Unit Plan Part II Template Scott Birns

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

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| Objective | Possible Teaching Strategies | Final Choice | Rationale |
| Explain what Genetics is | -Lecture/power point on Genetics.  -Video with a work sheet that goes along with the video. | -Lecture/power point on Genetics. | Since this will be the beginning of the unit I want the students to refocus and I feel like a lecture will refocus them. |
| Define what dominant and recessive alleles are | -Power point lecture  -Read an online article. Also would supply a worksheet that goes along with the article. | -Read an online article. Followed with a worksheet. | An article that talks about the potential that genetics could have in the future will excite them about the subject. Also the students will learn about the basics of genetics while reading the article. |
| Explain what segregation is | -Power point Lecture  -Video on Mendel that includes a worksheet. | -Video on Mendel that includes a worksheet. | A video on Mendel and his contribution to genetics would be an effective way for students to grasp genetics. A work sheet would go along with the video. After this video students should have the proper background to dig deeper into genetics. |
| Define the terms genotype and phenotype | -Power point Lecture  -Project  -Work sheet activity | - Project on family genetics along with a lecture that goes with the information. | This is a fun project for the students to partake on. It lets them work with their parents which is always a good thing when it comes to school. Nice way to tie everything they have learned so far together and bridge are way to Punnett square’s. |
| Illustrate a Punnett Square | -Lecture on how Punnett squares work  -worksheet with different Punnett square combinations.  -Web Lab | -A lecture on how Punnett squares work followed up with a worksheet that helps them practice. | Gives an opportunity for students to work by themselves. I will be walking around the classroom helping out any student who needs help. An opportunity to see if the student is grasping the concept of Punnett squares. |
| Solve the probability for a certain event to occur | -Lecture on probability.  -worksheet asking probabilities for different situations. | -Both, start with a lecture and then let students work on a worksheet. | I would give a lesson on different forms of probability. I would make some fun connections towards real world probability situations. Then the worksheet would be a nice little evaluator on how well my students can calculate probability. |
| Explain what independent assortment is | -Lecture  -Dragon Genetics - Independent Assortment and Gene Linkage activity | -Quick Lecture, then Dragon Genetics activity.  <http://www.science-class.net/Lessons/Genetics/BABY%20LAB.pdf> | Activity lets students put what they have learned into practice. Dragon Genetics asks students to hypothesis what they think will happen. Then the student goes through the activity using the information they have learned. At the end the student is asked to conclude what has happened. |
| Describe two inheritance patterns besides simple dominance | -power point lecture | -A power point lecture that covers this objective and the one below it. | This objective and the one below this one are tied together and should be taught together. Gives me the opportunity to cover the material so that the students will totally grasp the two objectives. |
| Distinguish the difference between incomplete dominance and co dominance | -research assignment.  -lecture/power point | -I will have the student’s research examples of multiple alleles and polygenic traits that occur in the world. I will then have the students write a paper on what they have found. | Gives students the opportunity to research topics being instructed in class. Also presents an opportunity for the students to practice their research skills. |
| Define what homozygous and heterozygous are | -Baby Lab  -Lecture | -Baby Lab  <http://www.science-class.net/Lessons/Genetics/BABY%20LAB.pdf> | This lets students take what they have learned throughout the unit so far and apply it to this lab. Also the lab would be fun for students because they will draw what their hypothetical baby would look like. |
| Be able to rewrite Mendel’s Principles | -Video on Mendel that includes a worksheet. | -Video on Mendel that includes a worksheet. | A video on Mendel and his contribution to genetics would be an effective way for students to grasp genetics. A work sheet would go along with the video. After this video students should have the proper background to dig deeper into genetics. |

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

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| Objective | Possible Assessment Strategies | Final Choice | Rationale |
| Explain what Genetics is | -Pop quiz | -Pop quiz | Just want to make sure that students are paying attention in class and they will keep paying attention. |
| Define what dominant and recessive alleles are | -Completion grade for the article worksheet they filled out.  -Take home assignment | -Completion grade for the article worksheet they filled out. | The material covered in this article will be on the unit exam. Also I want to see what sort of opinions the students have on the issue of genetics. |
| Explain what segregation is | -Completion grade for video worksheet.  -Research assignment on how segregation plays a key role in agriculture. | -Completion grade for video worksheet. | The video will have important information that I want the students to know. Will be able to use the worksheet to study for the unit exam. |
| Define the terms genotype and phenotype | -Family research project.  -Take home worksheet | -Family research project will be graded. | I want to reward students for their hard work. Want students to know that I value when parents are involved in their schoolwork. |
| Illustrate a Punnett Square | -Take home worksheet with different Punnett squares.  -Have students come up to board and draw the Punnett squares that they worked on in class to see if they are right. | -Take home worksheet with different Punnett squares. | Able to assess if students understand Punnett squares. More practice they have at it the easier it becomes. |
| Solve the probability for a certain event to occur | - After students fill out worksheet we will go over it in class that day.  -Take home worksheet. | - After students fill out worksheet we will go over it in class that day. | Gives students the chance to give answers during class. Builds confidence in them when they get acknowledged for being right. |
| Explain what independent assortment is | -Turn in lab packet for a grade. | -Turn in lab packet for a grade. | This is a good way to see if the students are grasping the concepts. Also lets me see if the students know how to form hypotheses and conclusions. |
| Describe two inheritance patterns besides simple dominance | -Pop quiz the next day on this objective and the one below. | -Pop quiz the next day on this objective and the one below. | Questions like these will be on the unit exam so it is good practice for the students. |
| Distinguish the difference between incomplete dominance and co dominance | -Research project will be graded. | -Research project will be graded. | Want to see how well the students can research related topics to what were learning. Lets me see if they have good research habits. |
| Define what homozygous and heterozygous are | -Turn in lab packet for a grade  -Take home worksheet. | -Turn in lab packet for a grade | This is a good way to see if the students are grasping the concepts. Also lets me see if the students know how to form a hypothesis and conclusions. |
| Be able to rewrite Mendel’s Principles | -Completion grade for video worksheet.  -Unit Exam | -Completion grade for video worksheet. | The video will have important information that I want the students to know. Will be able to use the worksheet to study for the unit exam. |

