**“Cell Factory” assignment**

Instructions

1. Draw a typical eukaryotic (animal or plant) cell. Use a FULL PAGE for your drawing. No tiny drawings allowed. TAKE PRIDE IN YOUR WORK.
2. On your drawing show the actual “Biology” names of all (20) of the cell components listed in the 1st column below. For very small items – such as mRNA, tRNA, ribosomes, etc. – you may draw them off to the side of the main cell structure. Use color, and TAKE PRIDE IN YOUR DRAWING.
3. Next to the ‘real’ names, write a suitable ‘factory’ or ‘city’ name which you think is appropriate.
4. Part 2: Make a list of each of the 20 organelles, followed by a short paragraph explaining their FUNCTION in the cell. Use your textbook. USE YOUR OWN WORDS!

You will turn-in:

1. Your beautiful Cell Drawing in all its glory
2. The list of organelles with detailed descriptions of their FUNCTION.

|  |  |  |
| --- | --- | --- |
| Real “Biology” names of organelles and cell components | “Cell Factory” names(Examples) | “Cell City” names(Examples) |
| Plasma membrane | Factory fence or wall | International border |
| Transmembrane proteins | Guard shack or Security detail | Border crossing |
| Nucleus | Head office | City Hall |
| Nuclear membrane | Office security | City Hall fence/Police? |
| Nucleolus | CEO’s office | Mayor’s office |
| DNA | Parts list or blueprints | City planning dept. |
| mRNA (messenger RNA) | Post-It Notes or delivery orders | Blueprints |
| tRNA (transfer RNA) | Parts handling machines or ‘jigs’ | Construction workers? |
| Cytoplasm | Factory floor | Environment |
| Mitochondria | Power plant | Power plant |
| Chloroplasts (in plants) | Solar panels | Solar panels |
| Rough E.R. (endoplasmic reticulum) | Assembly area for proteins | Construction jobsite? |
| Smooth E.R. (endoplasmic reticulum) | Assembly area for lipids | Same as above? |
| Ribosomes | Two-part machine for proteins | Same as left? |
| Golgi Apparatus | Packaging & shipping dept. | Post Office or UPS/Fedex |
| Lysosomes | Janitorial dept. | Recycling plant |
| Vacuoles & vesicles | Shipping containers | Railroad car? |
| Centrosome | Road building dept. | Road building dept. |
| Microtubules | Highways | Highways |
| Motor proteins | Delivery truck | Locomotive? |