

Lab Framework

Text: CORD

Unit: 4 Using Data, Charts and Graphs

Short Description: In this exercise, students will use age estimation skills while viewing a power point picturing various individuals. Students will record age estimate in one column and actual age of individual pictured in a second column. Students will appropriately analyze the results. This activity is appropriate for Algebra I students.

Developed by: Mark Henson

Contact Information:

Date: 23 June 2010

Estimating Age

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
 - Students will use age estimation skills
 - Students will record age estimate.
 - Students will appropriately analyze the results.
- **Statement of pre-requisite skills needed (i.e., vocabulary, measurement techniques, formulas, etc.)**
 - Graphing
 - Conceptual understanding of estimation
 - Graphing a line $y = x$
- **Vocabulary**
 - Regression line
- **Materials List**
 - PowerPoint of Pictures and birthdates
- **State Standards addressed**

Math:

 - A1.1.A Select and justify functions and equations to model and solve problems. (Partial)
 - A1.1.B Solve problems that can be represented by linear functions, equations, and inequalities. (Partial)
 - A1.2A Know the relationship between real numbers and the number line, and compare and order real numbers with and without the number line. (Partial)
 - A1.2B Recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables. (Partial)
 - A1.2D Determine whether approximations or exact values of real numbers are appropriate, depending on the context, and justify the selection. (Partial)

Reading:

 - 1.2 Use vocabulary (word meaning) strategies to comprehend text.
 - 1.2.2 Apply strategies to comprehend words and ideas.
 - 1.3 Build vocabulary through wide reading.

- 1.3.2 Understand and apply content/academic vocabulary critical to the meaning of the text, including vocabularies relevant to different contexts, cultures, and communities. WASL
- 2.1 Demonstrate evidence of reading comprehension.
- 2.1.4 Apply comprehension monitoring strategies for informational and technical materials, complex narratives, and expositions: use prior knowledge.
- 2.1.5 Apply comprehension-monitoring strategies for informational and technical materials, complex narratives, and expositions; synthesize ideas from selections to make predictions and inferences.
- 2.1.6 Apply comprehension-monitoring strategies for informational and technical materials, complex narratives, and expositions: monitor for meaning, create mental images, and generate and answer questions.
- 2.3.4 Synthesize information from a variety of sources.
- 3.1 Read to learn new information.
- 3.3 Read for career applications.
- 3.3.1 Apply appropriate reading strategies for interpreting technical and non-technical documents used in job-related settings.

Writing:

- 1.1 Develop concept and design: develop a topic or theme; organize written thoughts with a clear beginning, middle, and end; use transitional sentences and phrases to connect related ideas; write coherently and effectively.
- 1.2 Use style appropriate to the audience and purpose; use voice, word choice, and sentence fluency for intended style and audience.
- 1.3 Apply writing convention; know and apply correct spelling, grammar, sentence structure, punctuation, and capitalization.
- 2.1 Write for different audiences.
- 2.2 Write for different purposes, such as telling stories, presenting analytical responses to literature, persuading, conveying technical information, completing a team project, and explaining concepts and procedures.

- **Leadership Skills**

- Self Management

- **SCAN Skills/Workplace Skills**

- Mathematics: Use numbers, fractions, and percentages to solve problems; use tables, graphs, and charts; use computers to enter, retrieve, change, and communicate numerical information
- Leadership: Communicate thoughts and feelings to justify a position; encourage or convince; make positive use of rules or values; demonstrate ability to have others believe in and trust you because of competence and honesty.
- Self-Management: Assess one's own knowledge and skills accurately; set specific, realistic, personal goals; monitor progress toward goal.
- Responsibility: Work hard to reach goals, even if task is unpleasant; do quality work; display high standard of attendance, honesty, energy, and optimism.

- **Set-up information**

- See Lab Exercise

- **Lab organization** (-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required**)

- One period, see Lab Exercise

- **Summary of learning** (to be finished after student completes lab)

- discuss real world application of learning from lab

-opportunity for students to share/present learning
See lab sheet

- **Career Applications**
 - City Planners
 - Industry
 - Medicine
 - Carpenters

Washington Applied Math Council

<https://wa-appliedmath.org/>

LAB TITLE: Age Estimation

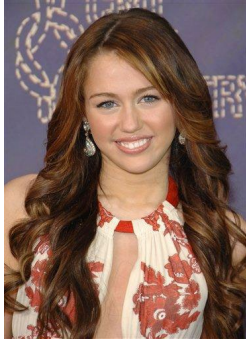
Name _____
Period _____
Date _____

Essential Question: How can a line, $y = x$, help us determine who in our class is the best estimator of age?

