

HKDSE Physics

SBA Annual Conference

09 Nov 2024

HKDSE SBA results (2024)

Paper	Mean	SD
Physics	73.0% (2020 : 73.6%)	15.3% (2020 : 14.1%)

- **Statistical Moderation** (based on **WHOLE school**) + **Professional Judgment** (DC comments on **student samples**: Lenient/Appropriate/Strict)
- Adopt **statistical adjustment** (387 out of 438, ~ 88%)
- **Outlining cases** followed-up by Supervisors (51 out of 438, ~ 12%)

HKDSE SBA moderation

Impact of Statistical Moderation

The impact of moderation on the SBA scores of the moderation groups and individual students is illustrated below with some hypothetical data.

Impact on Moderation Groups

In this example, there are just two schools, School A and School B. Each school is a moderation group. The overall performance of the students from both schools in the public examination and in the SBA is illustrated in Figures 2(a) to 2(c).

Figure 2(a) shows that, overall, the students from School B performed better in the public examination than the students in School A.

Figure 2(a)

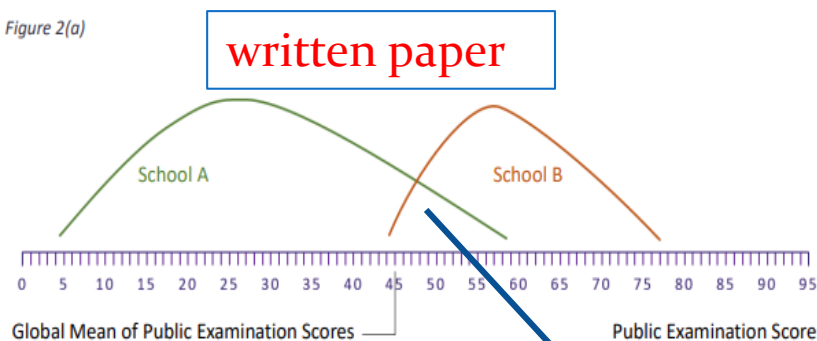


Figure 2(b) shows that the raw SBA scores of the students from both schools follow a similar distribution.

Figure 2(b)

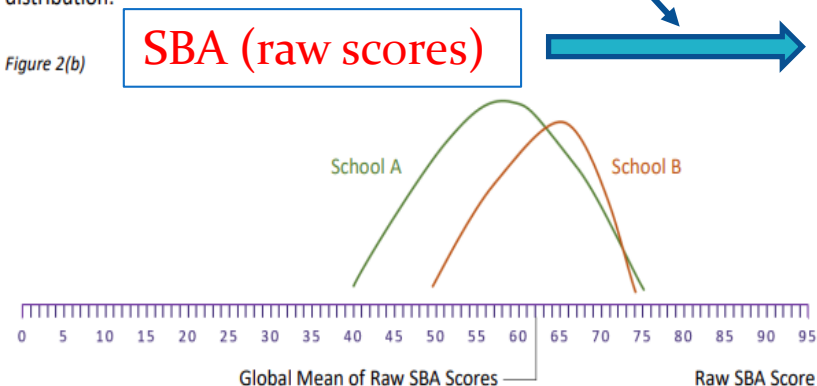
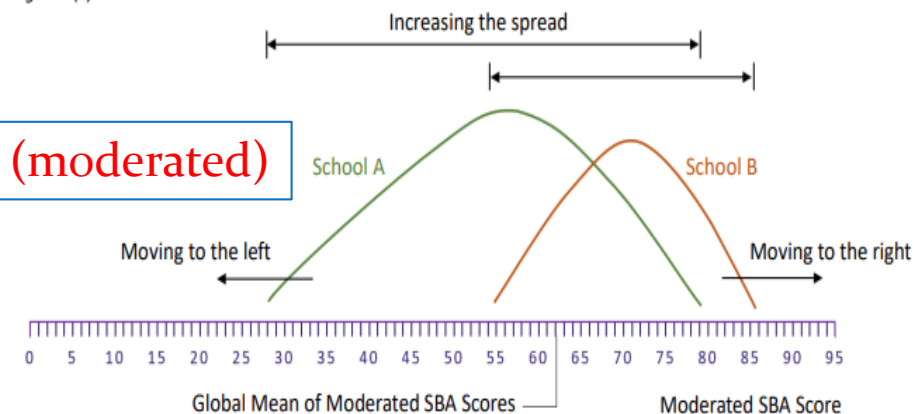


Figure 2(c) shows the impact of the statistical moderation process. The mean of the SBA scores of School B has increased after moderation while the mean of SBA scores of School A has decreased after moderation to reflect the performance of their students in the public examinations. In addition, the scores for both schools become more widely spread, reflecting the greater spread of the same students in the public examination.

Figure 2(c)



HKDSE SBA moderation (2024)

Paper	No. of Participating Candidates	No. of Schools
Physics	9939 (2020 : 9757)	438 (2020 : 429)

Moderation	Physics*
lenient -12% or more	5.9%(6.1%)
- (6 ~ 11)%	22.6%(21.4%)
± 5% or less	53.7%(57.8%)
+ (6 ~ 11)%	14.8%(10.5%)
strict + 12% or more	3.0%(4.2%)

*2020 data in brackets

Hong Kong Diploma of Secondary Education Examination 2024

Physics

Information on the Moderation of SBA Marks

The School-based Assessment (SBA) marks submitted by your school were moderated in accordance with the principles and methods described in the booklet *Moderation of School-based Assessment Scores in the HKDSE*, which is available on the HKEAA website: <http://www.hkeaa.edu.hk/en/sba/>.

General observation

In the 2024 HKDSE Physics Examination, participating schools were asked to submit SBA marks for inclusion in the subject result. We are pleased to report that 53.7% of schools fell into the 'within the expected range' category, while the marks of 3.6% of schools are higher than expected and 17.8% lower than expected. However, among the schools with marks higher or lower than expected, the majority only deviate slightly from the expected range. This is encouraging as the data showed that the majority of the teachers do have a good understanding about the SBA implementation, and hence the marking standards are generally appropriate.

Information given on the SBA Moderation Report

In the report, two comments are given in addition to the mean and standard deviation of the SBA scores before and after moderation. The first comment relates to the mean of the SBA scores awarded by your teachers as a whole. If your school's SBA scores were within the expected range, only minimal adjustments were made. More adjustments were necessary for schools with means that were higher or lower than expected. The second comment is about the distribution of the SBA scores submitted by your school. If the spread of the SBA scores was within the expected range, minimal adjustments were needed, while more adjustments were made to scores of schools with wider or narrower spreads than expected. Tables 1 and 2 below show what the comments mean.

Table 1: Implication of the comment on the mean

(D = difference between the means of the moderated and raw SBA scores)

Comment	Magnitude of D
Within the expected range	$0 \leq D < 6$
Slightly lower / higher than expected	$6 \leq D < 12$
Lower / higher than expected	$12 \leq D < 18$
Much lower / higher than expected	$D \geq 18$

Table 2: Implication of the comment on the spread

(R = ratio of the standard deviations of the moderated and raw SBA scores)

Comment	Magnitude of R
Within the expected range	$0.78 < R < 1.1$
Slightly wider than expected	$0.74 < R \leq 0.78$
Wider than expected	$R \leq 0.74$
Slightly narrower than expected	$1.1 \leq R < 1.2$
Narrower than expected	$R \geq 1.2$

香港考試及評核局

2023 年香港中學文憑考試

Hong Kong Examinations and Assessment Authority
Hong Kong Diploma of Secondary Education Examination 2023

校本評核分數調整報告 SBA Moderation Report

學校名稱 : 甲乙丙學校
School Name: ABC School
科目 : 英國語文
Subject: English Language
調整組別代號 :
Moderation Group ID: 1234 5678

調整組別的統計數據*

Statistics in the moderation group*

學校所提交的考生人數 :
No. of candidates submitted by school: 100
調整組別內的人數** :
No. of candidates in the moderation group**: 100
校本評核原始分數的平均分 :
Mean of raw SBA scores: 65.25
校本評核原始分數的標準差 :
Standard deviation of raw SBA scores: 9.06
調整後校本評核的平均分 :
Mean of moderated SBA scores: 62.25
調整後校本評核分數的標準差 :
Standard deviation of moderated SBA scores: 9.06

評語 :

Comments:

校本評核原始分數的平均分合乎預期範圍。

The mean of the raw SBA scores is **within the expected range**.

校本評核原始分數的分布合乎預期範圍。

The spread of the raw SBA scores is **within the expected range**.

* 這些數值是根據考評局獲得的最終數據計算所得，與校本評核系統所顯示者或有些微出入。

* The figures are based on the final data received by the HKEAA and may be slightly different from those shown in the SBA System.

** 調整組別不包括下列考生：

缺席於公開考試、校本評核被評為 0 分、獲豁免或未能完成任何評核課業的考生。

** The following candidates have been excluded from the Moderation Group:
candidates who were absent from the public exam / awarded zero SBA marks / exempted from SBA / failed to complete any SBA work.

