Secondary Science SBE
Lesson Plan Framework

Lesson Title: Refraction

Group: 8_y Location: Lab 1 Date/Time: 25th May/14h15 to 15h15

Learning Objectives: Pupils should learn:

- to describe how can we investigate light reflection.
- to predict how light changes direction in different mediums.

Learning Outcomes: Most students should be able to:

- that light changes direction at a boundary between two different media.
- to apply understanding of refraction to every day situations.

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

Ks3, Sc4 Physics, Exploring science text book, Topic about light refraction, NC 5

Links to other areas

Literacy, visual, verbal and kinaesthetic learning styles.

Previous assessment details informing this lesson.

Last lesson was used to introduce the reflection idea by making a practical activity about investigating light refection. Pupils developed investigative skills.

Differentiation

By questioning
By use of stimulus material
By pace of the lesson and relevant use of starters
By support
By guided 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	
5-10	Sharing lesson aim And introducing starter activity.	Pupils will be listening and write down the lesson aim about investigating light refraction. As a starter pupils will have a light bingo. ***Note: The pupil that finishes first will win some sweets.***	Computer Books Light bingo cards	Assessing pupils' behaviour during starter.
10	Going over power point with a brief explanation establishing a link with the entrance activity. ***Note: Importance of recapping the idea that involves refraction law.***	Pupils will be listening to brief explanation what is refraction of light and the importance of understand how can the light bent. Writing notes about it. Hopefully pupils will interact with the teacher to develop further knowledge.	Computer Power point White board	Q+A Assessing pupil's communicative skills being developed.
15-20	Setting a practical investigative work.	Pupils will make a practical activity in groups), carrying out an investigation about predicting and measuring results for the refraction of light within different angles. Writing some notes about it.	Books Computer Power point worksheet Note: See material on risk assessment attached.	Assessing pupils developing investigative skills.

10	Setting a plenary activity.	Pupils will need to take a look to key concepts cards and trying to match them together by describing and giving a definition.	White board Blue tack Key concepts card	Assessing pupils individually and making sure that all are on task for learning. Pupils will be developing literacy knowledge.
5	Setting instructions to pack away. **N*ote: Pupils should hand in books to teacher mark last lesson homework.***	All pupils should clean their desk, pack away and move to next lesson.	-	-

PGCE & BSc. Secondary Science(School based Form)

Risk Assessment

Title of Practical Activity: Light Refraction

Teachers and pupils involved: teacher, trainee teacher and 14 pupils

Substances hazardous to health - Chemicals regulated by COSHH	
1. using ray boxes	**6.**
2. using the rectangular glass block	**7.**
3.	**8.**
4.	**9**
5.	**10.**

Hazardous procedure or item of equipment.

- Ray boxes, rulers, power battery, paper and rectangular glass block.

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	Teachers will aware pupils of all risk assessment and will explain what they need to do with the ray boxes having careful with all the material.
2	2	2	4	Teacher will be aware of pupils being careful with glass equipment.