

Name: _____ **KEY** _____ Per: _____ Date: _____

Unit 7: Impression Unit Test Review Sheet

This review packet contains:

- A list of things you should be able to do
- A table of vocabulary words and their definitions that will be filled about using a puzzle activity
- Diagrams you are responsible for knowing how to label
- Practice questions similar to those that will be on the exam

What to study

- This review packet
- Your notes
- Notebook quizzes

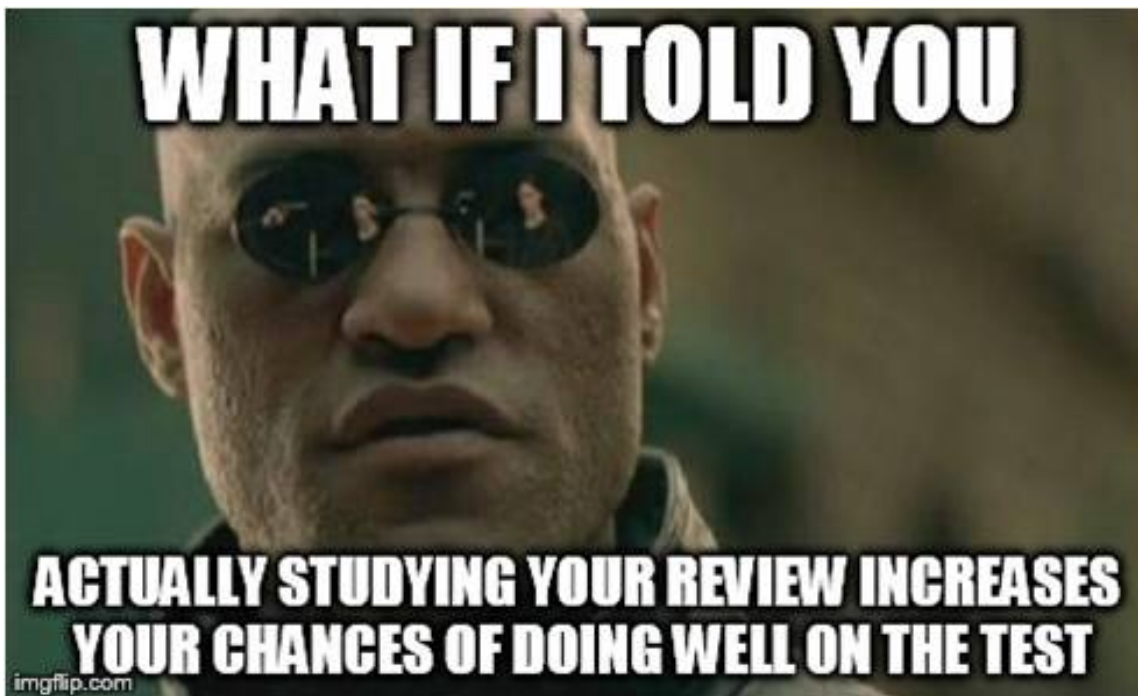
Schedule

- Monday 1/8: Vocabulary Review
- Tuesday 1/9: Practice Diagrams/Questions Review
- Wednesday 1/10: TEST

The Test

- Will consist of 50 multiple choice/matching questions – all of which will be recorded on a scantron

You are allowed to use an 3x5 index card on the exam with whatever **HANDWRITTEN information you feel is relevant**



**Make sure to check the site (lscanlonscience.weebly.com) for all material used in this unit) **

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You should be able to....

