

Title of Lesson: Lesson 3 Linear Regression Review and Activity
Subject : Applied Statistics

LESSON PLAN 3

Name: Dadan Rosana
Title of lesson: Linear Regression Review and Activity
Date of lesson: 2012
Length of lesson: 2 x 50 minutes
Description of the class
Name of course: Physics Education
Grade level: 3th

Source of the lesson:

Welkowitz, Joan, Robert B. Ewen, and Jacob Cohen. *Introductory Statistics for the Behavioral Sciences*. Third edition. San Diego, CA: Harcourt Brace Jovganovich Publishers, 1982

Kuehl, Rober O. *Statistical Principles of Research Design and Analysis*. Belmont, CA: Duxbury Press, 1994

Peck, Roxy, Chris Olsen, and Jay Devore. *Introdcution to Statistics and Data Analysis*. Pacific Grove, CA: Duxbury, 2001

Duration: 2x50 minutes	
Lesson aims: Learners to understand and use Linear Regression and correlation.	
Specific learning outcomes: Students will be able to:	Assessment method(s): <ul style="list-style-type: none">• Group activities

Title of Lesson: Lesson 3 Linear Regression Review and Activity
Subject : Applied Statistics

<ul style="list-style-type: none">• The student will be able to classify graphically and analytically the correlation between two variables as either positive, negative, or zero.• The student will explore, using both visual approximation and graphing calculator, the equation of a trend line for a scatterplot exhibiting a linear pattern.• The student will explain the meaning of the correlation coefficient r.	<ul style="list-style-type: none">• Question & Answer during the session..• Learner engagement during session.• Worksheet
<p>Linked Functional Skills: <i>Speaking, listening and communicating:</i> Students participate in discussions during the session, how they articulate answers and communicate with other learners.</p>	
<p>Previous knowledge assumed: Understand and use positive and negative numbers of any size in practical contexts. Carry out calculations with numbers of any size in practical contexts. Extract and interpret information</p>	
<p>Materials and equipment required: Powerpoint. Worksheet</p>	

Title of Lesson: Lesson 3 Linear Regression Review and Activity

Subject : Applied Statistics

Time/ Stage	Subject Matter/Content	Teacher Activity	Student Activity	Resources/ Notes
5 min	Introductory Activity: What chance of being right?	When the class begins ask 3 learners to stay outside until asked to come in. Ask the rest of the group to decide which student they think will come through the door first. Ask them to think about what chance they have of being right.	Discussions and agreement. Identify chance of being right.	This activity is designed to introduce probability in terms of the word 'chance'.
10 min	Explanation and discussion.	Discuss the concept of probability and relate to numerical processes.	Ask questions.	Chance is something most people use their instinct to decide. This activity and explanation is to establish that mathematics can be used to assess chance (i.e. probability).

Title of Lesson: Lesson 3 Linear Regression Review and Activity
Subject : Applied Statistics

Time/ Stage	Subject Matter/Content	Teacher Activity	Student Activity	Resources/ Notes
10 min	Small Group Activity: Focus Group Discussion – Using linear regression and correlation of physics education research.	Hand out a classify graphically and analytically the correlation between two variables as either positive, negative, or zero	Ask Questions Discussions and agreements. Feedback comments and questions.	At the first selection, the linear regression will be the same for each group, but this will change as the selection process continues.
5 -10 min	Explanation and discussion.	Carry out a procedure to determine an equation of a trend line for a scatterplot exhibiting a linear pattern by using visual approximation.	Ask Questions.	
25 min	Worksheet	Hand out the worksheets and guide students to showing their calculations. Introduce the need to do some problem solving. Ask them to check their answers.	Complete worksheet.	
10 min	Worksheet Answers	Provide answers and give explanations where necessary. Ask questions and discuss the checking procedures.	Ask Questions	Regression can be expressed in different ways; e.g. '1 in 8 chance' or '12.5% correlation'.

Title of Lesson: Lesson 3 Linear Regression Review and Activity

Subject : Applied Statistics

Time/ Stage	Subject Matter/Content	Teacher Activity	Student Activity	Resources/ Notes
5 min	Conclusion	Guide them to common sense checking.	Ask Questions.	This will need some explaining and discussions.

Title of Lesson: Lesson 1 Probability
Subject : Applied Statistics
Number Cards: Probability

1	2	3	4
5	<u>6</u>	7	8

Title of Lesson: Lesson 1 Probability
Subject : Applied Statistics

Task 4

At a restaurant customers are asked to complete a survey when they leave. Every month there is a prize draw for customers who complete the survey and include their contact details.

Survey results for last month														
Ratings 5 = Very Good 4 = Good 3 = Satisfactory 2 = Poor 1 = Very Poor														
Survey Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Customer rating of restaurant	5	4	5	3	4	2	5	3	2	4	5	5	3	4
Contact details included in survey	✓		✓	✓		✓	✓	✓		✓			✓	✓

Peter completed Survey Number 10. What is the chance of Peter getting the prize? Justify your decision.
