

Predicting Results

LT: Identify and analyze data which demonstrates chance as a factor of determining genetic outcomes




Hypothesis: If we cross 2 heterozygous black rabbits then 25% of the offspring will be brown

B = Black (dominant)
b = brown (recessive)

homozygous - dominant : BB
homozygous - recessive : bb
heterozygous (dominant) : Bb

heterozygous X heterozygous

	B	b	mom	
B	BB	Bb	25 BB	black
b	Bb	bb	50 Bb	black
dad			25 bb	brown

materials: red beans = B  2 people
white beans = b  Science notebook: 

- Procedure:
1. Place 50 red and 50 white beans in the Male bag and 50 red and 50 white beans in the female bag
 2. Make a data table in your science notebook
 3. Start drawing beans. Have 1 person draw a bean from the male bag and another person draw from the female bag. Record what type of bean combination there was (r/w, w/w, r/r)
 4. Repeat step three 100 times
 5. Use data to determine how many of each combination (r/w, w/w, r/r) were drawn.

F = red bean = B
 W = white bean = b

	M	F		M	F		M	F
1	r	w	34	w	w	67	r	r
2	r	w	35	r	r	68	r	w
3	w	r	36	r	r	69	r	r
4	r	r	37	w	w	70	w	w
5	r	w	38	r	w	71	r	r
6	w	w	39	w	w	72	r	r
7	r	r	40	w	w	73	w	w
8	r	w	41	r	w	74	w	w
9	r	r	42	r	w	75	w	w
10	r	w	43	r	w	76	r	w
11	r	w	44	w	w	77	r	r
12	r	w	45	r	r	78	r	w
13	r	r	46	r	w	79	r	r
14	r	r	47	r	w	80	w	r
15	r	w	48	w	w	81	r	r
16	r	r	49	r	w	82	r	w
17	w	w	50	r	w	83	r	r
18	w	w	51	r	r	84	r	w
19	r	w	52	w	r	85	r	w
20	w	w	53	r	r	86	w	w
21	r	r	54	r	r	87	r	r
22	r	r	55	r	r	88	r	w
23	w	w	56	w	r	89	r	r
24	r	r	57	r	w	90	w	r
25	w	r	58	r	w	91	r	r
26	w	w	59	r	w	92	r	r
27	r	r	60	r	w	93	r	w
28	r	r	61	r	r	94	r	r
29	r	r	62	r	r	95	r	r
30	r	r	63	r	w	96	r	r
31	w	w	64	r	w	97	w	r
32	r	w	65	r	w	98	r	r
33	w	r	66	r	r	99	w	r

100-r-r

66

42%	40%	18%
B/b	B/B	b/b
r/w	r/r	w/w
42	40	18

Class Data

	red/red	red/white	white/white	Total
1	62	26	12	100
2	50	42	8	100
3	40	42	18	100
4	50	41	9	100
5	42	39	19	100
6	38	46	16	100
7	41	45	14	100
8	36	49	15	100
9	45	42	23	100
10				
	404	372	124	
%	44.8889	41.3333	13.7778	100

Analysis Paragraph

Genetic outcomes are just products of chance and probability (the likelihood) of a trait of two parent cells. We conducted an experiment that tested the chance of three genetic outcomes. By collecting this data we could determine that ones genetic traits are a pick-and-pull type of thing. If each color bean represented a trait (black fur and brown fur) then we showed that having a red/white, white/white, or red/red combination was just the chance of those color beans being pulled. Using a punnet square we decided that the chance for each out come is as

follows, red/white 50%, red/red 25%, white/white 25%. After collecting our data the red/white possibility was 42%, red/red was 40% and white/white was 18%. So, the data displayed a fairly different outcome for red/red and white/white. The cause for the difference in logical and outcome probability is the qualities in some of the materials. We used two types of beans, red beans and white beans. As we were drawing the beans, we were more prone to draw a red bean because it was larger in size. This therefore affected the data because red beans were more likely to be drawn. If we'd used objects of the same size, such as marbles, the data would be more accurate because we wouldn't want to choose one object over another. We could also flip two quarters, however one person may have a different toss than the other affecting the data outcome. Many tests could be conducted, however, there will always be a flaw.

Conclusion

In this lab we analyzed data that showed chance as a factor of determining ^{genetic outcomes} ~~data~~. I ^{part-way} accept my hypothesis, part-way reject my hypothesis because the data showed that 18% of the offspring would be brown compared to my guess of 25%. So it is off by 7% meaning it's close but not exact. In this lab I learned that genetic outcomes are the chance of getting 3 gen combinations. Now I wonder if a woman has a child using a sperm donor, but doesn't know what the man looks like, could we determine what his genus were?