



SUPER POWER: Elastic Potential! UTILITY BELT & CONFETTI CANNON

LAB NOTES...

TO MAKE YOUR UTILITY BELT...

BUILD TIME
30 MINS

1. Wrap a length of string around your waist then add about 10cm onto the end.
2. Cut out strips of cardboard 8cm wide and tape together until you have a strip the same length as your string.
3. Draw and cut a square 12cm wide on card. Draw a smaller 8cm square inside this square by marking parallel lines 2cm in from each edge. Cut out this inner square to leave a frame.
4. Cut a skewer to 12cm in length and tape across the middle of the frame to make a buckle.
5. With the skewer lying vertically, tape the buckle to one end of the card belt.
6. You can decorate your buckle if you like!
7. Wrap the belt around your waist then tuck the end behind then in front of the skewer to secure.

TO MAKE YOUR CONFETTI CANNON...

1. Cut a balloon at the neck.
2. Stretch the balloon loosely over one end of the tube, tape in place.
3. Draw the circular outline of the tube on the card and add a 3cm long and 1cm wide tab.
4. Cut this shape out. Place the circle over the top of the open end of the tube.
5. Bend the tab downwards and tape to the side of the tube to make a lid.
6. Use the pointy end of a skewer to make a hole in the lid opposite the tab.
7. Thread an elastic band through the hole and thread one loop through the other to secure.
8. Bend the end of a paperclip out so that it makes a right angle, then bend this half down again to make a hook.
9. Hook the elastic band over the paperclip, then position it on the front of the tube with enough stretch to keep the lid closed. Tape the paperclip in place.
10. Make your confetti from small pieces of paper or kitchen foil. Place in the tube, then close the lid.
11. Tape 8cm string either side of the lid tap to make a loop.
12. Make another paper clip hook and tape to the belt. Hook the string over to attach to the belt.
13. To fire your confetti cannon, unhook from the belt, open the lid, point away from your face, pull down on the balloon and let go!

YOU WILL NEED

- Thick cardboard.....○
 - Tape.....○
 - Scissors.....○
 - Pencil.....○
 - Skewer.....○
 - Ruler.....○
 - Cardboard tube.....○
 - 2 x paper clips.....○
 - String.....○
 - Elastic band.....○
 - Balloon.....○
 - Wooden skewer or stick.....○
 - Kitchen foil.....○
- (or other material for 'confetti')

What's going on?

When you pull back on your balloon and stretch it out, you create potential energy which is stored in the balloon until you let it go.

Now it becomes kinetic energy and this pushes the confetti upwards with enough force to overcome gravity and fly out of the cannon.

The elastic nature of the balloon snaps it back into shape so it is ready for the next launch and eventually gravity takes over and the confetti falls to the ground.

Where else have you seen potential energy being used?

How high can you get your confetti to fly?

Do you think a longer tube would help the confetti to fly?

Have you seen this elastic behaviour in items other than a balloon?

What other useful items could you store on your utility belt?