

Your task is to design and make a paper table using only paper and tape.
This paper table must be able to hold objects at least one foot off the ground.

Step One: Get inspired!

Background research is an essential component of the engineering design process. Engineers need to understand the criteria by which they can judge their designs (i.e. “Is this a good design?” “Does this design meet the identified goals of the project?”). You have been tasked with designing a table, so first you should look at the tables that are around you. You will probably notice that tables come in different shapes and sizes.

As you look at the tables, consider the following questions:

- What materials are tables made out of?
- Where are tables “weaker” (maybe wobbly) and stronger/sturdier?
- What similarities can you find in the way tables are designed?
- Which designs do you like?

*Here’s one helpful hint: Which geometric shapes do you think are particularly strong?
 How might you use this information in your design?*

Step Two: Select Your Materials

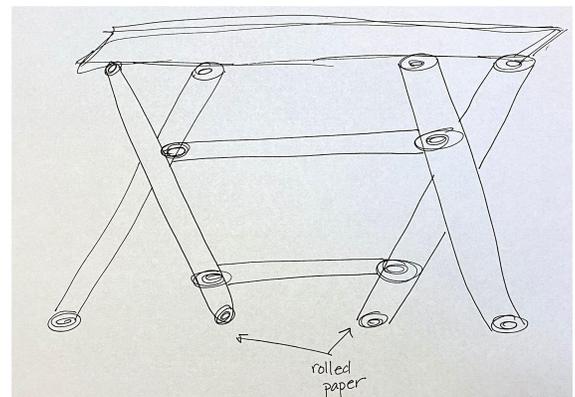
This one is easy! You can ONLY use tape and paper. The type of tape and paper you use is up to you. You may also need scissors (if you need to cut the paper or tape) and/or a ruler (to measure the height of your table). As you are thinking about the paper you are going to use, think about how you might fold, roll or bend it to help transform the paper into different shapes.

Step Three: Designing your Paper Table

Like an engineer, start your paper table project with a drawing of your design! Engineers draw out their ideas (sometimes called schematics, blueprints, sketches) as part of their design process.

Remember to keep the materials you found in mind as you draw your designs.

Drawing and talking through your ideas will help you finalize your plans.



Step Four: Building your Paper Table

BE PERSISTENT! Even if your paper table doesn't work right away, keep at it!

If you need help...

- Consider working with those around you!
- Think about additional or different materials you can use.
- Take a short break and give yourself time to refresh!
- Watch this [short video](#) of scientists talking about failure and persistence. Failure is a natural part of the discovery and design process!



Extra challenges

If you succeeded in building your design, next try one of these extra challenges:

- **Make it stronger:** How many books can your table hold? Last year, one student got her table to hold 46 books! Can you beat her record?
- **Make it taller:** How tall can you make your table and still have it hold at least one book?
- **Use fewer materials:** Engineers often have to think about cost when designing. How can you make the same table using fewer materials (thus reducing cost)? Think about using less tape or fewer pieces of paper to create the same design.
- **Make other furniture:** Can you make a chair to go with your table? Can you sit, *and lean back*, in your chair?

If you liked this challenge, click the link below to find out more!

[How It's Made: Table Tennis Table \(video - first 6 minutes\)](#)

Step 5: Sharing your Paper Table on Instagram or email.

We want to see your paper table! With permission from your parent, or guardian, share a picture of your paper table for our instagram page. By direct messaging or emailing an image of your challenge, you are giving us written consent to redistribute the image on our official instagram page and [webpage](#).

- **Instagram:** @sciencecircuswhittier
- **Email:** sciencecircuswhittier@gmail.com

