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| --- | --- | --- | --- |
| **Day One****60 minutes** | **Day Two****45 minutes** | **Day Three****60 -75 minutes** | **Day Four****50-60 minutes** |
| **Resources*** **Endangered Species game for each team**
* **Journal per student**
 | **Resources*** **Book or video for introduction to bats**
* **Journal per student**
 | **Resources*** **Bat House Checklist**
* **Final Bat House Project Rubric**
* **Laptops/ipads/computer**
* **Note Taking Research Template and rubric**
* **Bat pollinator coloring book**
* **Journal per student**
 | **Resources*** **Engineering Process Worksheet**
* **Bat house checklist**
* **Journal per student**
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| * Introduce endangered and threatened species/Build background knowledge
* Play “Endangered” species game from [www.projectwild.org](http://www.projectwild.org)
* Journal Reflection: This game opened my eyes to…
 | * Read, discuss and identify concerns facing bats in Pennsylvania
* Read Zipping, Zapping, Zooming Bats by Ann Earle (or some similar age appropriate book on bats) or watch Pennsylvania Game Commission video “Race to Save Pennsylvania Bats” a WQED production.

<https://www.youtube.com/watch?v=K_MmIIIdDmY>* Journal Reflection: Bat populations across Pennsylvania are…
 | * Introduce and distribute “Bat House Challenge/Checklist,” go over “Final Project Rubric”
* Go to Computer lab/use Ipads or laptops to research/ gather information for successful bat houses. Record notes using graphic organizer.
* Science teams alternate use of laptops and using Bat pollinator coloring book [www.batcon.org](http://www.batcon.org).
* Students and teachers fill out Note Taking/Research Rubric as an assessment
* Journal Reflection: If we want bats to use our bat house, we must have…
 | * Use engineering design templates to begin planning process for bat house.
* Provide bat house project checklist.
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| **Day Five****60 minutes** | **Day Six****60-90 minutes** | **Day Seven****45 minutes** |  |
| **Resources*** **Scaling Regular Figures Worksheet**
* **Grid paper**
* **Bat Box Blueprint checklist**
* **Journal per student**
 | **Resources*** **Makedo Cardboard Construction Toolkit or other assembling tools**
* **Cardboard**
* **Glue**
* **Journal per student**
 | **Resources*** **Final reflection - Bat House**
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| * Introduce scale models using
* Students design a bat house, drawing a blueprint to scale.
* Provide blueprint checklist for groups.
 | * Students build bat house models using provided materials.
 | * Students present bat house models and their findings. Groups make suggestions for future bat house projects and complete final project reflection.
* Teacher uses project rubric to grade the completed project.
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