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All high school science teacher at
Melcher-Dallas CSD

2021 extern at Des Moines Forestry

Part I: Overview of Workplace

Des Moines Public Works Department's Forestry Department. Their mission is to maintain a healthy urban forest by providing expert maintenance for the trees owned by the City or found in the right-of-way. They also offer support to residents and community members who would like to help Des Moines grow and maintain their urban canopy.

Part II: Workplace Focus

Urban forestry is the care and management of urban tree populations. The department supports the role of trees as an important part of the urban infrastructure and **critical in biodiversity**. Arborists conduct research and promote the benefits trees provide as well as tree preservation .

Part III: Introduce the Problem

Emerald Ash Borer infestations.

Introduce these [infographics](#).

Students will brainstorm questions about Ash population decline (ie causes, consequences, solutions).

Based on questions we will perform multiple investigations to accumulate knowledge and lastly design multi tiered solutions.

Part IV: Standards, Driving and Essential Questions

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. **(Why are the trees dying?)**

HS-LS2-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales. **(Why there are so many saplings?)**

HS-LS2-2. Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales. **(How does this impact other populations? Why do we care?)**

HS-LS4-5. Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species. **(Are some Ash immune?)**

HS-LS4-6. Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity. **(What can we do to fix this?)**

Part V: Extern Host Role

What is the role of your extern host in this learning unit? Include names and titles so others can reach out to these professionals.

Part VI: Student Learning

Do they have some level of voice and choice? Are there opportunities for revision? Are there opportunities for reflection along the way?