The Cell Simile Project

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| LT: | I can identify the major organelles in a cell and describe their functions. |

Introduction:

One way of understanding a new idea is to think how the idea is like something we already know about. We then can compare the pieces to help us understand and remember the roles of different parts.

For this project, we are going to look at animal cells and compare the parts of a cell (the organelles) to something we already know about. For example, we could compare the whole cell to a factory and then think about how each organelle is like a piece of that factory.

Let’s start with the nucleus. The nucleus controls activities in the cell and contains all the important information. What part of a factory would that be most like the nucleus?

*The manager’s office is like the nucleus because the manager sits inside and tells everyone else what to do.*

Let’s try another. What would the cell membrane be like? Well, the cell membrane is around the outside of the whole cell and controls what comes in and out.

*The gates and doors are like the cell membrane because the gates and doors control what comes in and out of the factory.*

Your task:

Your job is to make a complete version of this analogy. You will produce the following:

1. A poster-sized image of your simile that shows all the important details.
   * This should be in color and show care and craftsmanship
   * This drawing should include all the parts that represent the different organelles.
2. Labels on the image that point out how each piece is similar to an important cell organelle.

You will need to decide what you will use as your central simile. Below are a few suggestions. It is recommended that you choose one of these.

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| * + - * a castle       * a shopping mall       * a sports arena       * a museum | * + - * a restaurant       * a city       * a house       * a school |

If you have another idea and really want to do it, check with your teacher.

Cell Simile Rubric

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Just Beginning**  **(0 pt)** | **Approaching**  **(0.5 pt)** | **Meets**  **(1 pt)** | **Exceeds**  **(+0.5 pt)** |
| Completeness – Drawing | Drawing is missing a representation of 2 or more organelles. | Drawing fails to show one organelle. | Drawing includes something representing each organelle. | Drawing goes above and beyond in detail and scope. |
| Completeness  – Labels | Two or more parts are missing labels. | One part is missing a label. | Each part is labeled with a simile sentence comparing it to an organelle. | Labels go above and beyond in detail and scope. |
| Craftsmanship – drawing | Drawing is incomplete or looks as if it was done without much care. | Some areas of the drawing look sloppy and could use some more work. | Drawing shows evidence of best work.  Drawing is in color. | Extreme attention to detail shown in every step. |
| Craftsmanship – labels | Labels look as if they were done without much care. | Some labels or arrows are sloppy or could use some more work. | Labels and arrows are neat and show evidence of best work. | Extreme attention to detail shown in every step. |
| Accuracy | The labels have multiple errors, that show deep misunderstanding in the role of organelles. | The labels show a few errors in understanding the role of each organelle. | Each part’s label has a simile sentence that shows understanding of the organelle’s function. | Similes are extensive and detailed in their comparisons. |
| **TOTAL POINTS:** | | | | /5 pts. |

Cell Simile Sheet: Simile Sentences

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WHAT ARE YOU USING FOR YOUR CELL SIMILE? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TITLE SENTENCE:

“A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is like a cell because….”

*(your simile)*

Complete a simile sentence for each organelle. Be sure the parts of your simile actually make sense – for example, if you chose a castle, don’t include an electric power station.

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| *This part of your simile* | *is like a* | *cell organelle* | *because… (In what ways do they serve the same function?)* |
|  | *is like a* | *cell membrane* | *because…* |
|  | *is like a* | *cytoplasm* |  |
|  | *is like a* | *nucleus* |  |
|  | *is like a* | *mitochondria* |  |
|  | *is like a* | *vacuole* |  |
|  | *is like a* | *endoplasmic reticulum* |  |
|  | *is like a* | *Golgi body* |  |
|  | *is like a* | *ribosome* |  |
|  | *is like a* | *lysosome* |  |

Cell Simile Sheet: Simile Sentences

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TITLE SENTENCE:

“A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is like a cell because….”

*(your simile)*

Use this space to draw a draft of what your final image will look like. Make sure your drawing includes all the parts for all the organelles.

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