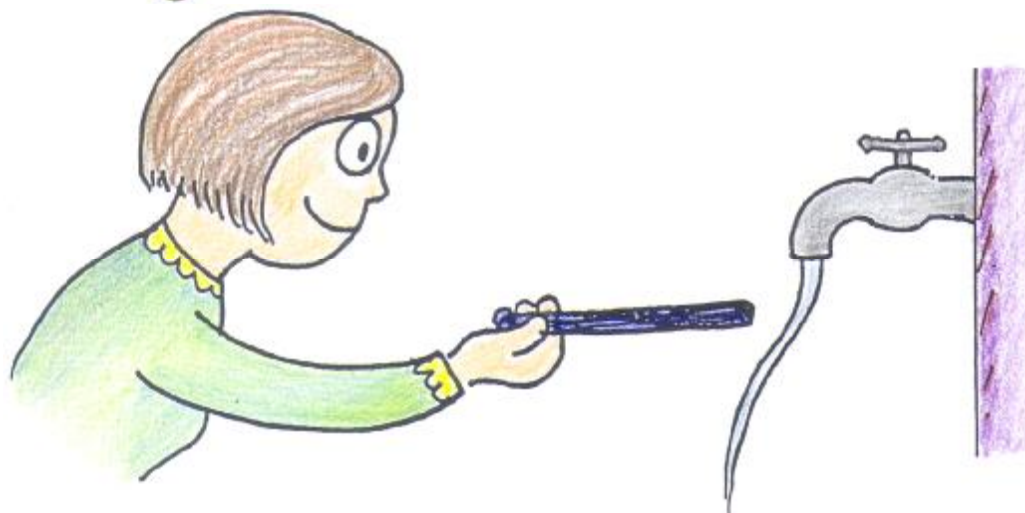


NEXT-TIME QUESTION

CONCEPTUAL Physics



A thin stream of water bends toward a negatively charged rod. When a positively charged rod is placed near the stream, it will bend in the

- a) opposite direction.
- b) same direction.
- c) ... but it won't bend at all.



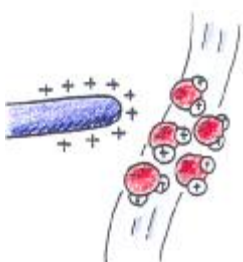
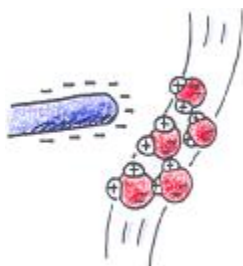
NEXT-TIME QUESTION

A thin stream of water bends toward a negatively charged rod. When a positively charged rod is placed near the stream, it will bend in the

- a) opposite direction.
- b) same direction.
- c) ... but it won't bend at all.



Answer: b, same direction



Will a thin stream of kerosene bend in the presence of a charged rod?

If you answered a, you likely thought the bending was due to positively charged water. But the water, even with many ions, normally has no appreciable net charge. The interaction between the charged rod and the water stream is mainly due to the dipole nature of water molecules. H_2O molecules are electric dipoles, positive on the hydrogen side and negative on the oxygen side. Like compasses that align along a magnetic field, H_2O s align along the electric field of the nearby rod—whether the rod is positive or negative. For both magnets and charges, the closest aligned pole or charge is always opposites in sign. Opposites attract, so net attraction is the result.

