



Electric Vehicles Toolkit

MYTHBUSTERS - EV EDITION

**HIGH SCHOOL PHYSICS /
ENVIRONMENTAL SCIENCE**

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Mythbusters - EV Edition

Are the myths about electric vehicles true?

Lesson Overview	Career Highlight
Students will share their current beliefs about 5 common electric vehicle myths, collect new facts on these topics, and write a social media post dispelling one of the myths.	Graphic Designer

STEM Course Connections	21st Century Skills	CTE Alignment
Middle School Earth Science High School Earth Science High School Environmental Science	Creativity Innovation	Environmental Engineering

Engineering Activity	
Science and Engineering Practice #8	Students will create a social media post to dispel a common electric vehicle myth.

Materials
<ul style="list-style-type: none">• Student Handout• Devices with internet access

Essential Questions
1. What are the answers to some common current myths about electric vehicles?

Background Information
<p>The myth that electric vehicles produce more emissions than gasoline cars is false. Even whilst accounting for the production emissions and charging emissions of an electric vehicle, it still produces less emissions than a gasoline car. The myth that the power grid would fail if we increase the number of EVs in the U.S. is false. Although there will be a higher demand for electricity, the Department of Energy has already planned to provide \$13 billion to improve the U.S. power grid. To add, some states, such as California, are requiring new construction projects (homes, buildings, etc.) to have solar panel systems installed, which would reduce the load on the power grid. The myth that there is nowhere to charge an EV is false. An EV can be charged with a normal 120 volt house outlet. Most people will likely charge from home and not need to charge on the road. Even if one needs to charge on the road, there are 51,000 charging stations available in the U.S. The myth that electric vehicles don't have enough range to drive daily is false. The average household travels about 50 miles a day, yet most EVs can travel more than 200 miles on a fully charged battery. To add, manufacturers are constantly evolving technology, and</p>

some EVs can already travel more than 400 miles today, which is about as much fuel as an average gas car travels on a full tank. The myth that there are limited EV options out on the market is false. Electric vehicles are starting to be produced in many different shapes and sizes. As the world starts shifting to electric powered vehicles, it is likely that even more types of EV models will be produced!

Mission Prep

Engage (15-20 mins)

Warm up Questions

Have students respond to the following questions in [student handout](#):

1. Why do you think that more people do not drive electric vehicles?
2. What improvements do you think need to happen in order for more people to drive electric vehicles?

Explore (5 mins)

Fact or Fiction Quiz

1. To check prior knowledge, have students complete the fact or fiction quiz in the [student handout](#) about common electric vehicle myths.

Launch

Explain (15 mins)

Mythbuster - EV Edition Pear Deck Slides

1. As a whole class, use this slide deck to review each of the myths presented to the students on their student handout.
2. Have students drag the green star to either the “fact” or “fiction” box. Once everyone has responded, display the “show responses” so that the class can see how the class feels about the topic.
3. Then proceed to the answer slide. Discuss the correct answer and facts associated with each one.

Elaborate (10 mins)

Reflection

1. Students can return to their [student handout](#), “correct” their prior responses, and reflect on what stood out to them with the reflection questions.

Exploration

Evaluate (10 mins)

Social Media Post

1. Students will select one of the 5 myths presented and design a social media post that’s purpose is to dispel preconceived ideas and educate the public about the facts.
2. Within the post, they should: state the myth, state the facts dispelling the myth, and find at least one website with additional information on this myth.
3. Students can use one of these Canva templates ([Template 1](#), [Template 2](#), [Template 3](#)) or design their own.

Extend (optional)

Career Connection

For students who enjoyed creating the design of their social media post, they can learn more about the Graphic Designer career path by watching [this video](#) by Career One Stop.

Students can reflect on the skills needed to become a graphic designer and how graphic designers will be needed as the electric vehicle industry grows.

CA NGSS Standards

- MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment
- ESS3.C: Human Impacts on Earth Systems - Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things.

CTE Alignment

B5.4 Evaluate how energy is transferred and predict the effects of resistance in mechanical, electrical, fluid, and thermal systems.

C3.3 Present conceptual ideas, analysis, and design concepts using freehand, graphic, communication techniques

D3.0 Understand the fundamentals of earth science as they relate to environmental engineering

D12.0 Implement processes to support energy efficiency

Resources

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