Year 4 Science: Contact and non-contact forces: ramps, magnets and gravity

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Kicking a ball: is that a contact or a non-contact force?

2. The north pole of one magnet is near the south pole of another. Do they attract or repel?

3. Which one will a magnet attract: a steel nail, an aluminium can, or a copper pipe?

4. Why is a wheelie bin easier to move than a box of the same weight dragged on the ground?

5. An apple falls from a tree. Which force pulls it, and is it a contact force?

6. Why does a full trolley need a bigger push than an empty one?

Fix the mistake

7. Correct this statement: "All metals stick to magnets."

8. Correct this statement: "Two north poles pull together."

9. Correct this statement: "A ramp makes the box lighter."

10. Correct this statement: "Gravity only works on things that are falling."

Answer key (for parents and tutors)

1. Kicking a ball: is that a contact or a non-contact force?
   Contact, because the foot touches the ball.
2. The north pole of one magnet is near the south pole of another. Do they attract or repel?
   Attract.
3. Which one will a magnet attract: a steel nail, an aluminium can, or a copper pipe?
   The steel nail.
4. Why is a wheelie bin easier to move than a box of the same weight dragged on the ground?
   Its wheels roll, so there is less friction than dragging.
5. An apple falls from a tree. Which force pulls it, and is it a contact force?
   Gravity, a non-contact force.
6. Why does a full trolley need a bigger push than an empty one?
   It is heavier, and heavier things need a bigger force to start moving.
7. Correct this statement: "All metals stick to magnets."
   Only some metals are attracted, mainly iron, steel and nickel; aluminium, copper and gold are not.
8. Correct this statement: "Two north poles pull together."
   Matching poles repel; only a north pole and a south pole attract.
9. Correct this statement: "A ramp makes the box lighter."
   The box weighs the same; a ramp lets you use a smaller push over a longer distance.
10. Correct this statement: "Gravity only works on things that are falling."
    Gravity pulls on you all the time, even standing still; the floor pushes back up so you do not fall.