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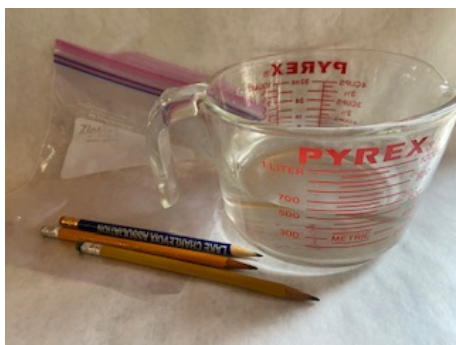
Raven Hill Discovery Center is a 501(c)(3) tax-exempt corporation.

Mission: Raven Hill provides a place that enhances hands-on and lifelong learning for all ages by connecting science, history & the arts.

Home Learning Opportunities: Week 3

April 6, 2020—Activity #3.1: Water exerts pressure

Have you ever jumped into the water and felt the pressure on your ears, when you went deep down? Water exerts pressure, which is logical, BUT can also be fun! This is best done over the sink. Fill a Ziploc plastic bag almost full with water and seal. Careful, it will be heavy. Holding it over the sink, slowly and carefully push a pencil through one side of the bag and out the other at an angle, so the holes are not straight across from each other. Surprise: no water comes out! Push another pencil in and out at also a different angle and then add a third pencil. How many holes do you now have in the bag? Holding the bag OVER THE SINK, pull all three pencils out as fast as possible. Notice that the water coming out the top holes don't shoot out very far, compared to the water shooting out much further from the lowest or bottom hole. There's more water pressing down on the water at the bottom of the bag, so it shoots out further!



1 Gather supplies



2. Fill bag & push pencils thru



3. Pull pencils out OVER a sink!

The water shoots out further from the lower holes: MORE WATER PRESSING DOWN FROM ABOVE!!
Have fun and clean up afterwards!

Note: Email cheri@miravenhill.org for Home Learning Opportunities: Week 1 & 2 and, as the week goes on, check out the entire **Week 3** activities on our website: www.MiRavenHill.org

Also, new on the website: **Raven Hill Memories**. Each day, there will be a photo montage from somewhere at Raven Hill. Check it out each day and email cheri@miravenhill.org, if you want to see previous montages. **ENJOY!**

April 7, 2020—Activity #3.2: Air Pressure

Safety is important in this experiment, so do this with adult supervision. **Matches are needed.**

Put a small plate on the table. Add a small amount of colored water (or plain water) to the plate, less than $\frac{1}{4}$ cup. Put a birthday or tea (warming) candle in center of plate in the water. Light the candle and wait a few minutes to make sure it is burning well. Set a **GLASS** jar or drinking glass over the candle and watch carefully.

Explanation: Air pressure pushes down on the water with a pressure of 14.7 pounds per square inch. The candle uses up the oxygen in the air, inside the jar, so there is less air pressure there. When the candle goes out, all the oxygen is used up and the water is pushed up into the jar by the greater air pressure outside the glass.



1. Gather materials



2. Pour water on small plate



3. Put glass over candle



4. watch

Remember, do this with an adult. Be safe. Have fun and always clean up, when you are done experimenting.

April 8, 2020—Activity #3.3: Puzzles

Get supplies: a rectangular piece of paper or cardboard, scissors, pencils, crayons or markers. Draw or color a picture or make a fun design. Cut one line through your paper to make two (2) pieces. Try putting your “puzzle” together to make the original rectangle again. Cut a second line on one puzzle piece to make three (3) pieces. Try putting your “puzzle” together to make the rectangle again. Cut a third line on one puzzle piece to make four (4) pieces. Can you put your “puzzle” together to make the rectangle again? Continue to cut once puzzle piece in two and put your “puzzle” back together again, until you have at least 10 or 12 pieces. Give your puzzle pieces to someone else and have them to try put the puzzle together. If you need more of a challenge, try cutting your puzzle into more puzzle pieces or cut other shapes for your puzzle pieces, instead of straight lines. Keep your puzzle pieces in an envelope, in case you want to put the puzzle together some other time. Make another puzzle with a different design!



1 Gather supplies



2 Color a picture



3 Cut into pieces



4 Put your puzzle together



5 Store for later

Have fun and always clean up, when you are done.

April 9, 2020—Activity #3.4: Cubits

Today, we use rulers to measure objects. Historically, body parts were used to measure things. Because everyone is a little different in size, the measurements weren't always exact, but they were close enough for most situations. In fact, we still use a measurement that is a body part—the foot. A foot today is now a “standardized” unit of measurement. Other old measurements included the cubit (distance from elbow to tip of finger or about 18” on an adult), the uncia (distance between two joints on a finger or about 1”) and the hand (width of hand or about 3 ½”) which is still used to measure horses—a “sixteen hand horse”. Below, is a photo of a gilded wood cubit and a folding cubit found in an Egyptian tomb.

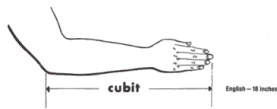
Find some tape to use. Masking tape works best, but scotch or duct tape will work too or even the sticky part of a Post-it note. Measure how long your kitchen table is in **your** cubits. Start with your elbow at the edge of the table. Put a little piece of tape at the tip of your finger. Now put your elbow on the piece of tape and put another little piece of tape at the tip of your finger. Repeat until you get to the other end of the table. Count the cubits. Have a parent measure the table using their cubit. Talk about why the numbers are different.

Explanation: your cubits are shorter than an adult's, so it takes more of them to measure the same length. Measure the length of your couch in cubits. Find something else to measure in your cubits. My table measures almost 3 “Cheri” cubits!

Try some other units of measurements. For example, measure the width of the TV in paper plates or dollar bills. Measure the height of the counter in spoons or the width of the refrigerator in cereal boxes. Use your imagination, but always use and reuse your pieces of tape to keep track of each unit, so you can easily count the total. Pick up all the pieces of tape and put it in the trash, when you are all done measuring.



1 Find tape or post-it



2 Cubit=elbow to finger-tip



3 My cubit & post-it



4 My table measures 3 cubits



5 real cubits from tomb

Have fun and always clean up, when you are done.