# **Quality & Qualifications Ireland**



Mechanics, 5N1638

## **Practical Assessment**

Learner Record 20%

Skills Demonstration 40%

**Teacher:** Caroline Mc Mahon

**Course Coordinator:** 

**Internal Verification- Name & Date** 

# Contents

# **Mechanics Practicals**

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# Ó Fiaich Institute of Further Education



## Dundalk, Co. Louth

# **Assignment Submission Form**

Learner's Name	
Subject Teachers Name	Caroline Mc Mahon
Course	7ENG
Module Title	Mechanics
Module Code	5N1638
Assignment Title	Vectors
Assignment No.	1 of 4
Maximum Marks	15%
	(10% Skills Demonstration +
	5% Learner Record)

You MUST Retain A Copy of This Assignment/Project For Your Own Records and in The Event of You Being Asked For A Second Copy By Your Subject teacher.

# **Declaration of Original Work**

Having read and understood the Policy on Assignment Submission I declare that I have carried out this assignment according to the guidelines in the attached brief and that the coursework I am now submitting is entirely my own work.

Signed:	Date:
8	

This Submission Form must be attached as the first pages of your Assignment / Project and be submitted to your subject teacher on or prior to the due submission date.

A submission list must be signed for this booklet.

## O'Fiaich Institute of Further Education

#### **Assessment Brief 1 of 4**

Module Title: Mechanics	Code: 5N1638
Teacher: Martin Coyne	Weighting: 15% (10% Skills Demonstration + 5% Learner Record)
Issue Date:	Due Date:

#### **Skills Demonstration:** Acceleration

- 1. Use your understanding of Vectors to demonstrate the practice of resolving two vectors into one both graphically and through calculation.
  - Using the data collected perform the necessary calculations and produce the necessary diagrams to satisfy the assignment brief.
  - o Disassemble and return all equipment once the skills demonstration has finished.
  - At all times demonstrate safe working procedures and ask the subject teacher for assistance/guidance where needed.
- Learner Record should be completed in this booklet.

#### **Assignment Guidelines:**

- Practicals will be conducted on the date of issue above during normal class in laboratory room
   48
- All students must be present in the laboratory at the start of class time.
- Late comers will not be permitted to enter the laboratory which will result in up to 6% of the marks being lost on the skills demonstration.

#### **Assessment Criteria:**

- Up to 10% will be allocated for the skills demonstration. Marks will be awarded as outlined in the Skills demonstration marking guidelines at the back of this booklet.
- Up to 5% will be allocated to the learner record. Marks will be awarded as outlined in the Learner record marking guidelines at the back of this booklet.

#### **Learning Outcomes:**

The above brief is based on learning outcomes 1 and 2.

I have read and understand the assignment guidelines fully:										
Candidate's Signature:										
Feedback Given:	Feedback Given: Yes $\square$ No $\square$ Date of Feedback:									
Evidence that you have completed your skills demonstrations must be provided in photographic form.										

Vectors	
Aims:	
Equipment:	
	_
	_
	_
<b>Equipment Set Up (Labelled Drawing in Pend</b>	il):