- **Footprints**
 - Match the definition of vocabulary words
 - Explain the requirements for a quality impression
 - Describe how impression evidence is collected
 - Distinguish between 2D and 3D collection methods
 - Sequence the steps needed to collect impression evidence
 - Explain the different parts of the impression that are analyzed by investigators
 - Explain what investigators can determine based on quality impressions
 - Match a suspect to a crime based on the shoe print left behind
 - Determine the trend of shoe size and height based on graphical analysis
 - Determine if a print is patent, latent, or plastic
- **Odontology/Bite Mark**
 - Match the definition of vocabulary words
 - Label the six main structures of a tooth
 - Determine if a victim is an adult or child based on the number of teeth
 - List various types of dental alterations
 - List physical characteristics of teeth
 - Determine the relative age of a victim based on the dental development
 - Explain the differences between male and female teeth
 - Classify identification methods as either presumptive or positive
 - Determine if a bite mark was received antemortem or postmortem
 - Match a suspect to a crime based on the bite mark impression
- **Tire Tracks**
 - Match the definition of vocabulary words
 - Label the major parts of a tire (groove, rib)
 - Explain the function of tread patterns in
 - Describe the process of recording tread impressions
 - Determine the vehicle at a crime scene based on mathematical data (turning diameter, wheelbase length, front and rear track width)
 - Match a vehicle to a crime scene based on tread pattern analysis

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Vocabulary Review Puzzle

Directions – in your group, piece together all of the puzzle pieces by correctly matching the vocabulary term to its definition. Once the puzzle is complete, use it to fill in the chart below with all of the vocabulary words you are responsible for.

(Hint: The way the definitions are worded on the puzzle will be exactly the way the words are defined on the exam!)

