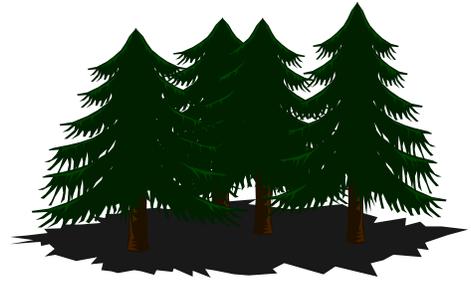


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# Dental Detectives

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## Objective

This activity provides the student with an introduction to the types of mammal teeth. The student will learn the four types of teeth: incisors, canines, premolars and molars, what they are used for and how to identify those teeth. The student will also learn how to relate the four tooth types to the five mammal feeding styles.

## Materials

This is a group activity, so each group will need the following: one mammal skull specimen, one Dental Detectives Checklist and one Dental Detectives tooth formula sheet (per group or per student).

**Appropriate Grade Level:** 6<sup>th</sup>-12<sup>th</sup>

**Time Required:** 20 minutes+

**Curriculum Benchmarks:** Life Sciences, Organisms: group or classify organisms based on a variety of characteristics.

Diversity/Interdependence: describe the relationship between characteristics of specific habitats and the organisms that live there; describe how adaptations help a species survive.

## Background Information

Every mammal can be identified using its skull. The teeth are an extremely useful part of the skull and help in identifying individual mammals. They also help to determine what the mammal ate, where it lived, and many times, its age. The dental formula is one of the tools used in identifying mammals. Each mammal has a specific number of teeth and the dental formula is an easy way to calculate these teeth. The dental formula calculates one side of the lower jaw and one side (half) of the upper jaw. Counting from front to back-incisors, canines, premolars and molars-on both the top and lower jaw, you can determine the number of teeth the mammal has. (Please refer to [Using the Mammal Key](#) for more explicit directions) Directions can also be found on the [Dental Detectives](#) tooth formula sheet. Refer to the accompanying [Mammal Terms Glossary](#) for more definitions.

## Activity

To begin, divide the class into five separate groups. Each group receives one mammal skull specimen-found in the Mammal Kit. Each group also receives a dental formula sheet and a checklist. Working together the group counts the teeth, determines the number of incisors, canines, premolars and molars (on one side of the skull) and records their results on the checklist. They then determine which dental formula fits the skull that they have and check the box next to that mammal. Throughout their discovery, the

teacher should walk around the room and help the individual groups. Some skulls are not easy to determine and some teeth (depending on the skull) are very small and difficult to see.

Concluding the lesson, have each individual group hold up their skull and tell the class what they believe it is. They can tell the class the skull's dental formula and if they do get it wrong, the class can help that group work through the problem (or the teacher can provide the correct answer-and why). A final review of the material learned in the lesson will finish this activity.

## **Assessment**

Have the students write responses to the following questions: How many different types of mammal teeth are there? List and define each one. What is the dental formula? Explain it in detail, and use it in an example, applying it to a mammal of your choice.

