ALBERT

Name _____ Date _____

Experimental Probability Worksheet

Grade 7 · Common Core 7.SP.C.6

> Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.

Practice

Builds the skill step by step.

1. A coin is flipped 50 times and lands on heads 27 times. What is the experimental probability of heads?

2. A number cube is rolled 60 times, and a 3 comes up 12 times. What is the experimental probability of rolling a 3?

3. A spinner landed on blue 18 times in 40 spins. What is the experimental probability of blue, as a percent?

4. A fair number cube is rolled 600 times. About how many times would you expect to roll a 6?

   A. 6

   B. 60

   C. 300

   D. 100

5. A player made 15 of her last 25 free throws. What is the experimental probability that she makes the next one, as a decimal?

6. A fair coin is flipped 200 times. About how many heads do you expect?

7. A fair coin landed on heads 14 times in 20 flips. What is the best explanation?

   A. The coin must be unfair.

   B. Heads is always more likely.

   C. Results from a small number of trials can vary a lot.

   D. The theoretical probability of heads is 0.7.

8. Marbles are drawn from a bag and replaced 50 times. Red comes up 20 times. Predict how many reds in the next 150 draws.

9. Of the last 80 customers at a café, 32 ordered a smoothie. Predict how many of the next 200 customers will order one.

10. As the number of trials grows, the experimental probability usually:

    A. moves farther from the theoretical probability

    B. becomes 0

    C. becomes 1

    D. gets closer to the theoretical probability

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On Level

Grade-level practice.

1. The table shows the results of 50 spins. What is the experimental probability of green?

Color	Red	Blue	Green
Times landed	12	18	20

2. The table shows the results of 50 spins. Predict how many times the spinner will land on blue in 300 spins.

Color	Red	Blue	Green
Times landed	12	18	20

3. A number cube is rolled 120 times, and a 5 comes up 28 times. How many more 5s is that than expected?

4. A coin is flipped 1,000 times and lands on heads 680 times. What is a reasonable conclusion?

   A. The coin may be weighted toward heads.

   B. The coin is fair.

   C. Heads is less likely than tails.

   D. Nothing can be concluded.

5. A quality check finds 4 defective phones out of 250. Predict the number of defective phones in a batch of 10,000.

6. A basketball player has made 72% of her free throws this season. Predict how many she will make in her next 25 attempts.

7. A spinner landed on yellow 9 times in 60 spins. What is the experimental probability of NOT landing on yellow?

8. The theoretical probability of rolling an even number is $\frac{1}{2}$. In 30 rolls, which result is most likely?

   A. Exactly 30 even numbers

   B. About 5 even numbers

   C. About 25 even numbers

   D. About 15 even numbers

9. Out of 400 seeds planted, 340 sprouted. What is the experimental probability that a seed sprouts, as a percent?

10. In a random survey of 60 students, 24 prefer cats to dogs. Predict how many of 450 students prefer cats.

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Challenge

Multi-step and word problems that stretch it.

1. The table shows the results of rolling a number cube 60 times. What is the experimental probability of rolling an even number?

Number	1	2	3	4	5	6
Times rolled	8	11	9	12	7	13

2. The table shows the results of rolling a number cube 60 times. By how much does the experimental probability of an even number differ from the theoretical probability?

Number	1	2	3	4	5	6
Times rolled	8	11	9	12	7	13

3. The table shows the results of rolling a number cube 60 times. Each number is expected about 10 times. Which number came up the most above its expected count?

Number	1	2	3	4	5	6
Times rolled	8	11	9	12	7	13

A. 6

B. 1

C. 4

D. 5

4. A carnival game was won 18 times in 150 plays. If 500 people play, predict the number of winners.

5. A spinner landed on red 28 times in 80 spins. Predict how many reds in 500 spins.

6. Kai flips a coin 10 times and gets 8 heads. He says the coin is unfair. What is the best response?

   A. He is right.

   B. 8 heads is impossible with a fair coin.

   C. A fair coin always lands heads exactly half the time.

   D. 10 flips are too few to be sure; he should flip many more times.

7. A store finds that 3 of every 40 shoppers return an item. Predict the number of returns in a week with 1,200 shoppers.

8. A bag has 20 blue and red chips. Ana draws a chip, records it and puts it back, 50 times. She gets 35 blue. Estimate how many chips in the bag are blue.

9. Which experiment gives the best estimate of the probability that a thumbtack lands point up?

   A. Toss it 5 times

   B. Look at its shape carefully

   C. Toss it 500 times and record the results

   D. Assume the probability is $\frac{1}{2}$

10. A weather app gave a 30% chance of rain on 60 different days. It rained on 18 of them. On what percent of those days did it rain, and does that match the forecast?