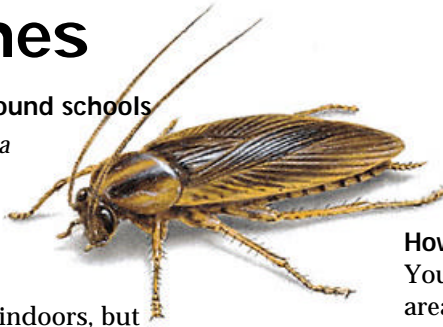




## Cockroaches

### Common species in and around schools

German cockroaches, *Blattella germanica*, commonly infest classrooms and food service areas. The less-common brownbanded cockroach, *Supella longipalpa*, also lives indoors, but prefers warm environments and often lives near electrical appliances. The American cockroach, *Periplaneta americana*, usually lives in sewers and basements. Oriental (*Blatta orientalis*), smokybrown (*Periplaneta fuliginosa*), and field (*Blattella vaga*) cockroaches live outdoors but occasionally come inside. Consult University of California's Pest Note # 7167 ([www.ucipm.ucdavis.edu](http://www.ucipm.ucdavis.edu)) or take specimens to your UC Cooperative Extension office (see county pages of your local phone directory).



### What do roaches want most?

Food, shelter, and water! Eliminate these as much as possible and you'll drastically reduce infestations.

### Biology and behavior

- ▶ Active at night—if you see them during the day, you have a heavy infestation!
- ▶ Live in cracks and crevices near food sources
- ▶ Prefer to crawl along edges of counters or floors—rarely venture into the middle of rooms
- ▶ Scatter when they sense vibration such as the sound of pesticide sprays

### Inspection and monitoring

- ▶ Locate hiding places by putting sticky traps (such as a roach motel) on the floor next to walls and under refrigerators, dishwashers, sinks, and ranges.
- ▶ Monitor on a regular basis and note how many per trap and the age range. Lots of young roaches—they're smaller and wingless—indicate you have an active infestation.
- ▶ Use a flashlight and small mirror to check behind or under cabinets and appliances.
- ▶ Flush out roaches with a hair dryer, not aerosol pesticides.
- ▶ Once you locate the source of roaches, you can restrict management to those specific areas.

### How many roaches are too many?

You may be able to tolerate a few roaches in garbage areas, but zero in kitchens or the teachers' lounge. Keep the threshold in mind when you monitor. Remember that even one female German cockroach can produce thousands of offspring.

### Roach management for teachers

- ▶ Keep classrooms clean by allowing food and beverages only in designated areas, then cleaning thoroughly.
- ▶ Take classroom pets home during roach infestations—their food and water support visiting roaches.
- ▶ Ask students to remove food from lockers, cubbies, and desks on a daily basis.
- ▶ Eliminate cockroach hiding places by removing out-of-date notices from walls and reducing clutter.
- ▶ Clean up the teachers' lounge before heading home every day.
- ▶ Communicate with custodial staff about special needs or roach sightings.

### Checklist for managing a cockroach infestation

- Identify** the roach species to maximize the effectiveness of your management strategy.
- Monitor** thoroughly with sticky traps (such as roach motels). Continue to monitor hotspots even after roaches are gone.
- Include sanitation** as your main preventive strategy. Clean up food debris in classrooms, offices, and lounges; empty classroom garbage daily; rinse recyclables before storing; place outdoor garbage cans and receptacles away from doorways.
- Exclude** roaches by caulking cracks and holes, and sealing spaces around permanent fixtures such as bulletin boards and cabinets.
- Use mechanical devices** such as a strong vacuum to force roaches out of their hiding places.
- Use least-hazardous chemical practices**, if necessary, such as bait stations and bait gels. Sprays tend to scatter roaches. You may kill a few, but most will survive and return.
- Communicate!** Keep teachers and other staff informed of pest management actions.
- Educate** staff and students how they can help prevent

#### Roach management for *food service staff*

- ▶ Store food in containers with tight lids made of plastic, glass, or metal.
- ▶ Store and seal food waste (from prep and serving areas) in plastic bags before removal. Remove waste at the end of each day.
- ▶ Keep indoor garbage in lined, covered containers.
- ▶ Clean food spills promptly.
- ▶ Clean soiled dishes, utensils, and surfaces by the end of each day.
- ▶ Keep shelves in storage areas clean.
- ▶ Take supplies out of boxes and store on pallets or open metal shelving—keep pallets away from walls.
- ▶ Communicate with custodial staff about emptying garbage daily, cleaning behind appliances—including refrigerators, ice-makers, and vending machines—and washing floors and vacuuming carpets daily in areas where food is served.

#### Roach management for *custodial staff*

- ▶ Vacuum roach hiding places using a strong vacuum with a crevice attachment.
- ▶ Empty garbage daily.
- ▶ Place outdoor garbage containers on hard, cleanable surfaces at least 50 feet away from building entrances.
- ▶ Wash all garbage containers regularly—wash those outdoors at least monthly and keep area around them clean.
- ▶ Collect litter from school ground areas at least once weekly.
- ▶ Have recyclables collected at least once weekly.
- ▶ Keep drains clean—this also prevents infestations of drain flies.
- ▶ Empty and thoroughly clean lockers and desks at least twice per year (e.g., winter break and at the end of each school year).
- ▶ Annually clean under and around rarely moved furniture (e.g., staff desks, bookcases, filing cabinets).

#### Roach management for *maintenance staff*

- ▶ Repair cracks and crevices in walls, floors and pavement.
- ▶ Seal openings around potential cockroach runways (electrical conduits, heating ducts, plumbing).
- ▶ Caulk permanent bulletin boards, mirrors and other wall fixtures.
- ▶ Cover floor drains with screens.
- ▶ Seal all permanently installed furniture and cabinets at points of attachment, under counter tops, and inside to prevent harborage of pests in the gaps.

#### Least-hazardous chemical control

*Note:* Dusts and insect growth regulators (IGRs) are not exempt from Healthy Schools Act requirements, although the ones described here are considered least hazardous when used according to label directions. Don't be tempted to spray roaches—they'll scatter and then return with a vengeance.

- ▶ **Insecticidal dusts**—Injected into wall voids and cracks and crevices. Active ingredients include boric acid, diatomaceous earth, and silica aerogel. The roaches die by drying out.
- ▶ **IGRs**—These prevent immature roaches from reproducing and stimulate mature roaches to feed (good idea to place near bait). Available products contain the active ingredients hydroprene or pyriproxifen.
- ▶ **Baits**—Exempt from notification and posting requirements if bait is confined in a self-contained trap (bait station), or formulated as gel or paste applied to cracks and crevices. Good sanitation encourages roaches to be more interested in baits. Active ingredients include abamectin, boric acid, fipronil, hydramethylnon, and imidacloprid.



#### For more information

Visit DPR's school IPM Web site at

[www.cdpr.ca.gov/cjsipm/](http://www.cdpr.ca.gov/cjsipm/)

For additional information about cockroaches see the link to UC IPM's Pest Note #7167.

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