The purpose of this lab activity is to visualize the food digestion process using tortilla chips and various common household items to re-create the digestive system in the classroom.

This activity has been modified from that from www.lmtsd.org.

**Digestive System Activity**

**Material (and what each represent)**

<table>
<thead>
<tr>
<th>Tortilla chips (food)</th>
<th>Baggie (Stomach)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (Saliva)</td>
<td>Stockings/Tights (Small Intestine)</td>
</tr>
<tr>
<td>Banana (digestive enzymes in saliva)</td>
<td>Drinking Cup (Large Intestine)</td>
</tr>
<tr>
<td>Mortar &amp; Pestle (teeth/chewing)</td>
<td>Trash Bag (Toilet/Bathroom)</td>
</tr>
<tr>
<td>Paper Towels</td>
<td>Marker</td>
</tr>
</tbody>
</table>

**Instructions**

1. Make sure the desk/table area has been cleared up, as things will get messy
2. Label each part of the digestive system with the marker
3. Use the mortar & pestle to ‘chew’ the tortilla chips VERY WELL
   A. Place the crushed up tortillas into the stomach (baggie)
   B. place the paper towel to the side as you will need this later
4. Remove the banana peel and add the digestive enzymes & saliva to the stomach/baggie
   A. Make sure to remove as much air from the stomach as possible and seal COMPLETELY

**How does the food get from the mouth to the stomach?**

5. GENTLY mix the stomach contents together for 3-4 minutes to ‘digest’ the food well
   (If you crush this too hard, the baggie will break...)
6. Tie a knot at one end of the (small intestine) stocking to make a seal
7. Cut a hole at one end of the stomach (baggie) and squeeze the contents into the small intestine
   A. Make sure you place the paper underneath to keep the area clean
   B. Watch as the water drips through the small intestine, then gently get rid the excess water

**What do you think happens to the water after it leaves the small intestine?**

8. Pole a hole in the bottom of the large intestine and set this aside
9. Cut a small hole in the small intestine and squeeze the digestion mix into the large intestine
10. Squeeze the contents out of the large intestine and place everything in the toilet
11. Make sure the lab area/benches are clean and everything has been put away
What are the functions of the digestive system?

Why are enzymes important in digestion? Please name two enzymes that are important for digestion.

In our activity, we ‘chewed’ our food and then the food went straight into our ‘stomachs’. What important part of the digestive system (muscle/organ) and was skipped?

Why would peristalsis still continue even if your friends helped you stand on your head?

We have recently completed labs on enzymes and pH. With this information, how does the pancreas help with digestion?