

CERCA SET **Distracted Driving**
English Language Arts

How can engineers and lawmakers improve driver safety and minimize driver distraction?

LESSON TITLE **How Do You Engineer Safe Drivers?**

CERCA QUESTION Are autonomous cars the best way to keep roads safe?

RESOURCES

- **Build Background Knowledge**
<https://www.pinterest.com/thinkcerca/distracted-driving-cerca-set-board/>
- **CERCA Framework**
- **Vocabulary Routine**
- **Speaking and Listening Routines**

	Whole group		Online
	Small group		Offline
	Individual activity		Activity time period
	Speaking and listening activity		Audio
		Available in English and Spanish	

Introduce the CERCA Question



Describe what an autonomous car is, and list some pros and cons to removing humans from control behind the wheel. Brainstorm ways that automakers (seat belts, airbags) and the government (speed limits, traffic signals) try to keep drivers safer. Ask students if they personally feel safe when riding in or driving a car, and why.

LEVEL 3-4 Expanding

► **ASK:** How are current efforts to keep drivers safer working?

Support language acquisition with the following sentence frames:

Currently, automakers add _____ to cars to keep drivers safer. Those improvements are useful because _____.

The government regulates drivers by imposing _____, which is beneficial because _____.

1 Connect



Have students log in to ThinkCERCA and click into this lesson.

LEVEL 3-4 Expanding

Read the overview aloud and discuss vocabulary. Then read the writing prompt aloud for students before they answer.

Complete Step 1: Connect.

Introduce Vocabulary



Use **Semantic Webbing** to introduce vocabulary

► **NOTE:** Some students will need support for additional words not listed on the student support page. Weave them into the instruction.

LEVEL 3-4 Expanding

Assign vocabulary words to small groups, or to partners. Depending on student familiarity with the vocabulary words you can create webs for all new words, or just the most challenging words. For small groups, assign a word and have them map it out on the whiteboard. When they are finished they can take a minute to explain it while classmates copy the map down. For partner work, have mixed ability pairs create maps for all assigned words in their notebooks.

After the routine have students add the focus words to their word notebooks.

LEVEL 4-5 Bridging

► **ASK:** In your opinion, do government regulations such as those on speed limits and requiring the wearing seat belts work well? Explain why or why not. What could be done to ensure greater compliance and safety?

LEVEL 4-5 Bridging

Complete Step 1: Connect.

LEVEL 4-5 Bridging

Depending on student familiarity with the vocabulary words you can create webs for all new words, or just the most challenging words. Have students work in pairs to write their own definition of the word in English. Next, have them brainstorm an image or mental picture to illustrate each word.

After the routine have students add the focus words to their word notebooks.


Introduce the Summary

En | Sp




Remind students that this is a summary for the passage they will read. Point out the Vocabulary as you read.

LEVEL 3-4 Expanding

 Have students read the Spanish version on the student support page, if applicable, before you read the summary aloud and have students follow along.

LEVEL 4-5 Bridging


 Ask a student to read aloud the summary in English to practice their fluency.


2 Read




Have students read the text, using Vocabulary from the student support page as appropriate.

LEVEL 3-4 Expanding


 Read comprehension questions with students before they begin reading the passage.

 Complete Step 2: Read.

 Discuss comprehension questions. Point out key vocabulary words in the text, especially as they are relevant to finding answers.

LEVEL 4-5 Bridging

 Complete Step 2: Read.


 Discuss comprehension questions. Point out key vocabulary words in the text, especially as they are relevant to finding answers.


3 Engage with the Text




NOTE: If you have concerns that your students are struggling with comprehension, you may wish to work with them on Step 4: Summarize before Step 3: Engage with the Text.

LEVEL 3-4 Expanding

 Model highlighting the text for students.


 Complete Step 3: Engage with the Text.


 Use the following sentence frames to discuss the highlights students made.

_____ **is just one of the reasons people get into car accidents.**

_____ **is a main drawback of autonomous cars.**

LEVEL 4-5 Bridging

 Complete Step 3: Engage with the Text.

 Discuss the highlighting students did. Ask students to share their highlights and notes, and use the following sentence stems to support student engagement in the conversation.

People get into car accidents because _____.


One drawback of autonomous vehicles is _____.

4 Summarize



Prepare students to write a CERCA by having them summarize the text.

LEVEL 3-4 Expanding

 Complete a summary of the article together using either the suggested sentence frames below or the stems in the product. Encourage students to use Vocabulary from the lesson.

Use the following sentence frames to create a summary.

