3 Then and now

Think about it: The impact of artificial light on insects

1 Read the article about the effect of artificial light on insects. Which paragraph of the article contains the following information?

a one example of a type of light that causes less harm to insects ☐
b reference to a species that hunts insects ☐
c the impact of artificial light on insect communication ☐
d how artificial light can interfere with insect navigation at night ☐
e reference to the developmental stages of one type of insect ☐

porch: a small area at the entrance to a building, such as a house, that is covered by a roof and often has walls

1 Turn on your **porch** light after sunset, and you will be treated to an aerial display by hundreds of bugs. Artificial lights attract moths, flies, crane flies, mayflies, beetles and all sorts of other insects. You may even find frogs and other insect predators hanging around your porch at night, taking advantage of the easy pickings. […]

2 Night-flying insects evolved to navigate by the light of the moon. By keeping the moon's reflected light at a constant angle, insects can maintain a steady flight path and a straight course. Artificial lights obscure the natural moonlight, making it hard for insects to find their way. […] Since the light bulb radiates light on all sides, the insect simply cannot keep the light source at a constant angle, as it does with the moon. It attempts to navigate a straight path but ends up caught in an endless spiral dance around the bulb.

3 Some scientists believe light pollution is leading to a decline in certain insects. Fireflies, for example, have difficulty identifying the flashes of other fireflies where artificial lights are present. For a moth that lives only a few weeks, a night spent circling a porch light represents a significant chunk of its reproductive lifespan.

4 Another negative impact of artificial lighting on insects is called the 'vacuum cleaner effect', where insects are lured from their normal environment by the draw of the lighting. Mayflies spend their immature stages in water, and finally emerge and develop wings as adults. Their lives are brief, so anything that interferes with mating and egg laying can be disastrous to a given population. […]

5 Mercury vapor lights are extremely effective at attracting night-flying insects, which is why entomologists use them to observe and capture specimens. If you want to reduce the impact of your outdoor artificial lights on insects, opt for warm colour lights.

2 Read the article again. Which insects does each statement apply to?

a They have a particularly short lifespan. ..... and .....
b Their communication signals to potential mates are obscured by artificial light. .....
c The early stages of their lives are spent in water. .....

3 Replace the bold words or phrases in the sentences with a word or phrase from the box.

detrimental effect adverse causal bringing about overwhelming correlation

a Some scientists believe light pollution is **leading to** a decline in insect populations. .....
b The **vast** majority of night-flying insects are attracted to sources of artificial light such as porches. .....
c There is a **clear and established** link between artificial light and the ability of insects to navigate successfully at night. .....
d Warm-coloured light bulbs are considered to have a less **harmful** effect on insects. .....
e There is a direct **relationship** between mercury vapour lights and a decrease in rates of insect reproduction. .....
f One particular **negative impact** of artificial lighting on insects is referred to as the 'vacuum cleaner effect'. .....

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