



Transparent Assignment Example

Transparent Assignment Template: from Tilt Higher Education

Assignment Name: DNA Extraction Lab for ChemV21 Lab

Due Date: 12/06/2023

Purpose: Students will conduct an experiment to demonstrate the ability to synthesize their understanding of the structure of DNA with the ability to apply lab skills to isolate macromolecules relative to the intermolecular forces and bonds in cells.

Skills:

- Students will implement procedures based on their understanding of the chemical components and structure of DNA.
- Students will explain the chemical processes used to extract DNA from the nucleus of a cell.
- Students will extract the DNA from a strawberry and use chemical tests to confirm its identity.

Skills: Implement procedures to conduct an experiment to isolate the nucleic acid DNA from a strawberry.

Knowledge: This assignment will also help students understand the relationship of temperature and concentration on salting out the DNA from the extracted solution from the strawberry cells.

Task: Identify all key steps needed to extract the DNA from strawberries. Perform the procedures to extract the biomolecule. Evaluate the extract to test the final product for DNA.

Criteria for Success:

- Students will have identified all reagents needed to isolate the DNA.
- Students will summarize the key types of intermolecular forces between DNA molecules and how to disrupt them to extract the nucleic acid from the strawberries.
- Students will organize their procedures into a logical set of steps to complete in the 2 hours of lab time.
- Students will implement their procedures during the lab session.
- Students will produce a product where they can identify if the DNA has been extracted correctly.



Rubric:

Assessment Review	4	3	2	1	0
What percent of the students were able to summarize the procedures for DNA extraction?	100-90%	89.9-80%	79.9%-70%	69.9-60%	59.9-0%
What percent of the students produced procedures that could be implemented in the correct order to extract DNA?	100-90%	89.9-80%	79.9%-70%	69.9-60%	59.9-0%
Did the students correctly identify the layer of the extract that contained the DNA?	100-90%	89.9-80%	79.9%-70%	69.9-60%	59.9-0%
Is there evidence in the data of an equity gap?	There is clear evidence compared to the data over a trend of three years of outcomes.	There is adequate evidence the data have been reviewed and shows a clear trend over three years.	There is minimal evidence on an equity gap compared to the data over a trend of three years of outcomes.	There is inadequate evidence of an equity gap compared to the data over a trend of three years of outcomes.	No data analysis is provided to look for equity gaps.