

Week 5, Building a Tunnel

Tunnels are basically hollow tubes through natural materials to allow something else to pass through. This could be cars, trains, walkways, etc. Tunnels are big projects that require a lot of meticulous planning. A collapse of any section could injure or kill people.



To find out some basics about tunnel design, try this [website](#). Information about existing tunnels can be found [here](#).



Create your own tunnel! It needs to be waterproof and withstand roughly 1 pound of weight placed on top without compromising the structure.

What You Need:

- Popsicle sticks and/or pipe cleaners
- Cardboard for a work surface
- Modeling clay or PlayDoh (2 or 3 cans)
- Pencil or wooden dowel
- Other things you have around the house that could help you bore through the clay
 - Make sure you talk to the adult supervising you before you grab sharp objects
- Glue
- Something to test how much weight the tunnel can bare
- Water
- Ruler or tape measure

Directions:

- 1) Lay down the piece of cardboard and make a model clay mountain. It should measure about 5 inches tall and 6 inches in diameter. Make the top of the mountain a bit flat.
- 2) Now design and create a tunnel to run through the model mountain. Don't forget to incorporate a support system in your tunnel.
- 3) Tunnels should be 2 inches by 2.5 inches and run completely through from one side to the other.
- 4) Once you think your tunnel is strong, allow the modeling clay to dry overnight. If you used PlayDoh, it won't dry out completely but will get crusty.
- 5) Take the cardboard and model mountain outside or just put it in the bathtub.
- 6) While video recording, pour at least 2 cups over the mountain and evaluate the tunnel for leaks. Follow this by placing something weighing about 1 pound on top of the

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mountain. Your tunnel should be able to withstand the force of the object. If you notice your tunnel crumble or crack, evaluate the problem and figure out how to fix it.

Once complete, upload your short video to social media with the hashtag **#futurerosies**.