Subject results Vs SBA

Physics	Mean	SD
Paper 3 (SBA)	73.0%	15.3%

Level	5*	5+	4+	3+	2+	1+
Percentage	11.4%	28.1%	49.3%	72.8%	89.9%	97.6%

approx. score estimated from % rank

SBA	91/90	83/82	75/74	65	54	40
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SBA work plan for 2024-25

- Submission requirements in 2024-25 (Ref: *School circular in Oct*)

Month/Year	Events
9 Nov 2024	SBA annual conference
Sep 2024 – Jun 2025	S6 and S5 SBA activities to be conducted by schools
8 Jan – 7 Feb 2025	Online Submission of (1) SBA marks, (2) Student work samples, and (3) ‘S5 and S6 Lists of experiments’ for 2025 Exam. (Use experiment list template provided at HKEAA website: SBA 校本評核 → Forms 下載表格 → SBAMarkTemplates 校本評核記分表 → Physics 物理 → SBA-PHY-ExpList)
Mar – Jun 2025	Moderation of S6 SBA marks by the HKEAA
May – Jun 2025	Email ‘S5 Lists of experiments for 2026 Exam’ to District Coordinators (DC)
Jul 2025	Release of 2025 HKDSE results
Sep 2025	Provision of feedback on the outcome of the SBA moderation of 2025 HKDSE to schools

SBA Requirements :

Physics		
S5	1 Expt (6%)	
S6	1 Expt (6%)	1 IS/Expt* (8%)

RESUMED

Note: Over the two years of S5 and S6, at least TWO marks for experiment (EXPT) and ONE mark for investigative study (IS) **OR** an experiment with a detailed report (EXPT*).

- Expt: Max. 5 entries [max 20M each]
- IS/Expt: only 1 entry [max 20M]

MINIMUM:

- 8 tasks for Physics
(SBA Handbook para. 2.2)

HKDSE Physics

List of Experiments

Examination year: 2025

Please record **ALL** the experiments done in S5 and S6 for this examination cohort. You may ADAPT the form to suit your need.

School name: ABC School SBA Group no.: xx

Subject Panel's name: Mr. Great Tel. no.: 123456 Email: xxxx@yyyyy

Experiment Title	Year*		Type*		Submit Marks [^]
	S5	S6	EXPT	IS/EXPT	
Internal Resistance of a Battery	✓		✓		
Measuring wavelength of light by using plane transmission grating	✓		✓		✓
Boyle's law	✓		✓		✓
Measuring the Focal Length of a Convex Lens	✓		✓		✓
Measuring Resistance using VA Method	✓		✓		
Measuring Magnetic Field Strength of Solenoid using Search Coils		✓	✓		✓
Refractive Index and Critical Angle		✓	✓		✓
Illuminance, Luminous Flux and Efficacy of an incandescent lamp		✓		✓	✓
Measuring the Specific Heat Capacity of water		✓	✓		

* Please tick the appropriate box.

[^] You may leave this column blank when emailing this form to the District Coordinator in S5.

When uploading this form to the SBA online system in S6, please tick the experiments selected for mark submission.

Points to note

- ◆ **Marking Schemes (MS)** indicated for tracking breakdown of marks

Practical skills: _____ / (6)	
Data treatment: _____ / (10)	
Conclusion: _____ / (4)	
Total: _____ / 20	

NOT exceed 30%
(practical skills
assessed at least
ONCE)

- ◆ **Group experiment** or IS accepted with **Individual Reports** (say, for parts starting from data treatment)
- ◆ **Plagiarism:**
 - **Serious cases (P cases):** Task with “P” – zero mark & Down ONE Level
 - **Less serious cases:** - Zero mark for the task or only give credit to the part done by the student

For students with Special Educational Needs (SEN)

Accommodation

- Provide necessary **assistance** to the student concerned and perform a **FAIR assessment**
(e.g. assigning a technician / classmate / teacher to set up the equipment for students with physical disabilities)
- Provide **alternative task** (but **same level of difficulty**) and perform a **FAIR assessment**
(e.g. making reference to School's SEN policy, soliciting advice from School Management / Psychologist / Therapist)
- Mark in the student work the kind of accommodation / exemption involved if being selected for submission to the HKEAA.

Exemption

- Formal approval from the HKEAA required
- Application form: <https://www.hkdse.hkeaa.edu.hk>
- Apply at the beginning of school year

Supporting documents

- **School's recommendation** for exemption
- Relevant **Medical supports**
Psychologist's supports
Attendance record (such as record of extended sick leaves)

Reminder:

- **Logistical Arrangements**
 - **Contact SBA Team of HKEAA**
sba@hkeaa.edu.hk
3628-8068 (Ms Tansy CHUN 秦誕沙)
- **Subject-related Questions**
 - **Discuss with your District Coordinator (DC)**

Resources (SBA)

(HKEAA website: SBA 校本評核 → Subject Information on SBA

校本評核科目資訊 → Physics 物理)

https://www.hkeaa.edu.hk/tc/sba/sub_info_sba/dse_subject.html?20



搜尋香港考試及評核局



考評局簡介

考評局服務

香港中學文憑

文憑試資歷認可

全港性系統評估

語文能力評核

校本評核科目資訊

- ▶ 校本評核 - 簡介
- ▶ 校本評核科目資訊
- ▶ 校本評核分數調整
- ▶ 校本評核教師手冊
- ▶ 校本評核常見問題
- ▶ 下載表格
- ▶ 校本評核相關資訊
- ▶ 聯絡我們

主頁 > 校本評核 > 校本評核科目資訊

香港中學文憑校本評核 - 選修科目: 物理

註：大部分學生表現示例以圖像檔案展示，閣下若在閱讀圖像檔案時有困難，可聯絡[香港失明人協進會](#)尋求協助。

▶ [校本評核教師手冊](#)

▶ [校本評核樣本課業](#)

▶ [其他資源](#)

▶ [常見問題](#)



Why SBA?

- The society needs different talents
- Written examination is not effective in assessing multiple intelligences
- SBA may partially fill-up the gap

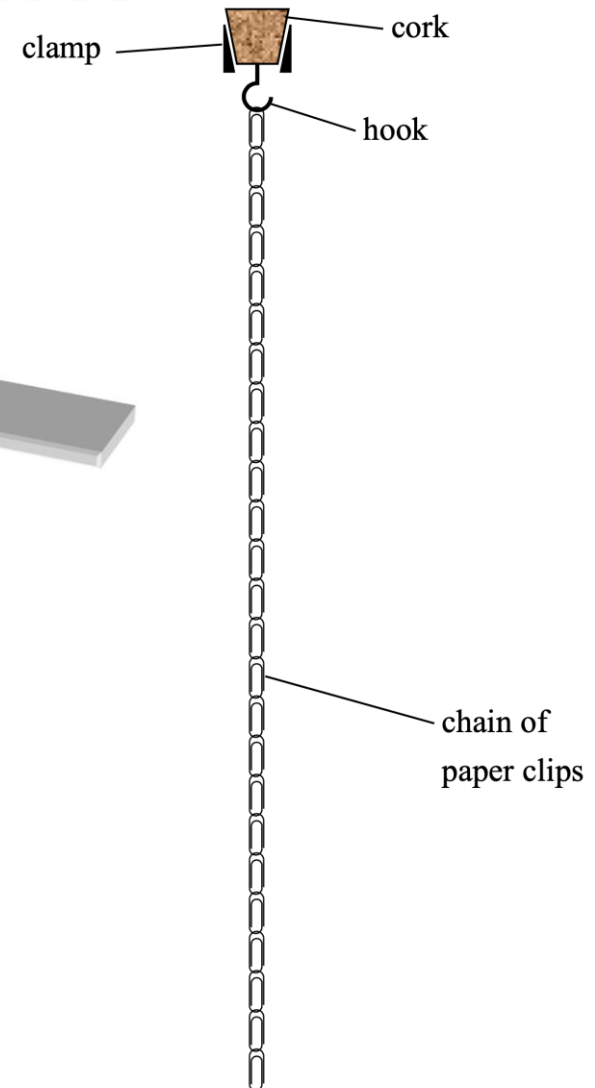
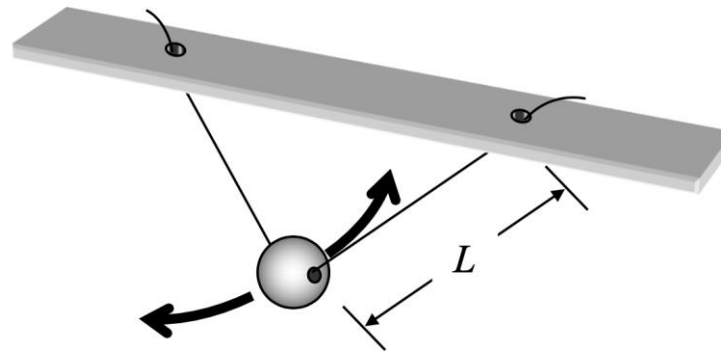
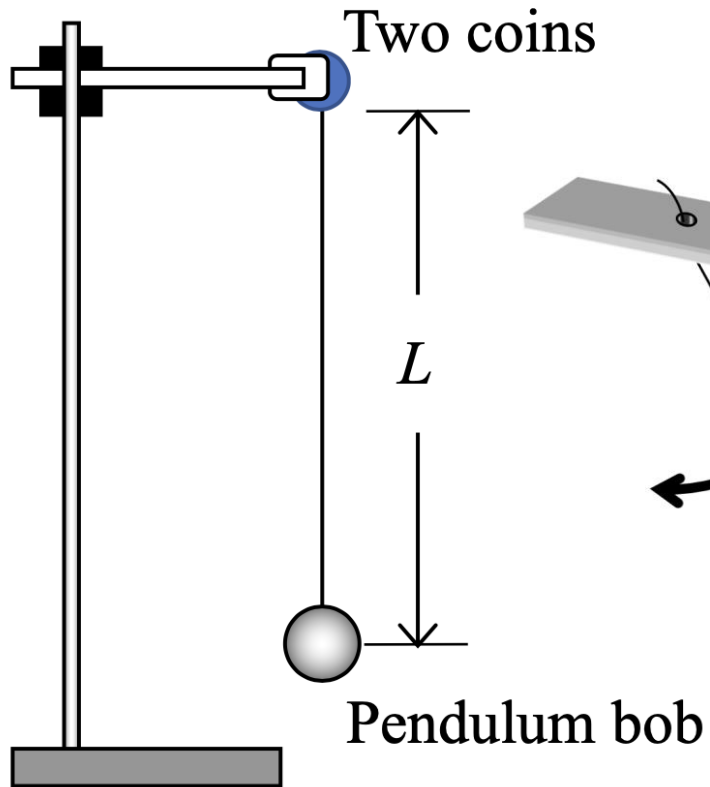
SBA can assess

