

Cell Phones + Driving = Accidents?

Grade Cluster - 6 - 8

NETS-S- 4 - Critical Thinking, Problem Solving, and Decision Making

Quick Look:

Vermont students collaborate with students from schools in other states to analyze data regarding cell phone use while driving. Accident data is collected and compared from states that have enacted laws that prohibits or restricts cell phone use while driving to those states that have no such laws. Students also collect data to determine if laws do, in fact, lower the incidence of cell phone use while driving. Students analyze their findings and prepare videos to share with driver education classes, their communities, and their respective state legislatures.

Scenario:

Hannah's sister, Megan, a high school senior, had a car accident while driving and talking on her cell phone. Three other local high school students were in the car with Megan.

One received injuries requiring hospitalization for nearly a week, while the others had only minor injuries, but will not be recovered in time to participate in the fall sports season. When Hannah came into school the day after the accident, a discussion among her seventh and eighth grade friends caused them to share experiences and information about other accidents related to cell phone use, including one incident where several high school cheerleaders were all killed while the teenage driver was texting. These middle school students want to know the facts. Does cell phone use really create more accidents? Vermont has no law that restricts any kind of cell phone use while driving. Would a state law that prohibits or restricts cell phone use while driving prevent these accidents from happening?

Their math and English teachers quell the discussions during class time, but the teachers talk over lunch about the enthusiasm their students are showing about this topic. They decide that this might be a perfect project for integrating the two subjects. The English teacher sees the possibility for a persuasive essay, while the math teacher envisions his statistics unit taking on a life of its own as students investigate this issue. The social studies teacher walks in during the discussion and asks if he, too, could use this project to teach the students about individual rights and government, and he wonders if the students might be able to prepare persuasive arguments to take on their visit to the state house. They agree to work with the students to develop this project, and select a small group of students to meet with them during a study period to plan the work for the larger group.

The small group of students working on the planning phase includes two students who have moved to Vermont from states that have already enacted laws regarding cell phone use. Those students use their [Facebook](#) accounts to elicit help from friends in their previous schools to collaborate on the research project. The social studies teacher's home

state has no cell phone and driving laws, so he contacts a teacher with whom he used to work to find out if she would be willing to join the project. Two days later, the planning group and teachers have elicited a total of four middle school classes to collaborate on their project, two from states with laws prohibiting or restricting cell phone use while driving, and two from states with no law prohibiting any cell phone use by drivers. Each of the schools outside of Vermont selects planning leaders to meet with the Vermont planning group.

Guided by the Vermont student planning group, all the planning groups meet via the [Learning Network of Vermont Video Conferencing System \(LNV\)](#) to formulate research questions and to plan how they will conduct the research. (4a, 4b, 6b) The students introduce themselves and then the Vermont students lead a discussion on the project. One student takes notes on a [Google Doc](#) that he shares with the students from all four schools. (6b) The students brainstorm ideas about data collection and develop several questions they wish to pursue. They decide to collect data about accidents from the state police in their areas, from the National Highway Safety Administration, and from the National Center for Statistics and Analysis. They also discuss surveys that could be developed to collect data from teenagers in each community. They want to compare the number of students who use cell phones while driving in spite of the law, with the number of those who use cell phones while driving in states without laws. The students from the states with laws in place decide they should also collect accident data from both before and after the law was enacted. The "before" data will be compared to the data from the states without laws, as well as compared to data after the laws were enacted. (4a, 4b, 4c) The planning groups bring this information back to their classes for discussion, and the students add, delete, or modify questions in the *Google Doc*.

Groups of eight students are formed, with two students from each school, to gather specific types of information. (4c) For example, one group designs a survey for teenage drivers. They use *Google Docs* to prepare the questions and [Google Forms](#) to collect the data. Another group looks up online data from the National Highway Safety Administration, arranges for an interview with a representative from that organization via [Skype](#), and prepares to present the findings to students in all four classes. Other groups take on the task of preparing questions and gathering data from their respective states about the number of accidents related to cell phone use before and after laws were in place. Each group creates a *Google Doc* to draft questions for a community survey and meets via *LNV* to discuss these questions. When the survey questions are finalized, the students prepare a *Google Form* to enter data that is later shared among all four classes. (4a, 4b, 6a, 6b) The four classes agree on a deadline for data collection and distribute their surveys to random samples of community members.

After all the data is collected, the groups at each school use [Excel](#) to analyze it and prepare comments to share with everyone. (4c, 6a, 6b) All the students meet again using the [LNV](#) to share their group findings. Students from each state gather the entire sets of data to further analyze it to prepare their presentations at home. The Vermont students are each required to prepare a persuasive essay that uses data to support either having no cell phone laws, enacting a cell phone law with restrictions (e.g., hands-free cell phone use only or teen drivers prohibited from using cell phones), or enacting a law that prohibits all use of cell phones while driving a vehicle. (4d) The essays are used to prepare group presentations that include:

- [Flash video clips](#) directed at teens, to be played when the school home page opens
- presentations to be shared with the driver education classes at their local high schools and at a local driver education center
- presentations to state legislators that compare accident data from states with and without the law
- “infomercials” to be played over local radio and television stations to encourage drivers to obey the law or to avoid using cell phones while driving

As a result of the student presentations, the Vermont State Legislature begins a discussion about drafting a cell phone law that targets all drivers, not just teens. Students anxiously await the final decision and carefully watch the legislative process. This topic becomes an ongoing discussion during current events in their social studies class.

Student Standards – The following NETS-S are noted in the scenario:

4. Critical Thinking, Problem Solving, and Decision Making – A, B, C, D
6. Technology Operations and Concepts – A, B

Teacher Standards – Teachers who teach this unit address the following NETS-T:

1. Facilitate and Inspire Student Learning and Creativity – A, B, C, D
2. Design and Develop Digital-Age Learning Experiences and Assessments – A, B
3. Model Digital-Age Work and Learning – C, D
4. Promote and Model Digital Citizenship and Responsibility – B

Content Grade Expectations

The scenario writer has identified the following content grade expectations that s/he felt might be assessed in this scenario. In most of these scenarios, there may well be opportunities to assess other or additional content grade expectations across a variety of disciplines. If you are interested in developing a unit or lessons based on the following scenario, and you don’t see any grade expectations in your content area, we encourage you to capture the ideas presented in the scenario and make it your own by adding components that address the grade expectations you are most interested in assessing.

W7:15 & W8: 15 In persuasive writing, students define a significant problem, issue, topic, or concern by...

- Establishing necessary context, taking audience into account, as needed
- Stating and maintaining a clear position on the problem or issue (purpose)

W7:16 & W8: 16 In persuasive writing, students present and coherently support judgments or solution(s) by...

- Arranging supporting evidence persuasively
- Providing and elaborating on with convincing and appropriate facts and details
- Addressing the reader’s potential concerns or counterarguments
- Drawing a conclusion by synthesizing the persuasive argument

M7:28 & M8: 28 In response to a teacher- or student-generated question, makes a hypothesis, collects appropriate data, organizes the data, appropriately

displays/represents numerical and/or categorical data, analyzes the data to draw conclusions about the questions or hypothesis being tested, and when appropriate to make predictions, asks new questions, or makes connection to real-world situations.

H&SS7-8:14 Students act as citizens by...

- Demonstrating positive interaction with group members
- Identifying problems, proposing solutions, and considering the effects of a course of action in the local community, state, nation, or world.
- Explaining and defending their own point of view on issues that affect themselves and society, using information gained from reputable sources.
- Explaining and critically evaluating views that are not one's own.
- Establishing rules and/or policies for a group, school, or community, and defending them.