Method/Procedure:
· <del></del>

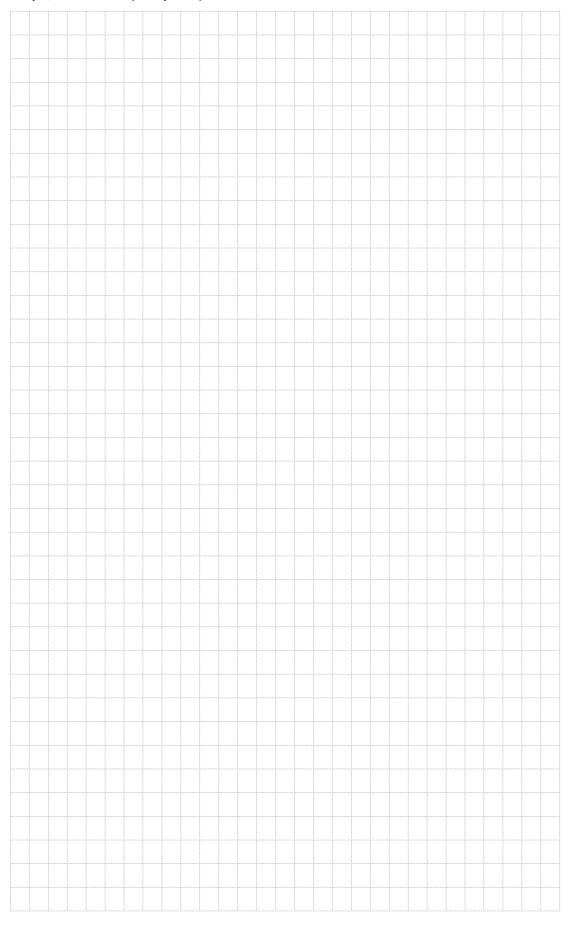
Readings (primary record):										
Notes:										
Observation	ns (Prim	ary Rec	ord):							

Calculations/Results:		

#### **Results:**



## **Graph/Chart/Table (if required):**



Interpretation of Observations:					
	-				
	-				
Analysis of Results:					
,					

Conclusion:		


	Teacher Feedback	Student Feedback
_	Strengths of Your Submission	Specific Advice on how to improve
Due Date:		your work
		_
		_
Percentage:		
		_
Grade:		
☐ Distinction		
☐ Merit		
☐ Pass	Student Feedback:	Student Feedback:
☐ Unsuccessful		
		_
Oral Feedback Given:		
		_
acher Signature:		



# Ó Fiaich Institute of Further Education



## Dundalk, Co. Louth

# **Assignment Submission Form**

Learner's Name	
Subject Teachers Name	Caroline Mc Mahon
Course	7ENG
Module Title	Mechanics
Module Code	5N1638
Assignment Title	Acceleration
Assignment No.	2 of 4
Maximum Marks	15%
	(10% Skills Demonstration +
	5% Learner Record)

You MUST Retain A Copy of This Assignment/Project For Your Own Records and in The Event of You Being Asked For A Second Copy By Your Subject teacher.

# **Declaration of Original Work**

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Signed:	Date:
•	

This Submission Form must be attached as the first pages of your Assignment / Project and be submitted to your subject teacher on or prior to the due submission date

A submission list must be signed for this booklet.

# O'Fiaich Institute of Further Education Assessment Brief 2 of 4

Module Title: Mechanics	Code: 5N1638
Teacher: Martin Coyne	Weighting: 15% (10% Skills Demonstration + 5% Learner Record)
Issue Date:	Due Date:

#### **Skills Demonstration:** Acceleration

#### 1. Use an suitable method to prove Newton's Second Law

- Using the data collected perform the necessary calculations and produce the necessary graphs to satisfy the assignment brief.
- o Disassemble and return all equipment once the skills demonstration has finished.
- At all times demonstrate safe working procedures and ask the subject teacher for assistance/guidance where needed.
- Learner Record should be completed in this booklet.

#### **Assignment Guidelines:**

- Practicals will be conducted on the date of issue above during normal class in laboratory room 47 or 48.
- All students must be present in the laboratory at the start of class time.
- Late comers will not be permitted to enter the laboratory which will result in up to 10% of the marks being lost on the skills demonstration.

#### **Assessment Criteria:**

- Up to 10% will be allocated for the skills demonstration. Marks will be awarded as outlined in the Skills demonstration marking guidelines at the back of this booklet.
- Up to 5% will be allocated to the learner record. Marks will be awarded as outlined in the Learner record marking guidelines at the back of this booklet.

#### **Learning Outcomes:**

• The above brief is based on learning outcomes 1, 2, 3, 5 and 6.