- Follow instruction
- Practical skills
- Collection of data
- Manipulate data, finding relationship and draw conclusion
- Attention to details
- Making reasonable suggestion
- Problem solving in unfamiliar situation

In any SBA session

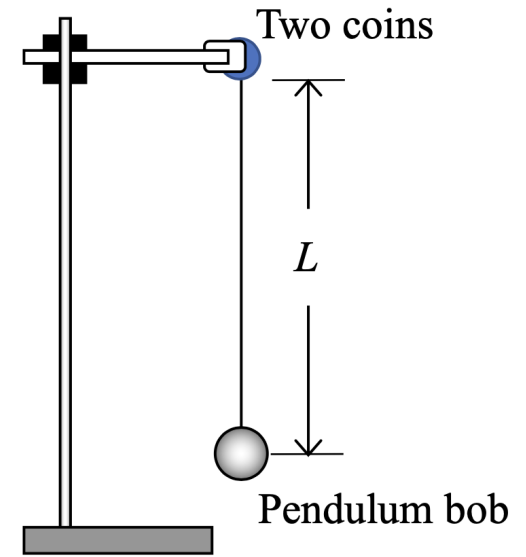
- It is impossible to do all
- Focus on one or two
- Base on your students
- Theory/Physics behind may be unknown

Examples: Pendulum

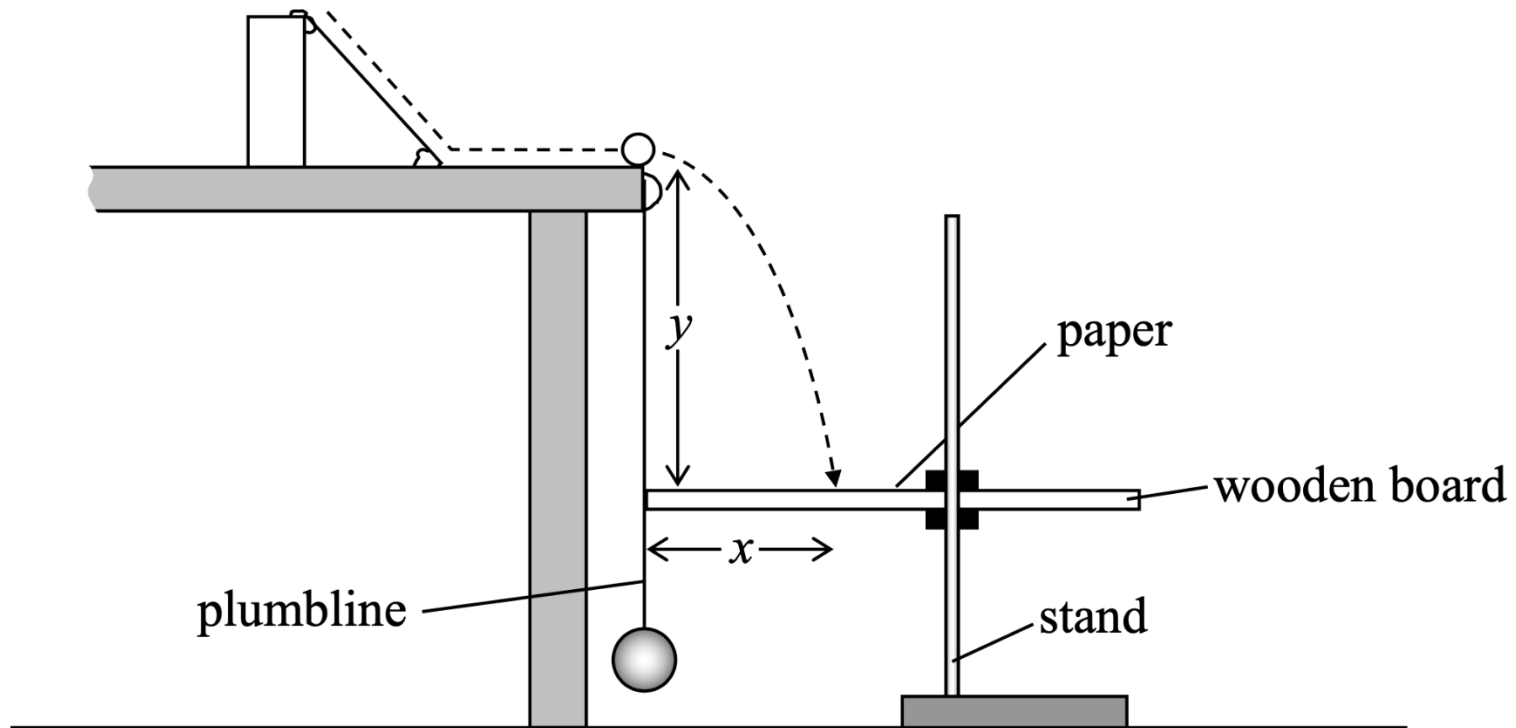


Skills involved

- Timing
- Swing angle
- Clamping
- Adjusting length
- Calculation, graph plotting
- Orientation of paper clips



