



Paper Roller Coaster Challenge

Design, plan, and build a paper roller coaster with one hill and one curve that gets your marble to the end of the track.

Materials

- Construction paper
- Toilet paper rolls
- Tape and/or glue
- Scissors
- Books and/or boxes
- 1 marble

Design

Roller coasters use the force of gravity to set the ride in motion. To do this, start your roller coaster marble ride at a high point and end at a low point. Building a roller coaster requires designing, planning, and building two things, the track and the support structure that holds the track.

- Draw a sketch of your paper roller coaster including the track and support structure.
 - What will you use to start at a high point and to create the hill?

Plan

- How big will your roller coaster be?
- Determine what materials you will use to build your track and support structure.
 - Tip: cutting at different angles helps to create curves
 - Be creative when planning the support structure for your roller coaster track (books and boxes are only suggestions).
- Find the location where you will set up your roller coaster.
- Gather your build materials.

Build

- Using any combination of construction paper, toilet paper rolls, tape, glue, and scissors to make the roller coaster track.
- Build the support structure out of any supplies, be creative!
- Did you build the track and support structure separately and then bring them together or did you build them together from the start?

Test

- Place the marble at the top of your paper roller coaster and release!

Did it make it all the way to the end of the track?

If your marble did not reach the end of the track, try modifying the design. A few factors to consider when modifying your roller coaster: the pitch or angle of your track affects speed, the thickness of the track material affects how much support it needs, the size of your roller coaster determines how much speed your marble will need to reach the end of the track.