ACHIEVE
Activities for the Week of 7/28-7/30

If you have any questions, please contact the lead teacher for the week:
Mrs. Holland: aholland@pgasd.com
OR **text @achievepga to 81010** to talk to the lead teacher and get Achieve text messages through Remind.
Click here for full directions on how to sign up for Remind!

Please note that all Achieve activities are optional and do not need to be turned in!

Tuesday

Activity # 1: Surface Tension
Instructor: Miss Sonday

Goal: Students will learn about and experiment with surface tension.

Materials:
Shallow plate or tray with water
About 2 feet of 30 AWG magnet wire
Scissors
Optional: double-sided foam tape and small googly eyes for decorating
Optional: blue food coloring (makes the water easier to see)

Directions:

1. Water has a unique property that allows it to “stick” to itself called surface tension. You can learn all about surface tension in this video. Feel free to do some of the experiments in the video yourself with items from your house or left over from other Achieve projects.
2. There is an insect that uses surface tension to move over water. Have you ever seen a water strider? Learn about them here! How do you think water striders are able to stay on top of the water without sinking? Surface tension! Because their legs never break the surface of the water, they are able to glide over the top like the items in the science experiments.
3. Make your own water strider! Watch this video for instructions!

Activity #2: Ice Cube Fun
Instructor: Mrs. Medeiros

Goal: Students will use ice to explore and have fun with Painting ice cubes, making colored water for cubes, and games with ice cubes.

Materials:
Ice cube trays
Paints
Paint brushes
Spoons

Directions:

1. Ice Cube Painting- Use ice from an ice cube tray, Use the ice as a canvas to paint pictures on.
2. Ice Breaker Game -Have children balance a slippery, colored ice cube on a spoon and race across the lawn. First team on the other side wins!
3. Fun with ice - fill up small containers, ice cube trays, silicone molds with colored water. Use the food coloring to put in the water. Freeze overnight. Put the colored ice shapes in bowls and explore outside.
4. Ice Chalk- click on the link for full directions and pictures. You can use leftover pieces of sidewalk chalk or follow the directions to use cornstarch to make your own.

Wednesday:

Activity # 1: Rivers
Instructor: Miss Sonday

Goal: Students will learn about rivers and experiment with building their own river.

Materials:
Aluminum Foil
Rocks from your yard
A hose or a bucket of water and another bucket to catch the water
Empty soda bottle
Drinking straw
Craft foam
Glue

Directions:

1. Have you ever wondered why the water in a river moves but the water in a pond or lake doesn't? A river forms from water moving from a higher elevation to a lower elevation, all due to gravity. When rain falls on the land, it either seeps into the ground or becomes runoff, which flows downhill into rivers and lakes, on its journey towards the seas. In most landscapes the land is not perfectly flat—it slopes downhill in some direction. Flowing water finds its way downhill initially as small creeks. As small creeks flow downhill they merge to form larger streams and rivers. Rivers eventually end up flowing into the oceans. If water flows to a place that is surrounded by higher land on all sides, a lake will form. If people have built a dam to hinder a river's flow, the lake that forms is a reservoir. You can learn more about rivers, streams, and creeks here.
2. See if you can create your own river. Take a look at these two sites for pictures and tips on constructing the river out of aluminum foil. You'll need to find a slope in your yard to simulate the change in elevation that causes a river to flow. After constructing your river, you will need to run water through it. You can trickle a hose or you can pour water down it from a bucket.
    a. https://frugalfun4boys.com/tin-foil-river-outdoor-water-play/
    b. https://www.icanteachmychild.com/foil-river/
3. Do experiments to see what will float down your river. Find sticks, pine cones, and other objects in your yard. Do they float? Sink? Get stuck? How does this remind you of a real river?
4. Construct a boat to float down your river! Check out this website for pictures and directions!

Activity #2: Water Games

Instructor: Mrs. Medeiros

Goal: Students will Play duck, duck, splash and make magic paper towels

Materials:

Markers
Paper towels
Cups

Directions:

1. Magic Paper Towels- Draw a picture on half of the paper towel.
2. Fold the paper towel in half to cover up the picture.
3. Dip the paper towel in water, and watch the picture appear!
4. Duck, Duck, Splash game- gather friends or family and a big pitcher of water.
5. Sit in a circle. One person fills a cup of water and goes around the circle saying, "Duck, Duck, Splash!" When the child says "Splash!" , they dump the water on that person, and run around the circle to get back into that child's spot. The child that is splashed, tries to chase the other child around the circle.

