MATH 360 Watson pre-reading assignment

*The following newspaper article extract comes from page 2 of*

*the June 11, 1991 edition of the Hobart Mercury*

**Family car is killing us,**

**says Tasmanian researcher**

Twenty years of research has convinced Mr.

Robinson that motoring is a health hazard.

Mr. Robinson has graphs which show quite

dramatically an almost perfect relationship

between the increase in heart deaths and

the increase in use of motor vehicles. Similar

relationships are shown to exist between

lung cancer, leukaemia, stroke and diabetes.

1. Draw and label a sketch of what one of Mr. Robinson’s graphs might look like.
2. What questions would you ask Mr. Robinson about his research?

MATH 360 Watson active reading prompts

*Please read the article* Watson, J. (2000). Statistics in context. Mathematics Teacher, 93(1), 54-58 a*nd respond to the following prompts.*

1. The first sentence in the article states “Judging statistical claims in social contexts is fundamental to statistical literacy.” What do *you* think someone should be able to do to be deemed statistically literate?
2. This article focuses on the topics of graphing relationships and interpreting associations found among variables (2nd paragraph p.54). What are the CCSS-M (<http://www.corestandards.org/the-standards/mathematics>) relevant to these goals?
3. Investigate the curriculum recommendations in other disciplines here in the United States to see where these topics are covered and what the relevant standards are.

Next Generation Science Standards <http://www.nextgenscience.org/>

National Curriculum Standards for Social Studies <http://www.socialstudies.org/standards>

National Health Education Standards <http://www.cdc.gov/healthyyouth/sher/standards/>

1. Add at least 2 more bullet points to the list at the top of the first column on page 55.
2. Do you think Mr. Robinson's numbers (Figure 1) are raw counts or rates? Which would be more helpful in looking for things that explain heart disease?
3. Pick one of the graphs in (b) or (c) of Figure 4. What would you say to the student who created that graph to assist him/her in moving to the next step of the hierarchy?
4. What are distinct advantages & disadvantages of each of the 3 types of representations shown in Figures 5, 6, and 7? Which representation type do you prefer and why?
5. How would you design a study on driving and heart deaths?
6. Evaluate your own answers from the pre-reading assignment to the two tasks, using the structure outlined in the article.

MATH 360 Watson post-reading assignment

Design a lesson or cross-curricular activity around an example of a statistical claim from the media (you are welcome to find your own or you can use one of the references below). The goal of your lesson is to help your class progress from step 2 of the hierarchy to step 3.

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| **Article title** | **Source** |
| Rethinking the economics of traffic congestion | <http://www.theatlanticcities.com/commute/2012/06/defense-congestion/2118/#> |
| Delaying kindergarten: Effects on test scores and childcare costs | <http://house.michigan.gov/SessionDocs/2011-2012/Testimony/Committee5-3-21-2012-4.pdf> |
| Sleeping pills linked with early death | <http://healthland.time.com/2012/02/28/study-sleeping-pills-linked-with-early-death/> |
| Why video games are good for you | <http://www.straightdope.com/columns/read/3034/why-video-games-are-good-for-you> |
| Fear-mongering from the bench | <http://www.commonwealmagazine.org/fear-mongering-bench> |
| Why being thin can actually translate into a bigger paycheck for women | <http://www.forbes.com/sites/lisaquast/2011/06/06/can-being-thin-actually-translate-into-a-bigger-paycheck-for-women/> |