

**Medical Photography**  
**Unit: Health Occupations**  
**Key Practical**

Name: \_\_\_\_\_

A. Describe the profession for each photograph. Describe at least three skills needed for this profession. (English Standard 6.12.8)

1. Profession Firefighter \_\_\_\_\_

a. Description: (5 pts.)

A firefighter must know the how to identify various types of fires.  
A firefighter should be able to work power saws and other equipment.

A firefighter must be able to physically assemble number styles of ladders and tie a variety of knots.

2. Profession EMT \_\_\_\_\_

a. Description: (5 pts.)

An EMT must know the anatomical structures of the heart in order to do CPR.

An EMT must be able visually identify various physical disabilities and how to mobilize the injury.

An EMT should be able to calculate correct dosages of medications and oxygen saturation rates.

3. Profession Orthopedic Surgeon \_\_\_\_\_

a. Description: (5 pts.)

A surgeon must be able to recognize the types of fractures.  
A surgeon must be able to identify the instruments used in surgical procedures.

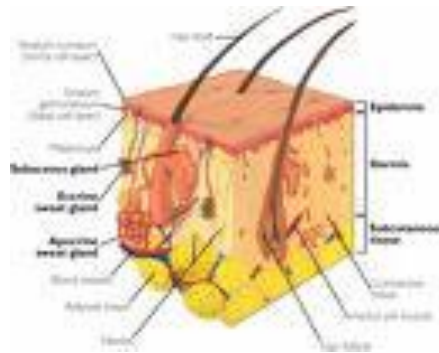
A surgeon must be fluent in medical terminology.

## B. Problem Solving:

1. If the wound in photograph #3 is 2 cm x 4.3 cm, what is the area of this rectangular wound? (5 pts.) Math content 3.7.1

$$2 \times 4.3 \text{ cm} = 8.6 \text{ cm}$$

2. In photograph #2 the gentleman is suturing up a wound that went through the epidermis and dermis. Draw and label ten parts of these structures. (5 pts.) Life Science Standard L.12.B



3. In photograph #5 the firefighter is spraying down a structure fire; describe the law of motion and why it is important for the operators of the fire line to understand this law. (5 pts.) Physical Science p.12.B1

### First law

It is possible to select a set of **reference frames**, called **inertial reference frames**, observed from which a particle moves without any change in **velocity** if no net **force** acts on it. This law is often simplified into the sentence "**A particle will stay at rest or continue at a constant velocity unless acted upon by an external unbalanced net force.**"

### Second law

Observed from an inertial reference frame, the net force on a particle is proportional to the time rate of change of its linear **momentum**:  $F = d(mv) / dt$ . <sup>[3][4][5][6][7]</sup> Momentum  $mv$  is the product of **mass** and **velocity**. **Force** and **momentum** are **vector** quantities and the **resultant force** is found from all the forces present by **vector addition**. This law is often stated as "**F = ma: the net force on an object is equal to the mass of the object multiplied by its acceleration.**"

### Third law

Whenever a particle **A** exerts a force on another particle **B**, **B** simultaneously exerts a force on **A** with the same magnitude in the opposite direction. The strong form of the law further postulates that these two forces act along the same line. This law is often simplified into the sentence "**Every action has an equal and opposite reaction.**"

Total Points Possible: \_\_\_\_\_ / 30 pts.