I have read and understand the assignment guidelines fully:  Candidate's Signature:								
Feedback Given:	Yes 🗆	No 🗆	Date of Feedback:					
Evidence that you have completed your skills demonstrations must be provided in photographic form.								

Air	Aims:	
Eq	Equipment:	
Eq	Equipment Set Up (Labelled Drawing in Pencil):	

**Acceleration: Newton's Second Law** 

Method/Procedure:	

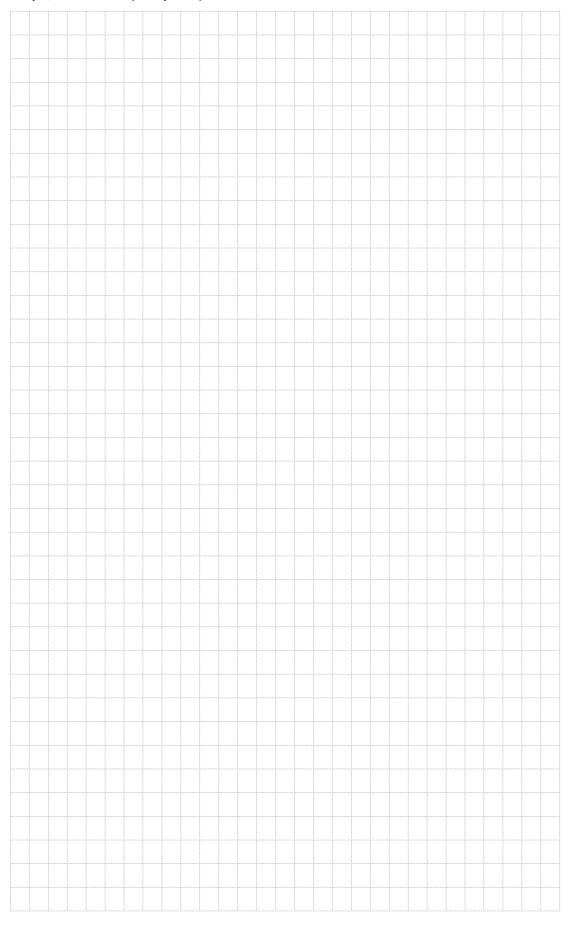
Readi	ngs (pri	imary r	ecord)	:					
Notes	:								
Obser	vations	s (Prima	ary Rec	cord):					

Calculations:	

#### **Results:**



## **Graph/Chart/Table (if required):**



Interpretation of Observatio	ns:		
Analysis of Results:			

Conclusion:				

# To be completed be the teacher when booklet is being marked and assessed: **Continuous Assessment Feedback Form** Teacher Feedback Student Feedback **Specific Advice on how to improve Strengths of Your Submission Due Date:** your work Percentage: **Grade:** ☐ Distinction ☐ Merit ☐ Pass **Student Feedback: Student Feedback:** ☐ Unsuccessful **Oral Feedback** Given: Teacher Signature: Student Signature: \_\_\_



## Ó Fiaich Institute of Further Education



## Dundalk, Co. Louth

# **Assignment Submission Form**

Learner's Name	
Subject Teachers Name	Caroline Mc Mahon
Course	7ENG
Module Title	Mechanics
Module Code	5N1638
Assignment Title	Co-planar forces
Assignment No.	3 of 5
Maximum Marks	15%
	(10% Skills Demonstration +
	5% Learner Record)

You MUST Retain A Copy of This Assignment/Project For Your Own Records and in The Event of You Being Asked For A Second Copy By Your Subject teacher.

# **Declaration of Original Work**

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Signed:	Date:	

This Submission Form must be attached as the first pages of your Assignment / Project and be submitted to your subject teacher on or prior to the due submission date.

