

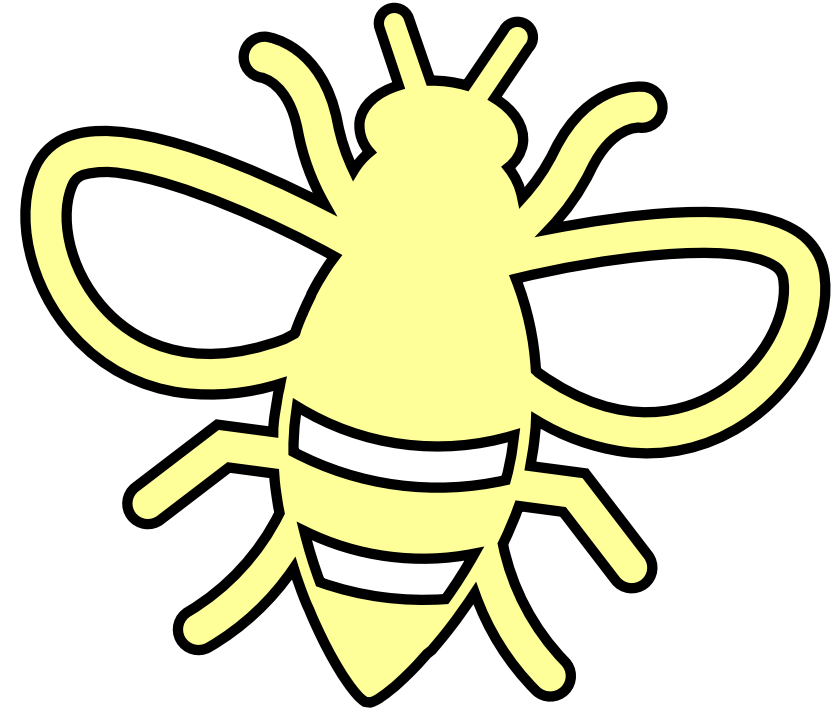


Impact of Pollution on Bees

Presented by FRC 6328 in partnership with
FRC 8604

Project Outline

- **Part 1: Research**
 - Complete internet research to understand what types of pollution affects bees, and how it affects them
 - Learn the chemistry behind certain types of pollution
- **Part 2: Pick Your Pollution**
 - Based on research findings, students will pick a specific type of pollution to focus on
 - Complete additional guided research on what existing solutions exist to mitigate or eliminate their pollutant of choice
- **Part 3: Design Your Solution**
 - Design a simple prototype in CAD software based on research findings



Part 1: Research

- You will be researching about the types of pollution that affects bees.
- To document your research, you will need to keep digital notes on the provided research templates for each of your sources.
 - *You will need to turn in your research notes as a part of your final project!*
- Make sure to answer all questions with complete sentences.
- Create a Works Cited in APA format with all sources used.
- Use prompts on next slide to guide your research!



Research Prompts

What are the bee basics?

What is a bee, what kinds of bees exist and what makes them different species, what do they do, and why are bees important?

What types of air pollution affects bees?

What types of water pollution affects bees?

How do pesticides affect bees?

What other kinds of pollution affects bees?

What is the chemistry behind different types of pollution? What kinds of chemical reactions are taking place?

Research Notes Template

- Write notes here....

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| URL (if applicable) | |

Research Notes Template

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Part 2: Pick Your Pollution

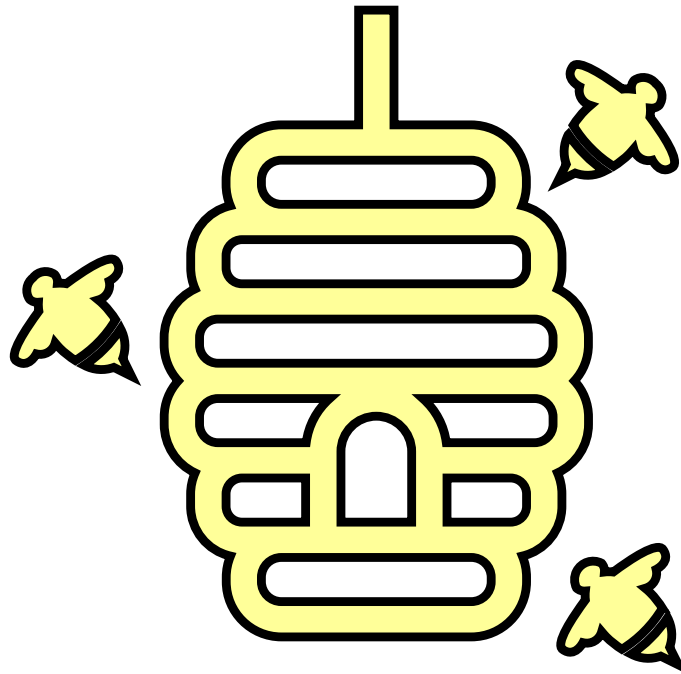
- Now that you understand the basics of bees and the types of pollution that affects them, you will now pick a type of pollution to focus on.
- Note your pollution selection in the box below.

Pollution Type:

Write answer here...

Part 2: Pick Your Pollution

- Complete additional research on at least three existing solutions for your chosen type of pollution.
- Keep research notes on the provided template just like you did in Part 1.



Research Notes Template

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Research Notes Template

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Works Cited

Final works cited here



Part 3: Design Your Solution

01

Start by creating concept sketches of as many possible solutions you can think of to mitigate or eliminate your chosen pollution type

02

Pick one prototype to design in the CAD (computer aided design) software Onshape.

Part 3: Design Your Solution

Insert images of your concept sketches below:



Part 3: Design Your Solution

Insert image of final CAD assembly below:



Project Reflection

Answer the following questions in the box below on your own:

1. What are three things you learned from this project?
2. What is one challenge you faced in your group and how did you overcome it?
3. What feedback do you have to improve this project in the future?

Write reflection here...

