Dear Educator,

Glass enhances nearly every part of our modern world by helping us live safer, smarter, more connected lives. In ways that we may not even realize, we are living in the Glass Age, thanks to advanced technologies at the forefront of communications networks, display technologies, mobile consumer electronics, automotive technologies, life sciences, and beyond.

Life in the Glass Age, a short video created by Corning, one of the world's leading innovators in materials science, explores some of the many ways glass impacts our daily experiences. The video takes viewers behind the scenes of everyday life, revealing the many different advanced glass technologies we encounter and how they are integrated into everything from overhead cellular solutions on lamp posts to the cell phone in your pocket. In addition, Corning has created a microsite that offers more information on its technologies, as well as an interactive, 360-degree video with select scenes that visitors can explore further.

Life in the Glass Age provides educators with a unique opportunity to introduce key science and technology concepts in the classroom. To help you align this resource with your curriculum, Young Minds Inspired (YMI) has partnered with Corning to bring you this free educational program designed to meet science standards for students in grades 4-8. The program includes STEM activities that will help spark student interest in key curriculum topics and provide them with a new understanding of their world, and how it is enabled by advanced glass technologies.

Please share this program with fellow teachers and your school's science department. The materials are protected by copyright, but can be duplicated for educational purposes. To comment on the program, please visit ymiclassroom.com/feedback-liga. We depend on your feedback to make sure our free educational programs help you expand your students' horizons.

Sincerely,

Dr. Dominic Kinsley
Editor in Chief
Young Minds Inspired

Target Audience

This program is designed for students in grades 4-8 as a supplement to the STEM curriculum.

Program Objectives

- To enhance students' awareness and understanding of glass technologies that impact us every day through communication networks, display technologies, mobile consumer electronic devices, life science research, and automotive technology.
- To encourage students to consider their role in advancing the future of glass in science and technology.

Standards Alignment

This program aligns with National Standards for Science, Common Core Standards, and Next Generation Science Standards for grades 4-8. For more details, visit ymiclassroom.com/life-in-the-glass-age.

Program Components

- This three-page educator's guide
- Six reproducible student activity sheets
- Teacher feedback form at ymiclassroom.com/feedback-liga
- A microsite of additional materials and resources including a traditional video *Life in the Glass Age* as well as an interactive, 360-degree video with select scenes

For questions, contact us toll-free at 1-800-859-8005 or by email at feedback@ymiclassroom.com.

Life in the Glass Age

How to Use This Program

Share these materials with fellow teachers and your school's science department. Before you begin the program, prep students by asking them what they know about the properties of glass (it's rigid, etc.), and what technologies or products they use that contain or are enabled by glass. Note that all activities in this program draw on resources available at the *Life in the Glass Age* microsite (LifeInTheGlassAge.com), and the Corning website (corning.com), so students will need Internet access in school or at home.

Activity 1: Life in the Glass Age

Complete this introductory activity together as a class, in order to foster discussion and curiosity.

1. Begin by having students watch *Life in the Glass Age*, a traditional video at LifeInTheGlassAge.com, then have them watch the traditional video again as they complete Part 1.
2. Discuss the traditional video, then have students complete Part 2 using the 360° views of select scenes in the interactive, 360-degree video available at the *Life in the Glass Age* microsite at LifeInTheGlassAge.com
3. Have students take the activity sheet home to complete the "My Life in the Glass Age" challenge: a one-day "glass technologies diary" noting where they encounter the five glass technology areas showcased in the video — optical communications, display technologies, mobile consumer electronics, life sciences vessels, and automotive technologies.
4. Divide students into small groups or work together to create a profile of what Life in the Glass Age looks like in your community.

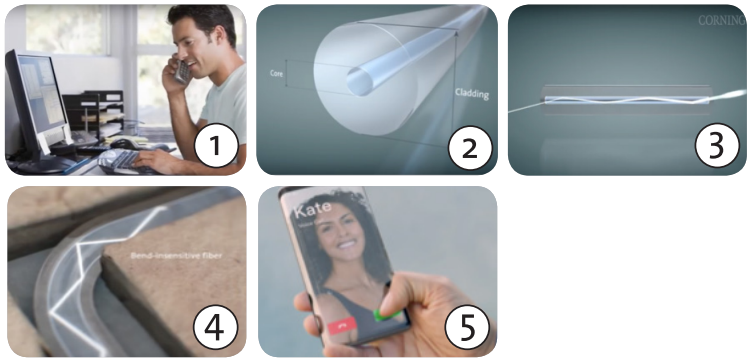
Answers: Part 1

Explain the terminologies and technologies in whatever way is most clear to your students.