# O'Fiaich Institute of Further Education Assessment Brief 3 of 4

Module Title: Mechanics	Code: 5N1638
Teacher: Martin Coyne	Weighting: 15% (10% Skills Demonstration + 5% Learner Record)
Issue Date:	Due Date:

**Skills Demonstration:** Co-Planar Forces

- 1. Use your understanding of Co-Planar forces to demonstrate the process of resolving a loaded suspended beam system in order to calculate and compare the resultant forces.
  - Using the data collected perform the necessary calculations and produce the necessary graphs to satisfy the assignment brief.
  - o Disassemble and return all equipment once the skills demonstration has finished.
  - At all times demonstrate safe working procedures and ask the subject teacher for assistance/guidance where needed.
- Learner Record should be completed in this booklet.

#### **Assignment Guidelines:**

- Practicals will be conducted on the date of issue above during normal class in laboratory room
   48.
- All students must be present in the laboratory at the start of class time.
- Late comers will not be permitted to enter the laboratory which will result in up to 10% of the marks being lost on the skills demonstration.

#### **Assessment Criteria:**

- Up to 10% will be allocated for the skills demonstration. Marks will be awarded as outlined in the Skills demonstration marking guidelines at the back of this booklet.
- Up to 5% will be allocated to the learner record. Marks will be awarded as outlined in the Learner record marking guidelines at the back of this booklet.

#### **Learning Outcomes:**

• The above brief is based on learning outcomes 1, 2 and 7.

I have read and unders Candidate's Signature:	•	gnment guideli	nes fully:
Feedback Given:	Yes 🗆	No 🗆	Date of Feedback:
Evidence that you have o	completed you	r skills demonst	rations must be provided in photographic form.

# **Co-Planar Forces** Aims: **Equipment: Equipment Set Up (Labelled Drawing in Pencil):**

Method/Procedure:				

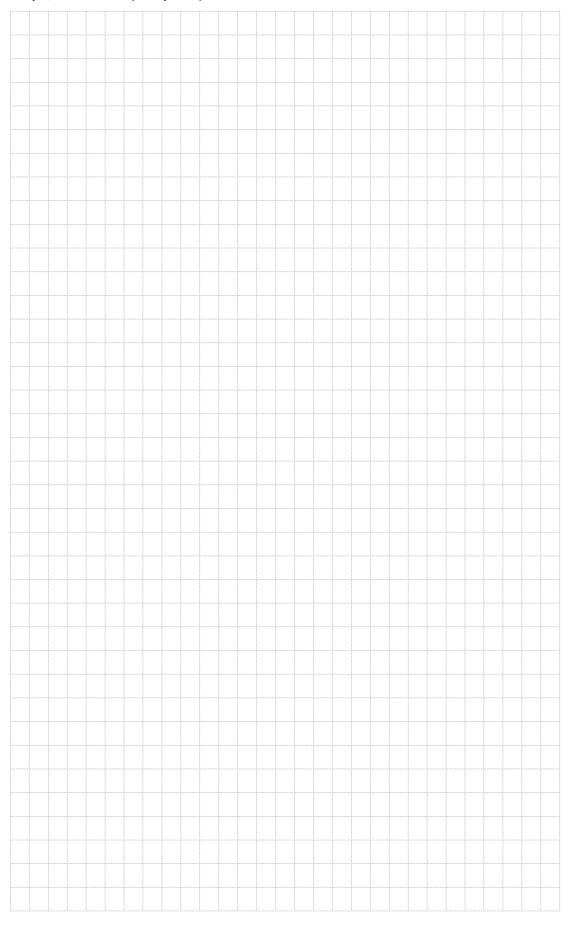
Readi	ngs (pri	mary r	ecord)	:					
Notes	:								
Obser	vations	s (Prim	ary Rec	ord):					

Calculations:	

#### **Results:**



## **Graph/Chart/Table (if required):**



Interpretation of Observation	ns:		
Analysis of Results:			

Conclusion:				

