



## Where did the water go?

**Curriculum Idea:** Water is a type of matter that can exist in different forms: gas, solid, and liquid. A change in temperature can change water from one form to another.

**Related Episodes:** Hot Ice

**Ages:** 5-6

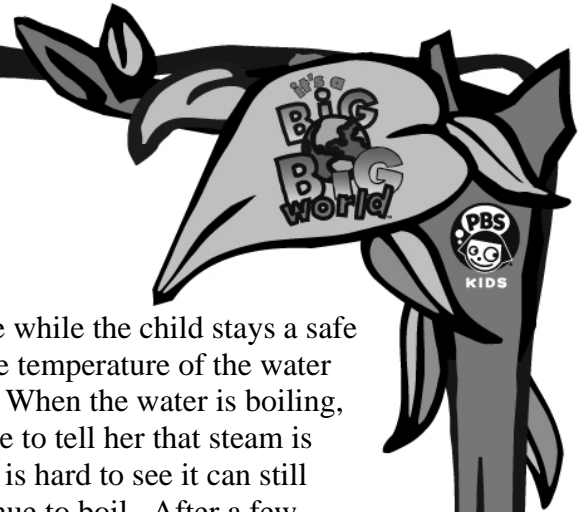
**Subjects:** Earth Science

**Skills:** Observation, Comparison

**Materials:** Water, ice cube, pot with lid, stove

**Directions:** Talk with your child about solids, liquids, and gases – these are the three forms that matter exists in. Explain that matter is “stuff” or anything that can be handled and takes up space (for example, blocks that you may carry around in a bucket, juice that you are drinking from a cup, or air that fills up a balloon). Water is a good example of a type of matter that we can easily see in these three different forms.

First, run some water out of the faucet to see water in its liquid form. Ask her how she uses water in this form: drinking, bathing, swimming. Next, tell her that when water gets cold enough, it will freeze and become a solid – like the ice cube. Ask her when she uses frozen water. Maybe ice to keep her drink cold or snow to play with in the winter? Have her touch the water in both of these forms. Ask her how the liquid water feels compared to the ice cube? Which one feels warmer? What other differences can she observe?



Finally, to observe water as a gas, put a pot of water on the stove while the child stays a safe distance away. Explain that the heat from the stove will raise the temperature of the water and once the liquid water gets hot enough, it will become a gas. When the water is boiling, ask the child if she can see the steam rising from the pot. Be sure to tell her that steam is very hot (even hotter than the boiling water!) and even though it is hard to see it can still cause a burn. Put the lid on the pot and allow the water to continue to boil. After a few seconds, lift the lid and hold it upside down. After making sure it is not too hot to touch, show her the inside of the lid where the water has condensed. Explain that when the steam she observed cooled, it became liquid water again – just like the water that you ran from the faucet!

**Talk About It:** Talk about other times that she may have observed matter changing forms. Has her bowl of ice cream ever melted into a liquid? Or a popsicle begun to drip, changing from a solid to a liquid while she was eating it? Has she ever opened the dishwasher and observed steam coming out and then seen little droplets of water on the dishes?

**Take It Further:** Think more about solids, liquids, and gasses. Look at different household items and ask your child to identify if they are a solid, liquid, or a gas. Point out that some things, such as honey, may not seem as runny as water, but they are still liquids. The thickness of a liquid is called its viscosity. Other things, such as baby powder, may pour very easily like water, but they are a solid. It is also important to remember that different liquids become solids at different temperatures. For water to freeze into a solid, it needs to get very cold. But other things, such as chocolate and wax, are solids at room temperature.