Video Scene	Technology or Equipment Enabled by Corning Glass
At Home	Smartphone to turn on lights via smarthome application, and optical communications connection to enable video streaming or searching the Internet
In the Office	Fiber optic cables, computer monitors, wireless phone charging, mobile phone, smart watch, TV in conference room, tablets
On the Road	Fiber optic cables and other solutions, optical communications solutions in public areas, information screens in airport, ceramic filters within cars and heavy-duty trucks, smart display in car, exterior glazing for windshield and windows
At School	Laptop screen, smartphone
Data Center/ Cloud	Fiber optic hardware solutions

Activity 2: Glass Networks

Fiber optics stretch around the globe, enabling our communications networks, entertainment, and more. Remind students that optical fiber provides the infrastructure that enables us to make phone calls, send video messages, stream sports games live, and have video conferences, etc. In this activity, students learn how today's optical fiber transmits information by watching the video "Fiber 101" located at https://youtu.be/N_kA8EpCUQo and labeling illustrations that show optical fiber in action. Then students go behind the scenes to see how optical fiber is made, visiting the Corning website to watch a video showing how the vapor deposition process is used to produce optical fiber. In a post-viewing discussion, ask students to connect what they learned about the properties of optical fiber with all of the communications networks depicted in the *Life in the Glass Age* video and on the microsite. Answers to Part 1:



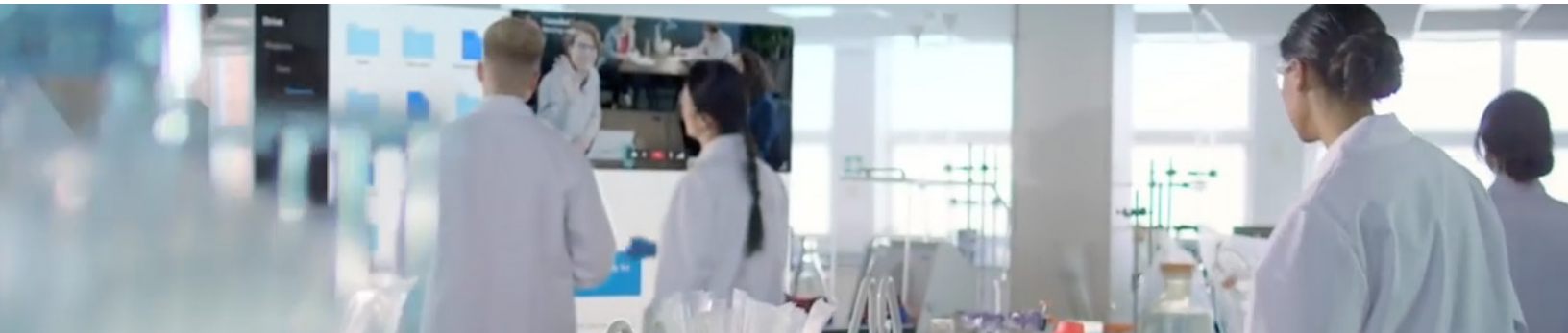
Activity 3: Glass Displays

In this activity, students explore the many layers and key properties of display glass that go into LCD and OLED displays. Review the brief timeline of Corning's display innovations. Then have students label the diagrams to learn how LCD and OLED technologies differ. (The Corning website and YouTube channel are excellent resources for a deeper understanding of these technologies.) Answers: LCD: A. Cover Glass; B. Front Plane; C. Backplane; D. Light-Guide Plate. OLED: A. Cover Glass; B. Encapsulation Glass; C. Backplane. In Part 2, have students watch the video about Corning's fusion process for manufacturing pure, ultra-thin sheets of glass. Lead students in a discussion using prompts on the activity sheet.

Activity 4: Glass on the Go

Corning® Gorilla® Glass has a strong foundation in materials science research. This activity tells the story of the development of Gorilla Glass for a major technology company in 2007. Students learn how Gorilla Glass cover glass works by studying the ion-exchange process used in its production. For the "My Life in the Glass Age" challenge, ask students to put on their problem-solving hats to come up with their own uses for Gorilla Glass. As an extension, review the Corning webpage on why glass is better for wireless charging of mobile devices (corning.com/gorillaglass/worldwide/en/glass-is-better-for-wireless-charging.html), and work as a class to make a Pros/Cons chart on the board.