# To be completed be the teacher when booklet is being marked and assessed: **Continuous Assessment Feedback Form** Teacher Feedback Student Feedback **Specific Advice on how to improve Strengths of Your Submission Due Date:** your work Percentage: **Grade:** ☐ Distinction ☐ Merit ☐ Pass **Student Feedback: Student Feedback:** ☐ Unsuccessful **Oral Feedback** Given: Teacher Signature: Student Signature: \_\_\_



## Ó Fiaich Institute of Further Education



## Dundalk, Co. Louth

## **Assignment Submission Form**

Learner's Name	
Subject Teachers Name	Caroline Mc Mahon
Course	7ENG
Module Title	Mechanics
Module Code	5N1638
Assignment Title	Coefficient of Friction
Assignment No.	3 of 4
Maximum Marks	15%
	(10% Skills Demonstration +
	5% Learner Record)

You MUST Retain A Copy of This Assignment/Project For Your Own Records and in The Event of You Being Asked For A Second Copy By Your Subject teacher.

## **Declaration of Original Work**

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Signed:	Date:
oigneu	Date

This Submission Form must be attached as the first pages of your Assignment / Project and be submitted to your subject teacher on or prior to the due submission date.

# O'Fiaich Institute of Further Education Assessment Brief 4 of 4

Module Title: Mechanics	Code: 5N1638
Teacher: Martin Coyne	Weighting: 15% (10% Skills Demonstration + 5% Learner Record)
Issue Date:	Due Date:

#### **Skills Demonstration:** Coefficient of Friction

- From your understanding of Friction demonstrate and prove that the coefficient of friction between any two surfaces is directly related to the force moving the object and the normal reaction force due to the weight of the object.
  - Using the data collected perform the necessary calculations and produce the necessary graphs to satisfy the assignment brief.
  - o Disassemble and return all equipment once the skills demonstration has finished.
  - At all times demonstrate safe working procedures and ask the subject teacher for assistance/guidance where needed.
- Learner Record should be completed in this booklet.

#### **Assignment Guidelines:**

- Practicals will be conducted on the date of issue above during normal class in laboratory room
   48.
- All students must be present in the laboratory at the start of class time.
- Late comers will not be permitted to enter the laboratory which will result in up to 10% of the marks being lost on the skills demonstration.

#### **Assessment Criteria:**

- Up to 10% will be allocated for the skills demonstration. Marks will be awarded as outlined in the Skills demonstration marking guidelines at the back of this booklet.
- Up to 5% will be allocated to the learner record. Marks will be awarded as outlined in the Learner record marking guidelines at the back of this booklet.

#### **Learning Outcomes:**

• The above brief is based on learning outcomes 1, 2, 5, 6 and 13.

I have read and und	erstand the ass	ignment guideli	ines fully:	
Candidate's Signatu	re:			
Feedback Given:	Yes 🗆	No 🗆	Date of Feedback:	
Evidence that you ha	ve completed you	ır skills demonst	rations must be provided in photographi	c form.

# **Coefficient of Friction** Aims: **Equipment: Equipment Set Up (Labelled Drawing in Pencil):**

Method/Procedure:	

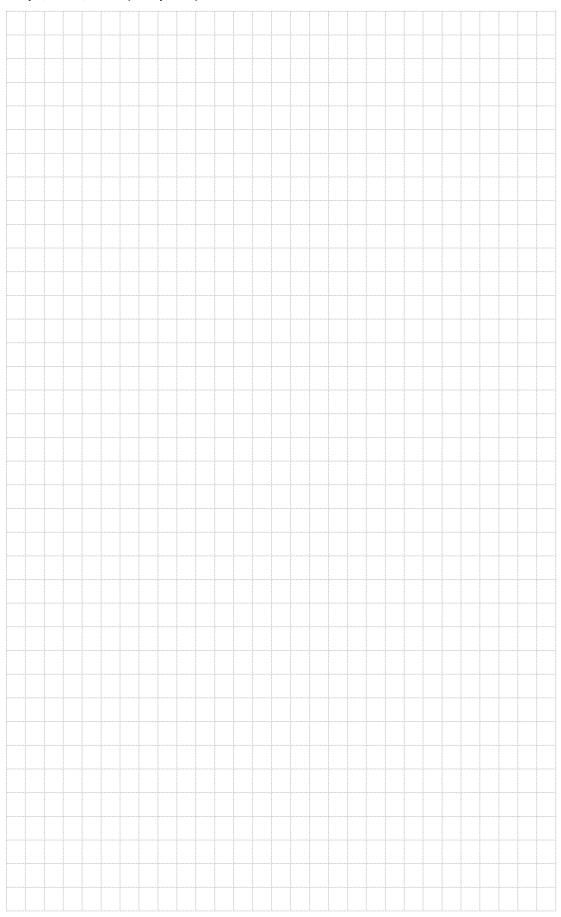
Readii	ngs (pri	mary r	ecord):	:					
<b>N</b> 1-4	_								
Notes	•								
Obser	vations	(Prim	ary Rec	ord):					

