

**Secondary Science SBE
Lesson Plan Framework**

Lesson Title: Hard Lessons

Group: 7_0 **Location:** M21 **Date/Time:** 21st May /9h10 to 10h10

Learning Objectives: Students should learn:

- to be able to calculate the volume and density of an irregular object.

Learning Outcomes: Most students should be able to:

- learn how to relate particles forces and hardness.
- describe how to calculate density given equation
- identify density as that heaviness " for its size"-

National Curriculum/Syllabus References (incl. reference to previous KS)

Ks3, Sc3, Exploring Science Text book, Pages 78-79 (States matter) NC4

Links to other areas

Literacy, kinaesthetic learning styles, and developing science thinking investigative skills.

Previous assessment details informing this lesson.

Last lesson main activity was useful to check if pupils can link some kinaesthetic styles with their learning.

Differentiation

By questioning
By support
By modelling

Health and Safety

Lesson safe for pupils but see risk assessment attached.

Lesson Development

| Timing (min) | Teacher activity | Pupil activity | # Resources | Assessment Items |
|--------------|--|---|--|--|
| 3 | Taking the register | Pupils will pay attention to the register. | Teacher planner | |
| 2 | Sharing lesson aim | Pupils will be listening and writing the lesson aim about understanding and calculating volume and density. | Small white board books | - |
| 10 | Setting the starter activity. | As a starter activity pupils will have an interactive diagram to complete recapping last lesson and establishing a link with the main activity. Watching a short video about it. | Computer White board Speakers Starter KS3 programme Tim and Moby Flash Files. | Particular Individual assessment by Q+A. |
| 10 | Going Through power point with a brief explanation. | Pupils will understand the important of mass, volume and density of some objects. | Computer Power point White board | - |
| 15-20 | Making a demo and setting instructions for the practical activity. | Pupils need to pay attention to demonstration about how to calculate a piece of marble density and carrying out the practical. Pupils will have a worksheet as guidelines. | White board Worksheet Note: See risk assessment attached to check materials. | Assessing pupils developing investigative and thinking skills. Q+A Note: Making sure that all pupils are on task. |

| | | | | |
|----|---|---|--|---|
| 15 | Setting a plenary activity | <p>Plenary activity will be particles loop game recapping all the last lessons ideas.</p> <p>Going over the answers for learning during the activity.</p> | Worksheet Computer Ks3 resources software | Pupils will be assessed individually by answering to the loop game. |
| 5 | Setting instructions to pupils pack away. | Pupils will clean their desks and move to next lesson. | - | - |

PGCE & BSc. Secondary Science(School based Form)

Risk Assessment

Title of Practical Activity: Solids, liquids and Gases Properties

Teachers and pupils involved: teacher, trainee teacher and 32 pupils

| Substances hazardous to health - Chemicals regulated by COSHH | |
|---|-----|
| 1. Using a top pan balance. | 6. |
| 2. Using a measure cylinder | 7. |
| 3. Using beakers | 8. |
| 4. | 9 |
| 5. | 10. |

Hazardous procedure or item of equipment.

Items: measure cylinder, marble, top pan balance, calculators and beakers.

Risk estimator >10 then risk is unacceptable; rethink control measures)

| Likelihood of occurrence | L Score | Severity of Outcome | O Score |
|--------------------------|---------|---|---------|
| Highly unlikely | 1 | Slight inconvenience | 1 |
| May happen but rare | 2 | Minor injury | 2 |
| Does happen but rare | 3 | Medical attention required | 3 |
| Occurs time to time | 4 | Major injury leading to hospitalisation | 4 |
| Likely to occur often | 5 | Fatality or serious injury | 5 |

Practical Risks

| Hazard | L Score | O Score | Total (Lx O) | Control Measures |
|--------|---------|---------|--------------|--|
| 1 | 1 | 1 | 1 | Teacher will aware pupils of risk assessment and will explain what they need to do with the top pan balance, by making a demo for all class. |
| 2 | 1 | 1 | 1 | Teachers will aware pupils of how to work with measure cylinders, being careful to not break. |
| 3 | 2 | 2 | 4 | Pupils will know that the need to be careful with glass materials to don't cut themselves. |