CORNING



Life in the Glass Age

Activity 5: Glass in the Lab

After reviewing a brief history of Corning's contributions to scientific research, students learn more about Corning Valor™ Glass and other innovations that are used in the life sciences field today. Have students explore the website, LifeIntheGlassAge.com, and use what they learn to complete the chart highlighting how key features of Corning's products meet the specific demands of drug discovery and drug delivery. Then, as a follow-up, have students watch the Precision Forming video on the Corning website and discuss how this manufacturing process translates across all glass technologies, from optical fiber connectors to pharmaceutical packaging.

Answers: **Answers will vary.**

TYPE	TRAITS	BENEFITS	APPLICATION
All Glass	• Transparent	• Puts chemical reactions in clear view	• Life science laboratory products that enable cell-culture research, bioprocessing, and specialty surfaces • Glass packaging for drug storage and delivery
Corning PYREX® glass	• Non-porous surface • Can handle high temperatures (up to 400°C/752°F for short periods and 230°C/446°F for longer) • Much stronger than traditional glass	• Resistant to contaminants • Easily reusable • Allows for high heat reactions and treatments	• All kinds of research and development that require high heat processing
Corning Valor™ glass	• Significantly reduced particle generation	• Better able to withstand shipping and processing • Reduces risk of contamination	• Mass production of pharmaceutical packaging • Safer production of vaccines and pharmaceuticals

Activity 6: Glass on the Road

Part 1 of this activity provides a brief overview of the many ways glass technology can be used in modern cars for exterior glazing and interior surfaces. Have students look at the diagram and watch the video at youtube.com/watch?v=g6pFh4J_kZM. Then, have them answer why glass is appropriate in each application, and list the benefits or qualities that make it ideal in an automotive setting.

Part 2 focuses on the environmental benefits of ceramic substrates and filters. Students learn more about these technologies as they complete a True/False quiz. To take the lesson further, have your class watch the Extrusion Process video and explore the relevant information in the Ceramic Particulate Filters section of the Corning website at corning.com/worldwide/en/innovation/materials-science/ceramics/how-it-works--extrusion.html

Answers:

Part 1

Technology	Qualities / Benefits For Environment, Experience, Efficiency
Corning® Gorilla® Glass for Automotive Exterior Glazing & Hybrid Windshield	• 30 percent lighter than traditional glass means increased fuel efficiency and lower center of gravity for improved performance • 2x tougher against rock strikes and weather and is safer and less costly to repair • Less framing needed allows for larger surface area for viewing clarity and head-up displays
Corning Gorilla Glass for Automotive Interiors	• Can easily and inexpensively be formed into 3D shapes without adding heat to the glass, giving designers unprecedented opportunities to create custom designs and shapes for interior vehicle displays • Can include anti-glare and anti-reflective treatments to improve visibility in strong, ambient lighting. Total reflection of surface light reflectance can drop by more than 80 percent • Regularly exceeds new industry safety standards on module Headform-Impact Tests (HITs), going through testing with no breakage at all
Corning® Fibrance® Light-Diffusing Fiber	• Offers maximum flexibility — allowing designers to bend, curve and wrap it around almost anything, while maintaining bright, beautiful, and uniform light • Can be embedded into upholstery • Evenly emits or diffuses the light out of the sides and down the length of the fiber
Corning® DuraTrap® Particulate Filters	• Meets tough CO2 requirements and preserves engine performance • Traps soot, or particulate matter, from diesel or gasoline exhaust emissions in a variety of light-duty and heavy-duty applications • Lowest impact to pressure drop and thermal mass, in order to enable the most efficient use of fuel and horsepower
Corning® FLORA® Substrates and Corning® Celcor® Substrates	• Optimized for high performance, efficiency, and flexibility • The first 30 seconds after a vehicle starts can account for 70 percent of the total regulated emissions; FLORA can reach operating temperature more quickly than standard substrates • Improves fuel efficiency • Can lower system cost by reducing precious metal use • Celcor is highly resistant to thermal shock

Part 2 – 1. *False*. Corning invented the cellular ceramic substrate in 1972, to help automakers meet U.S. Clean Air Act regulations. 2. *False*, 70%. And Corning® FLORA® Substrates reduce emissions from the moment the car starts. 3.*True*, just one of the reasons air pollution is a critical issue. 4. *False*. It would fill 2 2-liter soda bottles. 5. *True*. Filters remove 99%. 6. *False*. It has been reduced by 60%. 7. *False*. It's as large as a football field.

