Week 8, Day 1

Take a 30 cm piece of string and tie an end in one of the holes in your paper cup. Tie the free end to the other hole in the cup. Take the 90 cm piece of string and tie it in the middle of the string handle. Tape the other end of the string to a pencil. Put 5 pennies in the cup. Hold the ends of the pencil and spin the pencil towards you. What happens to the "bucket"? This is a kind of simple machine called a pulley. What do you think might be some uses for a pulley?

Week 8, Day 2

A pulley is a lifting device that helps lift heavy objects or raise objects up in the air. You need a 60 cm piece of string, a thread spool, some tape, and a "bucket" from yesterday's investigation for each group. Pull the 60 cm piece of string through the center of the spool so that the spool is in the middle of the string. Tape one end of the string going through the spool to a desk or table. Tape the other end to a different desk or table so that the spool is suspended between the two desks or tables. Put your "bucket" on the floor and place 5 pennies in the bucket. Make a pulley system by looping the attached string over the spool. Add more string to the free end if it is not long enough to reach. Lift the bucket off the floor by pulling the string downward against the spool. (Be sure your spool string is taped securely!!!) Let each person have a turn lifting the bucket.

Week 8, Day 3

Set up the same pulley system that your group made yesterday. Before you loop the long string over the spool, use a tape measure or ruler and a marker to mark the string at 5 cm intervals. Lift the bucket slowly. Have the recorder fill in the chart below to show how far the string moves as the bucket is lifted.

<table>
<thead>
<tr>
<th>Distance Bucket Lifted</th>
<th>Distance String Pulled</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 cm</td>
<td></td>
</tr>
<tr>
<td>20 cm</td>
<td></td>
</tr>
<tr>
<td>30 cm</td>
<td></td>
</tr>
<tr>
<td>40 cm</td>
<td></td>
</tr>
</tbody>
</table>
Week 8, Day 4

1. Mr. Donaldson dug a water well on his farm. He used a pulley and a rope to get water out of the well. The rope was eight hundred seven feet long. Which number is eight hundred seven? Mark your answer.
   - 87
   - 870
   - 807
   - 800,007

2. Mr. Donaldson took two cows to the cow auction. He had to use a pulley to lift the cows into his trailer. The first cow weighed 231 pounds. The second cow weighed 484 pounds. Which is the best estimate of how many pounds he lifted altogether? Mark your answer.
   - 700 pounds
   - 500 pounds
   - 400 pounds
   - 200 pounds

3. Mr. Donaldson has a flagpole on his farm. The flagpole has a pulley to lift the flag up the pole. The flag he raises is a rectangle. The flag is 80 cm long and 50 cm wide. What is the perimeter of the flag? Draw a picture to help you solve this problem. Mark your answer.
   - 130 cm
   - 230 cm
   - 260 cm
   - 290 cm

Week 8, Day 5

Draw a sketch of each of the six simple machines. Label each sketch.