Tools
Materials:
1. Cleaning Markings on the Pipe:

Safety First!
Work in a well ventilated and well lit area
When cutting/scraping/sanding the pipe safer to use a mask & eye protection

Gently scrape the markings using a knife/cutter or fine grade sandpaper. I prefer to scrape, I find it is the fastest method ... and the least messy
(You could also use steel wool, scotch-brite and acetone to remove the markings)
2. The Marking Jig:

Using cello tape and the strip of paper, make a paper tube. Roll the strip of paper over the Pipe - not too tight - just loose enough so that it easily slides over the pipe. This becomes your marking Jig. You can now slide the paper tube to the required position and draw a line (on the pipe) along the edge of the paper.
3. Cut The Pieces:

CUT PIPE TO REQUIRED LENGTHS

MAKE 12MM LONG CUTS AS SHOWN, AT BOTH ENDS OF EACH PIECE OF PIPE THIS MAKES IT EASY TO FIT AND REMOVE

465mm (1 x)

241mm (4 x)

109mm (8 x)

43mm (14 x)
Mark 43mm from one end of the pipe. Use the Marking jig (the paper tube you just made) to draw a line all around the pipe. Cut using a Hack Saw (Or a PVC pipe cutting tool). The line drawn all around will help you to keep 'on line' and to make the cut nice and square. Use sandpaper (OR a file, OR a knife) to clean the rough edges.

Continue marking and cutting pieces of pipes.
Sizes and number of pieces are mentioned below:

- 43mm Long = 14 pieces (Let us call these 'S')
- 109mm Long = 8 pieces (Let us call these 'M')
- 241mm Long = 4 pieces (Let us call these 'L')
- 465mm Long = 1 piece (Let us call this 'XL')
**Totally you'll have 14+8+4+1 = 27 pieces**

After cutting all the pieces **you'll be left with about 100mm** length of the pipe.
Keep it safe - It'll be used later in case you decide to make the 'wheel-assembly' (Step-10)

The lengths and number of pieces are calculated after trying/designing several assemblies. It is important that you stick to the lengths mentioned here. One length of 10ft Pipe will be fully consumed - **Nothing wasted!**
4. Ease of Assembling/Dismantling:

**IMPORTANT:**

Make cuts of about 12mm length at both ends of each of the 27pcs. This makes pushing the pipes into the fittings & removing them easy.

Without these cuts, if you push the pipe tightly into a fitting (even without glue), it'll really be difficult for kids to pull it out. So these cuts are a MUST.

Clean all cuts using fine grade sandpaper or a file.
5. Clean and GO!

Clean and wash:
Wash all the pieces thoroughly (to remove any dust, dirt, particles etc).
I soaked the pieces in mild detergent solution for about 5mins and scrubbed them with a soft old toothbrush, washed them clean, and dried using a paper towel.

Start Off:
Now that you have 27 pieces of pipes and 28 pieces of fittings ....
Your 55 piece Kit is Ready to use.
6. Assemble the Wheels

Push the dowel into the pipe until the dowel is flush with the pipe (use a mallet if required)
ASSEMBLE ALL THE PARTS

ASSEMBLED WHEEL
READY TO USE!

MY FINISHED WHEELS
A SIMPLE METHOD TO TRY OUT THE WHEELS

FORMULA - 1