Resources

YouTube.com/CorningIncorporated
www.corning.com
ymiclassroom.com/life-in-the-glass-age
www.LifeInTheGlassAge.com

Check out **LifeInTheGlassAge.com** to discover more.

Activity 1 | Life in the Glass Age

Part 1: This is Life in the Glass Age

Glass innovations improve your life in ways you may not always see, but you experience every day. In a new video, *Life in the Glass Age*, Corning introduces some of the advanced glass technologies being used to make every day extraordinary. As you watch the video with your class at LifeInTheGlassAge.com, use this chart to note all of the different glass technologies you see.

Video Scene	Technology or Equipment Enabled by Corning and Glass
At Home	
In the Office	
On the Road	
At School	
Data Center/Cloud	

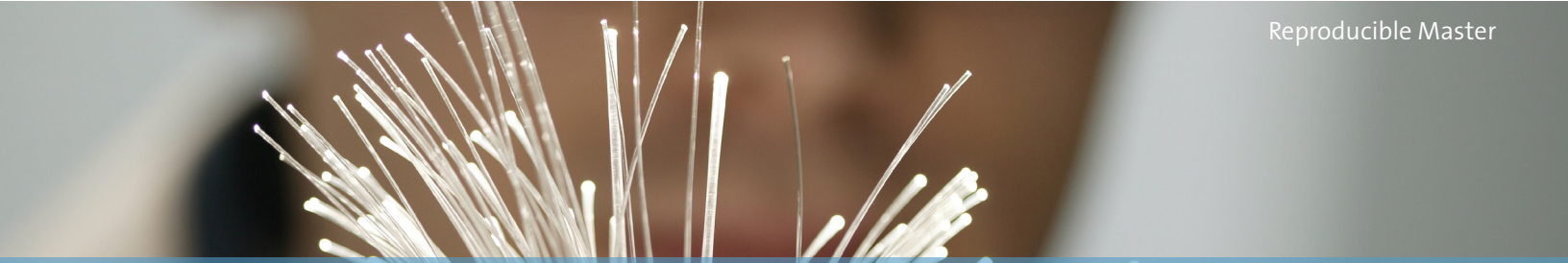
Part 2: A Closer Look

You can take a closer look at *Life in the Glass Age* by completing a scavenger hunt through the five 360° scenes featured in the interactive version of the video. Update the chart above by adding any additional technologies you find. Then choose two of the technologies you discovered and list each technology's benefits/uses in the chart below. We provide an example to help you get started.

Technology	Benefits/Uses
Fiber optic cables	ï In every setting, optical fiber provides the backbone of the communications network, enabling converged infrastructure for all of the various applications. For example, it allows devices like the mom's smartphone to instantly connect with her son, whom we see is in the school nurse's office.

MY LIFE IN THE GLASS AGE

Is there any limit to what glass can do? On the back of this sheet, keep a diary of all the glass technologies you encounter in just one day. Then compare with your classmates and work together to assess your own #lifeintheglassage.



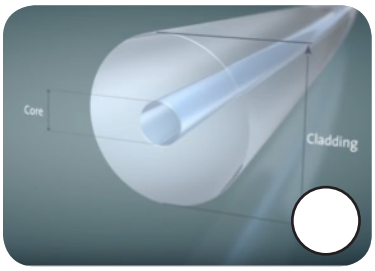
Activity 2 | Glass Networks

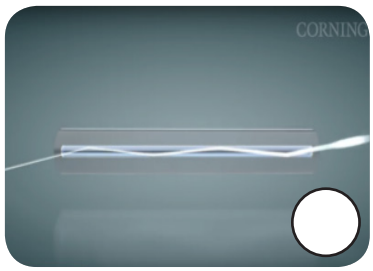
This is Life in the Glass Age

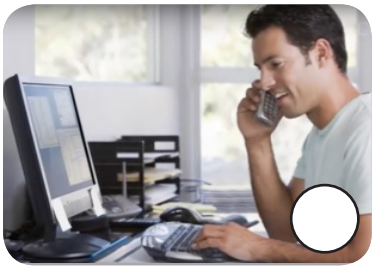
Invented at Corning's labs more than 40 years ago, optical fiber has revolutionized the way the world communicates and connects. Today, optical fiber is the backbone of our most advanced telecommunications networks. When we make a quick phone call, check a website, or download a video in today's highly connected world, it's all made possible by beams of light constantly bouncing through hair-thin strands of optical fiber.

