Torres- Unit Plan Part II

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| Objective | Possible Teaching Strategies | Final Choice | Rationale |
| 1. Students will be able to explain where plants get their energy to produce their food. | Diagrams  Group Activity  Video  Lecture | Lecture | Since this is an introduction, lecture would be best because students will be exposed to the basics of photosynthesis. |
| 1. Students will be able to explain the role ATP plays into cellular activities. | Lecture  Role play  Video | Role play | Having some basic knowledge of what photosynthesis is, students could attempt to role play the way ATP works in cellular activities. |
| 1. Students will be able to explain how plants and other organisms are able to use energy from the sun to power other important events that occur within the cell. | Group activity  Lecture | Group activity | Students have seen how photosynthesis works on a daily basis, a group activity to go over the things they’ve seen and relate it to “why” it is happening is the reason behind this group activity. |
| 1. Students will be able to explain the overall photosynthesis equation and understand the role that light plays within a chlorophyll. | Group activity  Diagrams  Assigned reading  Lecture  Lab | Lab | Students will be able to see what types of light play a crucial role in photosynthesis and they’ll be able to witness a plants structure by using microscopes and their naked eye to make observations. |
| 1. Students will be able to explain and identify what is happening in light dependent reactions. | Video | Video | A video is useful because it can tie in the basics learned in class and catch students up to the newer material that will be taught in class. |
| 1. Students will be able to explain the Calvin cycle. | Lecture | Lecture | Lecture for the Calvin cycle is best because it isn’t the easiest to understand. Having a lecture to go through this cycle step-by-step is the safest strategy. |
| 1. Students will be able to identify factors affecting photosynthesis. | Lecture  Group Activity  Group discussion. | First, group discussion.  Then, lecture. | Allowing students to come up with their own reasoning behind things that affect photosynthesis will allow them to become creative and actually think about factors. Then, to make sure everyone is understanding these factors, a class discussion could be held followed by a lecture to mention key factors that affect photosynthesis that the students should definitely know about. |

Use the table below to complete part 2 of your Unit Plan Assignment.

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| Objective | Possible Assessment Strategies | Final Choice | Rationale |
| 1.Students will be able to explain where plants get their energy to produce their food. | Classroom discussion  Group discussion  Reflection | Reflection | I think that turning in a reflection of what the student has understand about the lecture is best because the teacher can assess if the student really understood the basics of what was being taught. |
| 2. Students will be able to explain the role ATP plays into cellular activities. | Classroom discussion  Group discussion | Group discussion | Group discussion (along with taking notes) will help as an assessment strategy because each student will be in charge of a role in the ATP cellular activity and will need to be well prepared to present their role to their group and even their class. |
| 3. Students will be able to explain how plants and other organisms are able to use energy from the sun to power other important events that occur within the cell. | Group discussion  Reflection | Reflection | A reflection for this section is a good way to see if the students were an active member with their group activity. The teacher will write out questions and the student could write about what they had learned in this activity with specific examples. |
| 4.Students will be able to explain the overall photosynthesis equation and understand the role that light plays within a chlorophyll. | Grading lab | Grading lab | Grading the lab that is being done for this section is important because a lab will allow students to visually see what is happening with photosynthesis and applying the basics learned about photosynthesis to what they are doing in the lab is key to understanding this process and how light plays a crucial role. |
| 5. Students will be able to explain and identify what is happening in light dependent reactions. | Video Worksheet | Video worksheet | During this objective, a video will be provided to explain photosynthesis and what is happening in light dependent reactions.  The video worksheet will include important questions students will need to know to understand the process of photosynthesis and could even be used as future exam questions. |
| 6.Students will be able to explain the Calvin cycle. | Quiz  Reflection | Quiz | The quiz for this section, the Calvin Cycle, will include a diagram and the step-by-step process of what is occurring within the Calvin cycle. |
| 7.Students will be able to identify factors affecting photosynthesis. | Worksheet  Group activity | Group activity | First, I would have the students come up with their own ideas on what affects photosynthesis, once they have compiled a short list I would have them form groups. In these groups they will discuss their answers and why they chose those answers. Then, as a class we will have a discussion. I will have input and include factors that have not been included. |

Use the table below to complete part 3 of your Unit Plan Assignment.

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| Science Laboratory Skill | Related Objective(s)? | Teaching Strategy? |
| Microscopes | 4 | Instructor demonstration and a handout with basic information, |
| Making observations | 1,3,4,7 | Showing examples of what are good observations and letting the students practice and practice. |
| Designing an experiment | 4,5,7 | Teach students what thought process is needed to design a well thought out experiment and giving assignments that will allow them to practice this skill. |

Use the table below to complete part 4 of your Unit Plan Assignment.

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| Science Literacy Skill | Related Objective(s)? | Teaching Strategy? |
| Formulate hypotheses referencing prior research and knowledge. | 1 | Try to relate how the environment plays a crucial role in photosynthesis.  Bring day-to-day observations to new things being learned.  Lecture/Powerpoint |
| Determine the criteria upon which the designs will be judged, identify advantages and disadvantages of the designs and select the most promising design. | 7 | Allow students to design their own experiments.  Group/Individual activity. |
| Collect, organize and analyze data accurately and precisely. | 4 | Photosynthesis lab.  Observing plants and how light plays a crucial role in photosynthesis. |

**Unit Plan Overview (Part 5)**

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| **Day** | **Objective** | **Teaching Strategy** | **Assessment Strategy** | **Notes** |
| 1 | Students will be able to explain where plants get their energy to produce their food. | Lecture | Reflection of what was learned will be turned in at the end of class. | Need projector. |
| 2 | Students will be able to explain the role ATP plays into cellular activities. | Role play | Classroom discussion, everyone will have participated. |  |
| 3 | Students will be able to explain how plants and other organisms are able to use energy from the sun to power other important events that occur within the cell. | Group activity | Worksheets for group activities will be turned in to be graded. | Need to have enough worksheets. |
| 4 | Students will be able to explain the overall photosynthesis equation and understand the role that light plays within a chlorophyll. | Lab | Labs will be turned in to be graded. A classroom discussion may take place after labs are turned in. |  |
| 5 | Students will be able to explain and identify what is happening in light dependent reactions. | Video | Video worksheet will be provided. Needs to be filled out. Will go over after class. Students will keep these because there may be questions on there that will be on the exam. | Need to have a projector. |
| 6 | Students will be able to explain the Calvin cycle. | Lecture | Reflection will be turned in. |  |
| 7 | Calvin Cycle continued. | Role play & Group Activity | Students will be able to role play and be in groups to understand the calvin cycle. They will be graded on the role they took in the group activity. |  |
| 8 | Students will be able to identify factors affecting photosynthesis. | First, group discussion.  Then, lecture. | Reflection will be turned in at the end. | Study guide will be handed out. |
| 9 | ALL | Review Game | Game | Jeopardy |
| 10. | ALL | NA | Unit Exam | Test |