STEM Relay (Volunteer)

Objective

We are going to do a Bristol Myers STEM Relay. Divide the students into equal groups. Each group will have a worksheet with different STEM job. As a group they will have to answer the questions on their team worksheet and come up with a solution. As the volunteer feel free to include or exclude worksheets depending on classroom factors. Once all the groups are done, the students can move on to the next job. Once every group has had a chance to complete each job worksheet. Discuss the answers with the class! The goal of this activity is to give the students an opportunity to experience different STEM careers!

The relays include:

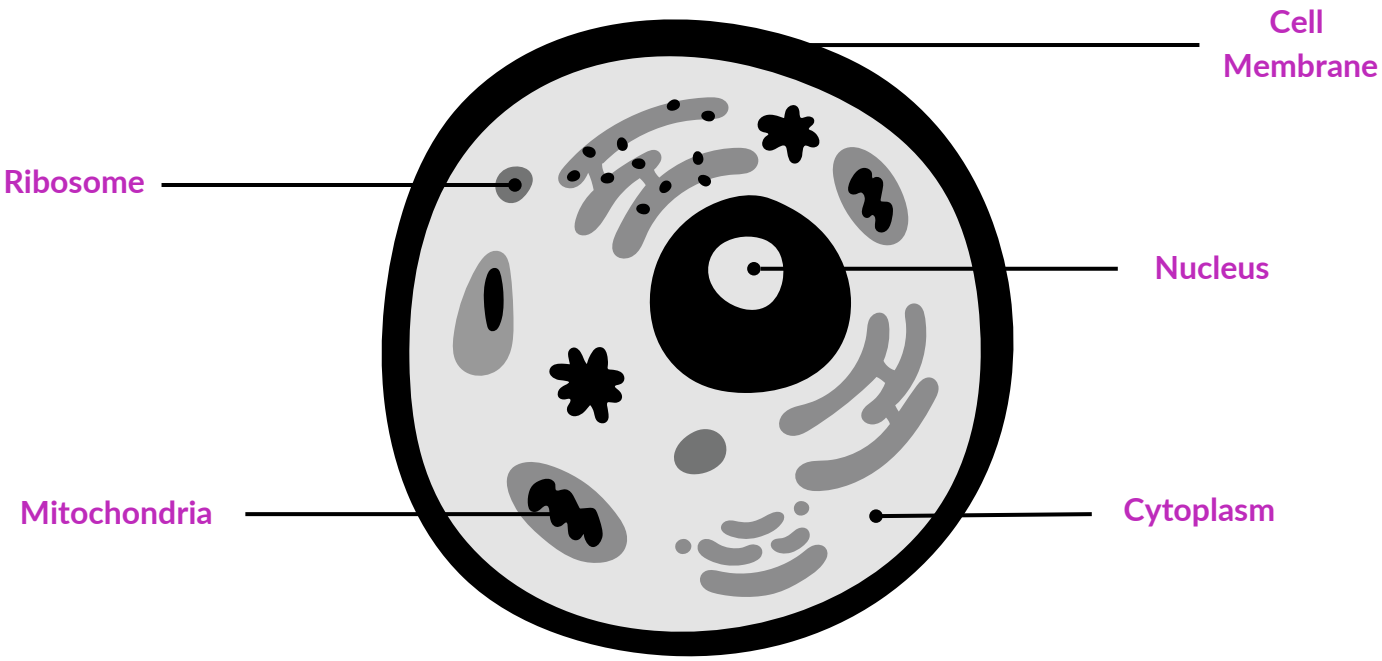
- The Biologist
- The Chemist
- The Pharmacologist
- The Clinical Trial Researcher

STEM Relay Volunteer

Biologist

Answer:

1. You see a large structure controlling all the cell's activities and storing important genetic information. Nucleus
2. You notice a flexible outer layer that determines what enters and leaves the cell. Cell Membrane
3. Small structures are producing proteins, which are essential for growth and repair. Ribosomes
4. Energy production is happening here as the cell breaks down food to stay powered. Mitochondria
5. A jelly-like substance is holding all the organelles in place. Cytoplasm



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Chemist

Answer:

1. Identify a Chemical Change:
    a. Sugar melting and turning brown when heated is a chemical change.
    b. Why? The heat causes the sugar to undergo caramelization, a process where new substances with different properties are formed.
2. Separating with a Magnet
    a. Iron filings can be separated from a mixture using a magnet because they are magnetic.
3. Separating a Mixture of Iron Filings, Sugar, and Baking Soda:
    a. Step 1: Use a magnet to remove the iron filings.
    b. Step 2: Add water to dissolve the baking soda while the sugar remains solid.
    c. Step 3: Filter the mixture to separate the sugar from the baking soda solution.
    d. Step 4: Evaporate the water to recover the baking soda.

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Pharmacologist

Answers:

1. 9:00 a.m.
    a. **100 Milligrams Active**
2. 10:00 a.m.
    a. From 9:00 a.m. to 10:00 a.m., half of the medicine breaks down so **50 Milligrams remain active.**
3. Explain why understanding how medicine breaks down over time is important for prescribing the correct dosage.
    a. **Pharmacologists need to know both how long a medicine takes to start working and how quickly it breaks down to determine proper dosing intervals. This ensures that enough medicine remains in the system to be effective without causing side effects.**

STEM Relay Volunteer

Clinical Trial Specialist

Answer:

2, 4, 8, 16, **32, 64**

2, 6, 18, 54, **162, 486**

2, 8, 32, 128, **512, 2048**

These are multiplication patterns. Understanding patterns like these helps researchers predict how a treatment will affect virus levels or patient recovery rates over time. If a medicine's effect follows a predictable pattern, researchers can calculate dosages and timelines more accurately to optimize patient outcomes.