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| **Topic** | **Questions to research** | **Claim:**  \* Narrow your questions to make one claim | **Evidence:** | **Reasoning:** | **Solution:** *Design, Evaluate and/or Refine a Solution* | **Trade-off(s):** | **Product Choice:**  Choose 1 product |
| *What human impact is an observable problem?* | *What do you want to know about this topic?* | *How does (topic) affect the environment?* | *What is your evidence that (topic) affects the environment?* | *Construct an explanation(s) (including data analysis/research) and apply scientific reasoning to link evidence to claim.* | *What solutions have already addressed this issue?*  *What ideas do you have?* | *What is the cost/benefit analysis of the issue and/or solution?* | * *newspaper article* * *radio show (voice recording)* * *video news report* * *blog page* |
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| Farming practices | How does farming affect the water quality?  How does farming affect soil quality?  Does farming destroy habitats?  How does farming affect animal populations?  Does pesticide use have an effect on the environment? | Farming affects soil quality | Erosion is visible;  Soil nutrient quality is depleted;  Dust Bowl;  Soil erosion in S. Africa | Water runoff affects how much water is available for plants  Soil nutrients are required for plant survival. | Rotation of crops  Rotation of grazing animals  No till farming  Irrigation practices that minimize water runoff | Cost/benefit analysis of the use of different types of crops, different sources of irrigation, chemical vs organic options for weed and pest control |  |

**Human Impact Solution Cost/Benefit Analysis**

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| **Advantages of doing/using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **(Benefits or Rewards)** | **Disadvantages of doing/using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **(Costs or Risks Involved)** |
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| **Advantages of NOT doing/using \_\_\_\_\_\_\_\_\_\_\_\_\_ (Benefits or Rewards)** | **Disadvantages of NOT doing/using \_\_\_\_\_\_\_\_\_\_\_\_\_ (Costs or Risks Involved)** |
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