https://bioweb-cfs.cas.okstate.edu/info/requiredreadings/Emerging%20Diseases.pdf

Emerging Diseases

A Nigerian child eats a poisonous bean, which requires extraordinary treatment by the local physician, framing investigation of cell membrane structure, secretion, intercellular communication, and neurons.

Readings about the **Population Growth** can be found in **Chapter 37.**
Readings about the **Immunity** can be found in **Chapter 34.**
Readings about the **Endosymbiosis** can be found in **Chapter 15.**

Population characteristics and change.

- If you are not sure what a **population** is, read pp. 750-751.
- If you are not sure what a **population density** is, read pp. 750.
- Readings about **population growth** start on p. 752.
    - To learn about **birth and death rates**, see p. 752
    - If you need help understanding **exponential growth**, read p. 754
    - If you need help understanding **logistic growth**, read pp. 755-757.
    - If you are having trouble distinguishing **dependent** from **independent factors affecting population growth**, see p. 757
    - If you are curious about survivorship curves and want to learn more, see pp. 753-754
- Readings about human population growth are found on pp. 759-761
    - To learn about the factors that slowed **birth rates** in humans, see p. 760
    - To learn about the factors that slowed **death rates** in humans, see p. 760

Immunity.

- For an overview of all the systems involved in defending your body against disease, see p. 682
- If you are not sure what **white blood cells** are or do, read pp. 682-683.
- **Adaptive immunity** is discussed on pp. 686-691.
    - If you are not sure of the role of **macrophages**, see p. 686-687.
    - If you are not sure what **B-cells** are or what they do, see p. 687.
    - If you are not sure what **antibodies** are or what they do, see p. 688.
        - If you are not yet sure what **proteins** are, see p. 55.
        - Producing and releasing antibodies is done by **cellular secretion**, which you can review in Figure 3.13 and by reading pp. 57-58
    - You can learn more about how your body can produce so many different antibodies and the details about the process by which specific B-cells are produced on pp. 688-690.
        - The summary of **B-cell activation and activity** can be found on p. 689 in Fig 34.9
    - Figure 34.11 will help you understand when & **why antibody production stops**.
    - If you are having trouble distinguishing between active and passive immunity, see p. 690 and Fig. 34.1
    - If you don't know what **memory cells** do, see p. 689 & 691

    - If you are not sure how **primary and secondary immune responses** differ, read pp. 690-691.
- To learn how **antibiotic resistance evolves** in bacteria, see p. 253
    - The problem with the **evolution of antibiotic resistance** is nicely described on p. 237 (The unending war with bacteria)
    - If you mistakenly think **bacteria become resistant** to antibiotics because overuse of antibiotics exposes them to antibiotics, see p. 253, 140
    - To learn more about **how specific antibiotics work**, see p. 350 (Apply it now), 51, 79, 131, 347
    - …and why they don't work against viruses on p. 338
- Not sure how **vaccination** works, see p. 692
    - To learn more about **vaccination and viruses**, see p. 337)
- **Have you heard that vaccines are dangerous or don't work?** That is NOT the case, see p. 681.
- If you would like to learn more about **viruses**, read pp. 332-338.

Theory of Endosymbiosis

- If you are not sure what **evidence** there is that certain organelles evolved from prokaryotes, read pp. 311-312 & pp. 362-363.
- If you are unsure of how this **applies to chloroplasts**, see p. 61
- If you want to see how this theory explains aspects of **photosynthesis and cellular respiratio**n, see p. 116.
- be sure to read material on link on **this Scenario's Study guide page**: Endosymbiosis and The Origin of Eukaryotes
- or just search using the term "evidence for the endosymbiotic theory of eukaryotic cell evolution" for more information)
- If this theory is correct, **why can't these organelles live outside of cells**? See p. 313