

Lesson plan

Level 3 Certificate/Extended Certificate in Applied Science

Unit number: 1

Unit name:

Assessment or performance outcome:

Tutor name:



Group or cohort

Week no. 5

Date

Guidance notes

Each learner needs a copy of the periodic table. Length – 1 hour

Resources: Internet, pen and paper

Links to other assessment or performance outcomes: Use information from Unit 1; Task 2a - atomic structure and Task 2c amount of substance.

Lesson objectives:

• find out about the mole

• work out the relationship between mass and moles

• work out the relationship between volume of a gas and moles

• work out concentrations of a solution

• calculate formulae

Activities

• Use the Periodic table to show the mole (gram formula mass) for each element. From this learners can work out the mass of different elements and compounds. The learners (individually or in groups) can be given several different molarities to work out e.g. How many grams of sodium chloride (NaCl) need to be added to

2.5 litres to make a 2M solution?

• Using Avogadro constant, learners can work out the number of molecules in a volume of gas.

• Using the Periodic Table to work out which elements can and cannot combine and in which proportion to work out basic formulae

(empirical). [http://www.bbc.co.uk/schools/gcsebitesize/ science/add\_ocr\_pre\_2011/periodic\_table/ionsrev2.sht ml](http://www.bbc.co.uk/schools/gcsebitesize/science/add_ocr_pre_2011/periodic_table/ionsrev2.shtml)

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| Synoptic assessment  • Information from the Periodic Table can be used to work out formulas for cell respiration Unit 1; AO1e, balancing equations for Unit 1 AO2c and bonding in Unit 1 AO2d. | Stretch and challenge activities?  • Work out charges on the ions of elements to produce ionic equations.  • Produce work with no help from the tutor. |
| Transferable skills and/or soft skills opportunities  • Research skills  • Working with no supervision. | English and maths:  •  • Maths - calculations and working out formulas |
| Assessment:  • Internal test  • Unit is externally examined. |