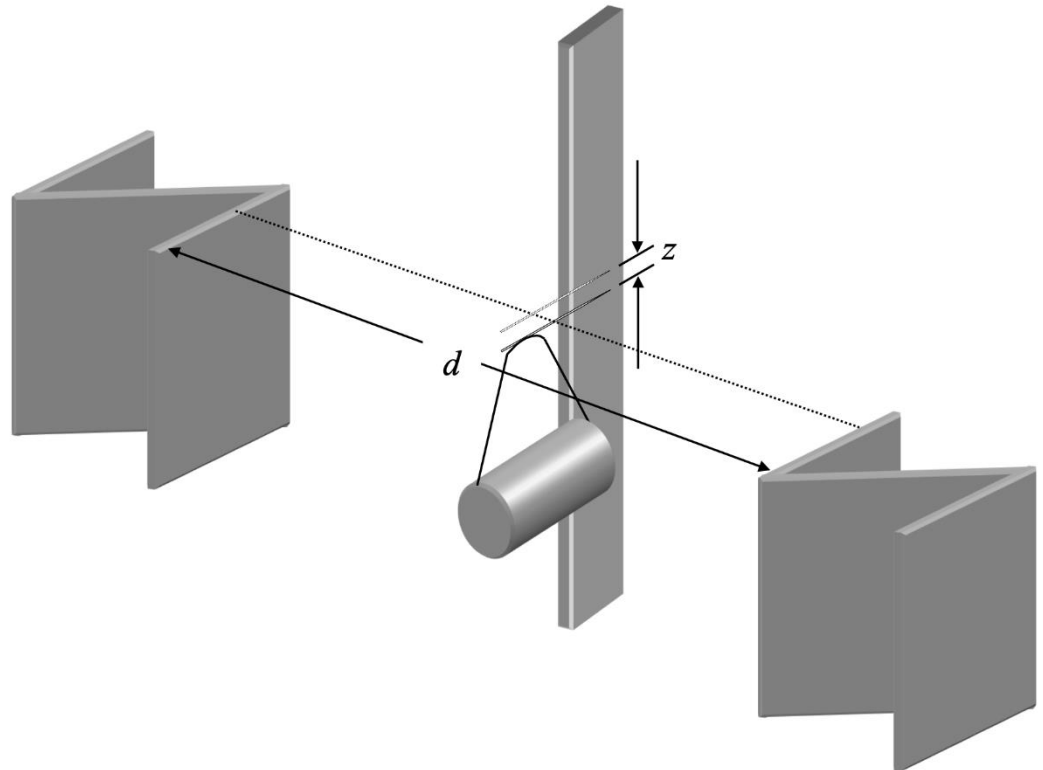
Example: Projectile motion



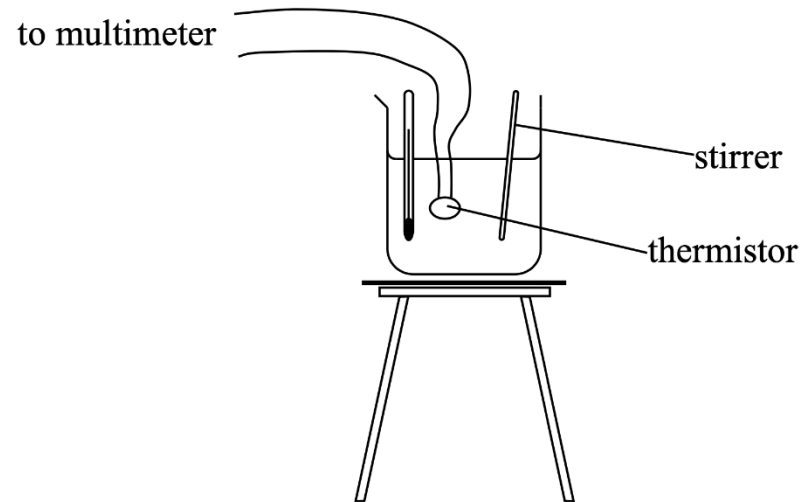
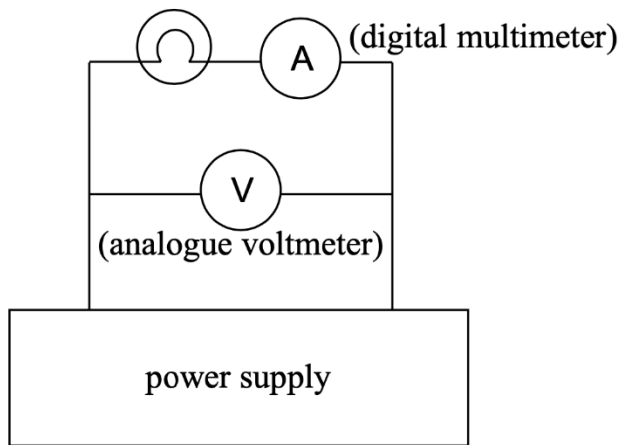
- How to make sure the ball do not deviate too much in its path?

Example in mechanics

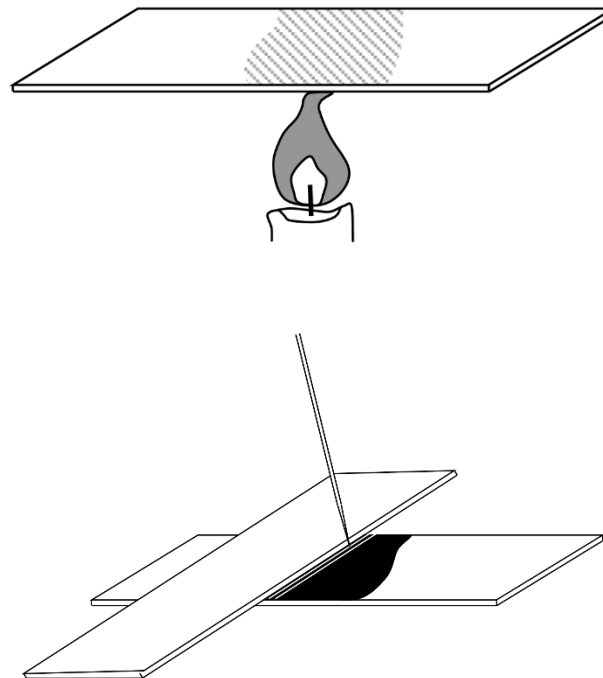
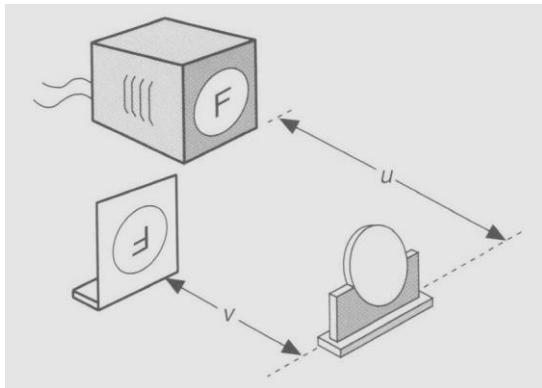
- Bouncing ball
- Hooke's law
- Loaded beam



Examples in E & M



Examples in Waves



Download word files

<http://sba.phylearning.org>



Physics SBA conference

Albert Hong
Jockey Club Ti-I College

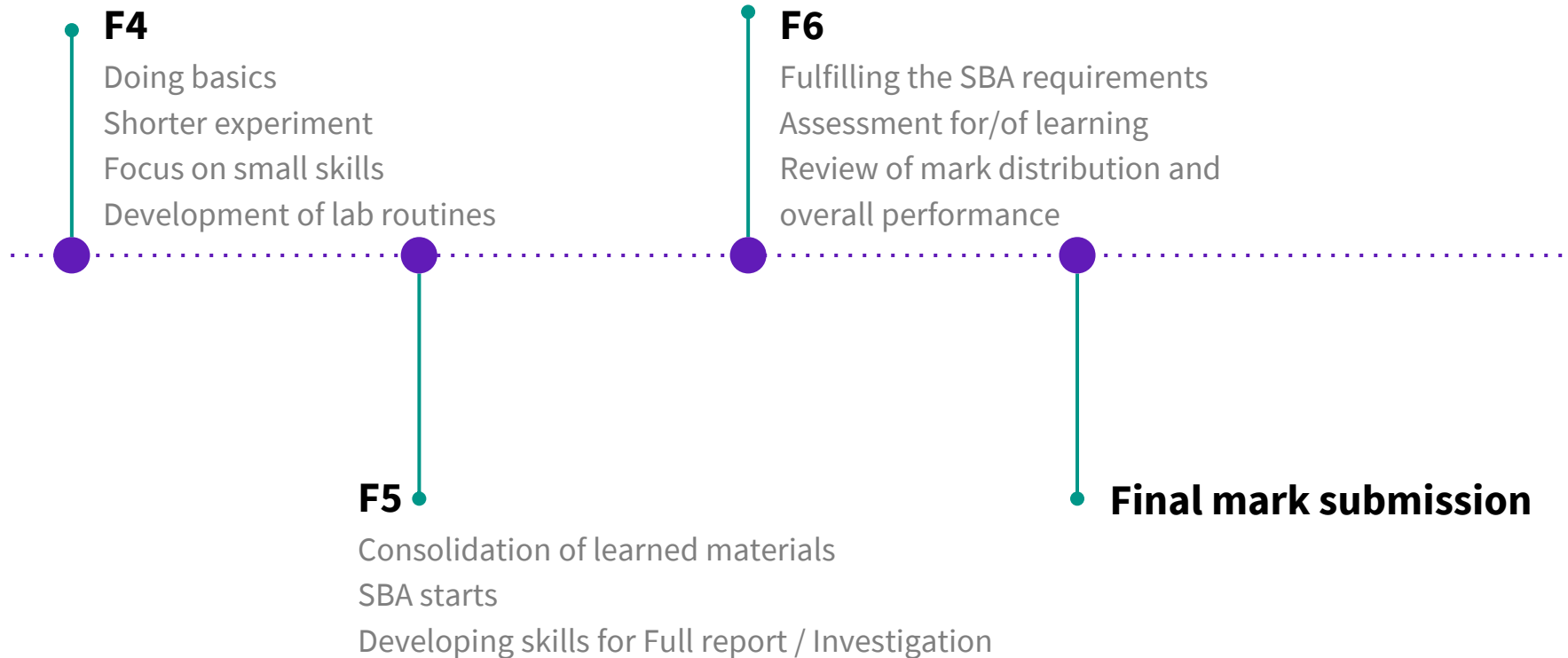


SBA

Arrangement & Assessment

- Overall planning
- Skills developments
- Assessment
 - Knowledge
 - Skills

Flow of SBA



Overall planning

A rough idea of what experiments will be done in 2.5 years.

