

The Standing Disease



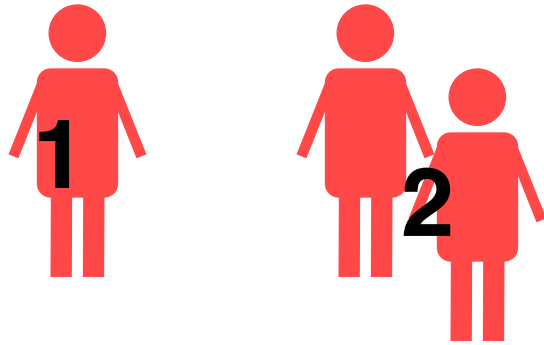
Supporting material for:

Kucharski A et al. (2017) Disease dynamics: understanding the spread of diseases. *Science in School* 40: 52–56. www.scienceinschool.org/2017/issue40/diseasedynamics



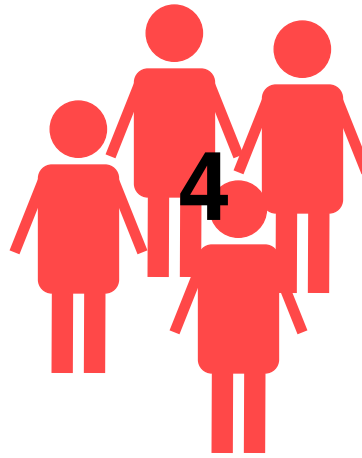
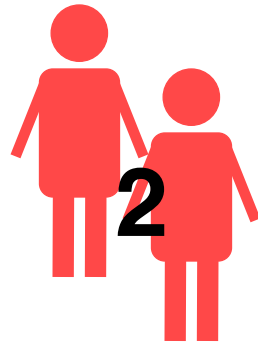