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? |
| -Practicing writing conclusions | -Solve the probability for a certain event to occur  -Illustrate a Punnett Square  -Define what homozygous and heterozygous are | -Baby Lab |
| -Calculating percentages/averages | -Solve the probability for a certain event to occur  -Illustrate a Punnett Square  -Define what homozygous and heterozygous are  -Explain what independent assortment is | -Baby Lab  -Dragon Genetics |
| -Practicing writing a hypotheses | -Define what dominant and recessive alleles are  -Define the terms genotype and phenotype  -Explain what independent assortment is | -Project on family genetics  -Dragon Genetics |

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? |
| Students will be exploring what genetics is and what new advances are happening with genetics. | -Explain what Genetics is  -Define what dominant and recessive alleles are | -Read an online article. Followed with a worksheet. |
| Students will be collecting, organization, and analysis of data related to their own genetics that they received from their parents. | -Define what dominant and recessive alleles are  -Define the terms genotype and phenotype | -Project on family genetics along with a lecture that goes with the information. |
| Students will be learning about homozygous and heterozygous by problem solving by using probability and drawing Punnett Squares. | -Solve the probability for a certain event to occur  -Illustrate a Punnett Square  -Define what homozygous and heterozygous are | -Baby Lab |
| Students will research examples of inheritance patterns besides simple dominance. | -Distinguish the difference between incomplete dominance and co dominance  -Describe two inheritance patterns besides simple dominance | -I will have the student’s research examples of multiple alleles and polygenic traits that occur in the world. I will then have the students write a paper on what they have found. |

**Unit Plan Overview (Part 5)**

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| **Day** | **Objective** | **Teaching Strategy** | **Assessment Strategy** | **Notes** |
| 1 | -Explain what Genetics is | -Lecture/power point on Genetics. | -Pop quiz |  |
| 2 | -Define what dominant and recessive alleles are | -Read an online article. Followed with a worksheet. | -Completion grade for the article worksheet they filled out. | Computer, worksheet, online article |
| 3 | -Explain what segregation is  - Be able to rewrite Mendel’s Principles | -Video on Mendel that includes a worksheet. | -Completion grade for video worksheet. | Video on Mendel, worksheet |
| 4 | - Define the terms genotype and phenotype | - Project on family genetics along with a lecture that goes with the information. | -Family research project will be graded. | -Family bonding time |
| 5 | - Illustrate a Punnett Square | -A lecture on how Punnett squares work followed up with a worksheet that helps them practice. | -Take home worksheet with different Punnett squares. | Worksheet, take home worksheet |
| 6 | - Solve the probability for a certain event to occur | -Start with a lecture and then let students work on a worksheet. | - After students fill out worksheet we will go over it in class that day. | Worksheet |
| 7 | - Define what homozygous and heterozygous are | -Baby Lab | -Turn in lab packet for a grade. | Colored pencils, lab prompt |
| 8 | - Describe two inheritance patterns besides simple dominance | -A power point lecture that covers this objective and the one below it. | -Pop quiz the next day on this objective and the one below. |  |
| 9 | - Distinguish the difference between incomplete dominance and co dominance | -I will have the student’s research examples of multiple alleles and polygenic traits that occur in the world. I will then have the students write a paper on what they have found. | -Research project will be graded. | Computers |
| 10 | - Explain what independent assortment is | -Quick Lecture, then Dragon Genetics activity. | -Turn in lab packet for a grade. | Lab prompt |

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| --- | --- | --- | --- | --- |
| **Day** | **Objective** | **Teaching Strategy** | **Assessment Strategy** | **Notes** |
| 11 | -All | -Jeopardy review game | -Game | Computer, projector |
| 12 | -All | -N/A | -Unit Exam |  |