≥8 (can be edited later)

Experiment Title	Subject*		Year*		Type*		Submit Marks^
	Phy	CS	S5	S6	EXPT	IS/EXPT*	
Measuring specific latent heat of ice	.		.		.		
Force and acceleration	.		.		.		
Conservation of momentum	.		.		.		.
Finding wavelength of red light using diffraction grating	✓.		✓.		✓.		
Resistance and Dimension	✓.		✓.		✓.		
Circular Motion with rubber bung	✓.		✓.		✓.		✓.
Throwing dice	✓.		✓.		✓.		✓.
Boyle's Law	✓.			✓.		✓.	✓.
Internal resistance of cell	✓.			✓.	✓.		✓.
Focal length of convex lens	✓.			✓.	✓.		
Illuminance	✓.			✓.	✓.		

* Please tick the appropriate box.

^ You may leave this column blank when emailing this form to the District Coordinator in S5.

When uploading this form to the SBA online system in S6, please tick the experiments selected for mark submission.

Starts small

No parallax method

Density of steel balls

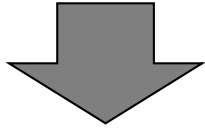
Mathematics skills

Jockey Club Ti-I College
Mathematics for Physics (Part A)

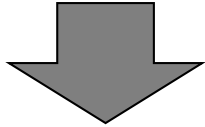
Contents

Topics	Page
1. Change of Subject and Substitution	2-3
2. Solving Equations involving Fractions	4-5
3. Percentage Change	6
4. Approximate Values (Rounding and Significant Figures)	7-8
5. Absolute error and Percentage Error	9
6. Factorization	10
7. Rate and Ratio	11
8. Angles related to Lines and Triangles	12-13
9. Pythagoras' Theorem and Trigonometric Ratios	14-16
10. Condition for Similar Triangles	17-18
11. Solving Simultaneous Linear Equations by Algebraic Methods	19-20
12. Arc Length	21-23
13. Law of Indices and Scientific Notation	24-25
14. Distance between Two Points and Slope of a Straight Line	26-28

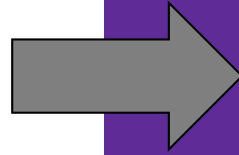
More Guidance



Less Guidance



**Writing some
procedure**



Full Report

More Examples

-  SBA lab sheet - internal resistance of cell (graph)
-  SBA lab sheet - Boyle's law (Full report) (23-24)
-  SBA lab sheet - Boyle's law (skill_graph)
-  SBA lab sheet - centripetal force (graph)
-  SBA lab sheet - Decay of Dice (less skills)
-  SBA lab sheet - Estimation of the wavelength (simple)
-  SBA lab sheet - Focal length of a convex lens (graph_math)
-  SBA lab sheet - Free_fall_acceleration (dataloggoer)
-  SBA lab sheet - Illuminance (graph_smartphone)
-  SBA Lab sheet - planck constant (graph)
-  SBA sheet - Terminal velocity (IS SBA)

Marking criteria

Draft marking before experiment

Fine-tuning during marking

Skills assessment

Demonstration of skills

- from a measurement
- by doing it in a group/individually

Assessment Criteria / Teacher's Remarks		
(1)	Vaseline Applied Pressure taken 10 seconds after volume is set	(2)
(2)	Volume of gas starts at 30 cm ³ Pressure roughly equals <u>to starting</u> value at the end of <u>expt.</u>	(2)

Mark Sheet for Assessment of Performance in Practical Work

Assessment Criteria / Teacher's Remarks		Group No.	Student No.
(1) Distant object used and clear image found in part A			(1)
(1/1) Focal length = 18 - 20 m			(2)
(2) Lens and screen parallel to each other Correct methods/understanding of experiment			(1)
(3) Able to use no-parallax method to locate image accurately			(2)

HKDSE

SBA for Practical Physics

Mark Sheet for Assessment of Performance in Practical Work

Assessment Criteria / Teacher's Remarks		Group No.	Student No.
(1) Circuit connected correctly			(1)
(2) Polarity of Ammeter connected correctly			(1)
(3) Polarity of Voltmeter connected correctly			(1)
(4) Start with rheostat set to maximum resistance			(1)
Remarks : (e.g. Individual student's strength/weaknesses)			



Supervisors' Remarks

2024 Teachers' Meeting for HKDSE Physics SBA

9 November 2024

Mandatory Requirement

- Process Skills (Area A)
- Report Writing (Area B)



HKDSE	2024	2025
Weighting	20 %	
Expts $\geq$	8 (S5 & S6)	
Submit $\geq$	1 Expt (6%) + 1 IS/Expt* (8%) [S5 & S6]	2 Expt (6%+6%) + 1 IS/Expt* (8%) [Expt: S5 1 + S6 1]
Mark Range	0 - 20	

Major Good Observations

1. Most reports were satisfactorily marked.
2. Most works had appropriate level of difficulty.
3. The majority number of experiments was 4 to 5 for submission.
4. Some reports provided assessment criteria and written feedbacks.
5. Detailed marking schemes were given in the reports.
6. The VWS provided in two language versions.
7. The weightings of process marks and report marks were indicated for reference.

Improvements Needed

1. Feedback was not provided in the report.
2. Marking schemes were not provided.
3. Part of the student's work had not been marked.
4. Process/skill marks were not indicated.
5. Break down scores were not given.
6. Narrow mark range with a small SD.
7. Some work sheets were too simple.
8. Same set of experiments was repeated yearly.

Some More Observations

1. Detailed report was similar to VWS rather than a full report.
2. The experiment list with less than 8 Expt.
3. The assessment criteria were not allocated appropriately to cover a broad range of students' ability.
4. Scores should not be given to those objective, apparatus and procedure when they were already given in VWS.
5. Further questions were needed to differentiate students' performance.
6. Marking of some VWS / reports were lenient / incorrect.
7. The graph plotting skills was poor and the conclusion was not deduced from the graph.

Popular Experiments

Heat and Gases

- Boyle's law of gas - pressure and volume
- Specific heat capacity of water / metal

Force and Motion

- Centripetal force in a conical pendulum
- Acceleration due to gravity
- Period / Energy change of a simple pendulum
- Momentum conservation
- Newton's second law

**The survey is based on 21 schools*

Popular Experiments

Wave Motion

- Focal length of a convex lens
- Refraction of light and critical angle
- Diffraction grating and wavelength
- Transverse stationary waves

E & M

- Light bulb and electrical power / I-V relationship
- Magnetic field inside a solenoid
- Internal resistance of a battery
- Ohm's law, Ammeter-Voltmeter method
- Resistance of wires

**The survey is based on 21 schools*

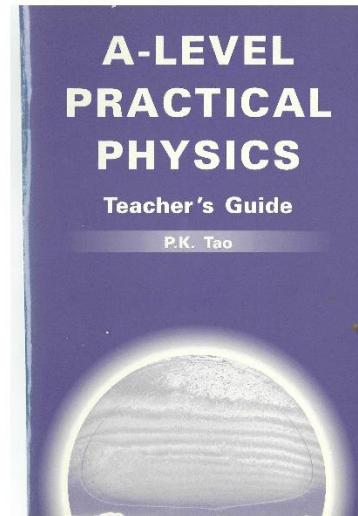
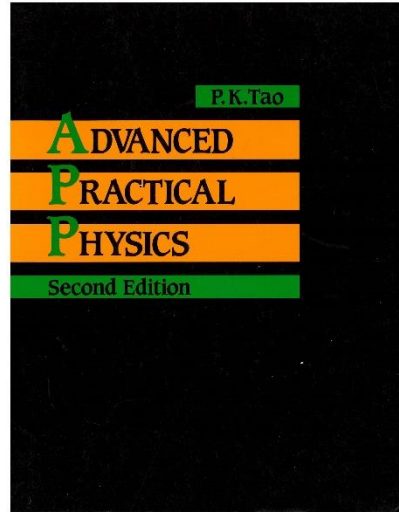
List of SBA Experiments



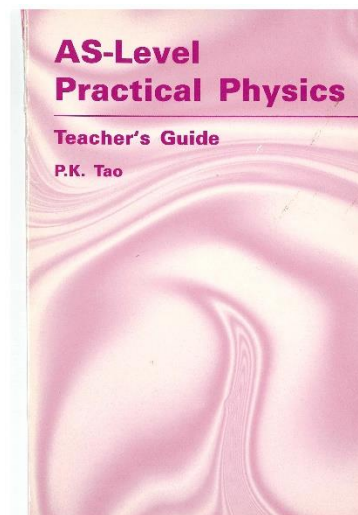
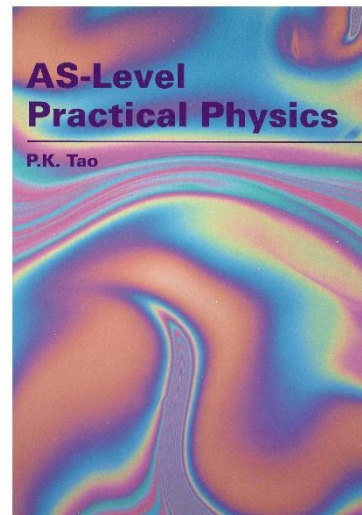
Topics	Number of SBA experiments
Heat and Gases	5
Force and Motion	7
Wave Motion	6
Electricity and Magnetism	10
Radioactivity and Nuclear Energy	
Elective	1