Part 1: How Does It Work?

Watch the video Fiber 101 at https://youtu.be/N_kA8EpCUQo. Then number the photos to identify which step they represent in the process described below. Need help? The underlined words are hints.







1. When a device like your computer has information to send, that data starts out as electrical energy.
2. A laser in the computer converts the electrical energy to photons – tiny particles of electromagnetic energy, otherwise known as light – and sends them in rapid succession down the core of the hair-thin fiber.
3. Photons travel in waves through the inner core of the fiber. The light signal is focused within the core and prevented from radiating out of the fiber.
4. Optical fiber also includes an outer layer, or cladding, made from a different glass composition. The cladding material has a low refractive index designed to reflect light back into the core without allowing it to escape.
5. When the photons reach their destination, a photocell-equipped optical receiver decodes the digital light signals and converts them back into electricity, displaying the data on the other user's computer, television, smartphone, or other device.

Part 2: How Is It Made?

Corning makes all of the glass for its fiber to ensure strength and purity for performance and longevity. To make the highest quality fiber in the world, Corning invented a manufacturing process called *vapor deposition*. See it in action by watching the video at youtube.com/watch?v=7tsF3mSpqX8.

Using what you learned from the Fiber 101 and vapor deposition videos, choose two scenes from *Life In the Glass Age* and explain how the unique properties of Corning's low-loss optical fiber help make communication happen. Some key concepts to consider include:

- Attenuation
- Dispersion
- Optical transmission
- Refractive index
- Single Mode
- Multi-mode

You get bonus points if you can suggest when single mode or multi-mode fiber might be most beneficial and why. One example has been started for you:

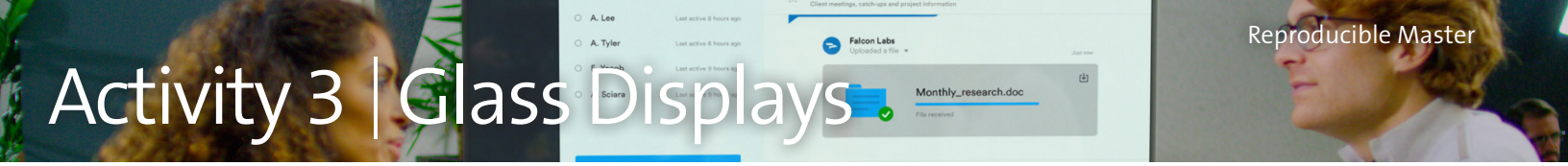
Scene	How Optical Fiber Enables Communication
Conference Call	• Single-mode fiber can connect the lab and the conference room whether they're across town or across the world. • Multi-mode fiber could be used to build the Local Area Network (LAN) at the lab and office, supporting video and data communications among many devices simultaneously.

Fun Fact! A single, hair-thin strand of Corning's optical fiber can support up to 4 million high-definition video streams at the same time.

MY LIFE IN THE GLASS AGE

What do you think the biggest impact of optical fiber is on the way you connect with your family and community? On the way you learn? Check out LifeInTheGlassAge.com and then discuss in class experiences you have had that are enabled by optical fiber.

Check out **LifeInTheGlassAge.com** to discover more.



Reproducible Master

Activity 3 | Glass Displays

Corning has played a leading role in display technology for nearly 80 years! Read the timeline to understand how the display industry—and the glass technologies to support it—has changed over time.

The 1939 World's Fair showcased a futuristic technology: television. The TV included a circular cathode ray tube made by Corning.

By the 1950s, Corning was producing television glass for the black-and-white sets that were appearing in nearly every living room.

In 1964, Corning invented the fusion overflow process, which forms specialty glass in midair.

In the 1980s, the fusion process revolutionized the way LCD glass is manufactured, making thin, flat glass with exceptional stability and unparalleled surface quality.

Today's vivid, immersive displays rely on layers of Corning glass technologies to provide thinner, more energy efficient devices with richer resolutions.

