

The Germs Worksheet: Viruses and Bacteria

Wonder-
Worksheet
15b Page 1

Multi-Million Factoid 1:

The human body contains about 10^{13} cells and 10^{14} microbes and viruses.

Microbes are bacteria, fungi and protozoa.

So there are more other life forms in you, than there are your own cells!

Write out the numbers in

full here: (Hint: Start from the right hand side/end, writing each set of three zeros with a comma in front of it, until you have enough zeros, then put digit 1 in front)

10^{13}

10^{14}



Multi-Million Factoid 2:

There are good and bad of everything, and bacteria, viruses and fungi are no different. But while bacteria can look after themselves (they live inside your body for shelter and food), viruses need your body's cells to replicate.

Create a short story or comic about a virus called Vincent who infiltrates a body he shouldn't, or something else. Perhaps the 'body' gets its own back. What happens to Vincent?

Plan your story here. There's some space to write or draw it overleaf.

Beginning:
Rising Action:
Climax:
Resolutions:
New Normal:

Multi-Million Factoids 3: Find out the main differences between Bacteria and Viruses.

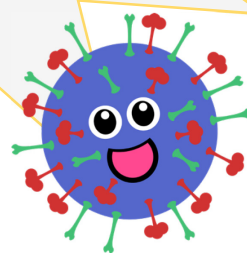
Watch this video to start: <https://www.smithsonianmag.com/videos/category/ask-smithsonian/ask-smithsonian-whats-the-difference-between/> Also see other suggested sources overleaf. **Then add your points below:**

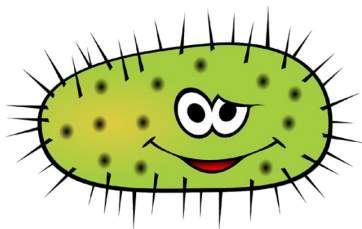
Bacteria

- 1.
- 2.
- 3.
- 4.
- 5.

Viruses

- 1.
- 2.
- 3.
- 4.
- 5.





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ANSWERS AND CREATIVE SPACE

The numbers in full are:

$10^{13} = 10,000,000,000,000$

$10^{14} = 100,000,000,000,000$

Here's space for you to create
your short story or comic
about a virus called Vincent...

Some of the main differences between Bacteria and Viruses (your points might be slightly different):

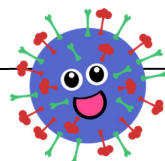
Bacteria

1. Larger, free-living cells.
2. Can reproduce by themselves.
3. Live in animal or plant host for food and shelter.
4. Can be beneficial, eg. Microbiome in human body which is essential for health.
5. Can be treated with antibiotics, although overuse has made antibiotics less effective.



Viruses

1. Much smaller, information-carrying 'packages'.
2. Need host's cells to replicate.
3. Cannot survive long outside a host.
4. Found alongside cell damage and disease in host, if host's immune system is weak.
5. Cannot be treated with antibiotics, but Colloidal Silver and Manuka Honey can kill some viruses.



Sources and Suggestions for Further Research:

Counting in Tens: http://www.vendian.org/envelope/dir0/counting_by_tens.html

Introduction to Pathogens: <https://www.ncbi.nlm.nih.gov/books/NBK26917/>

The Gut Microbiome and Your Health: <https://www.healthline.com/nutrition/gut-microbiome-and-health#section6>

Bacteria versus Viruses: <https://www.webmd.com/a-to-z-guides/bacterial-and-viral-infections#1>

Natural Anti-Microbial Remedies: <https://livingnow.com.au/natural-antibiotics-options-uses-surprising-sources/>