

THE EMERALD TRAP

Name: _____



Directions: Follow the steps below to design a solution to a Pennsylvania invasive species problem, the *Agrilus Planipennis* (**Emerald Ash Borer**). The goal is to create an **Emerald Ash Borer decoy** and then design a **trap** with the decoy to help stop the spread of E.A.B.s!

“A **decoy** is device or object to lure an animal.”



PART A

1 Step A. Brainstorm with your team about the physical traits of the Emerald Ash Borer.

Step B. Now sketch a model of the Emerald Ash Borer.

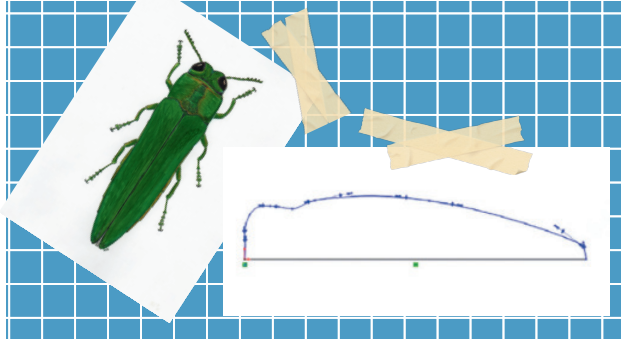
2 Step C. Take your sketch and create your model decoy. You can use the following materials to design your decoy!

Materials:

- Styrofoam peanuts
- Color markers
- Scissors
- Chenille sticks
- Pants
- Chenille sticks
- Pants
- Glitter Glue

PART B

3 Step D. Collaborate with your team about ways to trap a Emerald Ash Borer.



A team of research scientists at PSU has designed and tested many decoys like these to find the perfect model to test!

A

A. planipennis *A. biguttatus* Bioreplicated 1 Bioreplicated 2 3D-printed

12mm



Images by Domingue, M. J., Lakhtakia, A., Pulsifer, D. P., Hall, L. P., Badding, J. V., Bischof, J. L., & Baker, T. C. (2014). Bioreplicated visual features of nanofabricated buprestid beetle decoys evoke stereotypical male mating flights. *Proceedings of the National Academy of Sciences*, 111(69), 14106-14111.



Be A Detective!

4 Step E. Now design a trap. Use the blank space below to draw out your idea!



Look for marks that these larvae pests leave as they exit the bark as an adult. There are notable signs of E.A.B.s feeding on an ash tree!



5 Step F. Choose from the following materials. Then, take your design and create your trap. Test your trap to make sure it will catch an Emerald Ash Borer!

Materials:

- Cardboard
- Color markers
- Scissors
- Chenille sticks
- Paper cups
- Paper plates
- Toothpicks
- string

6 Step G: After setting up the decoy and trap, observe what happens! Record your data below.

Day	# of E.A.B.	Observations/Notes



PART C