GRADE 7

PRINTABLE WORKSHEET

Statistics & Probability

Introduction

Printable worksheets in the Lumos Skill Builder series are designed to help students master specific skills in Math and English Language Arts. The content of each workbook is rigorous and aligned with the robust standards. Teachers can effectively use these worksheets in the classroom to assess student progress within a learning objective.

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Grade 7 Statistics & Probability: Printable Worksheet

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Name: _____ Date: _____

7.SP.A.1- Sampling a Population

1. The following data set represents survey results on a scale of 1 to 10.
{8, 8, 9, 8, 6, 7, 7, 7, 8, 8, 6}
Which of the following survey result would you be most surprised with if given by the next person surveyed?

Ⓐ 6
Ⓑ 5
Ⓒ 8
Ⓓ 7

7.SP.A.2 - Describing Multiple Samples

2. These two samples are about students' favorite subjects. What inference can you make concerning the students' favorite subjects?

Student samples	Science	Math	English Language Arts	Total
#1	40	14	30	84
#2	43	17	33	93

Ⓐ Students prefer Science over the other subjects.
Ⓑ Students prefer Math over the other subjects.
Ⓒ Students prefer English language arts over the other subjects.
Ⓓ Students prefer History over the other subjects.

Name: _____ Date: _____

7.SP.B.3 - Mean, Median, and Mean Absolute Deviation

3. Use the table below to answer the question:

Month	Avg Temp.
January	24°F
February	36°F
March	55°F
April	65°F
May	72°F
June	78°F

If the temperature in January was 54°F instead of 24°F, by how much would the mean temperature for the six months increase?

Ⓐ 5°F
Ⓑ 10°F
Ⓒ 30°F
Ⓓ 35°F

7.SP.B.4 - Mean, Median, and Mode

4. What is the mean absolute deviation for the following set of data?
{1, 2, 3, 4}

Ⓐ 1
Ⓑ 2.5
Ⓒ 4
Ⓓ 2

Name: _____ Date: _____

7.SP.C.5 - Understanding Probability

5. Moe has a bowl of nuts (14 pecans, 8 walnuts, 28 almonds, 33 peanuts). If he picks a nut at random, what is the probability that he will pick a peanut?

Ⓐ 33 out of 70
Ⓑ 33 out of 80
Ⓒ 33 out of 100
Ⓓ 33 out of 83

7.SP.C.6 - Predicting Using Probability

6. Maggie rolls two pairs of four sided dice 10 times. The results were 30% side 1, 20% side 2, 20% side 3, 30% side 4. What were the actual results and expected results?

Ⓐ Results: 12 side 1, 8 side 2, 8 side 3, 12 side 4 ...Expected Results: 10 side 1, 10 side 2, 10 side 3, 10 side 4
Ⓑ Results: 6 side 1, 4 side 2, 4 side 3, 6 side 4 ...Expected Results: 5 side 1, 5 side 2, 5 side 3, 5 side 4
Ⓒ Results: 6 side 1, 4 side 2, 4 side 3, 6 side 4 ...Expected Results: 10 side 1, 10 side 2, 10 side 3, 10 side 4
Ⓓ Results: 10 side 1, 10 side 2, 10 side 3, 10 side 4 ...Expected Results: 12 side 1, 8 side 2, 8 side 3, 12 side 4

Name: _____ Date: _____

7.SP.C.7a - Using Probability Models

7. Sophia wants to select a pair of shorts from Too Sweet Clothing Store. The store has 2 different colors of shorts (black (B) and green (G)) available in sizes of small (S), medium (M), and large (L). If Sophia grabs a pair of shorts without looking, which sample space shows the different types of shorts she could select?

Ⓐ {BS, BM, BL, GS, GM, GL}
Ⓑ {BB, BG, SS, SM, SL}
Ⓒ {BG, SM, SL}
Ⓓ {BS, BL, GS, GL}

7.SP.C.7b - Probability Models from Observed Frequencies

8. Randomly choosing a number out of a hat 50 times resulted in choosing an odd number a total of four more times than the number of times an even number was chosen. How many times was an even number chosen from the hat?

