

Soft or Hard Water?

When we say water is hard or soft, it doesn't mean the water feels hard or soft when you touch it. We call water "hard" when it has minerals dissolved in it- like calcium and magnesium. Because Iowa was once covered by shallow seas, there used to be lots of shell animals living here. When they died and became fossilized, they formed limestone. When particles of limestone get dissolved in water, it makes water "hard". Hard water is hard to clean with because the soap gets attached to the minerals in the water instead of the dirt in what you're trying to clean- your hair, your clothes, your car, etc. That's why Des Moines Water Works softens your water- so you have an easier time cleaning things.



You can make your own hard water and see how it is different than soft water.

Materials:

- About 2 cups of distilled water (you can buy this at the grocery store)
- 1-2 teaspoons of Epsom salts (you can buy this at the drug store)
- 2 empty, clean, plastic liter soft drink containers with screw caps
- dishwashing liquid (not soap that you use in an automatic dishwasher)

Directions:

1. Pour 1 cup of distilled water in each plastic soda bottle.
2. Add the Epsom salts to one of the bottles and swirl until they dissolve. You have made this water "hard" by adding minerals.
3. Add several drops of dishwashing liquid to each bottle, put the caps on them and shake both of them.

Which one had the most suds? The one containing just distilled water should be much softer water and should make a lot more suds than the one containing hard water. You can tell why soft water is better for cleaning than hard water!