LCD vs. OLED

Corning delivers glass innovations for Liquid-Crystal Display (LCD) as well as rigid and flexible Organic Light-Emitting Diode (OLED) panels. In an LCD, an always-on backlight projects light through a liquid crystal, sandwiched between two pieces of glass. When the liquid crystal is excited by an electrical current, it lets the light of individual pixels pass through like a shutter, and the pixels create a picture. An OLED display works by turning on and off millions of tiny individual LEDs, each forming the individual pixels of a picture. Thanks to Corning's display technologies, LCD and OLED display panels both excel at delivering vibrant consumer displays, each in its own unique way—learn more about the differences here: corning.com/worldwide/en/markets/Display-Market/lcd-vs-oled-a-glass-age-debate.html.

Part 1: One Material, Many Layers

Advanced glass displays— for televisions, information kiosks, handheld devices, and more—are everywhere in our daily lives. Both LCD and newer OLED screens are comprised of several layers of glass to achieve the interactivity and imagery we rely on. Read about these layers below, then label the layers in the diagrams to get a more complete sense of how important glass is for enhancing our entertainment experiences. For an interactive view, check out corning.com/glassstack. Then, continue to learn more about Corning's technology for OLED with this video: youtube.com/watch?v=YQJuskDyRGk&feature=youtu.be.

LCD

A. Cover Glass – helps protect the device
B. Front plane – houses the color filter to create the picture
C. Backplane – processes millions of thin-film transistors
D. Backlight or Light-guide plate – directs light out the front of edge-lit LCD TVs

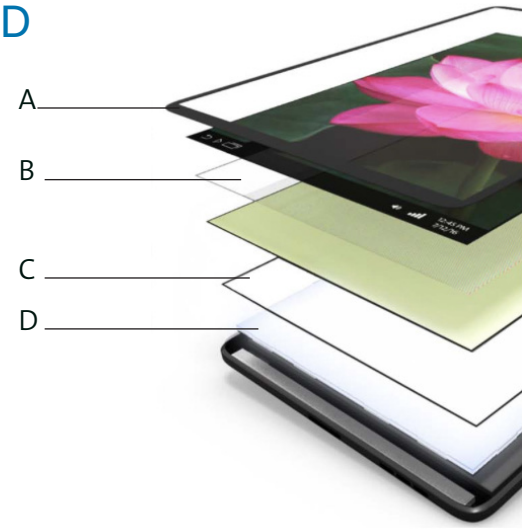
OLED

A. Cover Glass – helps protect the device
B. Encapsulation Glass – helps prevent damaging moisture and oxygen reaching the electronics
C. Backplane with OLED – processes millions of thin-film transistors

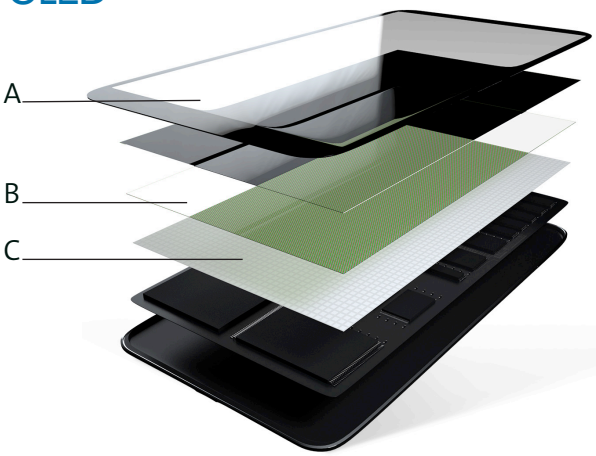
Part 2: Fusion

Corning's fusion manufacturing process is at the core of its display innovations, producing glass that is smooth, flat, thin, and stable. Catch the process in action atyoutu.be/q4ZU7zUxdM8. As you watch, think about the many variables that determine the final product: the quality of the raw materials; the temperature of the vat; the evenness and speed at which the molten glass spills over; and the handling of the newly formed glass sheets.

LCD



OLED



MY LIFE IN THE GLASS AGE

Learn more about Corning's advanced display glass technologies at LifeInTheGlassAge.com. Choose one of the Corning display products shown in the video. Learn how glass is involved and identify how glass is enabling that product or experience. You can write your thoughts on the back of this sheet.

Check out **LifeInTheGlassAge.com** to discover more.

Activity 4 | Glass on the Go

Part 1: Corning® Gorilla® Glass– A Tough Story

In 2007, a major technology company approached Corning about glass for its first smartphone.

The problem: Plastic scratched too easily, so they wanted a more durable and elegant material.

The solution: Drawing on decades of glass expertise, Corning delivered its solution within six months and created the market for cover glass. Since then, Gorilla Glass has been featured on more than 6 billion smartphones, tablets, and notebooks around the world.

