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Paper tower that support weight

One of the first one-day challenges we tried was a tower building. The Spaghetti Tower! Now let's go back and explain. The first challenges we tried were multi-day activities. That's right! And I mean several days. Like 4-5 days. Some of you know that I started as a STEM specialist after teaching in a third grade class for many years. So when I started my first STEM Challenge, I had NO IDEA of what I was doing. We spent many weeks in planning and improving and finally producing our final structures. So you can imagine that I was savagely looking for something different as we started our second event. I tried the spaghetti tower with 4th and 5th year and they loved it so much. As impressive as this challenge was, it wasn't the challenge they liked the most. It's the fact that we started and finished the same day! The one-day challenges are the best! Let's take a look at five one-day tower building challenges that also happen to be easy to prepare! Easy preparation These five challenges use easy-to-collect materials and can be prepared in minutes. We need a wacky material, but I will give you some advice on that. Take a look at: Egg Towers12 Straws Towers12 CardsTennis Ball TowersWater Egg Towers My original thought about the egg towers was that these would be really short- because we built them from paper. I didn't expect a large tower to hold the weight. And that weight happens to be an egg! Several surprising things have happened. The students very quickly started rolling the paper in large cylinders and these will have a lot of weight. Those who have not made a large single cylinder tried a wider tube with many legs. Every time the tube started to fall, they added another leg. These early efforts were made by the newspapers. TIP: Don't use a newspaper. Newspaper ink is everywhere. It covers their hands and then whatever they touch will have gray spots on it. Their faces, the furniture, their clothes... So the second time we tried this challenge, we used brown art paper. It is much more fragile than the newspaper so our towers didn't get too big. Many students have chosen to build a platform to hold the egg. TIP: Let's talk about the egg! It's a pretty wacky material. For testing, I use a plastic egg with pennies inside that equal the weight of an egg. When a team has a tower that holds the plastic egg safely, then I give them a real egg to try. Bonus tip: Put real eggs inside a bag flash before using them. TIP: If you want to choose not to use eggs, use a 3-ounce cup. Put a bag of pennies (or weights like washers) in the cup. The tower will have the hold of this weighted cup. They will also have to find a way to place the cup on the tower! 12 Straw Towers You can't get an easier preparation than this challenge! Straws and duct tape. Best news: this activity is surprisingly difficult. I have tried this challenge in many different ways. The first is simply to have students build a tower with no specific purpose. Specific. the towers will be quite high with simple straw arrows. The biggest problem for children is getting them up. Another way we tried this one is in the photo above. The teams received a sheet with 4 photos of famous structures. Their straw tower must have looked like one of the structures. These finished towers were not very high. Teams have spent more time doing laps have a specific shape and less time trying to have the highest tower in the class. TIP: Try this one both ways. I like students to compare their efforts and also talk about what they learned the first time. How did this help them in the second building? 12 Card Towers We loved the straw towers built like famous buildings, so we tried it again with 12 cards! The STEM Index Card Challenge is very popular. We use a stack of index cards for this one. We also tried it with only 12 cards. The towers become still very large (as large as 12 cards can be). Students quickly learn that turning the cards on their ends makes the towers bigger. When we tried this version using photos of famous structures, the students focused on the design of the building and it was not competitive at all. I loved seeing their structures and hearing how they solved the problems. Can you see the Leaning Tower of Pisa in the photo above? He's leaning over! TIP: Save index cards! I have students sorting them into flat card bins, folded cards, and rolled cards. We're reusing them! Tennis ball towers Here's another tower that has a wacky material - it's the tennis ball tower. I keep a basket of tennis balls for challenges. You could also use ping pong balls - I found the ones at Dollar Tree in a pack of 8. In this challenge, the students create a tower that will hold the tennis ball high. The twist with this challenge is that they have to use all their materials in some way. You can have the rule that all materials must be functional or not. These finished towers are not very high! TIP: I have a rule that the tennis ball cannot be pierced. It's a security issue for me. They can save it in place or use the chain to hold it in place. Water towers One of the water towers