Calculations:	

### **Results:**



## **Graph/Chart/Table (if required):**



interpretation of Observations:		
Analysis of Results:		

Conclusion:				


# To be completed be the teacher when booklet is being marked and assessed: **Continuous Assessment Feedback Form** Teacher Feedback Student Feedback **Specific Advice on how to improve** Strengths of Your Submission **Due Date:** your work Percentage: **Grade:** ☐ Distinction ☐ Merit ☐ Pass **Student Feedback: Student Feedback:** ☐ Unsuccessful **Oral Feedback** Given: Teacher Signature: Student Signature: \_\_\_

## **Learner Record Marking Sheet [Mechanics 5N1638]**

Assignment Title: Vectors

Accurate description of aims, materials and methodology	Maximum Mark	Marks Breakdown	Learner Mark
Aims	1	1 x 1	
Materials/Equipment	2	2 x 1	
Methodology/Processes	2	2 x 1	
Sub Total	5		

Concise record of results and observations, including a primary record	Maximum Mark	Marks Breakdown	Learner Mark
Results and/or Readings	_	F 1	
Observations	5	5 x 1	
Sub Total	5		

Comprehensive analysis of results and interpretation of observations	Maximum Mark	Marks Breakdown	Learner Mark
Analysis of results	5	5 x 1	
Interpretation of observations		2 X 1	
Sub Total	5		

Logical conclusions based on results and/or observations	Maximum Mark		Learner Mark
Conclusions	5	5 x 1	
Sub Total	5		

## **Learner Record Marking Sheet [Mechanics 5N1638]**

Assignment Title: Acceleration

Accurate description of aims, materials and methodology	Maximum Mark	Marks Breakdown	Learner Mark
Aims	1	1 x 1	
Materials/Equipment	2	2 x 1	
Methodology/Processes	2	2 x 1	
Sub Total	5		

Concise record of results and observations, including a primary record	Maximum Mark	Marks Breakdown	Learner Mark
Results and/or Readings	5	F v 1	
Observations		5 x 1	
Sub Total	5		

Comprehensive analysis of results and interpretation of observations	Maximum Mark	Marks Breakdown	Learner Mark
nalysis of results	5	5 x 1	
Interpretation of observations		2 X I	
Sub Total	5		

Logical conclusions based on results and/or observations	Maximum Mark		Learner Mark
Conclusions	5	5 x 1	
Sub Total	5		

## **Learner Record Marking Sheet [Mechanics 5N1638]**

Assignment Title: Co-Planar Forces

Accurate description of aims, materials and methodology	Maximum Mark	Marks Breakdown	Learner Mark
Aims	1	1 x 1	
Materials/Equipment	2	2 x 1	
Methodology/Processes	2	2 x 1	
Sub Total	5		

Concise record of results and observations, including a primary record	Maximum Mark	Marks Breakdown	Learner Mark
Results and/or Readings	5	F 1	
Observations		5 5 X I	5 x 1
Sub Total	5		

