

Making a Template

A lot of these track pieces need the toilet roll cut in half. To make this easier, fold a toilet roll in half and very carefully draw a straight line down the middle on either side. Cut along this line. Take one of these pieces and write “template” on it. This can now be used for measuring out where rolls should be cut in half!

The Single Track

Items

- A green pop stick
- A 10 cm straw
- A half roll

Steps

1. Glue the straw to the pop stick
2. Glue the half roll to the straw and pop stick

The Double Track

Items

- Two green pop sticks (one with 10 cm cut from the middle, and one cut in half)
- A 20 cm straw
- Two half rolls

Steps

1. Tape the pop sticks together in a straight flat line
2. Flip this over
3. Glue the straw to the pop sticks
4. Glue the two half rolls to the straw and pop sticks
5. Un-tape the pop sticks

The Triple Track

Items

- Three green pop sticks (two with 10 cm cut from the middle, and one cut in half)
- Three 10 cm straws
- Three half rolls

Steps

1. Tape the pop sticks together in a straight flat line
2. Flip this over
3. Glue the straws to the pop sticks
4. Glue the three half rolls to the straws and pop sticks
5. Take the tape off

The Slower Link

Items

- Four yellow pop sticks
- Two 10 cm straws
- Two half rolls
- A piece of paper

Steps

1. Fold the paper in half
2. Open the paper up and fold edge to centre
3. Fold the paper from this new edge to centre
4. Open the paper all the way up and fold along the first crease
5. Fold the paper from this new edge to the other edge. This makes your angle!
6. Measure 12.5 cm along two pop sticks
7. Use your angle to draw a line out from this point
8. Cut along these lines
9. Tape these pop sticks together at this angle
10. Flip this over
11. Lay a pop stick over the join and mark where it overlaps
12. Cut this out and glue it to the join
13. Cut 5 cm off both ends of a pop stick
14. Glue these 5 cm pieces to the ends of your angle
15. Flip this over. Take the tape off.
16. Glue the straws to the outside edge of the pop sticks
17. Glue the two half rolls to the straws and pop sticks

The Faster Link

Items

- (Same as the Slower Link)

Steps

1. Follow Steps 1 to 15 for making the Slower Link
2. Glue the straws to the inside edge of the pop sticks
3. Glue the two half rolls to the straws and pop sticks

The Zig Zag

Items

- Three Triple Tracks (but using orange pop sticks)
- Orange paper

Steps

1. Cut three circles out of the paper. These should be slightly bigger than the end of a toilet roll.
2. Glue and fold these in half and cut a small amount off one side of each one
3. Glue these to the Triple Tracks, alternating the side you glue it on

The Giant Leap

Items

- Four red pop sticks
- Two 10 cm straws
- Four half rolls
- A piece of paper

Steps

1. Fold the paper in half
2. Open the paper up and fold edge to centre
3. Fold the paper from this new edge to the other edge. This makes your angle!
4. Follow steps 6 to 17 for making the Slower Link (but using the angle you just made for step 7)
5. Cut three 1 cm strips from the end of a half roll
6. Glue these to the join
7. Cut 2 cm off a half roll and get rid of this 2 cm piece.
8. Glue the remaining piece to the inside of one roll. Make sure it overlaps the three 1 cm pieces.

Type One Pivot

Items

- Blue pop stick
- 6 cm straw
- One half roll

Steps

1. Cut 0.5 cm strip from the half roll
2. Measure out 0.5 cm from one end
3. Glue the other end to this point - making a ring
4. Mark the centre of the pop stick
5. Hold the straw with a peg, and squeeze glue down the centre
6. When glue comes out the other end, press it to the centre of the pop stick and wait for it to dry
7. Glue the ring around the straw - fill the ring up with glue for stability (and hold the straw straight whilst it dries)

Type Two Pivot

Items:

- Type One Pivot
- 6 cm straw
- 0.5 cm ring

Steps:

1. Mark out 2.5 cm from one end of the pop stick
2. Glue the straw to this point
3. Glue the ring around this

The Flush

Items

- Blue pop stick
- 4 weights (e.g. nuts – these weight 9.0 g each)
- One half roll
- One full roll
- Blue paper

Steps

1. Use the half roll template, to draw out the middle of the full roll in pencil
2. Punch two holes 2.5 cm from one end, and on opposite sides of the full roll (punch these holes on the pencil markings, to make sure they are on opposite sides)
3. Glue the half roll to the full roll, with 2 cm overlap and with the middles lining up. Erase the pencil marks.
4. Mark out 1 cm, 4 cm, 10 cm, 12 cm, 12.5 cm on the pop stick
5. Cut the pop stick at 12.5cm
6. Glue the four weights to the pop stick at these points
7. Glue the pop stick to the inside of the toilet rolls, so that the round end of the pop stick lines up with the edge of the full roll. This should be glued at the mid-point of the two holes.
8. Cut two circles out of blue paper (one bigger than a roll, and one smaller than a roll)
9. Glue the bigger one to the open end of the full roll
10. Glue and fold the smaller one in half.
11. Glue this to the half tube
12. Gently twist a pen into the holes, to make the holes a bit wider.

The flush uses a Type One Pivot.

The Water Fountain

Items

- Two 5 cm straws
- 1 weight
- One full roll
- Blue paper

Steps

1. Use the half roll template, to draw out the middle of the full roll in pencil
2. Punch two holes 2.5 cm from one end, and on opposite sides of the full roll (punch these holes on the pencil markings, to make sure they are on opposite sides). Punch another two holes in the same way in the other end of the full roll.
3. Slide a 5 cm straw through two holes. Glue it in place.
4. Punch a hole 1.5 cm from the end with the straw, in the mid-point of the other two holes.
5. Slide the other 5 cm straw through this hole and glue it in place.
6. Cut two circles out of blue paper (one bigger than a roll, and one smaller than a roll)
7. Rest the smaller circle on the straw inside the tube and glue it in place (it should be at an angle)
8. Glue a nut to the larger circle, so that one side of the nut touches the centre of the circle.
9. Glue the circle to the open end of the roll, so that the nut is on the same side as where the top straw pokes out of the full roll.

The Water Fountain uses a Type Two Pivot. Make 3 in total.

The Track Changer

Items

- Three purple pop sticks
- Two 10 cm straws
- Four 2.5 cm straws
- Four half rolls
- One full roll, cut down one side

Steps

1. Cut a 2.5 cm strip from the full roll
2. Measure out 2 cm, 4cm, 5 cm, 7 cm, 8 cm and 10 cm on this piece of roll
3. Hole punch at 4 cm and 8 cm
4. Fold in at the 5 cm and 7 cm points
5. Glue the four 2.5 cm straws to the sides of the centre rectangle
6. Fold out at the 2 cm and 10 cm points
7. Tape two half rolls together and flip this over

8. Glue what you just made to the join of the two rolls
9. Glue the 10 cm straw to a pop stick. (Repeat this step.)
10. Glue the pop sticks and straws to either side of the two halves, lining up the centre with the join
11. Flip this over and take the tape off
12. Cut a purple pop stick 9 cm long
13. Glue this to the middle and hold it straight up whilst the glue dries
14. Cut the ends of the two remaining half rolls into a curve
15. Place the straight ends at the top of the pop stick, and the curved ends in the other rolls
16. Glue these in places where they touch the pop stick and the other rolls

The Track Changer uses a Type One Pivot. Make two short tracks, each with a closed end, to go either side of this.