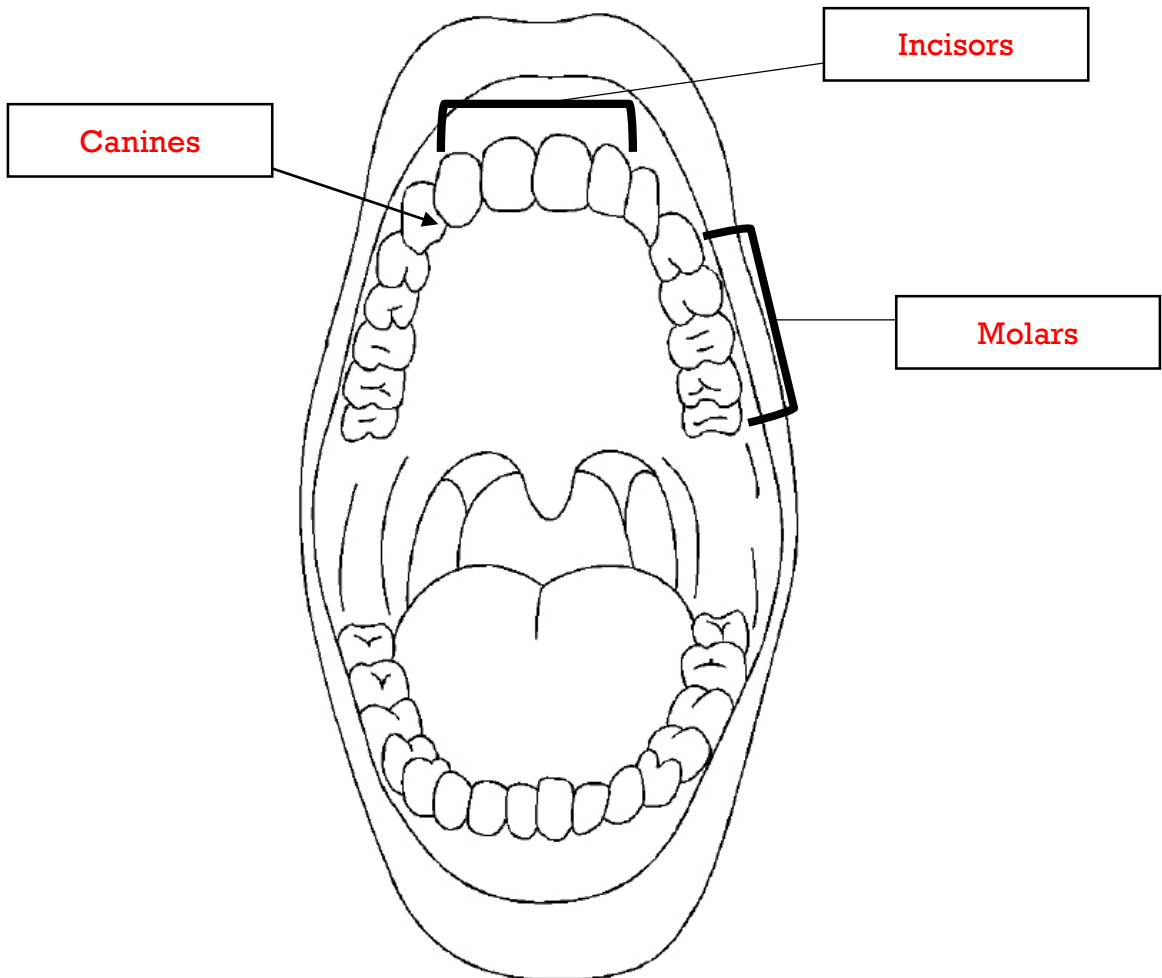
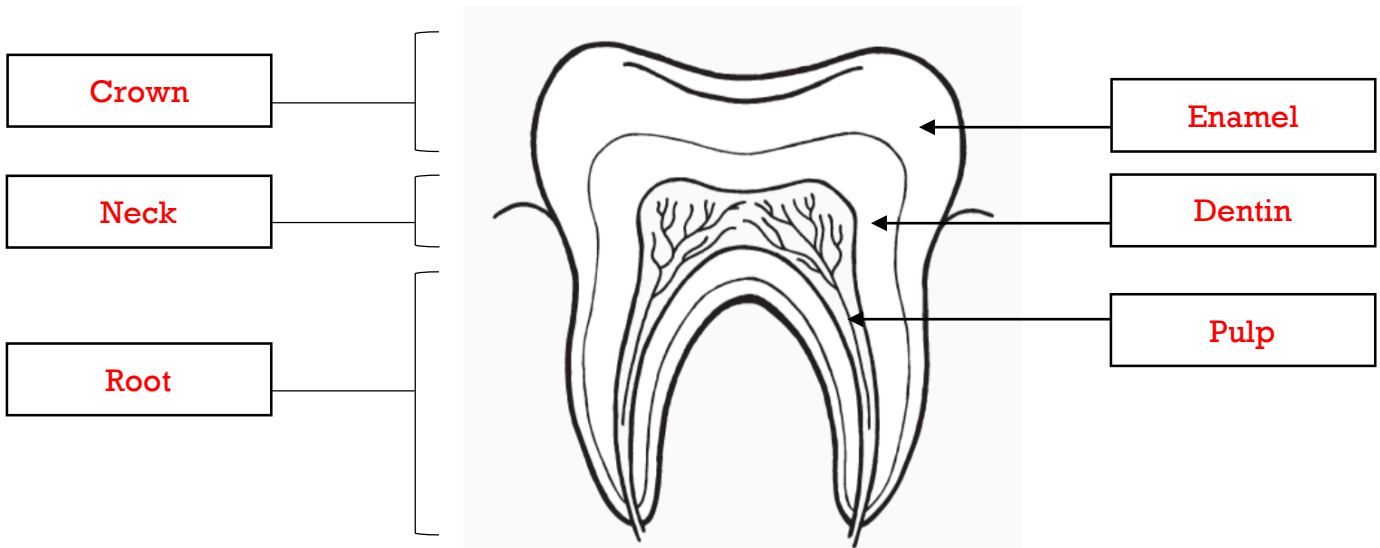
Vocabulary Word	Definition
Impression evidence	objects or materials that have retained the characteristics of other objects through direct contact (shoeprints, tool marks, tire tracks, bite marks, marks on a fired bullet)
Patent/visible print	a transfer of material from the shoe or tire to the surface that can be seen by the naked eye without additional aids (bloody shoe prints left on flooring or tracks left by muddy tires on a driveway)
Plastic print	a three-dimensional impression left on a soft surface (shoe or tire tracks left in sand, mud or snow)
Latent print	a print that is not readily visible to the naked eye; is created through static charges between the sole or tread and the surface
Casting	preserves the dimensional characteristics of the print
Wear patterns	specific damage done to the sole of a shoe based on a person's specific walking style/activity
Odontology	the study of the anatomy and growth of teeth and diseases associated with the teeth and gums
Forensic odontologist	studies teeth to identify victims of mass disasters, help police in criminal investigations, and verify signs of abuse
Dentition	the pattern made by a particular set of teeth
Crown	the region of the tooth above the gum line
Neck	the region of the teeth where the crown and root meet
Root	the region of the tooth embedded in a bony socket

