Short guide 10: Simple strategies to embed numeracy

What are you doing already?

Every time you teach learners how to use formulas, give learners resources to supplement their coursework you are helping your learners to build numeracy skills for the course, workplace and life. In this short guide you will find activities that you could use to further support your learners.

Pre-teaching & learning

- Use pre-teaching strategies like assessing prior knowledge and learning hooks to engage learners and grab interest and attention. *Examples*: brainstorming, asking Learners what they know about topic, games.
- Relate the topic to the trade/course/workplace, why is it used and some real examples, experiences or stories.

Introductions

- Introduce topic and concept.
- Use Visual Aids (diagrams, charts or illustrations).
- Continue to emphasise how the topic relates to the trade/course/workplace: For area, why do we need to calculate area in painting? To be able to determine how much paint we need.

Start from the Basics

- Define and explain the meaning of all new or technical words used.
- Breakdown the meaning of the formulae and each component means.
- Show contextualised worked examples, have discussions and ask questions.

Build on the Basics

- Increase the difficulty of examples and show learners how to solve these.
- Introduce/use word problems and support learners in understanding and solving word problems.
- Use course/workplace related problem solving Example: For Area: how many floorboards would be needed to cover the floor in a room.
- Give learners time to try and practice.

Post-teaching and learning

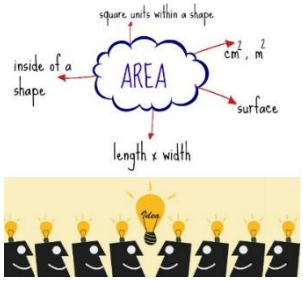
- Use Extension Activities.
- Assess learning with assessments and practical projects.
- Relate topic/concept to other areas of the course.

Monitor learning and support learners that may be finding it difficult.
Ask questions and encourage learners to ask questions.

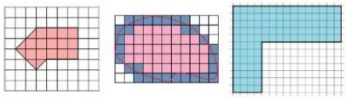
An example – A teaching plan for area

<table>
<tr>
<td>Pre-teaching & learning</td>
<td>
Tell learners and write down learning outcomes
Calculate the area of rectangular surface (e.g. wall, floor, door)

Calculate area of wall to determine how much paint or wall paper needed.

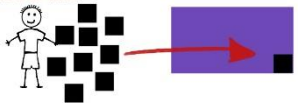
Brainstorm


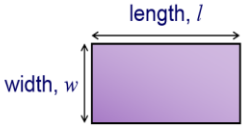
Relate to the trade


</td>
</tr>
<tr>
<td>Introduction</td>
<td>
Introduce and define area
What is Area?
Area is the:
› is the size of a surface
› measure of a flat (two-dimensional) surface or a space covered by an object, such as walls, floorboards or plasterboard


Show learners area in examples around them (door, wall, table)

</td>
</tr>
<tr>
<td>Start from the Basics</td>
<td>
Understanding area using square units
Square units
› Area is measured in square units.
› For example, we can use mm², cm², m²
Activity
› Give each learner a paper with rectangle. The rectangle is 900mm x 300 mm.
› The learners will also receive square units of 100mm x 100mm

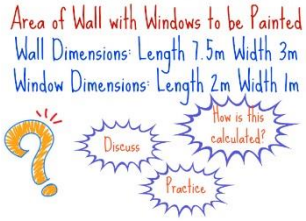
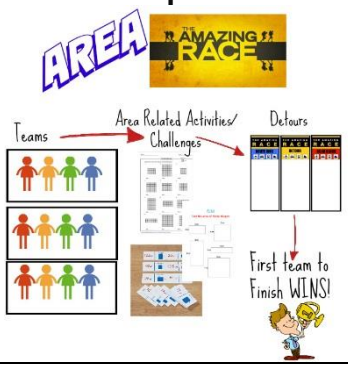
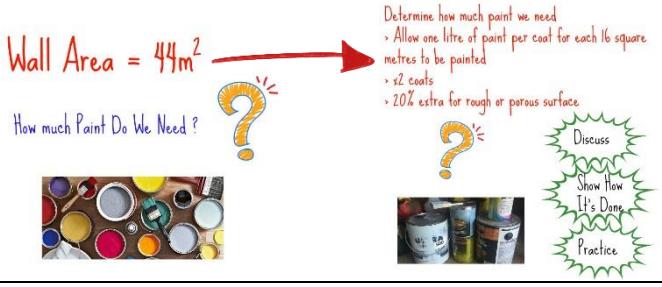
› Ask the Learners to find out how many squares cover each of the shapes.
› Record their answers


Calculating area of rectangles and squares
We can find the area of a rectangle by multiplying the length and the width of the rectangle together.


Area of a rectangle
= length × width
= lw

Show contextualised worked examples
Find area of a wall
Dimensions: Length 7.5m Width 3m
Area = Length x Width
Area of Wall = 7.5m x 3m
Area = 22.5m²

Remind students
› of the unit of measure
› the square units symbol
</td>
</tr>
</table>

Build on the Basics	**Use worksheets** 	**More area calculations**  	**Play a game relating to topic** 
Post-teaching and	**Extension activities (How much paint do we need?)**  	**Use calculations in the practical work** 

More info: Manaini.Cama@openpolytechnic.ac.nz