

Activity: From real world to exponential law

1. Complete the following images

Bacterial growth trough binary fission

Number of splits s	Number of bacteria B
0	
1	
2	
3	
4	
10	

Law relating B to s: _____

Law graph

2. In the law relating B to s , which numbers below are permissible values for s ? _____
Explain your answer.

5 $\frac{2}{3}$ -2 4,5 30 -2,5

3. List 4 numbers that you **cannot** obtain in place of B with the law relating B to s .

Daniela Valenti;

IIS "G. Vallauri", Fossano: Liuba Ballocco, Marianna Racca, Mattia Brizio, Lorenzo Bruno

4. Complete the following images

Radioactive decay of C14

After 1τ
After 2τ
After 3τ
After 4τ

τ : half-life of C14 (Nearly 6000 years)

Time t	C14 mass M
0	
1	
2	
3	
4	
10	

Law relating M to t : _____

Law graph

Note: Measure time by counting the number of half-lives

5. In the law relating M to t , can you substitute -1 for t ?

Yes, and it means: _____

No, because _____

6. In the law relating M to t , is it possible to obtain -2 as the value of M ?

Yes, and it means: _____

No, because _____