Useful Reference for Practical

- AL



- ASL



Equipment List :

SS Physics



Reference List of Furniture and Equipment for Secondary School

- Data logger (5 sets) – Item 20
- Diffraction grating (10 sets) – item 24
- Joulemeter, digital (1 set) – item 41
- Light meter, digital (5 sets) – item 50
- Meters, moving-coil (10 sets) – item 58
- Signal generator, low impedance output (10 sets) – item 84

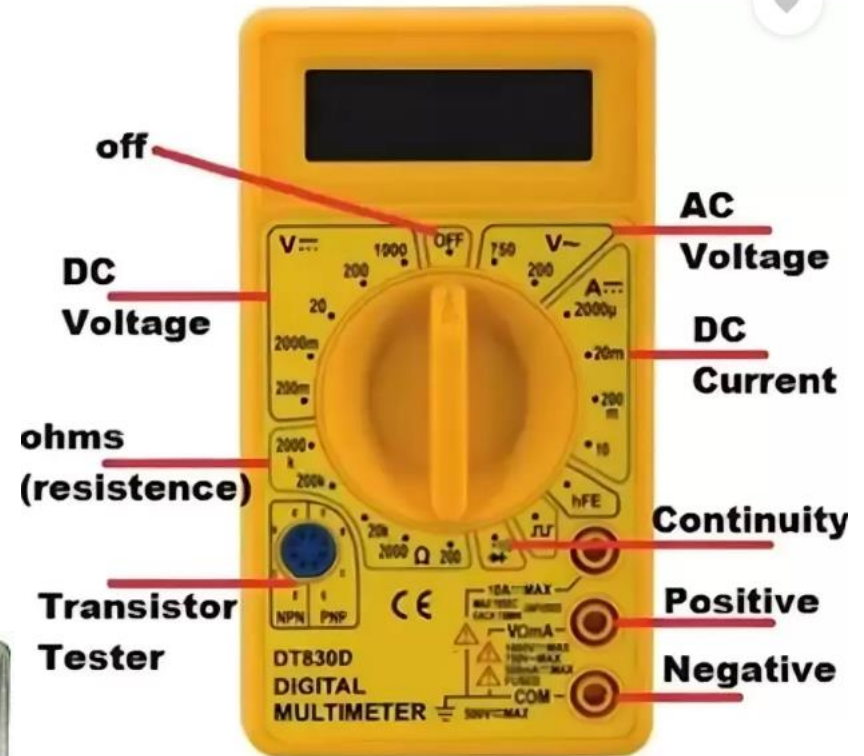
Format in SBA Practical

Step	Task	Items
1	Objective / Problem Statement	1. Purpose of experiment • Measure a well-defined quantity • Measure a function or a relationship
2	Design of Experiment	1. Apparatus 2. Theory 3. Setup 4. Procedures
3	Measurement	1. Experimental data • Tables of raw data / derived data • Use of apparatus / accuracy / error / uncertainty • Observations / shortcomings
4	Data Analysis / Presentation of measurement / final results	1. Graph • Sketch a best-fit straight line • Calculate slope / find intercepts • Interpret the plot 2. Table of final results
5	Conclusion / Discussion	1. Result of experiment / precautions / errors 2. Further extension

SBA in Progression

Stage	Learning Tasks
S3	• Operate basic measuring instruments • Identify variables • Conduct simply single measurements • Construct a data table • Plot graph
S4	• Operate apparatus • Learn some mathematics skill • Estimate errors, accuracy and significant figures • Conduct simple tasks • Perform simple report writing
S5	• Tasks for SBA
S6	• Tasks for SBA

Apparatus

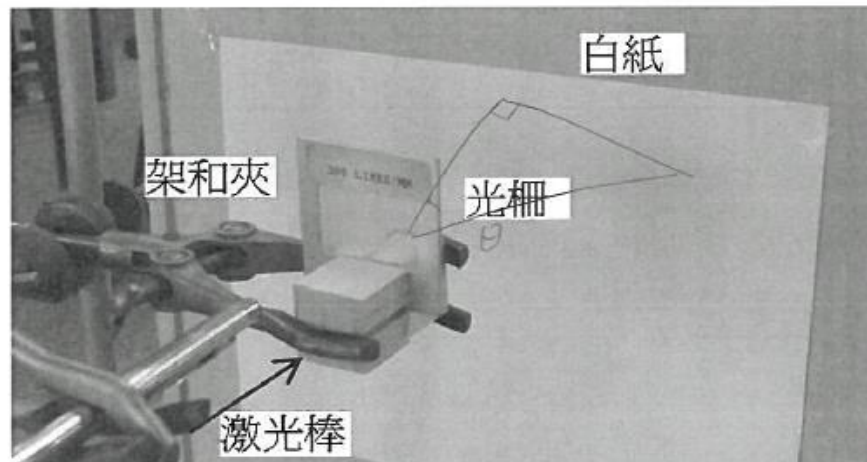


Diffraction Grating

步驟：

1. 如圖一所示裝置實驗器材。
2. 把激光指示棒指向平面光柵(警告：切勿將激光直射入眼睛。)
3. 調整平面光柵與白紙的距離，直至干涉條紋的出現。
4. 量度並紀錄平面光柵與白紙的距離(D)
5. 量度並紀錄中心亮紋與第一級亮紋的距離(y_1),
以及中心亮紋與第二級亮紋的距離(y_2)
6. 透過公式 $d \sin \theta = n\lambda$, 找出激光的波長 λ

$$\lambda = \frac{d \sin \theta}{n}$$



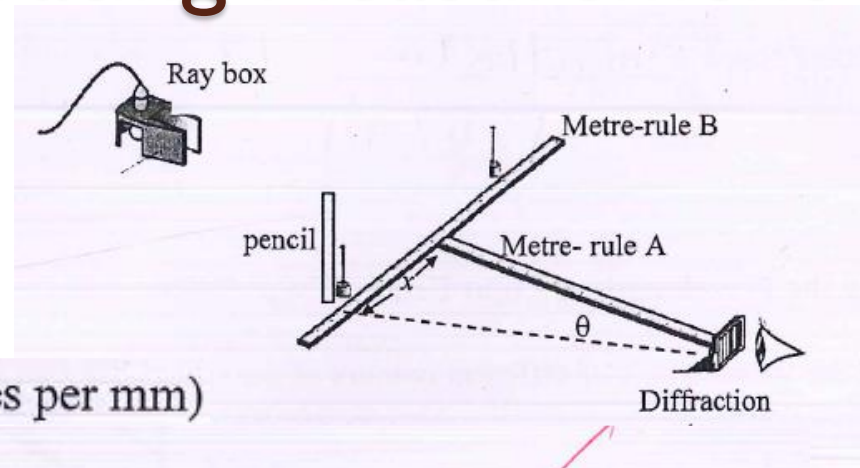
$$\begin{aligned}\theta_1 &= 10.9 \\ \theta_2 &= 22.4 \\ \tan \theta_1 &= 0.19261637\end{aligned}$$

結果和討論：

$D =$	62.3 cm	$d = 3.33 \times 10^{-6} \text{ m}$	
$y_1 =$	12 cm	$\sin \theta_1 = 0.189$	$\lambda_1 = 6.29 \times 10^{-7} \text{ m}$
$y_2 =$	25.7 cm	$\sin \theta_2 = 0.381$	$\lambda_2 = 6.34 \times 10^{-7} \text{ m}$

(3 分)

Diffraction Grating Measurement



Diffraction grating (300 lines per mm)

Results :

Grating constant (Slit width) = 3.33333×10^{-6} m

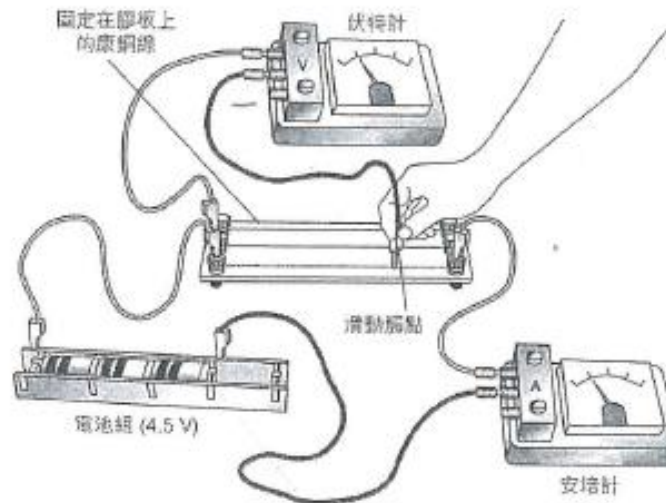
Colour	Red			
Order of maxima m	1		2	
	Left	Right	Left	Right
Position of pencil x /m	0.215	0.196	0.426	0.403
Angle of diffraction $\theta = \tan^{-1}(\frac{x}{L})$	12.1338°	11.0893°	23.0740°	21.9494°
Wavelength λ /nm	700.6504	641.1283	653.1988	622.9787
Mean value of λ /nm	654.4890 nm			

