

Activity 11G'
due Thursday, April 26

Area of a Scab

In this activity, you will find the area of a real-life two-dimensional irregular object, a scab. You will need to focus not just on what your estimate is, but also how precise you can make your estimate.

Think of a way you can dissect your scab in an organized way that will let you give lower and upper bounds for the area of the whole scab by adding up lower and upper bounds for the area of the smaller pieces. There's no one best way to do all this, but there are several ideas (some at odds with one another) you should consider as you decide what to do:

- There should be some system to your dissection.
- It should be very clear (no eyeballing, no estimating) that the lower bound for the area of each piece really is less than the actual area of the piece. (And similarly for the upper bound.)
- It should be (very) easy to compute upper and lower bounds for the area of each of the pieces. (What 2-dimensional shapes do you know whose area is easy to compute?)
- Your upper bound and lower bound should be as close as possible to each other, for each piece, or at least most pieces. (Some pieces you may know the area precisely; the lower and upper bounds for such a piece will be equal.)

When you are done with your dissection, enter the lower and upper bounds for the area of each piece into an organized table. Then, use your data to get lower and upper bounds for the area of the entire scab.

What do you think you could do differently and/or better to get a more precise answer? (In other words, to get your lower bound and upper bound closer together.)