

### ANSWER: PINCH

The answer is: b. The wires pinch together. What if the currents were flowing in opposite directions? The wires would spread apart. The basic rule of magnetism is usually taken to be that North and South poles attract while South and South or North and North repel. However, the source of magnetism is electric currents, so would it not be simpler to state the rules of magnetic force in terms of the electric currents which make the magnets? Yes. So the "new" rule of magnetism is: currents flowing in the same direction pinch together and currents flowing in opposite directions spread apart. This rule leads immediately to the first rule because when electrons for example flow around an iron cylinder, as shown in the top sketch, one end becomes North and the other end South.

Now when two cylinders are placed next to each other so that electron flows are in the same direction, as shown in the middle sketch, the North pole end of one cylinder faces the South pole end of the other and they pinch together. We can say North and South magnetic poles attract or we can say currents flowing in the same direction pinch.

When the cylinders are placed next to each other so that currents are flowing in opposite directions, as shown in the last sketch, the N pole end of one faces the N pole of the other and they repel. We can explain the repulsion by saying like poles repel, or by saying opposite currents spread apart.

