Lady Beetle Searching Behavior

Questions:

- Do lady beetles search for prey (aphids) systematically or is their search pattern random?

- What senses are most used by lady beetles to locate and recognize aphids?

Materials:

- Lady beetles
- 5 to 7 aphids per lady beetles
- small, shallow container with cover (petri dishes are ideal)
- camel hair brushes to manipulate aphids and beetles

Methods:

- Divide students into groups of 2 to 4 students per group
- Scatter 5 to 7 aphids over the bottom of each container
- Add one lady beetle to each container
- Observe the lady beetles closely and record their behavior. Teachers should stress the importance of close observations and accurate reading
- The experiment is terminate when the lady beetle starts eating an aphid
- Be sure to replicate your inquiry

What to expect:

- Students will almost immediately conclude search is random but is easily influenced by sides of containers
- Lady beetles may wander on the lid or may circle the perimeter. After a few minutes of observation, brush them back to the bottom of the container.
- Lady beetles may pass within a few millimeters of an aphid and not appear to notice it (inference: senses of sight, smell, hearing apparently are not important for host recognition)
- Lady beetles may step on aphids or aphids may crawl over the lady beetles (inference: touch does not seem to be important)
- The careful observers will notice the only when a lady beetle contacts an aphid head-on does it each the aphid. Teachers may have to coax this observation from students. They frequently observe it but is significance does not quite sink in. That's part of the beauty of this exercise. It shows the importance of actually thinking about what you are doing and the importance of paying attention to detail.
- Students will reasonably conclude that touch or taste (or both) are probably the senses that lady beetles use to recognize dinner and the sensory receptors are probably on the head.