Resistance of Wire

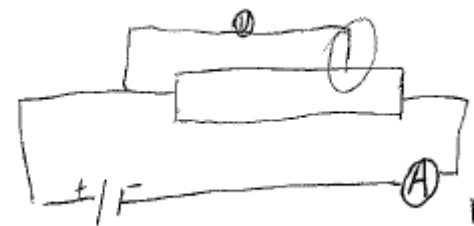
A. 實驗目標

本實驗的目的是希望找出電阻、線長度、線粗度三者之間~~的關係~~

B. 實驗結果



1. 請劃出電路圖



Data Table

Voltage V/V	2.85	2.65	2.55	2.5	2.45	2.35	2.2	2
Current I/A	0.5	1.5	2.3	3	4	5	6	8.3

(3) 結果

入射角 i	10°	20°	30°	40°	50°	60°
折射角 r	7°	14°	18°	25°	29°	34°
$\sin i$	0.17365	0.34202	0.5	0.64279	0.76604	0.86603
$\sin r$	0.12187	0.24192	0.32557	0.42262	0.48480	0.55919

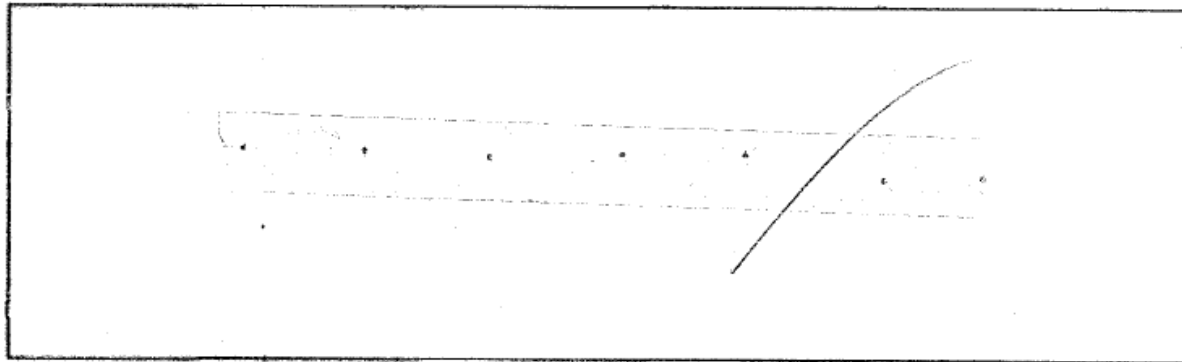
Ticker-tape Timer

4. Calculate the experimental value of the maximum speed v of the mass as it passes the lowest position.

$$\text{maximum speed } v = \frac{0.017}{\frac{1}{50}} = 0.85 \text{ m s}^{-1}$$

$$\frac{0.017}{\frac{1}{50}}$$

5. Paste the part of the ticker-tape with the two most widely separated dots in the following space. Mark the distance d on the tape.



$$0.85$$

6. Calculate the value of the maximum speed v of the mass as it passes the lowest position.

☛ Potential energy lost by the mass at the lowest position = mgh

Kinetic energy gained by the mass at the lowest position = $\frac{1}{2}mv^2$

$$\Rightarrow \frac{1}{2}mv^2 = mgh$$

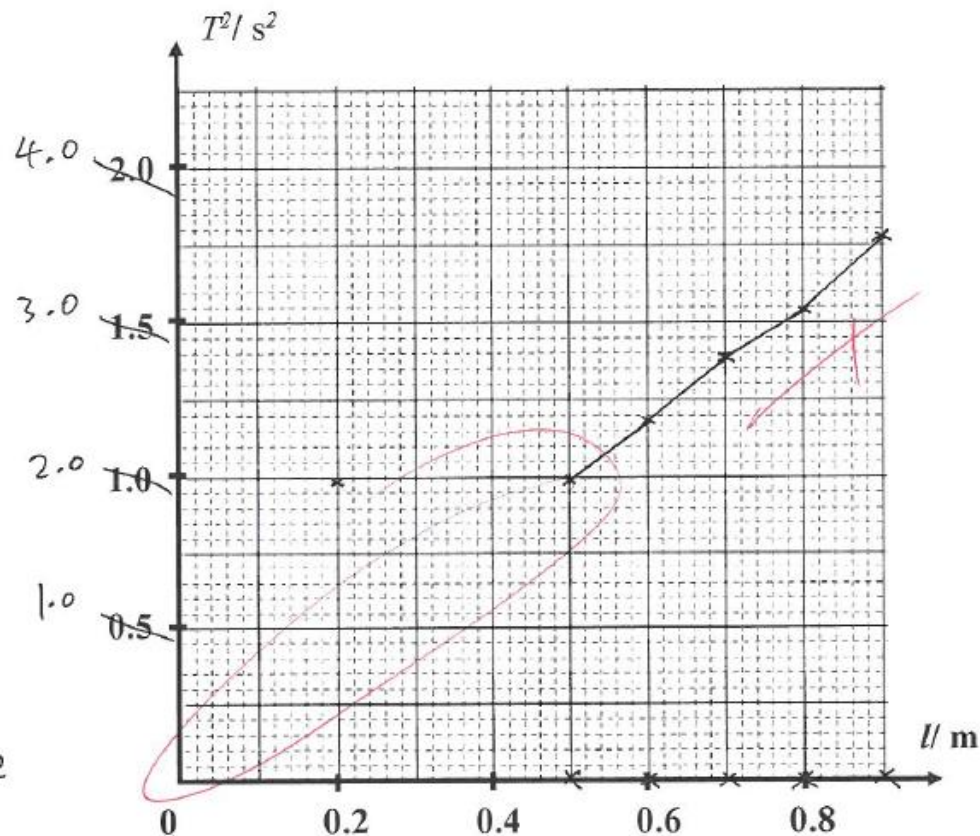
$$\Rightarrow v = \sqrt{2gh} = \sqrt{2(9.81)(0.035)} = 0.828673639 \text{ m s}^{-1}$$

5. 計算一次細小振盪的時間 T 及其平方 T^2 ，將所得答案記在表中。(5 分)

單擺長度 l/m	0.5	0.6	0.7	0.8	0.9
t/s	14.12	15.44	16.71	17.59	18.88
T/s	1.412	1.544	1.671	1.759	1.888
T^2/s^2	1.994	2.384	2.792	3.094	3.549