How they got there: To innovate rapidly, Corning scientists and engineers looked at their company's research from the 1960s and experimented with more than a hundred glass compositions to come up with the right solution.

The story continues: Scientists and engineers work to constantly push the boundaries of glass. Corning didn't stop with the creation of Gorilla Glass in 2007. They've continually improved on the original design, making each composition tougher, sleeker, and more durable for new applications. Corning® Gorilla® Glass 6 withstands drops from up to 1 meter on rough surfaces such as asphalt.

Brainstorm which technologies and products you use on a daily bases that need Gorilla's toughness. Then check out some stories about how people are using these tough devices every day at corning.com/gorillaglass/worldwide/en/incredibly-tough.html

Part 2: Ion Exchange

How can today's high-tech glass be so tough that it withstands drops, bumps, and scratches in everyday life, even while remaining incredibly thin?

The problem: Glass cracks and shatters when there are flaws on its surface and when tensions, from a fall or hit, are placed on it.

The solution: The combination of two Corning innovations:

- First, Corning's fusion process is used to produce thin, pristine, smooth glass that is virtually flawless.
- Second, the glass is chemically strengthened through an ion-exchange process, creating a surface layer of compression to resist the tensions that occur during drops, bumps, and scratches.

Imagine you have a box of pool balls. When you shake the box, they jiggle around and crash into each other. So one by one, you replace the balls with tennis balls, which are larger and softer. Now when you shake the box, they're too close together to move much. That's similar to how ion exchange creates compression to strengthen Gorilla Glass. To learn more, watch the video *Why Glass Breaks* at corning.com/gorillaglass/worldwide/en/technology/how-it-s-made.html

Take note of the following in the ion-exchange process:

1) Glass parts are immersed in a molten salt solution.
2) Potassium ions (electronically charged particles) in the solution migrate into the glass surface, replacing the smaller sodium ions originally in the glass.
3) As the glass cools, the larger potassium ions compress the glass together, creating a compressive stress layer that forms a tough surface.

MY LIFE IN THE GLASS AGE

Gorilla Glass is unlocking possibilities in other arenas beyond mobile devices – in fact, the possibilities are endless. Read more at corning.com/worldwide/en/innovation/the-glass-age/glass-a-clear-solution.html #ChemicallyStrengthenedGlass. Then put on your engineering hat and brainstorm some ideas for NEW uses for tough, ultra-thin glass. List your ideas on the back of this sheet. For each idea, be sure to explain the problem you are trying to solve and why Gorilla Glass is the solution.

Activity 5 | Glass in the Lab

Chances are, when you conduct experiments in science class, your beakers and other equipment are Corning products. The same is true in the most advanced research labs around the world. Corning's life science products have been used in laboratories for nearly two centuries. And since 1915, when it introduced PYREX® glass, Corning has been at the forefront of innovation for the medical and life science fields. For example, PYREX was critical in mass production of penicillin during World War II and in the development and production of the polio vaccine in the 1950s.

Today, the company's life science products support cell therapy to cure diseases; modernize glass pharmaceutical packaging; and lead the way with tools for 3D cell cultures, bioprocessing, and genomics research. The chart below outlines some of the key attributes of glass that make it the perfect material for a variety of uses in the life sciences. Explore Corning's Life Science Vessels website at corning.com/worldwide/en/products/life-sciences.html and use your findings to complete this chart. We've provided some examples to help you get started:

Type	Traits	Benefits	Applications
All Glass	Transparent	• Puts chemical reactions in clear view	
Corning PYREX® Glass	Non-porous surface	• Resistant to contaminants	
Corning VALOR™ Glass			

MY LIFE IN THE GLASS AGE

Precision Forming is a key part of Corning's manufacturing platform portfolio. Watch the video on Precision Forming at corning.com/worldwide/en/innovation/the-glass-age/science-of-glass/how-it-works--precision-forming.html to learn more. Then, choose one of the applications of Corning Valor™ Glass that you listed above, and explain why precision forming is critical to its success in drug delivery.

Activity 6 | Glass on the Road

In today's highly connected, high-tech automobiles, glass is everywhere. Beginning with Corning's development of a specialized headlight glass for automobiles at the turn of the 20th century, advanced glass technologies have been making driving safer, cleaner, and more connected, supporting the environment and redefining the on-road experience.