Ⓐ 27 times
Ⓑ 21 times
Ⓒ 29 times
Ⓓ 23 times

Name: _____ Date: _____

7.SP.C.8a - Finding the Probability of a Compound Event

9. The triple jump competition is close. Joe, Damon, Sam, and Chris have a shot at first place. If two of the four tie for first place and the other two tie for second place, how many ways could they be arranged in the top two spots?

Ⓐ 6 ways
Ⓑ 2 ways
Ⓒ 3 ways
Ⓓ 8 ways

7.SP.C.8b - Represent Sample Spaces Printable

10. If five different players have to be placed in five different positions on the team, how many different ways might this be done?

Ⓐ 120
Ⓑ 15
Ⓒ 40
Ⓓ 75

Name: _____ Date: _____

7.SP.C.8c - Simulate Compound Events to Estimate Probability

11. A catalogue has sports uniforms for sale. There are 6 designs of shorts that can be combined with 4 designs of shirts. What is the probability that two teams choose different shorts and different shirts?

Ⓐ 1 out of 2
Ⓑ 5 out of 8
Ⓒ 1 out of 4
Ⓓ 2 out of 7

Answer Key and Detailed Explanations

Question No.	Answer	Detailed Explanations
1	B	When analyzing the data, out of the 10 responses, none of the responses have been less than 6. Therefore, a surprising response from the next person would be a 5 since it is outside the range.
2	A	In the survey, 83 students selected science as their favorite subject while the other subjects had a combined number of 94 students. Therefore, an inference can be made that students prefer science over the other subjects.
3	A	Remember: A mean is the average of all the data presented. In this case, you have to average the temperatures, then replace the January temperature with 54 and recalculate the average, then take the difference.
4	A	To find the mean absolute deviation, 1. find the mean, 2. find the absolute value of the difference between each data value and the mean, and 3. average the differences. Here, the mean is 2.5. The difference between the data value and mean is 1.5, 0.5, 0.5, and 1.5. The average is 1.
5	D	Moe has a total of 83 nuts, 33 of which are peanuts. Probability is: (chance of successful outcome)/(total number of outcomes). Therefore, there is a 33 out of 83 chance that Moe will pick a peanut.
6	A	The theoretical probability (expected outcome) of rolling each die is 1 out of 4 because it will either land on 1, 2, 3 or 4 (those are the four possible outcomes). So, the expected outcome would be 10 for each side. The actual outcome was 40(0.30) for side one and side four and 40(.20) for side two and side three, which equals 12 side one, 8 side two, 8 side three, and 12 side four.
7	A	The sample space of {BS, BM, BL, GS, GM, GL} is the correct answer. Since Sophia has a choice of 2 different pairs of shorts in 3 different combinations, the sample space should reflect choices of black or green shorts in sizes of small, medium, or large.
8	D	An even distribution of the odds and evens would be 25 each. 4 more odds would mean 27 odds and 23 evens.
9	A	There are 6 ways to arrange the players for the top two spots (combining duplicates): JDSC, JCDS, SCDJ, SJCD, CDSJ, SDJC.
10	A	The first player could be in any of 5 positions; the second in any of the remaining 4 positions; the third in any of the remaining 3 positions; the fourth in any of the remaining 2 positions; the fifth must be placed in the only remaining position. The total number of ways to combine these options can be found by multiplying the number of possibilities for each placement: (5)(4)(3)(2)(1) = 120 possible outcomes.
11	B	The probability of choosing different shorts is 5 out of 6. The probability of choosing different shirts is 3 out of 4. Multiplying these together to find the probability of both gives us 5 out of 8.