A power point presentation of notable persons will be shown to you. You will be asked to estimate the age of each individual shown. Then you will be shown the actual age of each individual. Your estimate age will be recorded in the first column and the actual age recorded in the second column. **When recording the actual age note the birthday, the power point may have been prepared before the individual's birthday.**

Person	Estimated Age	Actual Age	Difference
Tom Cruise			
Madonna			
Matt Hasselbeck			
Miley Cyrus			
Daniel Radcliffe			
Oprah Winfrey			
Barack Obama			
Beyonce			
Will Ferrell			
Christine Gregoire			

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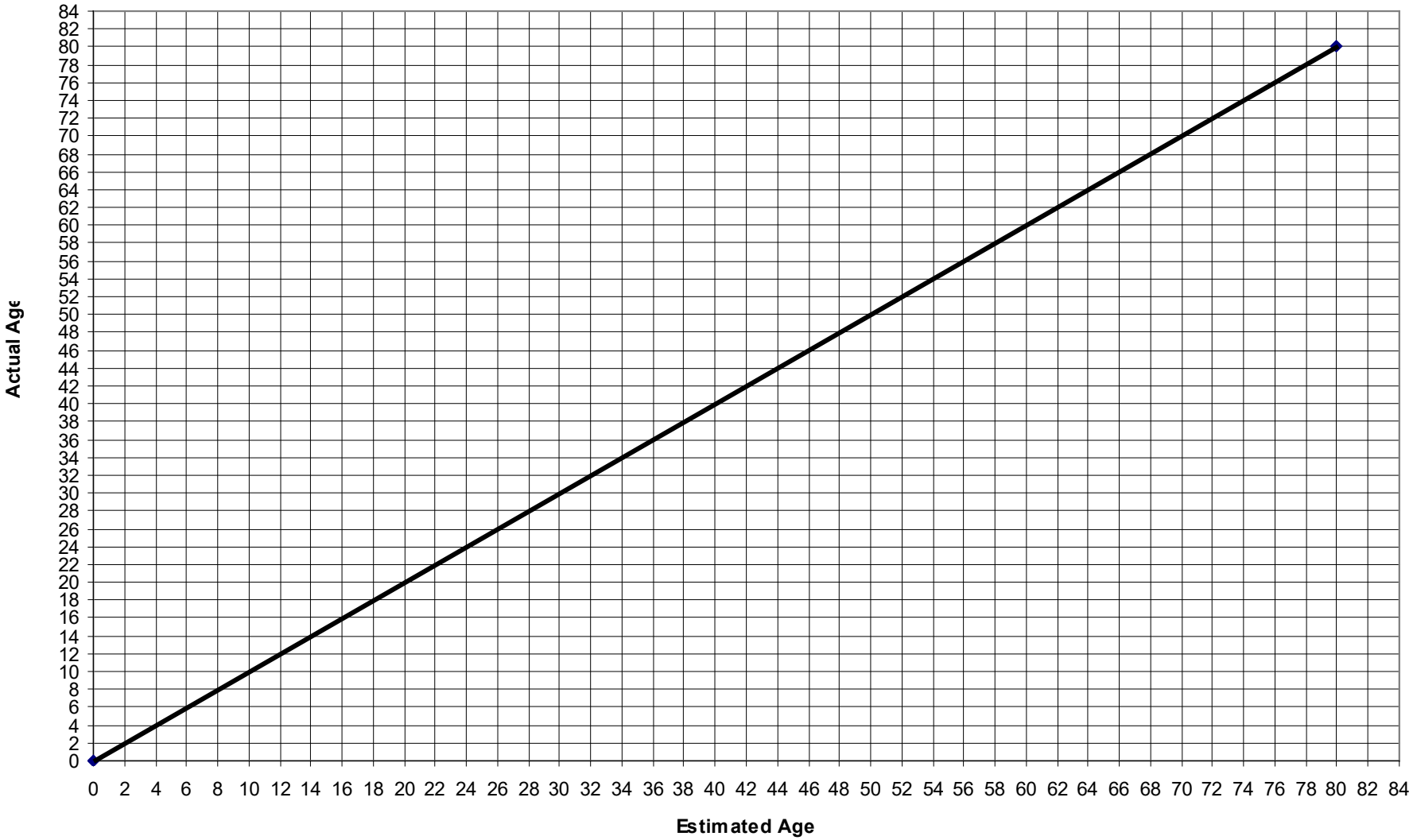


Washington People Math



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Estimated vs. Actual Age



Actual Birthdates

- Tom Cruise (July 3, 1962)
- Madonna (August 16, 1958)
- Matt Hasselbeck (September 25, 1975)
- Miley Cyrus (November 23, 1992)
- Daniel Radcliffe (July 23, 1989)
- Oprah Winfrey (January 29, 1954)
- Barack Obama (August 4, 1964)
- Beyonce (September 4, 1981)
- Will Ferrell (July 16, 1967)
- Christine Gregoire (March 24, 1947)

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Data Analysis:

1. What does it indicate if a point lies on the line?

2. In terms of your guess, what does it mean if there are points below the line?

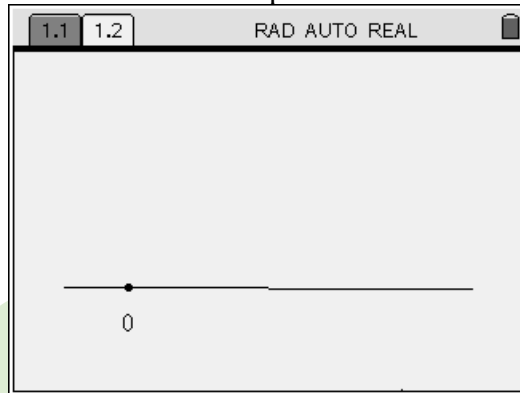
3. What is indicated by the points that lie above the line?

4. Explain whether or not you are a good age estimator.

5. What would you do to determine the best age estimator in your class?

6. Who was the best guesser in your class? _____

7. Create a box and whisker plot of the estimator results of your class:



8. What was the median of the estimator results of your class? _____

9. What is the interquartile range? _____

10. What is the meaning of the interquartile range? _____

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