JOHN EDMONDSON HIGH SCHOOL
Assessment Notification

Faculty: Science  Course: Stage 6   Year: 12

Assessment Task: Depth Study - Practical Investigation and Report

Assessment Weighting: 30%   Due: Term 4  Week 8  Date: 6/12/2019

Task Type: Hand in Task ☑  In Class Task ☐  Practical Task ☑

Outcomes assessed (NESA)
PH12-12 describes and analyses qualitatively and quantitatively circular motion and motion in a gravitational field, in particular, the projectile motion of particles
PH11/12-1 develops and evaluates questions and hypotheses for scientific investigation
PH11/12-2 designs and evaluates investigations in order to obtain primary and secondary data and information
PH11/12-3 conducts investigations to collect valid and reliable primary and secondary data and information
PH11/12-4 selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media
PH11/12-5 analyses and evaluates primary and secondary data and information
PH11/12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose

Task Description/Overview
Students are to carry out an investigation of their choice into an aspect of projectile motion OR circular motion OR gravitational acceleration.
Some possible examples:
i) Using Video Tracker to analyse the horizontal component and vertical component of the velocity of a projectile
ii) Constructing equipment to verify the Hunter and the Monkey projectile motion problem.
iii) Using circular motion to determine the coefficient of friction between a variety of different surfaces.
iv) Verifying minimum speeds for a successful loop the lopp
v) Practically determining the acceleration due to gravity.

Detailed Assessment Task Description
Students are to
i) Submit a 3 minute video describing their investigation and summarising their findings. The target audience being a Year 12 Physics class. USB stick to Ms Pathammavong
ii) Submit a 2000 word report which includes their research, investigation and findings. Hard copy to Ms Pathammavong.
The Depth Study Report (hard copy) and video on USB stick will be due before Roll Call in the SOLE room on Friday 6th December, 2019.
TIME GIVEN IN CLASS: 6 lessons (5 hours) - 18/11/19, 19/11/19 (2 periods), 20/11/19, 22/11/19, 27/11/19
5 hours minimum should be allocated at home
NOTE: Students absent during the scheduled Depth Study periods will need to reschedule a suitable time with their teacher to fulfill their requirements.

You are to submit a scientific report that includes the following:
- title
- abstract
- introduction
- hypothesis
- materials and method
- risk assessment
- results
- discussion
- conclusion
- reference list

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Developing</th>
<th>Elementary</th>
<th>Substantial</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH12-12 describes and analyses qualitatively and quantitatively circular motion and motion in a gravitational field, in particular, the projectile motion of particles</td>
<td>Demonstrates limited knowledge of the concept Marks 1-3</td>
<td>Demonstrates some knowledge of the concept Marks 4-5</td>
<td>Soundly explains and analyses the concept, thorough research Marks 6-8</td>
<td>Thoroughly explains, analyses and applies the concept, extensive research Marks 9-10</td>
</tr>
<tr>
<td>Questioning and predicting PH11/12-1 develops and evaluates questions and hypotheses for scientific investigation</td>
<td>Includes a limited question or hypothesis Marks 1</td>
<td>Includes a question or hypothesis Marks 2</td>
<td>Thoroughly develops a question/s and hypothesis Marks 3</td>
<td></td>
</tr>
<tr>
<td>Planning investigations PH11/12-2 designs and evaluates investigations in order to obtain primary and</td>
<td>Includes a limited design and investigation Marks 1</td>
<td>Includes a design and investigation Marks 2</td>
<td>Thoroughly designs and evaluates an investigation/s Marks 3</td>
<td>Extensively designs and evaluates an investigation/s Marks 4</td>
</tr>
<tr>
<td>Performing experiment and Risk Assessment</td>
<td>Conducting investigations</td>
<td>PH11/12-3 Conducts investigations to collect valid and reliable primary and secondary data and information</td>
<td>Requires teacher assistance to conduct the investigation and to select appropriate equipment</td>
<td>Some suitable equipment is chosen</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Processing data and information</td>
<td>PH11/12-4 Selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media</td>
<td>Data is disorganised and only one set of data from one experiment present</td>
<td>Selects data and information and represents them using a range of formats, digital technologies and appropriate media</td>
<td>Selects qualitative and quantitative data and information.</td>
</tr>
<tr>
<td>Analysing data and information</td>
<td>PH11/12-5 Analyses and evaluates primary and secondary data and information</td>
<td>Presents data with limited analysis</td>
<td>Identifies trends, patterns and relationships in data and information with limited analysis</td>
<td>Identifies errors, uncertainty and limitations in data</td>
</tr>
</tbody>
</table>
### Assessment Criteria

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Mark Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding (O)</td>
<td>Student has demonstrated an extensive knowledge and understanding. Student represented quantitative data in a range of appropriate formats using digital technologies. Student communicated scientific understanding effectively using language that is clear and succinct to present a logical and cohesive report that followed the guidelines provided.</td>
<td>79.5-100</td>
</tr>
<tr>
<td>High (H)</td>
<td>Student has demonstrated a thorough knowledge and understanding. Student represented quantitative data in a range of appropriate formats. Student communicated scientific understanding using language that is mostly clear to present a well-organised report that followed the guidelines provided.</td>
<td>69.5-79</td>
</tr>
<tr>
<td>Sound (S)</td>
<td>Student has demonstrated a sound knowledge and understanding. Student represented quantitative data in a range of appropriate formats. Student communicated scientific understanding using language that is mostly clear to present a report that followed the guidelines provided.</td>
<td>49.5-69</td>
</tr>
<tr>
<td>Basic (B)</td>
<td>Student has demonstrated a basic knowledge and understanding. Student represented data in a logical format. Student communicated scientific understanding using basic language with limited scientific terminology to present a report that follows some guidelines.</td>
<td>19.5-49</td>
</tr>
<tr>
<td>Limited (L)</td>
<td>Student has demonstrated a limited knowledge and understanding. Student represented data disorganised and not in an appropriate format. Student communicated scientific understanding using basic language to present a report that lacks any structure.</td>
<td>0-19</td>
</tr>
</tbody>
</table>

**Satisfactory completion of courses**  
A course has been satisfactorily completed, when the student has:  
- Followed the course developed/endorsed by the NSW Educational Standards Authority (NESA)  
- Applied himself/herself with diligence and sustained effort to the set tasks and experiences provided in the course.  
- Achieved some or all of the course outcomes