**Notes:**

* less open ended
* hints
* questions about *random*
* questions about behaviorspace

**Ideas:**

* Butterfly model problems
* Butterfly video
  + randomness
  + modifications
* Forest fire model:
  + video with 2-3 modifications; use book; discussion of methods
  + use a reporter and a method (in multiple places) – talk about

**Questions:**

* Analyze the question in exercise 5 in a more rigorous way.
  + Have 50 butterflies start within an area of 10 x 10 patches near the edge of the landscape and move for 1000 ticks, say with an x coordinate from 80-90 and a y coordinate from 90-100 (recall the setxy and random primitives).
  + Develop the following measures of how closely clumped the butterflies are at the end of the run, to serve as an indicator of how likely they are to find a mate. Create a reporter to return the value for each of the measures:
    - num-occupied-patches: returns the number of patches with at least one butterfly on them, the fewer, the more clumped the butterflies.
    - avg-neighbors-3: returns the average number, for all butterflies, of other butterflies in radius 3 around each.
    - avg-distance: returns the average distance between any two turtles (the other primitive will be useful, so that each turtle can ask all turtles except for itself their distance)
  + Conduct simulation experiments to see how these indicators of mating success vary with q. Do the measures always agree on how closely clumped the butterflies are? Is there any reason to think one measure is better than the others?
* Repeat the experiment of the previous question, moving the 10 x 10 box in which the butterflies start around the landscape. Do the results depend on local topography?
* Try some alternative models of how butterflies move.
* 8.6.2, 8.6.3
* 9.8.3, 4 – histogram instructions