Dear Educator,

Drive home real-world applications of physics and biology concepts through the science of car crashes and car safety. This learning resource brought to you by the Insurance Institute for Highway Safety (IIHS) and the curriculum specialists at Young Minds Inspired, will introduce you to *IIHS in the Classroom*, an innovative NGSS-aligned interactive resource for grades 5-12 that uses the results of highway safety research to give students a hands-on understanding of core STEM concepts. Full of engaging videos, lesson plans, demo labs, and more, *IIHS in the Classroom* can be used in the classroom and as a digital resource for remote learning.

Your students can test drive *IIHS in the Classroom* by taking the Digital Car Crash Science and Safety Quiz, located at **ymiclassroom.com/iihs**. This self-directed quiz offers a preview of the topics featured on the IIHS website and can be used to launch class discussion and further exploration into the topics.

Please share these materials with other educators and families at your school. Although they are protected by copyright, you may make as many copies as you need for educational purposes.

We hope that you will let us know your opinion about this program by visiting **ymiclassroom.com/feedback-iihs**. We depend on your feedback to continue providing free educational programs that make a real difference in students' lives.

Sincerely,

Dr. Dominic Kinsley
Editor in Chief
Young Minds Inspired

Questions? Contact us toll-free at 1-800-859-8005 or by email at feedback@ymiclassroom.com.

New STEM Lessons
for In-Class and At-Home Instruction

How Physics + Biology = Highway Safety

Target Audience

Students in grades 5-12

Program Goals

- Help students and teachers explore the science behind what happens in a car crash — both to the car and to those inside it — and discover why some vehicles are safer than others.
- Reinforce important crash-related STEM concepts while providing students with the knowledge to make safe decisions while riding in or driving a vehicle.
- Support in-class and remote learning

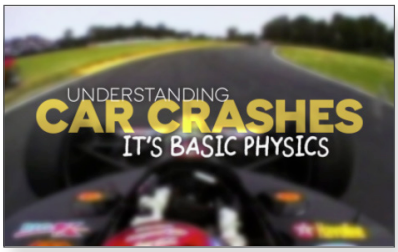
About *IIHS in the Classroom*

Developed by the Insurance Institute for Highway Safety (IIHS) together with award-winning science educator Griff Jones, Ph.D., *IIHS in the Classroom*, at **classroom.iihs.org**, is an innovative NGSS-aligned interactive resource that uses the results of highway safety research to give students a hands-on understanding of core STEM concepts and practices. The videos and demo labs at *IIHS in the Classroom* can be used as a teaching unit or as curriculum supplements. Students and teachers can explore the website in class or at home without registration. Teachers who register at the site can also receive free access to comprehensive lesson plans and other teaching resources.

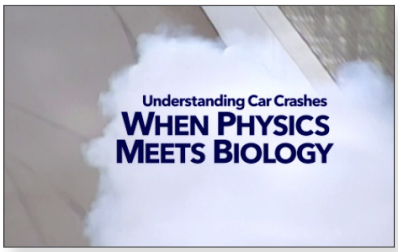
IIHS in the Classroom consists of three primary components:

1. *Understanding Car Crashes* Videos

These two 20-minute videos provide a deep dive into important science concepts.

