Unit Plan Part II Template

Use the table below to complete part 1 of your Unit Plan Assignment.

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| Objective | Possible Teaching Strategies | Final Choice | Rationale |
| 1. Understand how the greenhouse effect maintains the biosphere’s temperature range | * PowerPoint lecture giving real life examples * Having students construct different models of a greenhouse and then observing temperature inside * Project where students have to look at historical temperature trends | Having students construct different models of a greenhouse and then observing temperature inside. | Students will be able to use different “gases” (materials) and see how they affect the temperature inside of their little worlds. This can give students a hands on project that has very observable results. |
| 1. Identify Earth’s three main climate zones | * A worksheet where students identify and color in the zones, and write a brief description * Video on the three types of zones and their location | A worksheet where students identify and color in the zones, and write a brief description | This should allow the students the ability to see, on a map, where the main climate zones lie. It will also give them a basic understanding of the characteristics of each zone and allow them to see the similarities across the globe. |
| 1. Explain how biotic and abiotic factors influence an ecosystem | * Bring in samples of biotic and abiotic factors that are in ecosystems. Allow students to hypothesize how they think they interact with each other. * Lecture | I believe both will work well together. First a lecture on what biotic and abiotic factors are, then allow students to compare them | Students need to be able to make comparisons themselves, without too much guidance. |
| 1. Understand the different interactions between communities; predatory, symbiotic etc. | * Lecture * Game * worksheet | Short lecture followed by game | A very short lecture can help with vocabulary terms. Then I would have students participate in a game where students become different animals and explore what kind of relationships are between each. This interaction can help students move around, interact, and visually and kinesthetically understand how these relationships work. |
| 1. Identify unique characteristics of the world’s major biomes | * video * venn diagram * worksheet showing locations | Video on the types of biomes and their locations | There are many many different biomes in the world, and I think that this can be most easily understood through a video. A video that shows the different biomes and where they are located can help students relate to what they have already seen and learned. |
| 1. Understand the main factors that govern aquatic ecosystems | * Student worksheet/puzzle * Lecture * Creating an aquarium | Creating an aquarium | Stealing the idea from what Mrs. Palmer’s class did with a $300 grant. I would have the students research different plants and animals that can live together in an aquatic ecosystem. This would not only give them hands on experience but also research experience. |
| 1. Identify the two types of freshwater ecosystems | * Teacher PowerPoint | Teacher PowerPoint | Identification of these two types of ecosystems is very simple, and can easily be shown through a simple powerpoint |
| 1. Explain the differences between the marine zones, and give unique characteristics of each | * Activity on where certain animals go * Teacher guided lecture | Activity | Students will use the activity I have made for this class. They will be given a chart that has the layers of the ocean and descriptions of them. Then they will have to place a variety of creatures in the correct places. |

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. Understand how the greenhouse effect maintains the biosphere’s temperature range | * Turn in lab packet for a grade * Check lab skills and participation | Checking lab skills/ participation | In this activity students will need to use certain lab skills such as hypothesizing, creating an experiment and working together. The experiment itself is important because of the concepts associated with it, however I want to make sure students understand the importance and difficulty of creating a good experiment. |
| 1. Identify Earth’s three main climate zones | * Worksheet * Group project | Group project | I would assign each group an area of the globe. They would then need to create a powerpoint, poster or some other presentation to show where the different climate zones were in their region. |
| 1. Explain how biotic and abiotic factors influence an ecosystem | * Worksheet * Quiz | Worksheet | I would give a worksheet that would assess the students’ knowledge on *what* abiotic and biotic factors are, and then give several examples and have students describe what kind of an influence the factors would have. |
| 1. Understand the different interactions between communities; predatory, symbiotic etc. | * Guided worksheet with video * Quiz * Class activity/worksheet | Class activity/worksheet | Students would be assigned different animals or plants. They would move about the room learning what kinds of interactions occur and writing these down upon a worksheet. Both the worksheet and participation would be graded. |
| 1. Identify unique characteristics of the world’s major biomes | * Guided movie notes worksheet * lecture | Guided movie notes worksheet | The worksheet would have questions that correlated to the video. This would be graded and handed back so students could use the worksheets as notes to study for a test. |
| 1. Understand the main factors that govern aquatic ecosystems | * Hand in lab packet for a grade * Check lab skills | Lab skills and lab packet | Students will need to understand how to handle animals, and this will help assess their lab skills. Also the research they do on the aquarium project will serve as a lab packet that can be graded as a group project. |
| 1. Identify the two types of freshwater ecosystems | * Video notes sheet * Quiz at the end of the video | Both the video and quiz | Students would have a video that would auditory and visually show the differences between each ecosystem. They would fill out a worksheet along with this, and there would be a short 5 question quiz after the video is done. |
| 1. Explain the differences between the marine zones, and give unique characteristics of each | * Demonstration * Worksheet | Demonstration and worksheet | I would create, in an aquarium, a simulated marine zone showing the costal to the abyssal zone. Students would then participate in coming up to the board and writing down different information about each zone. Other students would copy this onto their worksheets |

