

## Daily Lesson Plan

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| <b>Course Name:</b>   |                      |
| <b>Unit Title: Radiation and the Human Body</b>   | <b>Day: 10 of 15</b> |
| <b>Relevant NC Standard Course of Study Goal(s):</b>  |                      |
| <ul style="list-style-type: none"> <li>● Bio 1.1.3 Recall that chemical signals may be released by one cell to influence the development and activity of another cell.</li> <li>● Biol 2.1.1 The input of radiant energy which is converted to chemical energy allows organisms to carry out life processes.</li> <li>● Bio.3.1.3 Mutations can be random and spontaneous or caused by <b>radiation and/or chemical exposure</b></li> </ul> |                      |
| <b>Specific Lesson Objectives</b>   |                      |
| <b>Students will understand:</b>  |                      |
| <ul style="list-style-type: none"> <li>● how radiation, as they have currently learned about it in a physical science and environmental context, has an impact on organisms</li> </ul>  |                      |
| <b>Students will know:</b>  |                      |
| <ul style="list-style-type: none"> <li>● key terms: mutation, cell death (apoptosis), radioactivity</li> </ul>  |                      |
| <b>Students will be able to:</b>  |                      |
| <ul style="list-style-type: none"> <li>● discern between natural and human-created sources of radiation and describe the conditions under which radiation can become harmful to humans/life on Earth</li> </ul>   |                      |

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| <b>Key Vocabulary/Formulae for this Lesson</b>  |  |
| <ul style="list-style-type: none"> <li>● mutation, radiation, human-made radiation, mutagenesis, apoptosis</li> </ul>       |  |
| <b>Materials</b>  |  |
| <ul style="list-style-type: none"> <li>● PPT materials</li> <li>● various art supplies for Radiation Art Project</li> </ul> |  |
| <b>Technology Needs</b>   |  |
| <ul style="list-style-type: none"> <li>● Laptop/projector for presentation</li> </ul>                                       |  |

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| <b>LESSON ACTIVITIES</b>  |             |   |   |
| <b>Opening (Hook, Warm-Up, Anticipatory Set, Review, etc.)</b>                          |             |   |   |
| <b>Procedure: Include all sections that apply to this lesson; combine as necessary.</b> |             |   |   |
| <b>Section</b>  | <b>Time</b> | <b>What the Teacher will do:</b>  | <b>What the Students will do:</b>   |
| <b>Input, Modeling, &amp; Check for Understanding</b>                                   | 30 min      | Teacher gives notes presentation on biological radiation and invites students to ask questions/bring relevant experiences to the lecture. | Students listen, take notes, participate in discussion on biological radiation. |

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| <b>Guided Practice</b>                | 30 min | Teacher instructs students to create an artistic expression of the different sources of radiation which we experience on Earth. Teacher explains that each students should depict themselves in their artistic creations and use especially sources of radiation that the student as an individual will encounter on a regular basis. Example: if the individual lives within a 25 mile range of a nuclear power plant, that power plant should be included in the drawing. | Students will create art based on different sources of radiation which they experience in their daily lives. Students should also include the general magnitude of that radiation somewhere in their drawings/art measured in millirems (mrem). Students may use their personal radiation dose calculation sheets for reference for this exercise. |
| <b>Closing/ Summary</b>               | 10 min | Teacher introduces topic for tomorrow: If large doses of radiation can cause cancer to occur in the body, then why is radiation also used as a therapy/treatment for certain types of cancer?<br>Teacher gives students exit ticket and asks them to write two natural sources of radiation and two human-made sources of radiation.  | Students complete exit ticket using their knowledge and/or notes gained from the day's lesson. Students brainstorm how radiation can be used as a treatment for cancer.  |
| <b>Assessment of Student Learning</b> |        |   |  |
|                                       |        |   |  |