Read the Vienna Numbers

Name _____

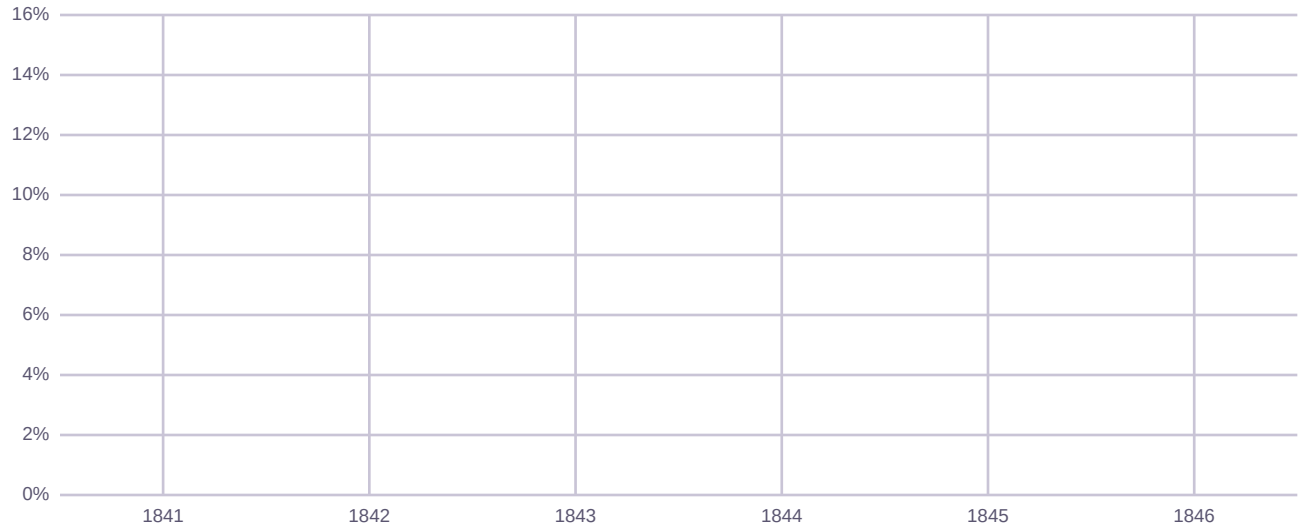
Semmelweis and the handwashing evidence · ages 12–16 · about 50 minutes

Vienna General Hospital had two maternity clinics. Medical students trained in the First Clinic, student midwives in the Second. Women were admitted on alternating days. These are the real yearly figures.

Year	1st: births	1st: deaths	1st: rate %	2nd: births	2nd: deaths	2nd: rate %
1841	3,036	237	7.8	2,442	86	3.5
1842	3,287	518	15.8	2,659	202	
1843	3,060	274		2,739	164	6.0
1844	3,157	260	8.2	2,956	68	
1845	3,492	241		3,241	66	2.0
1846	4,010	459	11.4	3,754	105	

1. Fill in the blank rates (deaths ÷ births × 100, to one decimal place).

2. Graph both clinics' rates, 1841–1846, on the grid below.



3. What stands out? Which clinic would you have wanted to be admitted to, and why?

Data: Semmelweis (1861), as tabulated on Wikipedia; Loudon, J R Soc Med (PMC3807776).

Read the Vienna Numbers: part 2

Name _____

The change in May 1847

In mid-May 1847 Semmelweis ordered everyone examining women in the First Clinic to wash their hands in chlorinated lime solution. First Clinic death rate by month:

April 1847	May 1847	June 1847	July 1847	August 1847
18.3%	(change begins mid-month)	2.2%	1.2%	1.9%

4. Sort each statement: S = the data supports it, N = the data does not show it, M = need more information

___ Deaths in the First Clinic fell soon after handwashing began.

___ Germs on the doctors' hands caused childbed fever.

___ The Second Clinic was safer than the First Clinic from 1841 to 1846.

___ Handwashing would lower death rates in every hospital.

___ Nothing else changed in the First Clinic in May 1847.

___ Women admitted to the First Clinic were sicker to begin with.

5. Many doctors refused to believe Semmelweis. Give two reasons someone in 1847 might have doubted him.

Teacher notes

Q1: 1842 Second 7.6; 1843 First 9.0; 1844 Second 2.3; 1845 First 6.9; 1846 Second 2.8.

Q4: S, N (germ theory came later), S, M, M, M. Historians note the First Clinic's rate had already dipped in late 1846 to early 1847, and some of Semmelweis's published tables have been criticised as selective.

Story link: Cielle is chlorine in The Cielle Stories at superelements.com.

Sources: Wikipedia (Semmelweis); Eur J Epidemiol 2022 (10.1007/s10654-022-00871-8); Epidemiol Infect 2017 (PMC9203449).