

“In the Construction Zone”

Module 11, Adventure 2



Prompt:

When designing buildings, architects and engineers need to think about how people will move around inside of the building. Stairs are one way people can get from one floor to another.

Elevators are another good option. Elevators have many benefits - they help people move to other floors quickly, they allow people with carts and other large items to go to different floors, and they make buildings more accessible to people. For someone who has trouble with stairs, or who uses a wheelchair or walker, or has a stroller, for example, an elevator can be especially important to help them get to different floors.

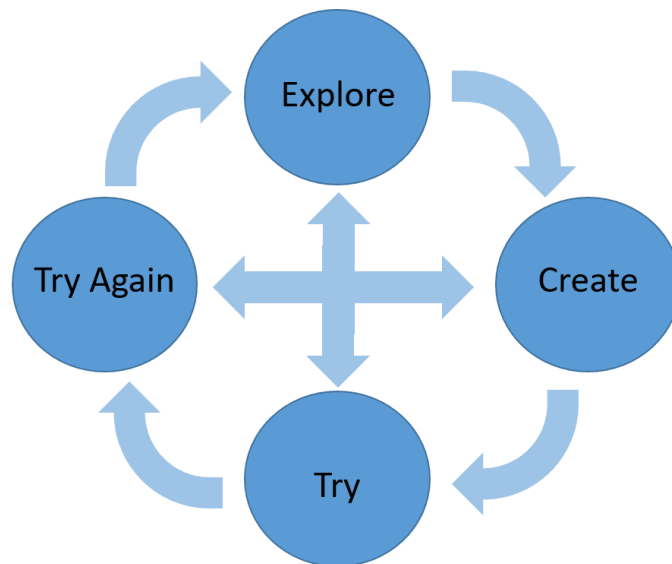
In this adventure, you will engineer an elevator that can carry at least two “passengers” to a height of 16 inches / 40 centimeters.

Materials:

- Recycled items, such as toilet paper and paper towel tubes, cereal boxes, yogurt containers, egg cartons, etc.
- Assorted craft supplies, such as craft sticks, pipe cleaners, brass fasteners, rubber bands, straws, paper clips, etc.
- String, yarn, or fishing line
- Tape
- Scissors
- 2 Small toys, figurines, or something similar to use as passengers
- Ruler or tape measure
- *Optional: Explorer Notebook*

Instructions:

1. Find two small toys to use as passengers.
2. Look at the materials you have and make a plan for your elevator. Think about the following when creating your plan:
 - a. The elevator needs to include a platform to move the passengers. .
 - b. You cannot touch the platform or the passengers while the elevator is in motion.
 - c. The passengers must go up and down in the elevator without falling off the platform.
3. Create your elevator and test it out!
4. Remember, engineers often create a design, try it out, then improve it and test it again. This can happen a lot before they decide the design is what they want it to be. Keep testing and improving your design until you think it is ready!



For explorers using an Explorer Notebook:

1. Sketch out the plan for your design.
2. Keep a list of what works well and what didn't work well.

Check out the last page for a page design idea. You can use this or set up your page however you want!

Resources:

1. For some inspiration, check out the elevator designs we worked on. They need some improvement, but they are a start!



2. Learn more about elevators in this National Geographic [video](#).

Extensions:

The following are optional steps you can take if you want to extend this adventure:

1. Add more passengers. How will you change your design?
2. The elevator is needed for a taller building! Make changes to your current elevator design so that it can go at least twice as high as the first design.
3. Go to the “In the Construction Zone” topic on Flipgrid and share your elevator!

Explorer Notebook

You can use this to help you set up your Explorer Notebook!

Engineering an Elevator Module 11, Adventure 2

Sketch of my creation:



Things that work well:

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Things that didn't work:

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