WONDERLEARNERZ PRIMARY ACADEMY â€" OFFICIAL ANSWER KEY & MARKING SCHEME

# Data Handling and Pictographs: Worksheet 3 [ANSWER KEY]

Grade 5 | Mathematics | Ch 19: Data Handling and Pictographs | Total Marks: 19 | Time: 45 Minutes

**Q1. In a school pictograph, each symbol of an open book represents 8 library books read. If Grade 5 has 6 book symbols, how many books were read?** [1 Mark]

**Correct Answer: 48 books**

*Explanation: 6 symbols x 8 books/symbol = 48 books.*

**Q2. What is the mode of the following data set: 14, 18, 14, 22, 19, 14, 25?** [1 Mark]

**Correct Answer: 14**

*Explanation: The mode is the most frequently occurring value. 14 appears 3 times.*

**Q3. Find the range of this data set: 12, 28, 15, 39, 21.** [1 Mark]

**Correct Answer: 27**

*Explanation: Range = Maximum - Minimum = 39 - 12 = 27.*

**Q4. What is the average (mean) of the numbers 10, 20, 30, and 40?** [1 Mark]

**Correct Answer: 25**

*Explanation: Sum = 10 + 20 + 30 + 40 = 100. Mean = 100 / 4 = 25.*

**Q5. At the Harbor Marine Terminal, an environmental tally counts bird species over a weekend: Sparrows (24), Robins (16), Pigeons (30), and Blue jays (10). What is the total number of birds recorded?** [1 Mark]

**Correct Answer: 80 birds**

*Explanation: 24 + 16 + 30 + 10 = 80 birds.*

**Q6. In a bar graph showing favorite sports among 120 fifth-graders: Soccer has 45 votes, Basketball has 35, Swimming has 25, and Tennis has the rest. How many students voted for Tennis?** [1 Mark]

**Correct Answer: 15 students**

*Explanation: 45 + 35 + 25 = 105. Remaining for Tennis = 120 - 105 = 15 students.*

**Q7. A test score record lists 5 quiz scores: 85, 90, 75, 95, 80. Calculate the student's mean quiz score.** [1 Mark]

**Correct Answer: 85**

*Explanation: Sum = 85 + 90 + 75 + 95 + 80 = 425. Mean = 425 / 5 = 85.*

**Q8. Pictograph Key: 1 star = 12 awards. Grade 5 won 60 awards. How many star symbols should be drawn?** [1 Mark]

**Correct Answer: 5**

*Explanation: 60 / 12 = 5 stars.*

**Q9. Find the missing value: The mean of 12, 15, 18, and [ ? ] is 15.** [1 Mark]

**Correct Answer: 15**

*Explanation: Sum must be 15 x 4 = 60. Current sum = 12 + 15 + 18 = 45. Missing = 60 - 45 = 15.*

**Q10. A student looks at a pictograph where 1 symbol = 10 apples and sees 4.5 symbols. The student writes '45 apples'. A classmate argues 'You can't have half a symbol.' Who is correct?** [1 Mark]

**Correct Answer: The student is correct (half a symbol represents 5 apples, so 4.5 x 10 = 45)**

*Explanation: Half symbols are standard in pictographs to represent half the key value (1/2 of 10 = 5). Total is 45.*

**Q11. When finding the range of 5, 8, 12, 20, a student calculates 20 - 8 = 12. What** [1 Mark]
was the student's mistake?
**Correct Answer: Subtracted the second number instead of the minimum value 5 (Range is 20 - 5 = 15)**
*Explanation: Range is maximum minus minimum: 20 - 5 = 15, not 20 - 8.*

**Q12. Why is a bar chart generally easier to read accurately than a pictograph when** [2 Marks]
data values are not multiples of the key?
**Correct Answer: Bar charts have a continuous numerical axis where bar heights align directly with exact values, whereas pictographs require estimating fractional portions of icons.**
*Explanation: Continuous linear scales provide precise quantitative alignment without symbol estimation.*

**Q13. Explain why the mean might be misleading if a data set contains one extreme** [2 Marks]
outlier (such as salaries of $30k, $32k, $35k, and $1,000k).
**Correct Answer: The extreme high value of $1,000k skews the sum, pulling the mean up to $274k, which does not represent typical earnings for most people in the group.**
*Explanation: Outliers distort arithmetic means; medians provide a more resilient central measure.*

**Q14. A student scored 78, 82, and 88 on the first three science tests. What score must** [2 Marks]
the student achieve on the fourth test to obtain an overall mean average of 85?
**Correct Answer: 92**
*Explanation: Total sum required = 85 x 4 = 340. Current sum = 78 + 82 + 88 = 248. Required fourth test score = 340 - 248 = 92.*

**Q15. In a survey of 50 students: 30 play soccer, 25 play basketball, and 12 play both** [2 Marks]
sports. How many students play neither sport?
**Correct Answer: 7 students**
*Explanation: Total playing sports = 30 + 25 - 12 = 43 students. Neither sport = 50 - 43 = 7 students.*