Thursday

Activity # 1: Rainbow in a jar

Instructor: Miss Sonday

Goal: Students will use water density to create a rainbow with sugar water.

Materials:

4 Glasses or cups to mix the colors in
Small glass or jar to make the rainbow in
warm water and 1 cup measuring cup
Sugar
measuring teaspoon
food coloring
Spoon
Pipette or turkey baster

Directions:

1. **WHAT IS WATER DENSITY?**

   Density is all about compactness of stuff in space. For this experiment, the more sugar in each glass of water, the greater the density of the water. Same space, more stuff in it! The denser the substance, the more likely it will sink. This is how our rainbow sugar water density tower works! By increasing the amount of sugar in the solution but keeping the amount of water constant, you create solutions that have increasing densities. The more sugar you mix into the same amount of water, the higher the density of the mixture. So density explains why the colored sugar solutions stack on top of each other inside the baster or jar. Density applies to air as well! Learn more about density here!
2. See density in action by creating a rainbow in a jar! For pictures and tips, click here!
3. Create your colored waters. Each color will have a different amount of sugar dissolved in the water. The more sugar that is dissolved, the denser that water is and that color will sink lower in the baster or jar.
   a. Measure 1 cup of water into each glass
   b. Add a few drops of the following food coloring to each glass of water: Red, Yellow, Green, Blue
   c. Measure and add a different amount of sugar to each glass of colored water.
      - RED COLOR – 2 TBSP
      - YELLOW COLOR – 4 TBSP
      - GREEN COLOR – 6 TBSP
      - BLUE COLOR – 8 TBSP
   d. Stir until as much of the sugar is dissolved as possible.
4. If you have a turkey baster, try to make a rainbow in the baster!

    a. Squeeze the baster and put it in the red water. Release a little of the pressure to suck up some red water.
    b. Keeping it squeezed, transfer to orange, release a little more to suck up some orange water.
    c. Continue to do this for all the colors. Make sure you leave enough pressure in the baster to get you through all four colors.
5. Use a pipette or baster to make a rainbow in a jar or glass.
    a. Use the baster's measuring marks or mark your pipette to ensure you get the same amount of each color. Start with the densest color, blue, first. Add it to the glass.
    b. Next, add the green, but add the green very, very slowly. You may want to release the water slowly along the side of the jar or glass..
    c. Continue to do the same thing, working your way back through the colors. Slow and steady. You may need to practice a few times before you get a full rainbow

Activity #2: Making Rain/Dancing Rice

Instructor: Mrs. Medeiros

Goal: Students will make rain and dancing rice.

Materials:
Water
Glass jar or clear container
Shaving cream
Blue food coloring
Rice
Baking soda
Vinegar

Directions:

1. Making Rain Fill the cup with water (*air*)
2. Add a thin layer of shaving cream (*clouds – water vapor*)
3. Place drops of blue food coloring on the top of the shaving cream (*water droplets*)
4. Wait for the "rain" to fall
5. Dancing rice Fill the Clear Jar 3/4 Way Full Of Water. If desired, mix in food coloring.
6. Add in 1 TBS of Baking Soda and Stir. Mix completely.
7. 1/4 Cup Of Uncooked Rice. Note that instant rice is needed for this project! Non-instant rice is too dense and won't result in a "dancing" reaction.
8. Add in 1-2 TBS of White Vinegar.

Links to this week's videos:

Tuesday

Activity #1

- Surface Tension
- Water Striders
- Create a Water Strider

Activity #2

-

Wednesday

Activity #1

-

Activity #2

-

Thursday

Activity #1

- Density Facts

Activity #2

-

Links to this week's resources:

Tuesday

Activity #1

-

Activity #2

- Ice Cube Painting
- Ice Breaker Game
- Fun with ice
- Ice Chalk

Wednesday

Activity #1

- Rivers, Streams, Creeks
- https://frugalfun4boys.com/tin-foil-river-outdoor-water-play/

- https://www.icanteachmychild.com/foil-river/

Activity #2

- Magic Paper Towels
- Duck, Duck, Splash game

Thursday

Activity #1

- Rainbow in a Jar

Activity #2

- Making Rain
- Dancing rice