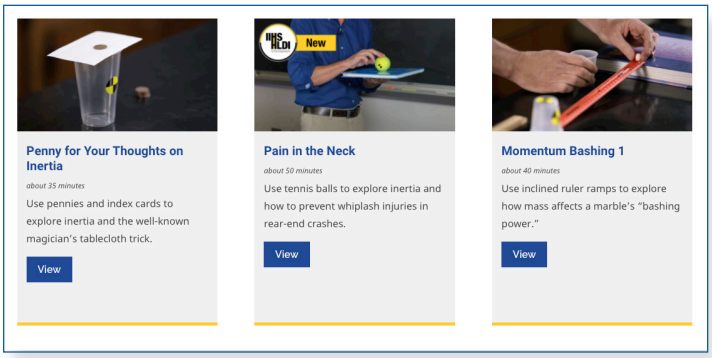


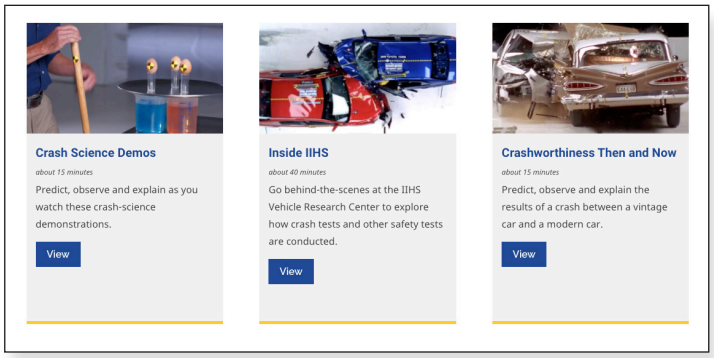
- In ***It's Basic Physics***, students discover how the laws of physics apply to crash tests and guide engineers in designing safer cars to protect occupants in a crash. The video offers a fresh and engaging way to strengthen crucial concepts such as mass and inertia, Newton's Laws of Motion, forces and interactions, speed and acceleration, and the applications of energy.



- The ***When Physics Meets Biology*** video lets students explore what happens to the human body in a crash, and how IIHS researchers and engineers use scientific principles to help reduce injuries. The video takes the physics concepts introduced in ***It's Basic Physics*** and applies them within the context of their influence on the human body in a car crash. Human anatomy is highlighted — in particular, the impact of a crash on the brain and cerebral fluids.
  Other concepts presented include cells, tissues, and organs.

Both videos offer versatile viewing options, including viewing in full or by segments, providing flexibility in scheduling lessons within your existing curriculum.





2. Lessons

These video-assisted hands-on lessons are perfect for the science and STEM classroom, allowing students to learn more about the science of car crashes and vehicle safety. Each lesson is set up as a video lab with an inquiry-based, NGSS-aligned and 5E instruction-compatible teacher lesson plan. Designed to engage students in the scientific process, most lessons require materials that are easily accessible and inexpensive.

Here are a few of the lesson titles:

- Penny for Your Thoughts on Inertia
- Egg Crash
- Momentum Bashing
- Twirling Penny
- Distracted Driving Dangers

3. More Engagement Video Series

This online library of additional videos includes a variety of *Crash Science Demos* and a comparison of *Crashworthiness Then and Now*, all which support STEM skills by engaging students in the process of prediction, observation, and explanation. "Student" and "Teacher" sections accompany each video set. A separate *Inside IIHS* video suite lets students go behind-the-scenes at the IIHS Vehicle Research Center and gives them an up-close view of many STEM careers in action.

These are a few of the video titles:

- Lego IIHS Crash Test
- Crash Science Demos
- Crashworthiness Then and Now

About IIHS

IIHS is an independent, non-profit scientific and educational organization dedicated to reducing the losses — deaths, injuries, and property damage — from motor vehicle crashes. The IIHS is wholly supported by auto insurers and insurance associations.

Go behind-the-scenes at the IIHS Vehicle Research Center to explore how crash tests and other safety tests are conducted.

Take a video tour of the *IIHS in the Classroom* site at vimeo.com/412778886.

What Teachers Are Saying

"I can adapt the material to fit our online platform. It is so high quality!" KATHY, 8TH GRADE SCIENCE

"I love the teacher-tips videos." DAVID, HIGH SCHOOL PHYSICS

"The videos throughout are so well done and short enough to hold anyone's attention." VICKI, 5TH GRADE SCIENCE

"Thank you for all of the real-life data and lessons!" DANI, HIGH SCHOOL BIOLOGY

Resources

- *IIHS in the Classroom* — classroom.iihs.org
- IIHS at YMI — ymiclassroom.com/iihs

YMI Digital Car Crash Science and Safety Quiz

This self-directed quiz offers students a preview of the topics featured on the *IIHS in the Classroom* website and can be used to launch class discussion. Visit ymiclassroom.com/iihs to access and pre-screen the quiz. Links to *IIHS in the Classroom* videos where students can learn more about the topics are included after each answer.