Square bubbles

Suitable for: Primary School Students

Materials Needed:
- ¼ cup liquid dish soap   Bucket
- 6 Pipe cleaners   6 straws
- 4 cups water   scissors – Under adult supervision.
- 2 Tablespoons glycerin (optional) (Adding glycerin to the bubble mixture makes the bubbles stronger and last longer).

Method:
- Use the scissors to cut each of the six pipe cleaners and straws in half. You will have twelve pieces of each.
- Twist three of the pipe cleaners together at an end to make a triangular, pyramid-shaped component. You will end up with four, three-legged pieces.
- Slide a piece of straw onto pipe cleaners. Some of the pipe cleaner should stick out of the straw on each leg.
- Build the cube by twisting the pipe ends on one component to the ends on another component. Connect the legs until the cube is complete. Make it as even a shape as you can.
- Submerge your cube into the soap solution and let it sit in the solution for a moment. Make sure your bucket is deep enough for the cube to be completely submerged.
- Remove the cube from the bucket. Now take a straw, dip it into the bubble solution and gently blow a bubble into the center of the cube.

Prediction:
- When you take the cube out, you will see flat bubble surfaces have formed on the sides of the cube.
- You will see that a cube-shaped bubble starts forming in the center when you blow bubble in the center.

What Happened?
- As you dip the cube into the bubble solution, the solution stretches between the edges and the soap film clings to the sides of the cube (**adhesion**). This causes the bubbles to appear square or cubic. The soap film connects the shortest possible distance while still connecting all sides.
- When we blow bubble in the center, even though the center bubble naturally wants to become a sphere, the pressure from the other bubbles pushing against it causes it to form

How did the outcome match your prediction?
If you follow the steps correctly, you will be able to make a perfect square bubble.