



uBEATS Teacher's Guide:

Tooth Identification

This teacher guide is a supplementary text to support the use of the uBEATS “Tooth Identification” module for grades 11-12.

To help students develop the knowledge necessary for an incredible future in health care, we created UNMC Building Excellence in Academics Through STEM (uBEATS), an online health science resource for Nebraska students.

UNMC uBEATS modules are short (15 minutes or less), interactive online health science modules to supplement curriculum taught in grades 6 – 12. These do not replace curriculum, but they are a supplement for teachers and students incorporating evidence-based information and UNMC expert guided material. Each module is chunked into sections with formative and summative assessments with immediate feedback provided.

Tips on how to utilize uBEATS modules:

- Internet access is required to view uBEATS modules.
- For those who have access to one-to-one technology, modules can be used in or outside of the classroom as a topic introduction, extension, or review. For classrooms without individual student devices, modules can be used in whole group instruction. Formative assessment questions can use the teacher's preferred call and response method and summative assessment questions can be displayed on the board and answered individually by students or printed and distributed to students after viewing the module.



Objectives

- Correctly identify teeth using the Universal Numbering System.
- Correctly classify a tooth by type, dental arch, quadrant, and number.

Introduction

Each tooth in a person's mouth has special characteristics that identify its position among the rest of the teeth. This module explains location and features for 28 adult permanent teeth. The four 3rd Molars ("wisdom teeth") are not included in this module because they are often missing. Classification of teeth is based on these four descriptions: structural features; which dental arch (upper or lower); whether on right or left side; number according to the Universal Numbering System.

Prior Knowledge ..

Before beginning this module, the teacher should understand the Next Generation Science Standards (NGSS) featuring [Three-Dimensional Learning](#).

Core Idea LS1.A: Structure and Function. [A Framework for K-12 Science Education](#)

In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues or organs that are specialized for particular body functions.

Science and Engineering Practices [NGSS](#)

Developing and using models

Crosscutting Concepts [NGSS](#)

Patterns; Systems and System Models; Structure and Function



Key Terms/Vocabulary

Universal numbering system, tooth type, dental arch, quadrant, permanent dentition, incisal, cervical, mesial, distal, facial, buccal, lingual, anterior, posterior, central, lateral, root, cusp, cingulum, incisor, canine, cuspid, premolar, molar, root canal, upper arch, maxilla, lower arch, mandible, quadrant 1, quadrant 2, quadrant 3, quadrant 4, wisdom teeth, lingual anatomy, lingual pit, distolingual twist, crown concavity, longitudinal route depression, oblique ridge, occlusal surface, cusp of Carabelli.

Science Standards

- Nebraska's College and Career Ready Standards for Science 2017 [Nebraska Science Standards](#)

SC.HSP.6.1. Gather, analyze, and communicate evidence of the relationship between structure and function in living things.

- National Consortium for Health Science Education [NCHSE](#)

1.1.1.b. Demonstrate anatomical position.

1.1.1.d. Use directional terms.

1.1.2.i. Structures of the digestive system.

Extensions of the lesson

To help students become more familiar with the Key Terms of this module, the teacher can use the vocabulary list for a classroom Word Wall, or integrate the vocabulary into review sessions.

Encourage students to reflect on their own level of understanding of dental vocabulary during recent visits to a dentist.

As student misconceptions become apparent, the teacher may need to reinforce these important concepts:

- Each tooth has six different edges:
 - The incisal edge is the farthest from the root.
 - The cervical parts are closer to the root.
 - The mesial edge is closer to the midline of the mouth.
 - The distal edge is farther away from the midline of the mouth.
 - The lingual surface is on the tongue-side of the tooth.
 - The facial or buccal (cheek) surface is opposite of the tongue-side of the tooth.
- Teeth are arranged in two rows: top teeth and bottom teeth.
 - The top teeth are in the upper arch. This is the maxilla.
 - The bottom teeth are in the lower arch. This is the mandible.
- The teeth are located in four quadrants.
 - Upper right (the patient's right) teeth are in quadrant 1.
 - Upper left teeth are in quadrant 2.
 - Lower left teeth are in quadrant 3.
 - Lower right teeth are in quadrant 4.
- Teeth are also classified as front teeth and back teeth.
 - The six front teeth in each arch are the anterior teeth.
 - The back teeth in each arch are the posterior teeth.
- Distinct types of teeth have specialized functions.
 - Incisors are for shearing and cutting food.
 - Canine teeth are for ripping and tearing food.
 - Premolars are for chewing.
 - Molars are for chewing and grinding.
- The universal numbering system always applies, even if some teeth have been removed, or have never come in at all. For example, regardless of whether a person has wisdom teeth (#1, 16, 17, 32), the top two front teeth are always #8 and 9.

Enrichment

Use a browser to search the Internet for information about "Tooth Morphology."

Search for information about "Cusp Anatomy."