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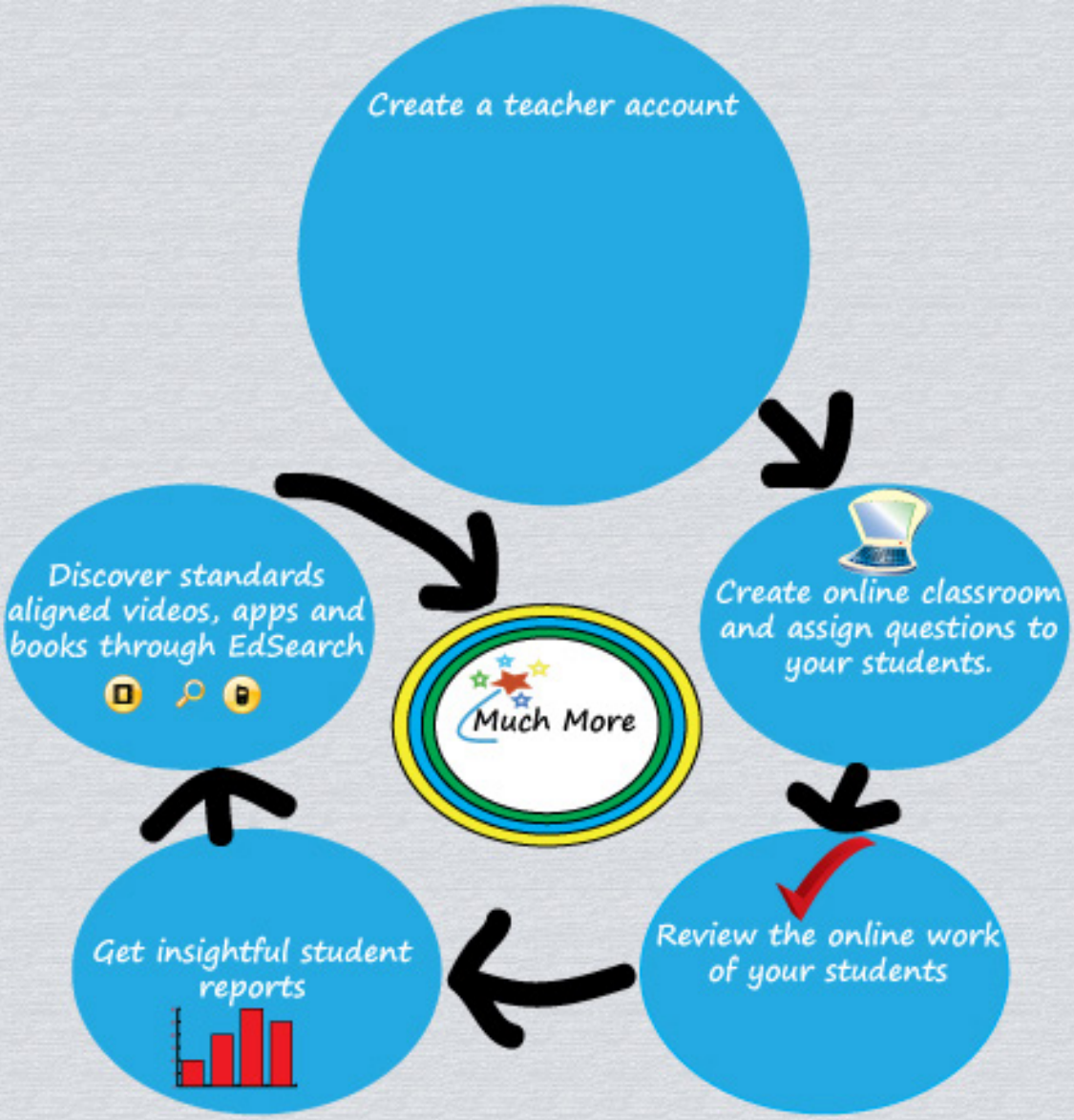
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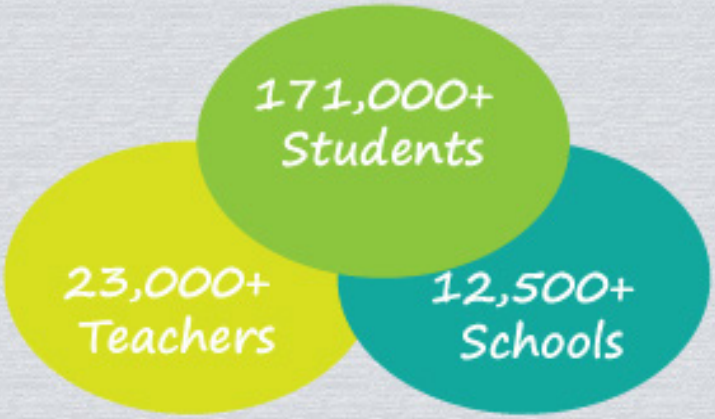
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