This article highlights the possibilities around _____ and what is being done to prevent _____.


Some researchers believe that _____.

The federal government has responded by _____.

 Complete Step 4: Summarize.


LEVEL 4-5 Bridging


 Complete Step 4: Summarize.

 Review the summaries to ensure that all students understand the big ideas of the passage. Encourage students to use Vocabulary from the lesson.

5 Build Your Argument



 Practice creating a CERCA together using the CERCA graphic organizer (online or offline) and the leveled frames below and on the student support pages. Remind students that some of their evidence can come from their highlighting work.

 **NOTE:** You may wish to have students orally respond to the CERCA question using a Listening and Speaking Routine instead of writing a response.

LEVEL 3-4 Expanding

Use the following sentence frames to complete the CERCA graphic organizer.


Claim *Autonomous cars [are/are not] the best way to keep people safer*

Reason *because _____.*

Evidence *Bryan Reimer, a research scientist at MIT's AgeLab, stated that _____,*

Reasoning *which means that _____.*

Counterargument *Some advocates of _____ suggested that autonomous cars _____. In reality, these vehicles would _____.*

 Complete Step 5: Build Your Argument.

LEVEL 4-5 Bridging

Have students share their thoughts with the group.

Use the following sentence frames to complete the CERCA graphic organizer.

Claim *Autonomous cars [are/are not] the best way to keep people safer*

Reason *because _____.*

Evidence *Bryan Reimer, a research scientist at MIT's AgeLab, stated that _____,*


Reasoning *which means that _____.*

Counterargument *Some advocates of _____ suggested that autonomous cars _____. In reality, these vehicles would _____.*

Evidence *Other experts like Danny Shapiro, the director of Automotive at NVIDIA, have focused on software that _____.*

Reasoning *If his ideas are correct, then cars will _____.*

Have students complete the graphic organizer with at least one more piece of evidence and associated reasoning. Assist as needed.

 Complete Step 5: Build Your Argument.

6 Create Your CERCA



Have students write their CERCA in the lesson online so that you can provide feedback and monitor growth.

► **NOTE:** Remind students that they can use the Copy all button to move their work into the text box.

LEVEL 3-4 Expanding

Use the responses students made in the graphic organizer to model writing in response to the CERCA question.

Have students reread their draft. Then have them submit to complete Step 6: Write Your CERCA.

LEVEL 4-5 Bridging

Have students write their CERCA. Provide support as necessary. Remind students that they can use vocabulary words as they write.

Use this sentence frame to help students conclude their CERCA:
Considering the frequency of accidents caused by human error, and the amount of distractions drivers face, it seems that autonomous cars are _____.

Have students add a conclusion and then reread their draft. Then have them submit to complete Step 6: Write Your CERCA.

Complete Speaking and Listening Activities



Complete a whole group speaking and listening activity with all students who completed the grade level lesson. Prompt students to use the vocabulary from the passage in the activity.

LEVEL 3-4 Expanding

Do the **Fishbowl Activity** with students. Modify the activity for these students by providing them with questions in advance of the discussion, and with appropriate sentence frames to support them in answering those questions so that they will be ready to participate in discussion.

LEVEL 4-5 Bridging

Do the **Fishbowl Activity** with students. Modify the activity for these students by providing them with questions in advance of the discussion.

How Do You Engineer Safe Drivers?

Are autonomous cars the best way to keep roads safe?

Vocabulary

*artificial intelligence (noun): technology sophisticated enough to perform tasks that usually require the human brain

auspices (noun): support

*autonomous (adj.): able to control itself

bandwidth (noun): capacity

eroding (verb): wearing away

human error (noun): mistakes people make

*infotainment (noun): broadcast material which informs and entertains listeners

infrastructure (noun): the basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies) needed by society

liability (noun): a responsibility

mitigation (noun): reduction

passive (adj.): inactive

PCs (noun): personal computers

Vocabulary continued

permit (verb): allow

*regulatory (adj.): controlling through rules

revenues (noun): profits, money earned

stifle (verb): restrict or restrain something or someone

underscored (verb): emphasized

upgrades (nouns): added on improvements

Summary

Regulating driver safety is nothing new, but there is a renewed sense of urgency. Due to smart phones and in-car computer systems, drivers are more distracted than ever. Automotive experts, government regulators and manufacturers are trying to figure out the best way to keep drivers engaged and minimize human error. While Google has developed autonomous cars, widespread use of artificial intelligence is unlikely in the near future. Currently, software prototypes exist that allow real time reactions to hazards, but companies like GM are pushing other innovations, such as adaptive cruise control, that could act as a bridge to the safer cars of the future. The government's response has been slower because they have to see how these improvements impact drivers, and ensure that they balance regulation with developmental progress.

