

STANDARDS:

The following standards may be addressed by using the podcast in conjunction with the information provided in the Teacher's Guide:

NGSS**Disciplinary Core Ideas: LS2.A Interdependent Relationships in Ecosystems**

Organisms, and populations of organisms, are dependent on their environmental Interactions, both with other living things and with nonliving factors

Crosscutting Concept: Energy and Matter

The transfer of energy can be tracked as energy flows through a natural system

Science and Engineering Practices: Developing and Using Models**Common Core**

CCSS.ELA-Literacy.SL.6.2: Interpret information presented in diverse media and formats and explain how it contributes to a topic, text, or issue under study

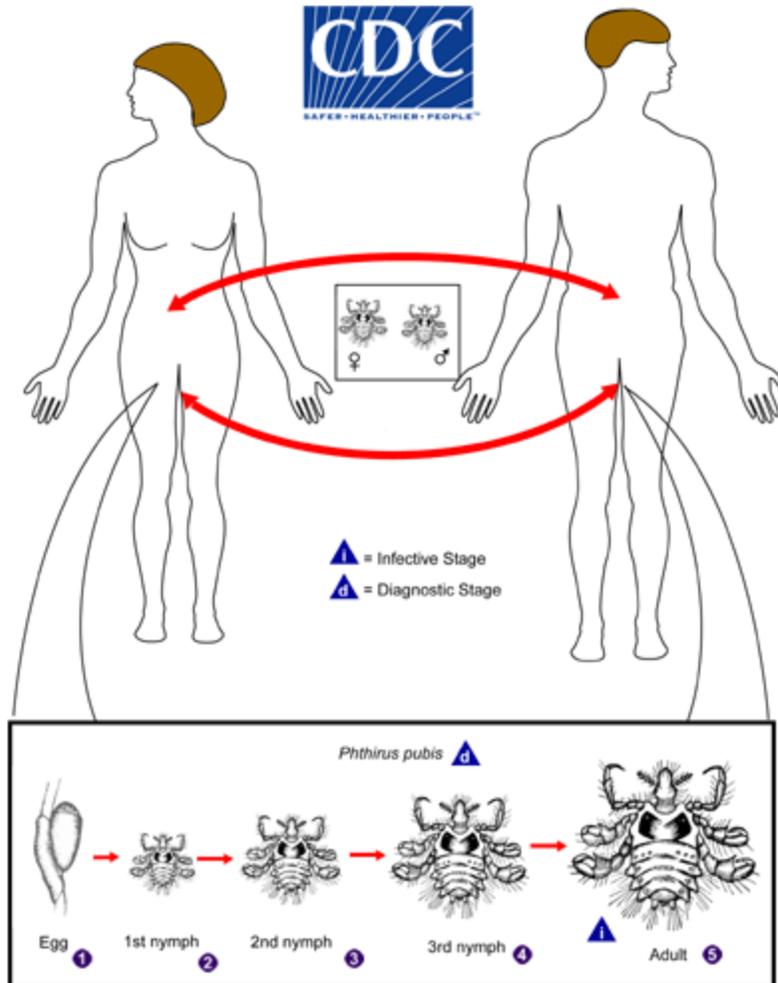
CCSS.ELA-Literacy.SL.6.3: Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

BACKGROUND:

One great way to get students (and adults!) excited about learning biology is to share stories that are "gross" or embarrassing. This episode is both.

Life Cycle:

Pubic lice (*Phthirus pubis*) have three stages: egg, nymph and adult. Eggs (nits) are laid on a hair shaft ❶. Females will lay approximately 30 eggs during their 3–4 week life span. Eggs hatch after about a week and become nymphs, which look like smaller versions of the adults. The nymphs undergo three molts (❷, ❸, ❹) before becoming adults ❺. Adults are 1.5–2.0 mm long and flattened. They are much broader in comparison to head and body lice. Adults are found only on the human host and require human blood to survive. If adults are forced off the host, they will die within 24–48 hours without a blood feeding. Pubic lice are transmitted from person to person most-commonly via sexual contact, although fomites (bedding, clothing) may play a minor role in their transmission.



Lice (pediculosis) can infect the scalp, body, pubis, and eyelashes. Head lice are transmitted by close contact; body lice are transmitted in cramped, crowded conditions; and pubic lice are transmitted by sexual contact. Symptoms, signs, diagnosis, and treatment differ by location of infestation.

Head Lice are most common among girls aged 5 to 11 but can affect almost anyone; infestations are rare in blacks. Head lice are easily transmitted from person to person with close contact (as occurs within households and classrooms) and may be ejected from hair by static electricity or wind.

Body Lice primarily live on bedding and clothing, not people, and are most frequently found in cramped, crowded conditions (eg, military barracks) and in people of low socioeconomic status. Transmission is by sharing of contaminated clothing and bedding. Body lice are main vectors of epidemic.

Pubic Lice (“crabs”) are sexually transmitted in adolescents and adults and may be transmitted to children by close parental contact. They may also be transmitted by fomites (eg, towels,

bedding, clothing). They most commonly infest pubic and perianal hairs but may spread to thighs, and trunk.

Head and pubic lice live on people, whereas body lice live in garments. Confirm the diagnosis of lice by finding live lice or live nits. Treat head or pubic lice with a topical drug (eg, a pyrethroid) or oral ivermectin. Treat body lice symptomatically and by eliminating the source of lice.

ACADEMIC LANGUAGE:

Crab Louse - (*Pthirus pubis*, also pubic louse) is an insect that is an obligate ectoparasite of humans, feeding exclusively on blood.

Human parasites are various protozoa and worms which may infect humans, causing parasitic diseases. Human parasites are divided into endoparasites, which cause infection inside the body, and ectoparasites, which cause infection superficially within the skin.

Sexually Transmitted Diseases (STD) and venereal diseases (VD), are infections that are commonly spread by sex, especially vaginal intercourse, anal sex and oral sex.

Hygiene is a set of practices performed for the preservation of health

Evidence:

Prior to my experience with a mouth full of surprises, I thought you could only get lice in the pubic region. Lice in general is very common; often times seen in regions where sanitation is an issue and high levels of human contact. Pubic lice on the other hand is traditionally classified as a STD, often acquired through unprotected intercourse with someone carrying the host lice commonly known as a “crab”. Since the “crab” form is seen mostly on pubic regions; one never thinks that incubation and development of this parasite would be present in other regions of the body especially the mouth.

LEARN MORE:

1. How is the biology definition of “crabs” different from the everyday definition of “crab”?
2. What are some things we call “worms” that aren’t biological worms? Come up with as many ideas as you can (including physics, computer science, etc.)
3. When I think of a crab, I think of sea food. What did you think of when you picture a crab? Do you think people would think of different things? Explain your answer.

REFERENCES

Parker, J. N., Parker, P. M. (2002) *The Official Patient's Sourcebook on Pubic Lice*
San Diego, Calif : Icon Group International, Inc. 2002

Anderson, A.L., (2009) Pubic lice (*Pthirus pubis*): history, biology and treatment vs. knowledge and beliefs of US college students. *International Journal Of Environmental Research And Public Health* Feb; Vol. 6 (2), pp. 592-600.

Center for Disease Control (CDC). (updated Aug. 22, 2011). Parasites – *Phthirus pubis* (also known as crab louse). Retrieved from: <http://www.cdc.gov/parasite/pubic/>