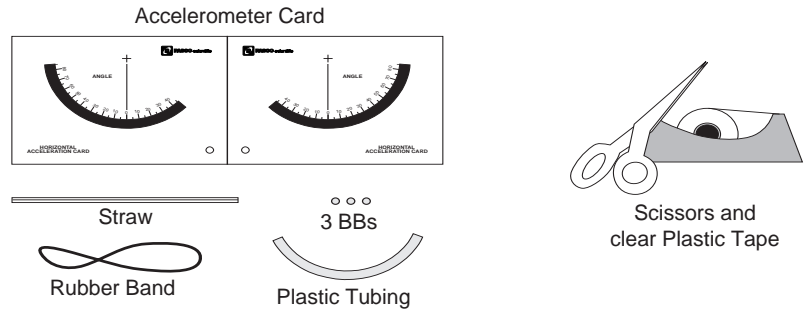


Constructing the Horizontal Accelerometer

Step 0

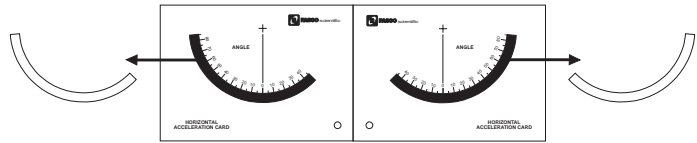
Materials Needed:

- Accelerometer Card
- Plastic Tubing (at least 15.6 cm)
- BBs (3)
- Straw
- Scissors
- Clear Plastic Tape
- Rubber Band



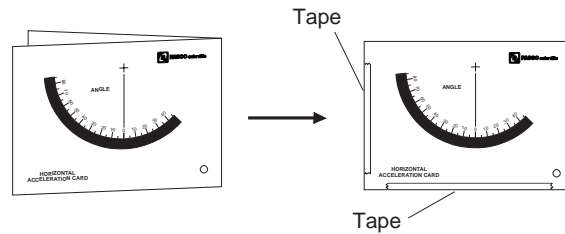
Step 1

- Remove the cutouts from each side of the Accelerometer Card.



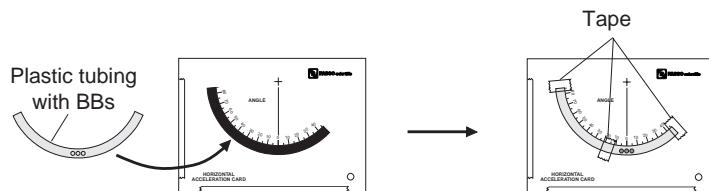
Step 2

- Fold the Accelerometer Card.
- Tape the side and bottom of the two halves together.
- White wood glue or hot glue can be used to secure the two halves of the Accelerometer Card together.



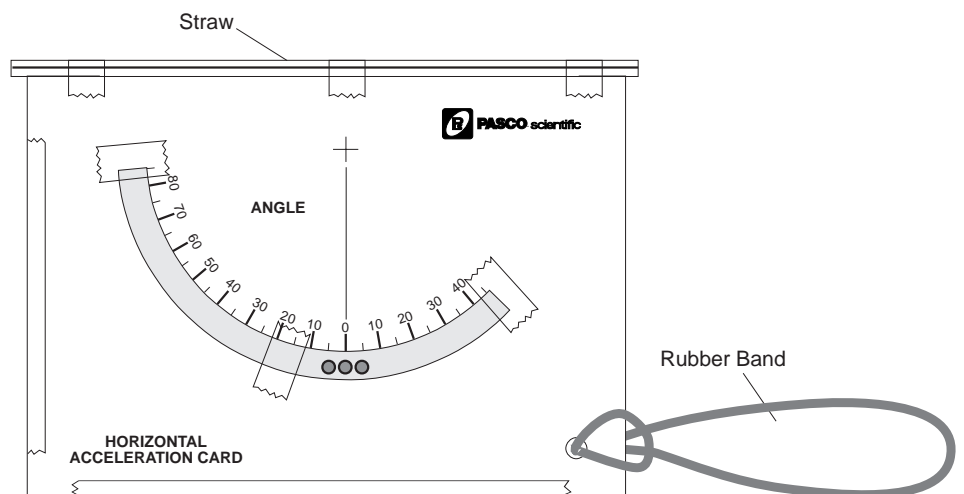
Step 3

- Cut the plastic tubing to fit the Accelerometer Card (15.6 cm).
- Place three BBs in the tube.
- Fit the tube into the card.
- Tape the tube to the card on both sides.



