Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NDHS Per: \_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_

**The Digestive System**

1. **Mouth**: **mechanical digestion** - chewing

 **chemical digestion** - salivary **amylase** - enzyme that breaks down starch

 Other functions of saliva:

 lubricate and moisten food

 coat mouth - protect against abrasions

 **antibacterial** agents - prevent tooth decay

 **Bolus**: mass of chewed mess

 - moved to back of throat by the tongue

2. **Pharynx**: throat

 common opening for respiratory and digestive system

 **Epiglottis** - blocks **trachea** (windpipe) - prevents food from entering **lungs**

3. **Esophagus**: pharynx to stomach

 moves food to stomach by **PERISTALSIS** - rhythmic waves of muscle contraction - pushes food down to stomach

4. **Cardiac Sphincter**

(Sphincter – ring of muscle – acts as a gate)

* allows food into the stomach and keeps food inside
* Malfunction = **heartburn**!

5. **Stomach**: about 2 L capacity - storage of food

**Gastric Juice** - **Pepsin and Hydrochloric Acid (HCl)**

 HCl

* breaks down proteins
* kills most bacteria and foreign organisms

 PEPSIN - breaks peptide bonds in proteins

 **Mucus**: protects stomach wall from **self digestion**

Mix of food, enzymes, mucus, and HCl = ACID CHYME

6. **Pyloric Sphincter** – regulates release of acid chyme into small intestine

7. **Small Intestine**: **Duodenum, Jejunum, Ileum**

 Duodenum = 1st 25 cm

 - secretes enzymes for the digestion of **starch, protein, fats and nucleic acids**

 - Helped by accessory digestive organs

 - **pancreas, liver, gall bladder**

 Pancreas secretes **digestive enzymes**

 Liver produces **bile** (stored in gall bladder) that emulsifies (breaks apart) fat

 Jejunum and ileum: 6 meters - function: **absorption** of nutrients

 Increase surface area with **villi and microvilli**

8. **Large Intestine**: aka Colon : 1.5 meters long

 - Absorption of **water and minerals**

 - movement of waste aided by **FIBER** - stimulates the **contraction** of the intestine wall

Large Intestine has lots of **Bacteria**:

 Break down many materials in waste and produces **vitamins and gas**

9. **Rectum**: storage of **feces** until eliminated (**defecate**) through the **anus**.