How Do You Engineer Safe Drivers?

Are autonomous cars the best way to keep roads safe?

Los automóviles autónomos, ¿son la mejor manera de mantener nuestras calles seguras?

Vocabulary

English

*artificial intelligence

(noun): technology sophisticated enough to perform tasks that usually require the human brain

auspices

(noun): support

*autonomous

(adj.): able to control itself

bandwidth

(noun): capacity

eroding

(verb): wearing away

human error

(noun): mistakes people make

*infotainment

(noun): broadcast material which informs and entertains listeners

infrastructure

(noun): the basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies) needed by society

Español

*inteligencia artificial

(sustantivo): tecnología lo suficientemente sofisticada para llevar a cabo tareas que usualmente requieren de un cerebro humano

auspicios

(sustantivo): apoyo

*autónomo

(adjetivo): capaz de controlarse a sí mismo

ancho de banda

(sustantivo): capacidad

erosionar

(verbo): desgastarse

error humano

(sustantivo): errores que cometen las personas

*información y entretenimiento

(sustantivo): material que informa y entretiene a los oyentes

infraestructura

(sustantivo): las estructuras básicas físicas y de organización e instalaciones (por ejemplo, edificios, carreteras, fuentes de alimentación) que necesita la sociedad

Vocabulary continued

liability (noun): a responsibility	responsabilidad (sustantivo): una obligación
mitigation (noun): reduction	atenuante (sustantivo): reducción
passive (adj.): inactive	pasivo (adjetivo): inactivo
PCs (noun): personal computers	PC (sustantivo): computadoras personales
permit (verb): allow	permitir (verbo): autorizar
*regulatory (adj.): controlling through rules	*regulador (adjetivo): que controla por medio de reglas
revenues (noun): profits, money earned	ingresos (sustantivo): ganancias, dinero ganado
stifle (verb): restrict or restrain something or someone	reprimir (verbo): restringir o frenar algo o a alguien
underscored (verb): emphasized	subrayado (verbo): enfatizado
upgrades (nouns): added on improvements	actualizaciones (sustantivos): mejoras

How Do You Engineer Safe Drivers?

Are autonomous cars the best way to keep roads safe?

Los automóviles autónomos, ¿son la mejor manera de mantener nuestras calles seguras?

Summary

English Regulating driver safety is nothing new, but there is a renewed sense of urgency. Due to smart phones and in-car computer systems, drivers are more distracted than ever. Automotive experts, government regulators and manufacturers are trying to figure out the best way to keep drivers engaged and minimize **human error**. While Google has developed **autonomous** cars, widespread use of **artificial intelligence** is unlikely in the near future. Currently, software prototypes exist that allow real time reactions to hazards, but companies like GM are pushing other innovations, such as adaptive cruise control, that could act as a bridge to the safer cars of the future. The government's response has been slower because they have to see how these improvements impact drivers, and ensure that they balance regulation with developmental progress.

Español La regulación de la seguridad en la conducción no es nada nuevo, pero hay un renovado sentido de urgencia. A causa de los teléfonos inteligentes y los sistemas computacionales en los automóviles, los conductores están más distraídos que nunca. Los expertos automotrices, reguladores gubernamentales y fabricantes tratan de encontrar la manera de mantener a los conductores concentrados y minimizar el **error humano**. Mientras que Google ha desarrollado un automóvil **autónomo**, el uso de la **inteligencia artificial** está sin duda en el futuro cercano. Actualmente, existen prototipos de software que permiten las reacciones en tiempo real a los riesgos, pero empresas como GM están impulsando otras innovaciones como el control de crucero adaptativo, que podría actuar como un puente para los automóviles más seguros del futuro. La respuesta del gobierno ha sido más lenta porque tiene que ver cómo estas mejoras afectan a los conductores y garantizar el equilibrio entre la normativa y el progreso.

How Do You Engineer Safe Drivers?

Are autonomous cars the best way to keep roads safe?

4 Summarize

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and what is being done to prevent _____.

Some researchers believe that _____.

The federal government has responded by _____.

5 Build Your Argument

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Counterargument *Some advocates of _____ suggested that autonomous cars*

_____.

In reality, these vehicles would

_____.

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6 Create Your CERCA

Considering the frequency of accidents caused by human error, and the amount of distractions drivers face, it seems that autonomous cars are _____.