Part 1: Many Uses for Glass

Different types of glass and ceramic technologies are used throughout modern vehicles. We see just some of them in the images below. For a 360° understanding, watch the video at youtube.com/watch?v=g6pFh4J_kZM. Use what you see to complete the chart below by explaining how each of the innovations makes driving safer, cleaner, or more connected. The first one has been started for you.

Technology	Qualities / Benefits For Environment, Experience, Efficiency
Corning® Gorilla® Glass for Automotive Exterior Glazing	• 30% lighter than traditional glass means increased fuel efficiency and lower center of gravity for improved performance • 2x tougher against rock strikes and weather and is safer and less costly to repair • Less framing needed allows for larger surface area for viewing clarity and heads-up displays
Corning® Gorilla® Glass for Automotive Interiors	
Corning® Fibrance® Light-Diffusing Fiber	
Corning® DuraTrap® Particulate Filters	
Corning® FLORA® Substrates and Corning® Celcor® Substrates	

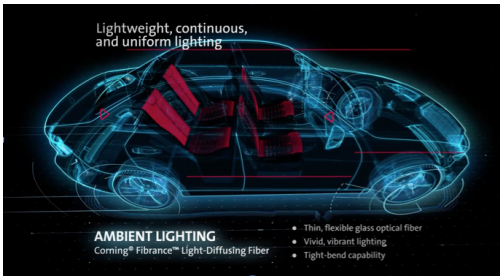
Part 2: Supporting the Environment

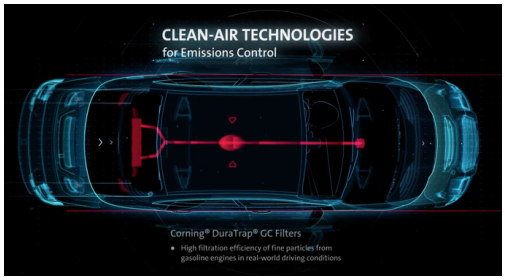
In 1970, the auto industry approached Corning with a challenge: find a way to reduce vehicle pollution by 90% in five years, to meet the demands of the newly strengthened U.S. Clean Air Act. Corning responded with the cellular ceramic substrate, a honeycomb-like structure with thousands of parallel channels. In substrates, porous linings within the channels allow for catalytic conversions to take place removing harmful toxins too small to trap in a filter, turning them into harmless gases and water vapor. The exhaust then passes through a filter in which alternate channels are plugged to force the exhaust through the pores of cell walls, leaving behind soot particles that are too large. These channels are designed to trap soot, or particulate matter, from diesel or gasoline exhaust emissions.

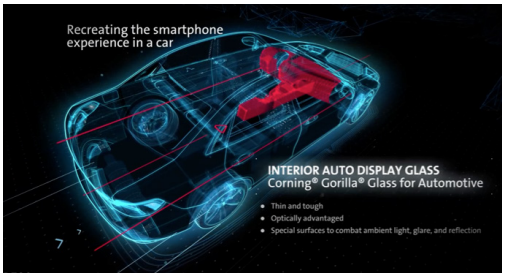
Discover more about how Corning's environmental technology products are supporting the environment (corning.com/worldwide/en/products/environmental-technologies.html). Test how much you've learned by taking this True/False quiz.

_____ 1. Clean-air technology is a new field for Corning.
_____ 2. 10% of a vehicle's emissions come out of its tail pipe in the first 30 seconds after it starts.
_____ 3. The average person breathes close to 3,000 gallons of air (enough to fill a tanker truck) every day.
_____ 4. Without a filter, a typical diesel truck driving from New York City to Los Angeles would release enough soot into the air to fill a 2-liter soda bottle.
_____ 5. Corning® DuraTrap® Particulate Filters® for diesel engines remove 99% of the soot leaving the vehicle.
_____ 6. Since the Clean Air Act was originally passed in 1963, air pollution has been reduced by 10%.
_____ 7. A catalyzed substrate the size of a soft drink can contains the surface area of a basketball court.

Fun Fact! Corning is skilled in glass manufacturing but also in ceramics technology! The ceramics products in your car's engine help clean the air you breathe.







MY LIFE IN THE GLASS AGE

How do you hope glass will enhance your driving experience some day? On the back of this sheet, design the dashboard of your dreams. As an alternative, you can work with your classmates to brainstorm other uses for ceramic particulate filters and substrates. How could they be used, for example, to reduce air pollution from coal-fueled power plants?

CORNING

Check out **LifeInTheGlassAge.com** to discover more.