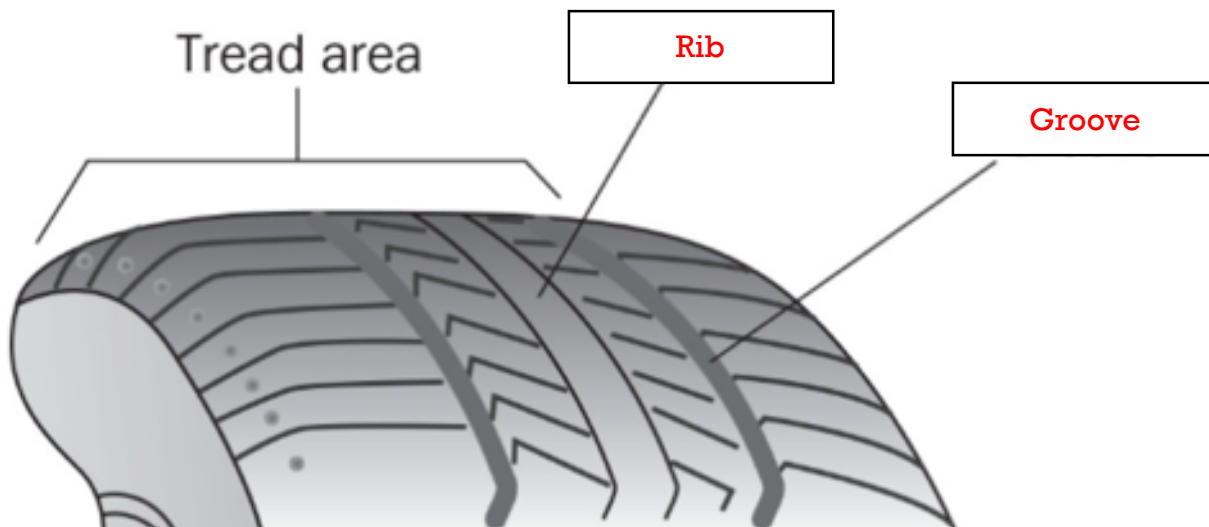
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Dentin	a connective tissue that has calcified and gives teeth their basic shape
Pulp	a softer connective tissue inside the tooth that contains nerves and blood vessels
Enamel	calcium carbonate and calcium phosphate covering the dentin
Incisors	the front teeth
Canines	the teeth next to the incisors that are a bit sharper than the other teeth, used for tearing meat
Molars	the teeth with a flatter surface used for grinding
Tire tread	the patterns (ridges and grooves) on a tire that channel water away and provide traction
Ribs	the “ridges” on the tire (the part that touches the ground)
Grooves	the “valleys” of the tire (the depressions in the tire)
Track width	the distance between the center of one tire to the center of the other tire on the same axle (the distance between the two-front tire OR the distance between the two rear tires)
Wheelbase distance/length	wheelbase distance is measured from the center of the front axle to the center of the rear axle
Turning diameter	the space needed to turn the car in a complete circle

Diagrams

Directions: Label the following diagrams using your notes.





