

Activity 3 A

Reinforcement and Cancellation of Magnetic Fields



FOR YOU TO DO

Several Wires Together: Have each group take its 5 m wire and make a large coil with two turns. Straighten out one side of the coil. Holding the straight side vertically, the group members move a compass around this side to the magnetism there. Then two groups pair up and combine their coils. Have the groups tape together their coils along one side, so the total current can be twice as large as before. Have the students make the currents go in the same and in the opposite directions in the two coils. (When the currents are in the same direction, the magnetic fields of the two coils will reinforce. When the currents are in the opposite directions, the magnetic fields will cancel.)



Caution students that the wires may get hot. They should disconnect the battery between activities and at any time that the wire begins to feel warm.