



## Colorado Science and Engineering Fair

## 2025 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: Light It Before You Bite It!

Finalist's Name: Kenley Mitchell

School and City: Sargent

Sponsor's Name: Terri Paulson

Category: Chemistry

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

For my project, I tested to see which brand of dog food has the most microplastics. I used 5 bags of cheap dog food and 5 bags of expensive dog food. To extract the microplastics from each kind of food, I first ground the food up with a blender. After blending, I put it through a .25 mm sieve to get only the small particles. Then, I digested 3 grams of the sieved dog food for 12 hours. After digestion, I used potassium carbonate for density separation. Next, I used the overflow method to separate out the lighter weight plastics that float on the top. Then, I filtered the top portion of the sample and stained it with Nile red stain. Then, I put it into a photobox that I made and examined it with a smartphone and a blue light. I found on average the more expensive dog food had 7.6 microplastic particles per 3 grams of food and the cheaper dog food had 10.4 microplastic particles per 3 grams of food. This supports my hypothesis because I said that the cheaper dog food would have more microplastics. I also thought that salmon flavored food would have the most microplastics. I found that beef had the most microplastics instead of salmon like I predicted.

*I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.*

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**