in our city had to be repaired a few years ago and it was repainted. It caused quite a stir when the motto of the local high school was painted on. The community wanted the words to come back to the tower! The Go Team sign was repainted and everyone was happy... and that all of this has led to this challenge. We did some research on why there are water towers, and then we built. The materials for this one are things that we use all the time so the preparation was just to get out the craft sticks and straws. Milkshake straws work well for this one. The idea is that the small bowl should be held high and when the tower is standing water is poured into it. TIP: Let the students pour the water into their own water tower. I almost always allow it since I don't want to be the reason the tower falls! Click on one of the images to see more details of each challenge! Why are the challenges the best? There are several reasons why this kind of challenge works. Generally speaking, preparing a day and materials are easier. (Not always!) My students like this format because they know that their teams change every week. The one-day challenge doesn't always require a lot of implementation and research. Children like to get into the part of the building quickly. Assemble the materials, give the students a brief overview, put forward the rules of the task, let them build. Clean up and next week is a new challenge! This message may contain affiliate links. Can you make paper hold books? You definitely can! With only 4 pieces of paper and a little scotch, we help up to 27 pounds! This paper book tower is completely amazing to look at! We did a paper book tower experiment this week to see what paper shape and height would be the strongest. We really made paper hold books and my kids were amazed at how strong it was! How to make paper hold up books: Watch it in action: My kids wanted to know which shapes would be strongest, so we folded the paper into squares, circles and triangles and taped them together. Then I decided to add another component and test the height as well. We made a set of the same shapes, but half the height. We made two types of circles, tightly wrapped and loosely wrapped to see if it made a difference. We made four of them in each shape and size, and then we put a piece of paper on top. We tested the shorts and the big ones at the same time. and placed books on them one at a time to see who would last the longest. I had the most pictures of the paper well rolled because it was the one that held the longest and the most weight. We started with the triangle-shaped papers. These held 8 for short papers and only 4 for large triangles. The squares lasted across 5 pounds with large papers and 7 with short. The circles were certainly the strongest. The widely wrapped circles held 13 for the large ones and 23 for the courts. Our tight packed papers held 27 for large pieces and 24 for shorts. My kids guessed that the tightly wrapped would hold the most books, but I think they were completely surprised by exactly how many. They ran out of lean pounds so they started getting bigger and heavier books as we continued. As soon as we finished, they asked us if we could do it again! With just paper, duct tape and scissors, you can make this exciting experience with your kids! See a few more Fun Paper: Easy Engineering Experiment Blooming Paper Flowers 3-D Paper Shapes Jumping Frog Origami 6 Paper Tips That Seem Like Magic This paper tower challenge is different from all the others because our paper tower challenge this time had to hold the weight! My partner Christian and I got three pieces of newspaper and two feet of duct tape after we were told to build a tower capable of holding weight as well as getting over fifty centimeters to get an A. First of all, we started with the base of our tower. We have decided that we will we're going to build four supports to hold our structure, and after that we've concluded that we're going to use all our materials and just use the leftovers for the main structure. After finishing, we were really looking forward to seeing if she was going to hold the weight. So we put a block on top of our fabulous face structure, but unfortunately the block fell and it couldn't balance easily. We wanted to do it again because we had concluded that our base was simply not strong enough to have that much weight, but the teacher said there would not be enough supplies for the rest of the classes that day if we had to do it again. So the minutes passed with hearing the same sound of the block hitting the table, so Christian and I understood that we had to do something to prevent the block from falling. We cut a little off the top of the structure, and our friendly face project finally held this block, so we measured it and saw it was only forty-eight inches tall, and it had to be fifty for us to get a decent A. We recorded a little bit of what we cut back, held it block, and then we measured it one last time. He was 50 inches tall! So I guess you could say we did well on the project, but I think it was just luck a few inches! Centimeters!

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