

Lesson 6

Probability (Recommended 11-12 grades)
Hilleman & Vaccines
Student Pages



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Lesson 6: Probability

STUDENT WORKSHEET

Given the success rates for some vaccines, suppose 4 children under the age of ten have each had the minimum doses of all of the vaccines. (MMR, Polio, DPT, HB, HIB).

Given:

Percent Efficacy (Success Rates):

Source: <https://www.cdc.gov/mmwr/preview/mmwrhtml/00048610.htm>

Measles (Merck Sharp and Dohme Corp., 2018): 98.8

Mumps (Merck Sharp and Dohme Corp., 2018): 99.5

Rubella (Merck Sharp and Dohme Corp., 2018): 99.5

Pertussis (MMWR, 1997): DTaP: 81%

Polio (MMWR, 1997): 100

Hepatitis B (MMWR, 1997): 95%

FIND THE PROBABILITIES FOR EACH SITUATION

1. All four children are exposed to measles.
All four children get the disease.
2. All four children are exposed to polio.
None of the children gets the disease.
3. All four children are exposed to mumps.
Only one child gets the disease.
4. All four children are exposed to pertussis.
At least three children get the disease.



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For 5-8, suppose 10 children under the age of ten have each had the minimum doses of all of the vaccines. (MMR, Polio, DPaT, HB, HIB).

5. All 10 children are exposed to rubella. 2 children get the disease.
6. All 10 children are exposed to rubella. None of them get the disease.
7. All 10 children are exposed to pertussis. 2 children get the disease.
8. All 10 children are exposed to Hepatitis B. 3 children get the disease.



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