

These activities and questions are designed for you to have engaging discussions with your student about the STEM jobs they are encountering in their Learning Blade schoolwork. Here is an overview of what is included.



Table Talk: These are questions you can ask your student without having any background knowledge in STEM. These will be easy conversation starters.



Dig Deeper: These are questions with suggested links to learn more about different STEM careers to explore with your student.



Home Lab: This is an easy, hands-on activity to do with your STEM student.

What Has Your Student Been Learning?

In this mission, **your students'** goal is to research transportation options and come up with a plan that would save your family time on the road. And less time on the road would mean more time at home. Along the journey, students will need to determine what tools (i.e. trains, planes, automobiles, hybrid cars, and public transportation) and teammates/experts (i.e. transportation engineer, mechanic, automotive engineer and technician, transportation planner and logistics engineer) are needed to assist in finding a solution to the congestion problems before frustrations grow out of control

TABLE TALK

Starter Question:

Have you ever been trying to get somewhere and all of the sudden hit traffic? Traffic can be frustrating when you are trying to get somewhere.

Driverless cars (sometimes called a self-driving car, an automated car or an autonomous vehicle) have the promise of reducing transportation congestion because they will be better at merging and handling intersections because cars will be able to communicate with each other.

Are you comfortable allowing a computer or robot to drive your car? Do you think this will help traffic in a city?

What happens when only half the cars on the road are autonomous vehicles?



DIG DEEPER

Resources for More Information:

In this section, we provide a series of links and associated questions to DIG DEEPER on individual careers addressed in the Transportation Congestion Mission. Feel free to explore these with your STEM student as you model curiosity and lifelong learning.

To cut down on traffic, what incentives have you seen to try to get people to use a different form of transportation other than cars? Do they work? Now if you were the Transportation Planner for your city, what new tactic would you implement to cut down on the amount of cars driving? Watch the TED talk below to see the effects of a small driving fee.

https://www.ted.com/talks/jonas_eliasson_how_to_solve_traffic_jams

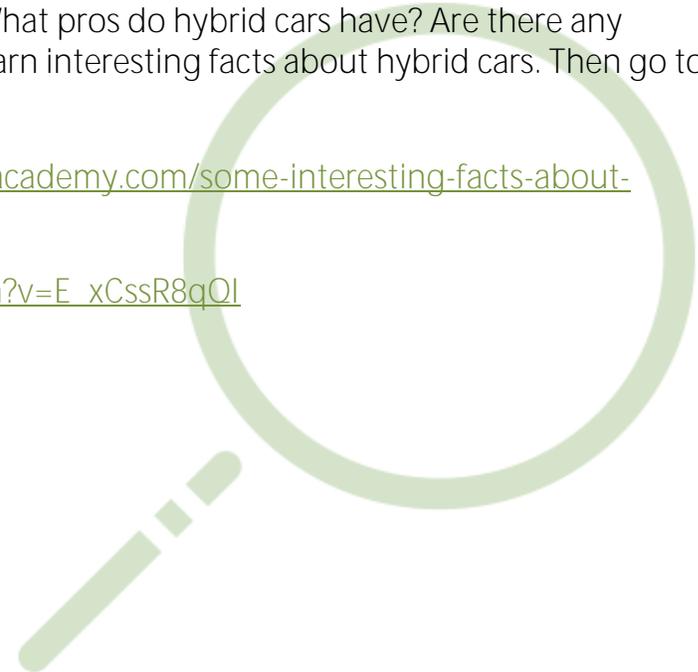
In densely populated cities, transportation is huge concern. The world population is expected to increase by 2 billion by the year 2050, with many people moving to urban areas. This poses a huge problem for transportation congestion in cities of the future. To help solve this problem, come up with a new form of public transportation that can alleviate traffic in cities. Watch the video below to see a proposed idea to reduce traffic congestion in China.

<https://www.youtube.com/watch?v=80Z4xnSNAHs>

Hybrid Cars have become increasingly popular. What pros do hybrid cars have? Are there any cons? Read this short article at the link below to learn interesting facts about hybrid cars. Then go to the second link to see how Prius Hybrid car works.

Interesting Hybrid Car Facts: <http://www.gogreenacademy.com/some-interesting-facts-about-hybrid-cars/>

Prius Hybrid Car: https://www.youtube.com/watch?v=E_xCssR8qQI



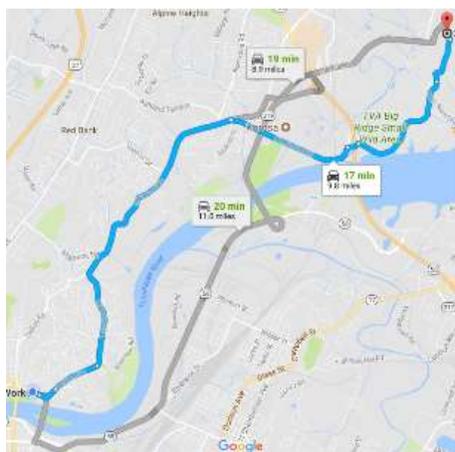
In this section, we will explore applications of what your student has been learning in Transportation Congestion Mission. In this Home Lab, we will be looking at an online resource that will help build problem-solving skills and relate it to solving transportation problems.

Materials:

- Stopwatch
- Pen and Paper
- Map of your town

Directions

1. Take your map of your town. Draw out the route you normally take to school and back.
2. Discuss if this is the fastest way to get there or not. If it is not, come up with a faster route.
3. Test your routes!
4. Next time you go to school or come home from school, time how long it takes.
5. Test different routes.
6. Keep track of your travel times so you can compare your results.
7. Where is the most traffic?
8. During the rush hours of schools, traffic can get crazy. Many schools have traffic guards to help relieve traffic build up.
9. Identify on your map where the most traffic occurs around your school.
10. Do you have any traffic guards? What could be done to help relieve more traffic?





#STEM4Parents Transportation Congestion

Dear Parent/Guardian,

I kindly ask that you fill out and sign this piece of paper so I can provide your student with a completed grade for this #STEM4Parents homework assignment.

I discussed with _____ the Transportation Congestion Mission in Learning Blade.
(student name)

Student Signature



Parent/Guardian Name (print)

Date

Parent/Guardian Signature