

NARWHAL

REVEALING AN ARCTIC LEGEND

Activity for Students and Families

The Truth About the Tusk

Created and field tested by: Smithsonian's National Museum of Natural History

Purpose: Participants compare a human tooth model and a narwhal tusk to make observations about where the nerves are located on the tusk.

Target Ages: Can be used with multigenerational groups and elementary school students

Content Standards: NGSS

3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates and reproducing.

Background: In 2014, narwhal researcher Martin Nweeia published a paper on the purpose of the narwhal tusk, arguing that the nerves are located on the exterior of the tusk and act as a sensory organ.

Goals: In this activity, participants will:

- Be introduced to basic anatomy of a narwhal tusk
- Understand that the nerves are on the outside of the tusk
- Compare a narwhal tusk to human tooth anatomy

Materials:

- Human tooth model or illustration
- Narwhal tusk model in the exhibition
- Illustration of the nerves on the narwhal tusk in the exhibition

Script:

Ask participants to wonder:

- Have you ever eaten something so cold that your teeth hurt? How do we feel through our teeth? Where are the nerves located? Inside the tooth or outside?
- Since the tusk of a narwhal is a tooth, where do you think the nerves would be on the tusk?



Allow participants to examine the models of narwhal tusks in the exhibition. Encourage participants to look for the diagram of the narwhal tooth in the exhibition. Use this diagram to explain:

- The narwhal tusk is a tooth and may act as a sensory organ. The nerves are on the exterior of the tusk and some scientists hypothesize that this may help the narwhal sense changes in its environment. For instance, the tusk may be able to sense salinity, which could give them information about ice formation. (Higher salinity = more ice)

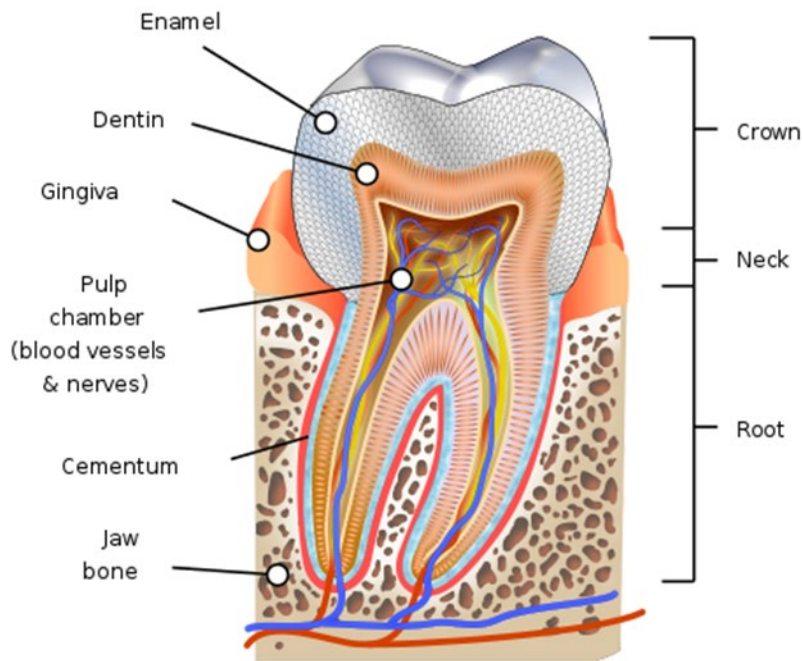


Image from Wiki Commons https://commons.wikimedia.org/wiki/File:Human_tooth_diagram-en.svg