Practice Questions

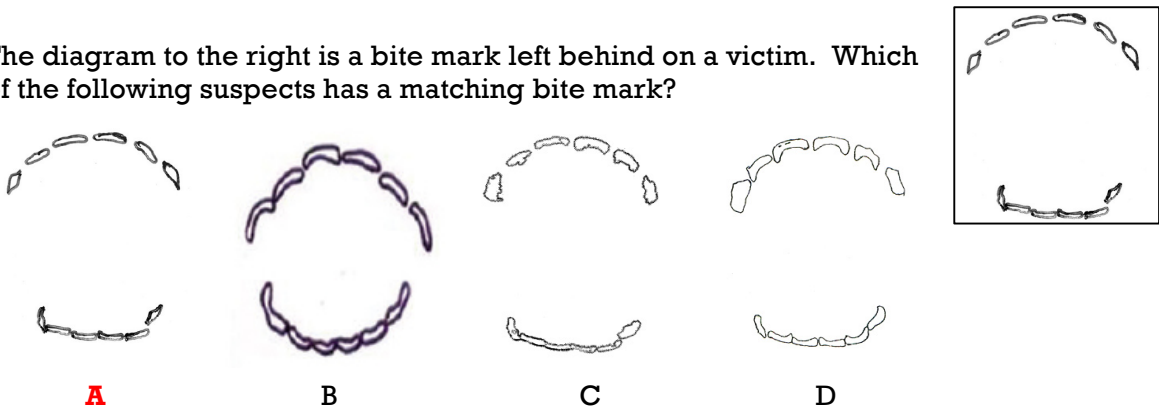
- Which of the following is a 3D collection method of impression evidence?
 - Photography
 - Tape
 - Electrostatic Dust
 - Casting**
- Which of the following can be determined by on the depth of an impression?
 - The exact store the shoe was purchased
 - The color of the shoe
 - The speed of the person**
 - The gender of the person
- What allows a shoe print to become individual evidence instead of class evidence?
 - The color
 - The brand
 - The type of shoe
 - The wear patterns**
- Generally speaking, when comparing shoe size and height,
 - As height increases, shoe size increases**
 - As height increases, shoe size decrease
 - As height decreases, shoe size increases
 - There is no correlation between shoe size and height
- A shoe print left in the snow is considered to be a
 - Plastic print**
 - Latent print
 - Visible print
 - Patent print
- Digestion begins in the
 - Mouth**
 - Esophagus
 - Stomach
 - Small intestine

7. When a root canal is performed, which of the following structures is carefully removed by a specialized dentist called a periodontist?
- a. The dentin
 - b. The pulp**
 - c. The enamel
 - d. The root
8. A body was found in the rubble of a horrible factory fire. Forensic analysts were able to identify the victim by their teeth. The victim was found to have 30 teeth. Forensic analysis can conclude that the victim is most likely
- a. An adult**
 - b. A child
 - c. It is impossible to determine the age
9. Looking at these four images, order the pictures in order from youngest to oldest.



- a. A → B → C → D
- b. D → C → B → A
- c. B → D → C → A**
- d. A → C → D → B

10. The diagram to the right is a bite mark left behind on a victim. Which of the following suspects has a matching bite mark?



11. Presumptive identification is when we think we know who it is, but we can't say it with scientific certainty who that person is. Which of the following is an example of presumptive identification?
- a. Medical and dental records
 - b. Fingerprints
 - c. Family ID**
 - d. Medical and dental records

12. When linking a vehicle to a crime scene, you need to look at
- The front track width and rear track width only
 - The front track width, rear track width, and the tread pattern
 - The front track width, rear track width, wheelbase distance, and tread pattern**
 - It is impossible to link a vehicle to the crime scene without video evidence
13. Different tires have different treads. Which of the following is **INCORRECT** about the function of tire treads?
- They are there for aesthetic reasons only (to make the tire pretty)**
 - Different vehicles have different treads depending on the function of the vehicle
 - The asymmetrical tread has better traction in wet and wintery weather
 - If the tire does not pass the Penny Test (the depth of the tread is 2/32" or less) the tire needs to be replaced.

14. Based on the data below, which suspect **BEST** matches the crime scene?
- WBL = Wheelbase length
 FTW = Front track width
 RTW = Rear track width

Crime Scene	WBL: 7200 mm	FTW: 4500 mm	RTW: 4600 mm
a. Suspect #1	WBL: 7000 mm	FTW: 4500 mm	RTW: 4500 mm
b. Suspect #2	WBL: 7400 mm	FTW: 4400 mm	RTW: 4600 mm
c. Suspect #3	WBL: 7150 mm	FTW: 4200 mm	RTW: 4600 mm
d. Suspect #4	WBL: 7175 mm	FTW: 4500 mm	RTW: 4600 mm

15. The diagram to the right shows a tire track found at a crime scene. Which of the following suspects' vehicles match the print found at the scene?

