

Butterfly Brigade Unit Assessment Materials

Measurement Criteria & Examples of Acceptable Solutions

Biodiversity: Students should be able to define biodiversity as it relates to habitat diversity, species diversity, or genetic diversity.

Butterfly Identification: Students should be able to work together to positively identify butterflies using the field guide cards and their own knowledge of the common butterflies.

Survey Method: Student teams should have a good understanding of the survey method during class discussions and be able to explain the reasons for specific data controls that will result in accurate and reliable data.

Examples:

- *Students will be able to list the steps they will take to document observations as they conduct the survey*
- *Students will be able to explain the use of data controls.*
 - *Limiting the identification responsibilities to one or two students to prevent extra counting of butterflies observed.*
 - *Recommending the use of 1 person as data recorder to prevent omissions or duplications in the counting of butterflies observed.*
 - *Procedures for identification that require positive identification of a species rather than a guess.*

NOTE: If a positive identification is not possible, butterflies may be recorded as an unknown species, such as “unknown skipper” or “unknown swallowtail.”

Recommended Strategy: Students should be able to recommend a strategy to increase butterfly diversity. The strategies should target one or more of the areas of concern that were identified by the analysis of the survey data.

Examples:

- *Recommend prescribed burns to encourage the growth of specific plants in an area of the refuge to increase host plants and/or nectar sources.*
- *Recommend the addition of specific plants that will provide host plants to encourage a greater diversity of butterflies.*
- *Recommend the addition of specific plants that will provide nectar sources for adults to attract a greater diversity of butterflies.*
- *Recommend the protection of specific areas of the refuge to limit human impact on the habitat areas and possible destruction of host plants, nectar sources, or butterflies.*
- *Recommend an educational campaign for communities near the refuge to encourage residents to develop new natural spaces or enhance existing areas to target a greater diversity of butterflies.*

Final Presentation: Student teams should be able to work together to research the questions they developed during the data analysis portion of the activity and formulate a strategy that would result in an increase in butterfly diversity. A rubric for the evaluation of the final presentation has been provided on the following page.



Final Presentation Rubric

Team _____

Members _____

CATEGORY	Excellent (4)	Good (3)	Fair (2)	Needs Improvement (1)	Poor (0)
Survey Procedure	Survey procedure is fully explained and controls for accurate and reliable data are included	Survey procedures explained and some data controls data are included	Survey procedure explained, but is lacking main steps; some data controls are included	Survey procedure and data controls are included, but not accurate or fully explained	Survey procedure and data controls are not included
Data Analysis	Complete analysis of data and full explanations for unexpected data has been included	Good analysis of data and partial explanations for unexpected data has been included	Fair analysis of data, but lacks explanations for unexpected data is minimal	Data analysis is minimal and not completed	Data analysis is not completed
Areas of Concern	Several areas of concerns are included and explained	A few areas of concern are included and explained	One area of concern is included and explained	An area of concern are included, but not explained	Areas of concern are not included
Research	Research is documented and relevant to project goals	Some research is documented and relevant to project goals	Documentation of research is minimal and shows little relevance to project goals	Results of research is minimal and shows no relevance to project goals	Results of research is not included
Proposed Strategy	Proposed strategy demonstrates a full knowledge of areas of concerns and incorporates methods that will increase diversity	Proposed strategy demonstrates a good knowledge of areas of concern and incorporates limited methods that will increase diversity	Proposed strategy shows little knowledge of areas of concern or does not address them; methods to increase diversity are not developed	Proposed strategy is not developed and knowledge of areas of concern are not able to be evaluated	No strategy is proposed

Comments: