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| **Lesson Plan:** |

**Main purpose:**

**1)** Hands-on practice with water/gas displacement technique

2) Gas test: hydrogen/oxygen gas

3) Manipulation of compound density

**PLOs**

**C4** describe changes in the properties of matter

**Material and equipment needed**

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| --- | --- | --- | --- |
| **aluminium foil** | **calcium metal** | **pencil** | **water troughs/big beakers** |
| **test tubes** | **empty coke cans** | **hot plate** | **tweezers** |
| **stoppers** | **splints** | **gloves** | **at least 6 troughs** |
| **pre-made groups** | **small beakers** | **goggles** | **phenolphthalein** |

**Hook and Introduction**

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| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 15 min | * Demonstration | * Have Coke cans with pre-heated water prepared - get the attention of the class by dipping the can with hot vapor in cold water. Explain what you did and show them again. Ask them what do they think happened = introduction to density * Show them the displacement technique with a trough of water, Calcium wrapped in aluminium foil, test tubes filled with water - displace the water to collect the gas * Show the students that the water is basic by adding phenolphthalein, so they should dispose of this carefully | Ask them about safety: "how should you handle the calcium?" |

**Development**

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| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 45 min | * Lab with instructions on handout | * Teacher - front lighting up splints for students - check for group dynamics - show measurements on board * Students - performing lab in their groups | * Lab questions |

**Closure**

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| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 5 min | * Balloon explosion? * Remind students of review, unit, and practice package | - | Lab questions due before unit test |

Groups

La Questa

Emma

Janet

JadeShahrukh

Jane

Jericho

EeroBen

Julian

Christina

DevonAnita

Hamim

Kezmen

AliceLuk

Kieran

Sharon

LucyIshmum

Shirley

Jeph

Brianna