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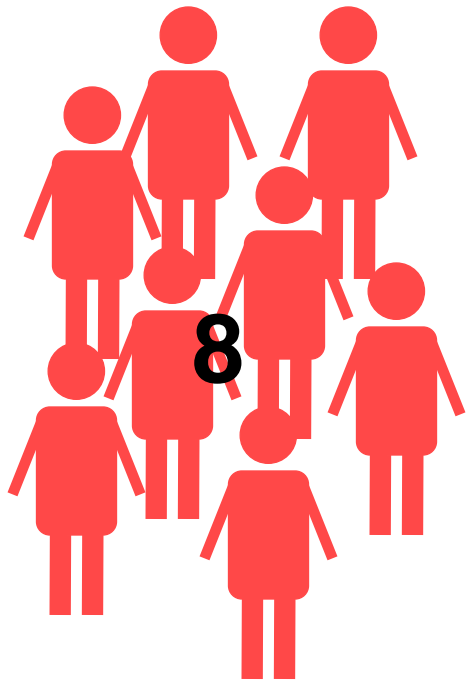
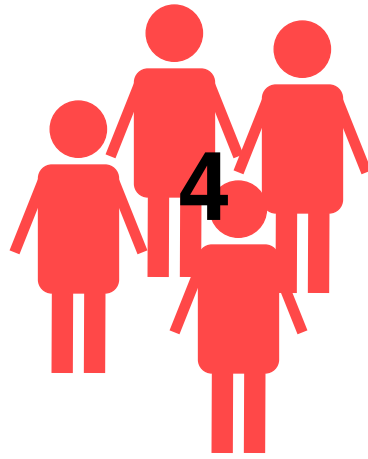
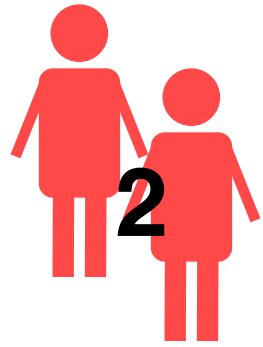
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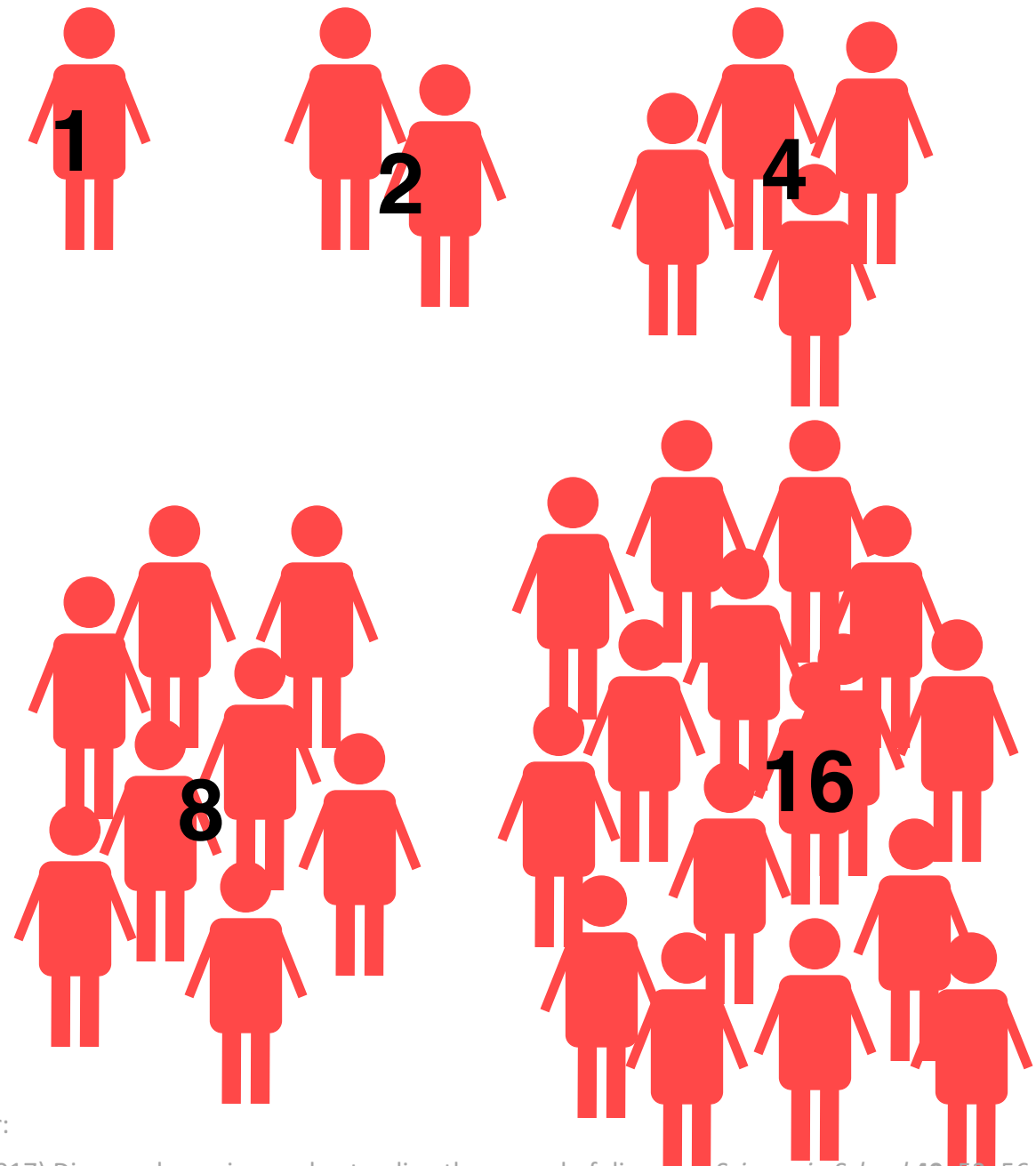
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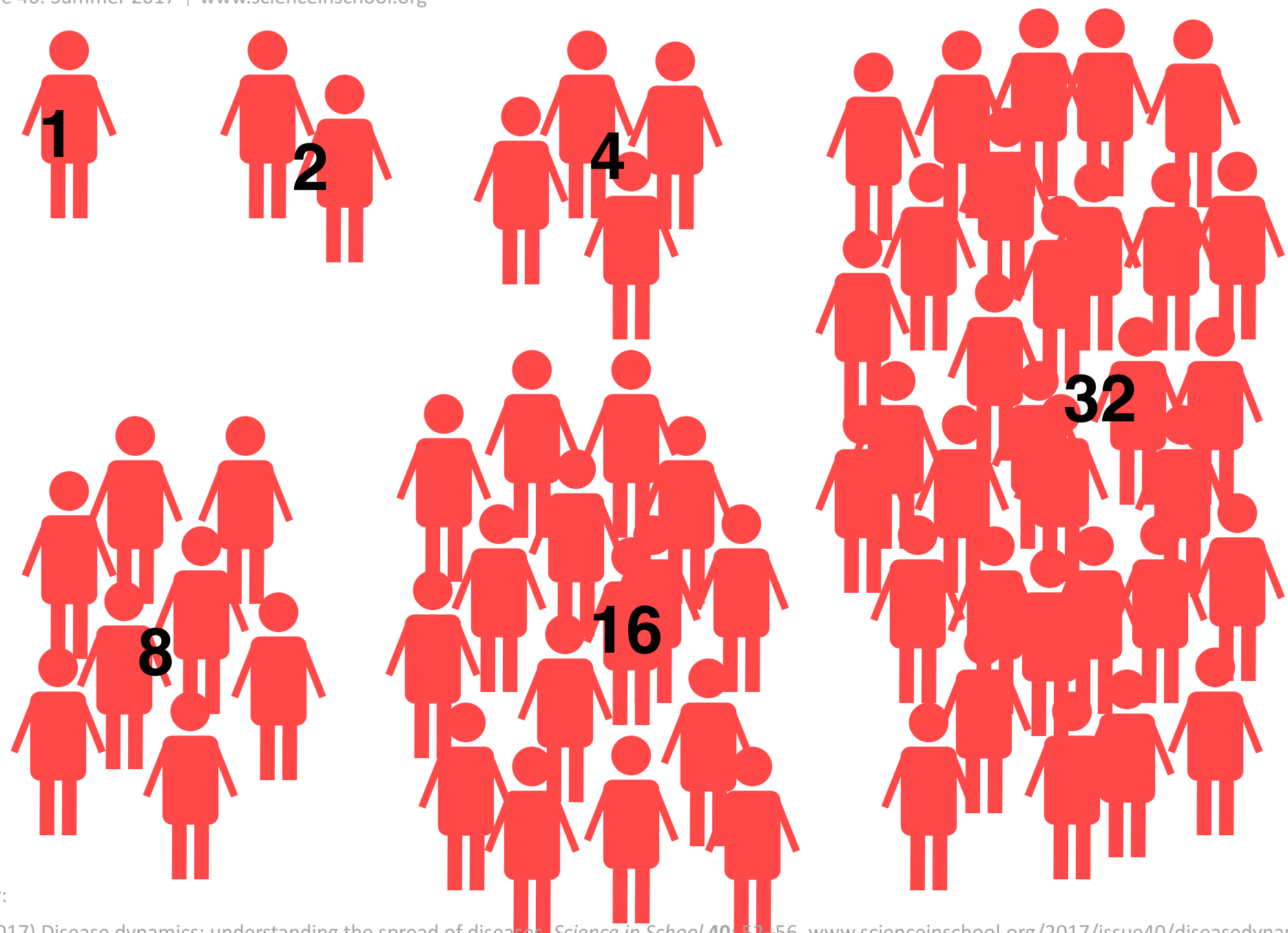