Comprehensive analysis of results and interpretation of observations	Maximum Mark	Marks Breakdown	Learner Mark
nalysis of results	- 5	5 x 1	
Interpretation of observations		2 X I	
Sub Total	5		

Logical conclusions based on results and/or observations	Maximum Mark		Learner Mark
Conclusions	5	5 x 1	
Sub Total	5		

## **Learner Record Marking Sheet [Mechanics 5N1638]**

Assignment Title: Coefficient of Friction

Accurate description of aims, materials and methodology	Maximum Mark	Marks Breakdown	Learner Mark
Aims	1	1 x 1	
Materials/Equipment	2	2 x 1	
Methodology/Processes	2	2 x 1	
Sub Total	5		

Concise record of results and observations, including a primary record	Maximum Mark	Marks Breakdown	Learner Mark
Results and/or Readings	5	F 1	
Observations		5 5 X I	5 x 1
Sub Total	5		

Comprehensive analysis of results and interpretation of observations	Maximum Mark	Marks Breakdown	Learner Mark
Analysis of results	_	5 x 1	
Interpretation of observations	5	2 X I	
Sub Total	5		

Logical conclusions based on results and/or observations	Maximum Mark		Learner Mark
Conclusions	5	5 x 1	
Sub Total	5		

## **Skills Demonstration Marking Sheet [Mechanics 5N1638]**

Assignment Title: **Vectors** 

Effective execution of practical investigations including adherence to health and safety procedures	Maximum Mark	Learner Mark
Knowledge of equipment and materials	3	
Correct set-up of equipment (apparatus)	2	
Accurate handling and use of equipment and materials	2	
Competent execution of procedure/process/method	3	
Reduction of process errors	2	
Use of appropriate PPE	2	
Safe handling of equipment, tools and materials	3	
General adherence to laboratory health and safety practices	3	
Sub Total	20	

Accurate recording of measurements and/or observations	Maximum Mark	Learner Mark
Recording of measurements	20	
Recording of observations	20	
Sub Total	20	

## **Skills Demonstration Marking Sheet [Mechanics 5N1638]**

Assignment Title: Acceleration

Effective execution of practical investigations including adherence to health and safety procedures	Maximum Mark	Learner Mark
Knowledge of equipment and materials	3	
Correct set-up of equipment (apparatus)	2	
Accurate handling and use of equipment and materials	2	
Competent execution of procedure/process/method	3	
Reduction of process errors	2	
Use of appropriate PPE	2	
Safe handling of equipment, tools and materials	3	
General adherence to laboratory health and safety practices	3	
Sub Total	20	

Accurate recording of measurements and/or observations	Maximum Mark	Learner Mark
Recording of measurements	20	
Recording of observations	20	
Sub Total	20	

## **Skills Demonstration Marking Sheet [Mechanics 5N1638]**

Assignment Title: Co-planar Forces

Effective execution of practical investigations including adherence to health and safety procedures	Maximum Mark	Learner Mark
Knowledge of equipment and materials	3	
Correct set-up of equipment (apparatus)	2	
Accurate handling and use of equipment and materials	2	
Competent execution of procedure/process/method	3	
Reduction of process errors	2	
Use of appropriate PPE	2	
Safe handling of equipment, tools and materials	3	
General adherence to laboratory health and safety practices	3	
Sub Total	20	

Accurate recording of measurements and/or observations	Maximum Mark	Learner Mark
Recording of measurements	20	
Recording of observations	20	
Sub Total	20	

Assignment Title: Coefficient of Friction

Effective execution of practical investigations including adherence to health and safety procedures	Maximum Mark	Learner Mark
Knowledge of equipment and materials	3	
Correct set-up of equipment (apparatus)	2	
Accurate handling and use of equipment and materials	2	
Competent execution of procedure/process/method	3	
Reduction of process errors	2	
Use of appropriate PPE	2	
Safe handling of equipment, tools and materials	3	
General adherence to laboratory health and safety practices	3	
Sub Total	20	

Accurate recording of measurements and/or observations	Maximum Mark	Learner Mark
Recording of measurements	20	
Recording of observations	20	
Sub Total	20	

## **Louth and Meath Education and Training Board**

Mechanics	Learner Marking Sheet
5N1638	Skills Demonstration 40%
	Learner Record 20%

Learner's Name: Learner's PPSN	l:	
Assessment Criteria	Maximum Mark	Learner Mark
Skills Demonstration		
<ul> <li>effective execution of practical investigations including adherence to health and safety procedures</li> </ul>	20	
<ul> <li>accurate recording of measurements and/or observations</li> </ul>	20	
Subtotal	40	
Learner Record		
<ul> <li>accurate description of aims, material and methodology</li> </ul>	5	
<ul> <li>concise record of results and observations, including a primary record</li> </ul>	5	
<ul> <li>comprehensive analysis of results and interpretation of observations</li> </ul>	5	
<ul> <li>logical conclusions based on results and observations</li> </ul>	5	
Subtotal	20	
Total Mark	60	

Assessor's Signature:	Date: _	
External Authenticator's Signature:	Date:	

## **Learner Record Marking Guidelines:**

#### Comprehensive description of aims, equipment, materials and methodology

- ➤ <u>Aims</u>: Two points based on what you plan to achieve in this experiment/investigation. Bullet points or short paragraph is acceptable, must not be a mini procedure. (1 mark)
- Equipment and Materials: A list of all equipment used in the experiment.
   A diagram of the equipment set-up (in pencil)
   (1 marks)
- Method/Procedure: At least 8 points outlining the step by step process used conducting the investigation.
   (2 marks)

#### Accurate record of results and/or observations, including a primary record

- Observations/(Readings): Readings comprise of the data taken from the experiment/investigation. Readings are generally presented in a table.
   Observations are critical parts of the experiment/investigation that are worth noting. All experiments/investigations require at least 2 observations.
- <u>Results</u>: Results are the outcomes of any calculations/graphs/trigonometric or geometric layouts performed after the investigation. Depending on the nature of the experiment/investigation results could also be a written statement clarifying the experimental outcomes.
  (3 marks)

### Comprehensive analysis of results and interpretation of observations

Interpretation of Observations/Analysis of Results: Explain the impact that the observations you previously listed have on the results/outcomes of the experiment.

To explain the meaning/impact/implication of the results they will need to be analysed. Source of error that were not/could not be eliminated from the experiment and their impact on the results can be discussed here.

(5 marks)

#### Logical conclusions based on results and/or observations

Conclusion: This is a detailed account of the critical aspects of the experiment/investigation. It should reinforce the analysis and explain the meaning of the observations and results.
 The conclusion is not a summary of the experiment. (5 marks)

## TOTAL MARKS 30 WILL BE DIVIDED BY 4 FOR THE FINAL MARK.

## **Skills Demonstration Marking Guidelines:**

During the skills demonstration you will be observed and marked on the following:

#### Assembling and handling equipment and materials:

• Knowledge of equipment and materials (4x1) (3 marks)

• Correct set-up of equipment (apparatus) (2 marks)

Accurate handling and use of equipment and materials (2 marks)

## Implementation of process and/or following guidelines and instructions:

• Competent execution of procedure/process/method (6 steps x 1) (3 marks)

• Reduction of process errors (4 x 1) (2 marks)

#### Safe working practices

• Use of appropriate PPE (2 marks)

Safe handling of equipment, tools and materials
 (3 marks)

General adherence to laboratory health and safety practices
 (3 marks)

#### Accurate recording of measurements and/or observations:

• Recording of measurements (20 marks)

Recording of observations

Evidence that you have completed your skills demonstrations must be provided in photographic form.

#### TOTAL MARKS 40 WILL BE DIVIDED BY 4 FOR THE FINAL MARK.