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? |
| Handling animals | 6 | Aquatic ecosystems lab |
| Laboratory safety (glass handling, goggles, gloves etc.) | 1, 3, 6 | Green house gas lab,  Abiotic /biotic factors lab, aquatic ecosystem lab |
| Creating an experiment | 1, 6 | Aquatic ecosystems lab |

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? |
| Make predictions | 1, 3, 4, 6, 8 | Green house gas lab,  Abiotic /biotic factors lab, community interactions worksheet, aquatic ecosystem lab, marine zone lab |
| Evaluate scientific information | 1, 3, 4, 6, 8 | Green house gas lab,  Abiotic /biotic factors lab, community interactions worksheet, aquatic ecosystem lab, marine zone lab |
| Construct solutions to a real world problem | 1 | Greenhouse gas lab |

**Unit Plan Overview (Part 5)**

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| **Day** | **Objective** | **Teaching Strategy** | **Assessment Strategy** | **Notes** |
| 1 | 1. Understand how the greenhouse effect maintains the biosphere’s temperature range | Having students research different models of a greenhouse | Participation and research | Computer lab time |
| 2 | Objective 1 | Having students construct different models of a greenhouse and then observing temperature inside. | Checking lab skills/ participation | Materials for students to create greenhouses. |
| 3 | 1. Identify Earth’s three main climate zones | A worksheet where students identify and color in the zones, and write a brief description | Group project | Computer lab time for making of PowerPoint’s or other presentations |
| 4 | 1. Explain how biotic and abiotic factors influence an ecosystem | I believe both will work well together. First a lecture on what biotic and abiotic factors are, then allow students to compare them | Worksheet | Examples, both physical and representational of biotic and abiotic factors |
| 5 | 1. Understand the different interactions between communities; predatory, symbiotic etc. | Short lecture followed by game | Class activity/worksheet | Video/lecture on community interactions |
| 6 | 1. Identify unique characteristics of the world’s major biomes | Video on the types of biomes and their locations | Guided movie notes worksheet | Video |
| 7 | 1. Understand the main factors that govern aquatic ecosystems | Research on Creating an aquarium | Research skills and group work | Computer lab time. |
| 8 | Objective 6 | Creating an aquarium | Lab skills and lab packet | All materials and safety equipment that is needed for the aquarium |
| 9 | 1. Identify the two types of freshwater ecosystems | Teacher PowerPoint | Both the video and quiz | Video and materials for lecture |
| 10 | 1. Explain the differences between the marine zones, and give unique characteristics of each | Activity | Demonstration and worksheet | Materials for aquatic demonstration |

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| --- | --- | --- | --- | --- |
| **Day** | **Objective** | **Teaching Strategy** | **Assessment Strategy** | **Notes** |
| 11 | ALL | Review day | Projects from objective 2 will be presented before review | Use a jeopardy type game |
| 12 | ALL | na | Unit Exam | Testing materials |