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Supporting material for:



Supporting material for:

1	131,072
2	262,144
4	524,288
8	1,048,576
16	2,097,152
32	4,194,304
64	8,388,608
128	16,777,216
256	33,554,432
512	67,108,864
1,024	134,217,728
2,048	268,435,456
4,096	536,870,912
8,192	1,073,741,824
16,384	2,147,483,648
32,768	4,294,967,296
65,536	8,589,934,592



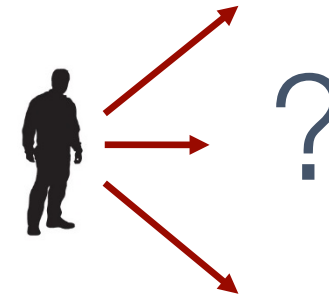
Supporting material for:

65,536 8,589,934,592

“Eyebrows were raised when the Centers for Disease Control’s model forecast **77 trillion cases** if the epidemic went unchecked”

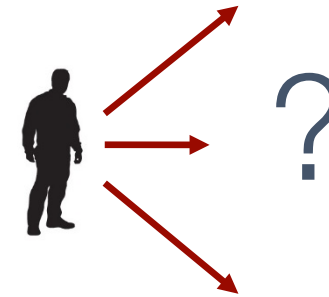
– Ben Cooper, 2006

Reproduction number (R_0)



Definition: Average number of people an infected person infects at the start of an epidemic

Reproduction number (R_0)

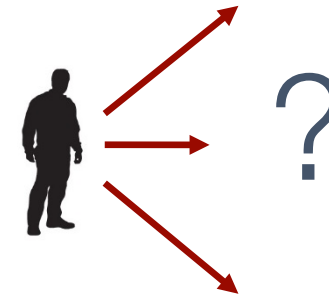


Definition: Average number of people an infected person infects at the start of an epidemic



$$R_0=2$$

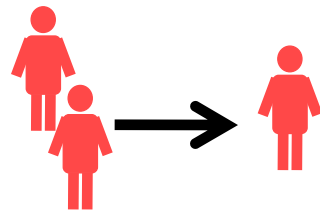
Reproduction number (R_0)



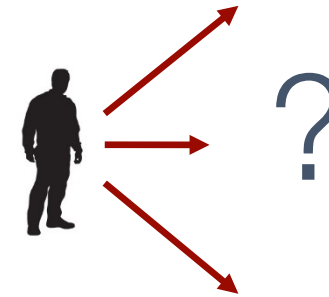
R_0 measures how quickly an epidemic will take off...

$$R_0 < 1$$

Cases **decrease** each step



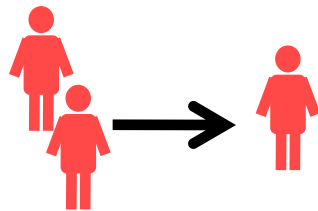
Reproduction number (R_0)



R_0 measures how quickly an epidemic will take off...

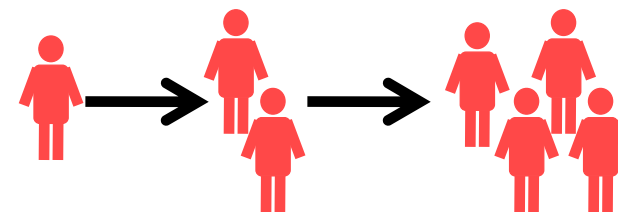
$$R_0 < 1$$

Cases **decrease** each step



$$R_0 > 1$$

Cases **increase** each step



Supporting material for: