page.aspx?o=158035**
Resource menus from the Whole Organisation Approaches Pathfinder Projects: The Menus focus on specific areas of literacy, language and numeracy skills that are widespread needs for learners in particular vocational contexts and identify key resources to support skills development.

**Software for mind-mapping and other visual organisers**

**http://www.inspiration.com**
Inspiration – a reasonably-priced mind mapping tool. A free trial version is available.

**http://www.mindomo.com**
Mindomo – on-line mind-mapping. The basic version is free.

**http://freemind.sourceforge.net/wiki/index.php/Main_Page**
FreeMind – free download

**http://www.gliffy.com**
Gliffy – draw and share diagrams on the web

**http://www.graphic.org/goindex.html**
Introduction to graphic (visual) organisers