Data Table

Plot

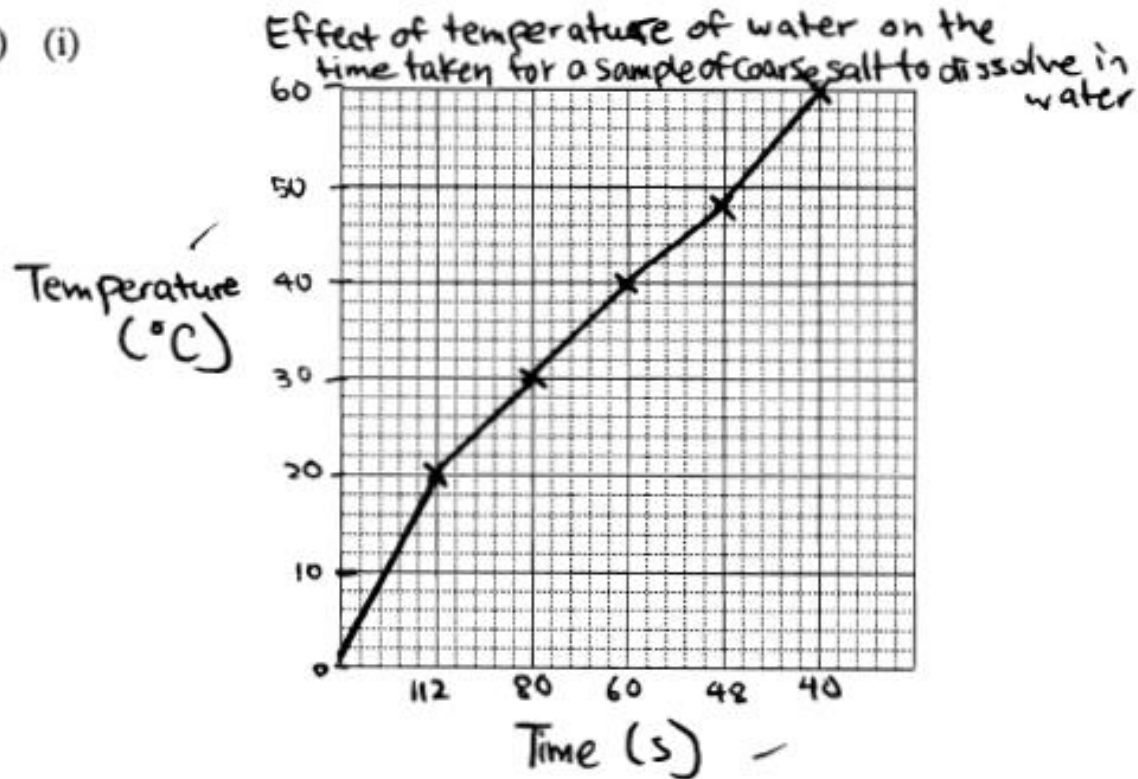


Data and Plot

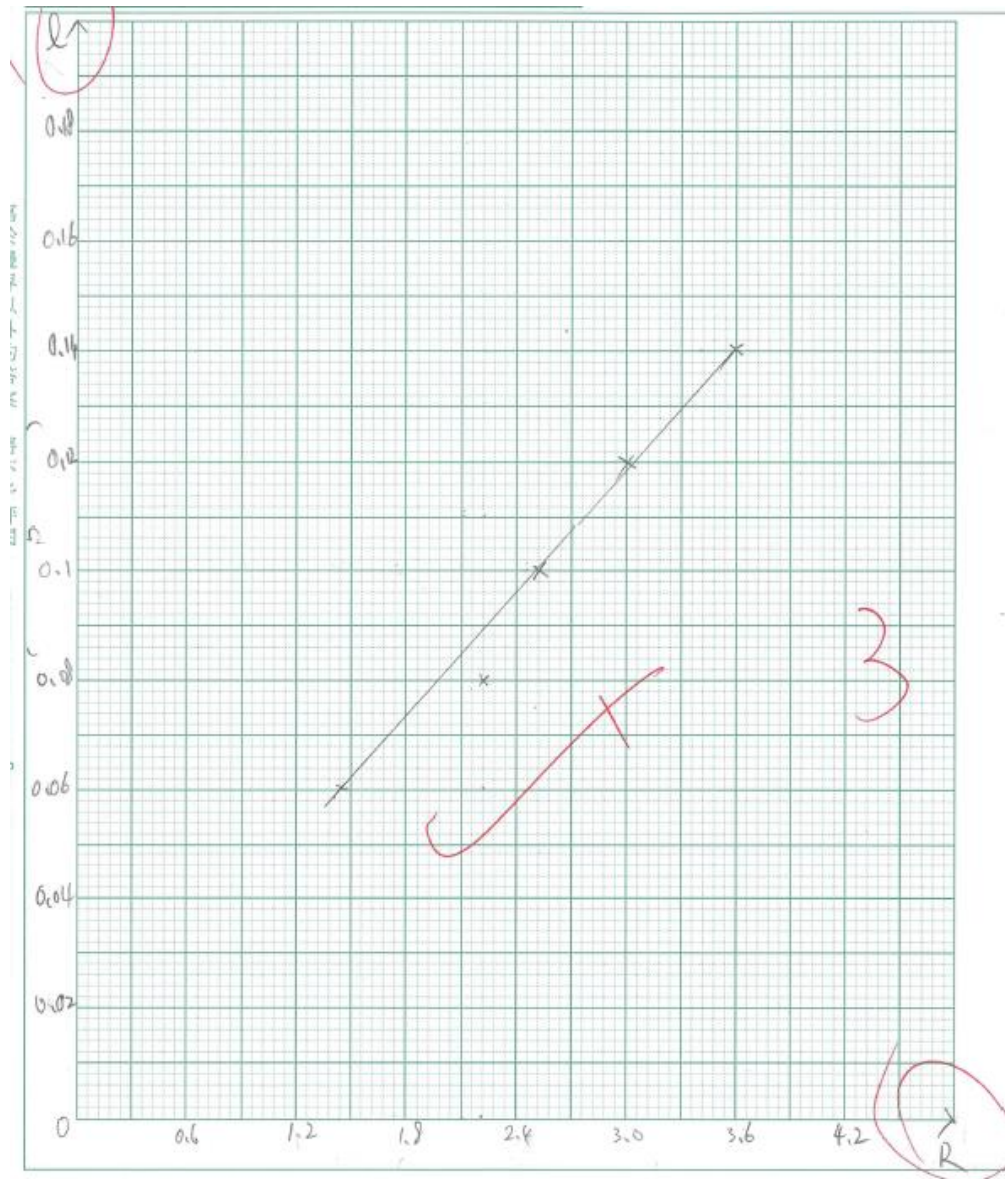
(c)
Time taken
for a sample
of coarse salt to
dissolve in water

Temperatures of water				
20°C	30°C	40°C	50°C	60°C
Time, 112 sec 122 sec.	120 sec. 80 sec.	60 sec	48 sec	40 sec

(d) (i)



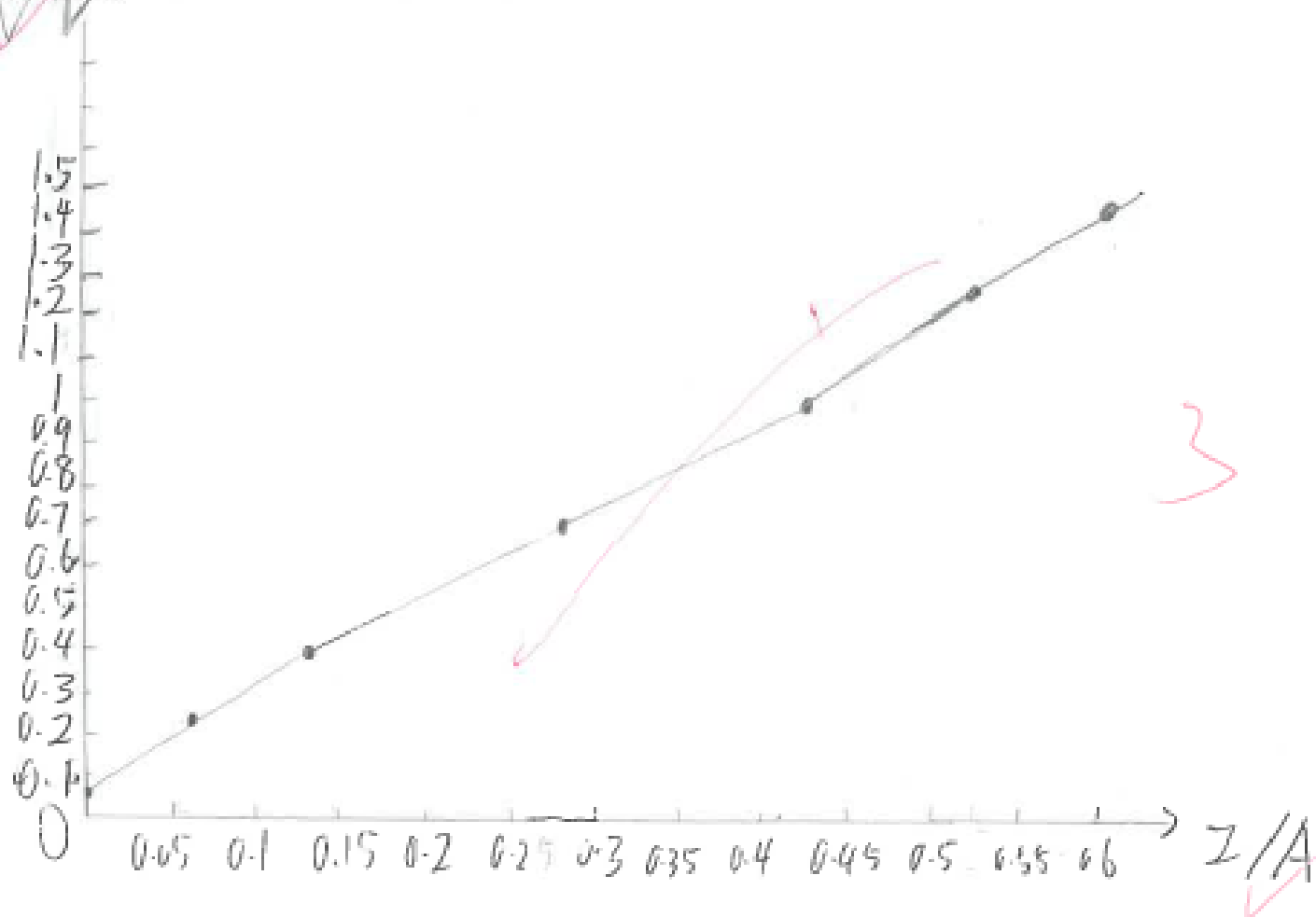
Plot



Plot

繪畫感生電動勢的峰值與通過電磁鐵的電流^{0.00}的關係圖。

(4 分)





THANKS