Step 4

- Tape the straw to the top of the Accelerometer Card.
- Secure the rubber band to the hole in the card, as shown. It serves as a lanyard.

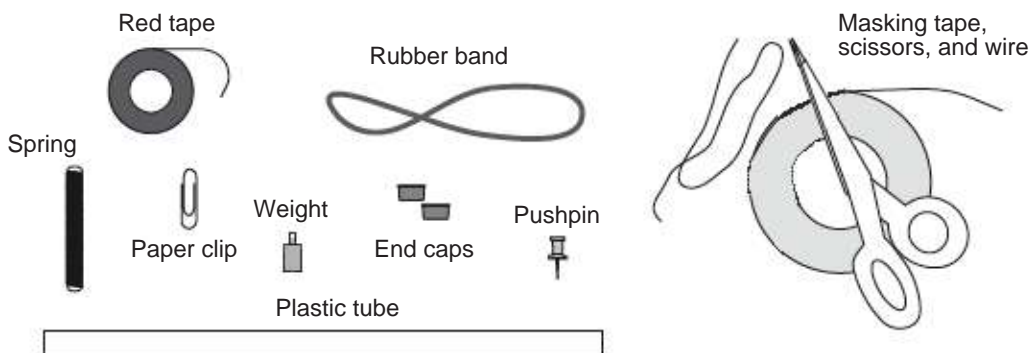


Constructing the Vertical Accelerometer

Step 0

Materials Needed:

- Plastic tube
- Spring
- Red tape
- Rubber band
- Paper clip
- Weight
- End cap
- Masking tape, scissors, and wire



Step 1

- Unbend the paper clip and form a "V" with it.



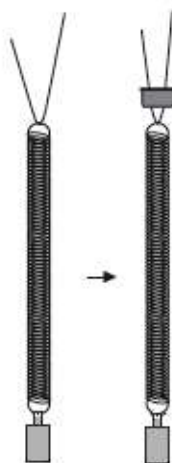
Step 2

- Use the pushpin to poke two holes in one of the plastic end caps from the inside.



Step 3

- Attach the weight to the spring and suspend both from the paper clip.
- Push the ends of the paper clip through the holes in the end cap.



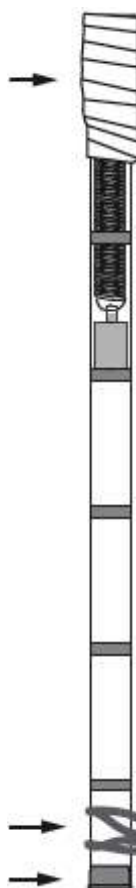
Step 4

- Bend the ends of the paper clip outward forming "ears".
- Bend the ends of the paper clip downward as shown.



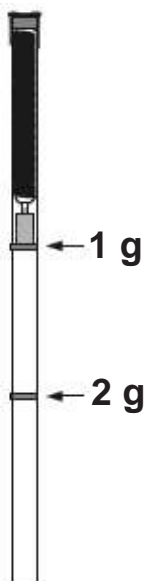
Step 7

- Wrap masking tape around the ends of the paper clip.



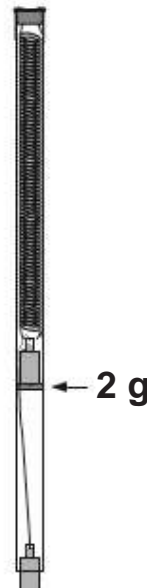
Step 6

- Remove the second weight (the one held on by the wire).
- Place a second piece of red tape around the tube, aligned with the bottom of the remaining weight.
- You now have the 2 g and 1 g points marked. Place additional pieces of tape around the tube, with equal spacing, to mark the 0 g, 3 g, and 4 g levels..



Step 5

- Tie a second weight to a piece of fine wire, and hook this wire onto the spring as well.
- Insert the spring, weights, and end cap into the plastic tube. Squeeze the ends of the paper clip against the sides of the plastic tube.
- Hold the tube vertically. Place a piece of red tape around the tube, aligned with the bottom of the weight which is firmly attached to the spring.



Step 8

- Place the other end cap on the bottom of the tube.
- Secure the rubber band to the bottom of the tube as a lanyard.



Step 9

- Tape the rubber band to hold it in place.

