Refraction vs reflection

- **Materials**: A clear cup or glass of water (the clearer and upright the better), a straw or pencil, a piece of paper and marker
- **Instructions**:
    - Draw a thick arrow that measures between 1.5 inches – 2 inches on the piece of paper.
    - Fill your cup or glass with water.
    - Place the straw in the water, allowing it to fall to the side of the cup.
    - OBSERVE & DISCUSS:
        - As you look at the straw through the glass what do you notice?
        - Does this work from all angles?
    - Next, take the pencil out of the cup.
    - Hold the piece of paper with the arrow about 5 inches (or the width of your hand with your finger relaxed) away from the glass of water.
    - Look through the glass at the piece of paper. Take note of the direction of the arrow.
    - Lift the paper above the glass. Take note of the direction of the arrow.
    - OBSERVE & DISCUSS:
        - What did you notice about the straw in the water?
        - What changed about the arrow when you were looking through the glass of water vs. when you saw the piece of paper on its own?
        - Both experiments represent refraction – or the bending of light. When light hits a curved surface, it bends or refracts. When light travels into our eye it bends and the image flips upside down. Our brain flips it right side up, so we never notice.