

# WHAT CAN WE RESEARCH AND WHY WOULD WE DO IT?

- FOR KNOWLEDGE AND UNDERSTANDING:-
- SEARCH FOR CORRECT INFORMATION  
THAT PROVES A POINT
- CLIMATE CHANGE
- CURES FOR DISEASES  
• MEDICAL RESEARCH
- SPORT PERFORMANCE IN REACTION TO  
PRACTICE TIME



4. Abe works for Honda and he is in charge of research and development for hybrid cars. Currently Toyota claims that the Prius MPG is 45.6. Abe thinks that Toyota is overestimating the gas mileage. Write a null and alternative hypothesis to the claim of the Prius.

$H_0$ : PRIUS MPG IS AT LEAST 45.6

$H_a$ : PRIUS MPG IS LOWER THAN 45.6

6. Super Delicious Pizza claims that they deliver a pizza in 20 minutes or less. Rudy thinks that they can't deliver that fast.

$H_0$ : PIZZA DELIVERY IN 20 MINUTES OR LESS

$H_a$ : PIZZA DELIVERY IN MORE THAN 20 MINUTES

7. Coach Deliciousham thinks that her students will score higher on their next test than the students of Coach Pidgeon's class.

\*  $H_0$ : COACH DELICIOUSHAM'S STUDENTS WILL SCORE HIGHER

$H_a$ : COACH PIDGEON'S STUDENTS WILL SCORE HIGHER

Watch the clip from Mythbusters. What are the null and alternative hypotheses for each of the three pain myths?

Men v. Women:

$H_0$ : WOMEN TOLERATE MORE PAIN THAN MEN

$H_a$ : MEN " " " " WOMEN

Red Heads

$H_0$ : RED HEADS CANNOT TOLERATE A LOT OF PAIN

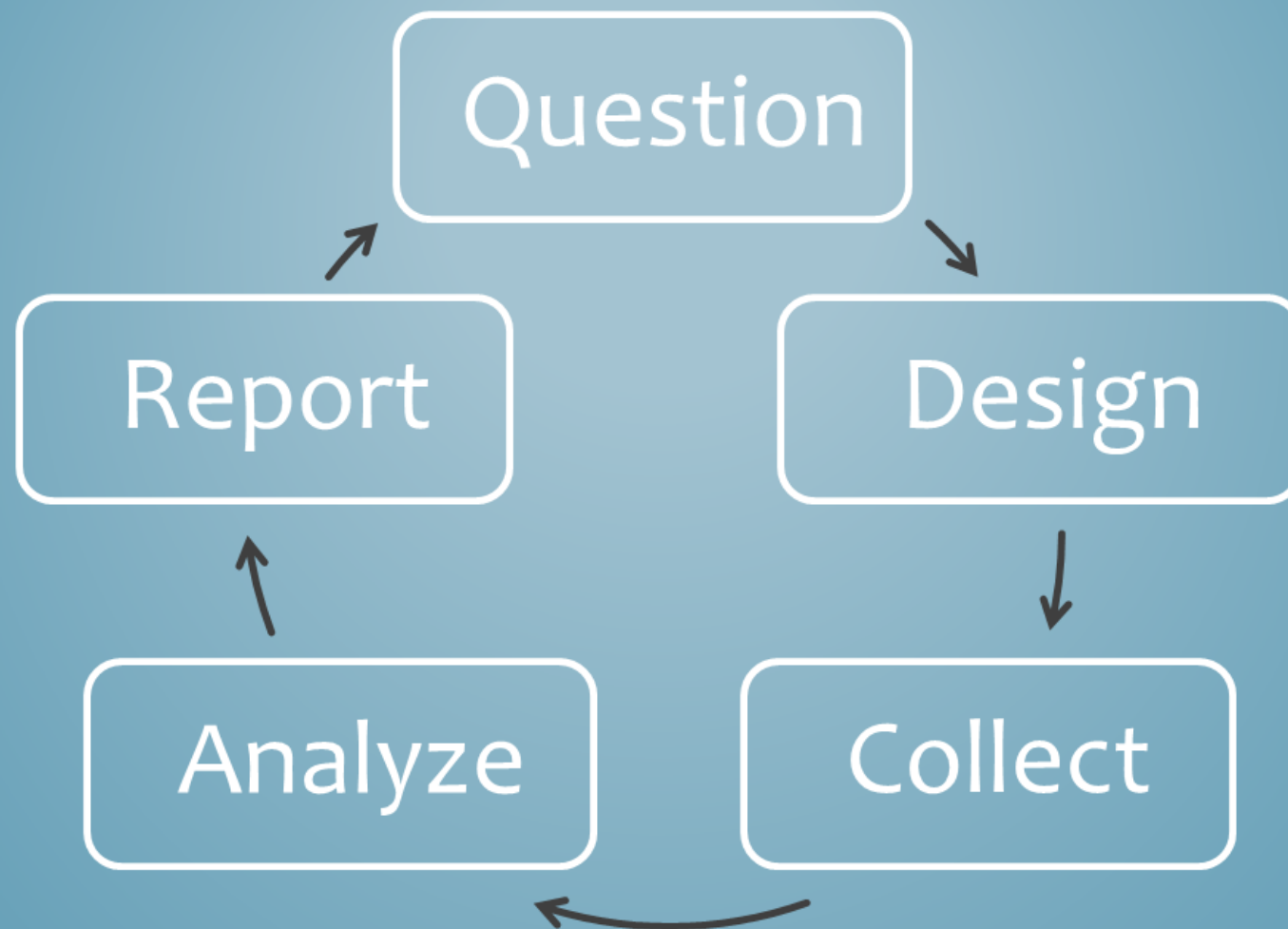
$H_a$ : RED HEADS CAN TOLERATE PAIN

Cursing:

$H_0$ : CURSING HELPS YOU DEAL WITH PAIN

$H_a$ : CURSING DOES NOT HELP YOU DEAL WITH PAIN







# DESIGN

- *How are we going to test?*
- *Experimental v. Observational*
- *Samples (who/what to test and how many)*
- *What will the questions/experiments be?*



# COLLECT

- *Run the study*
- *Gather data*



# ANALYZE

- *Graphs*
- *Putting the data together in a way so you can easily see results*





# REPORT

- *Did you prove or disprove your hypothesis?*
- *Why do you think you got the results that you did?*
- *Was there error or bias?*
- *What can you do to expand on this study?*



## Null and Alternative Hypotheses

Every researcher researches a topic because they are trying to prove something. Either proving something as true or false; or proving the effect of a treatment. So the first part of the Question cycle is creating hypotheses.

3. You bought a bag of potato chips and when you opened it up you noticed that it seemed mostly filled with air. The bag claims that there is 28.3 grams of chips in every bag. You think that this is an overestimate. Write a null and alternative hypothesis to this situation

$H_0$ : THERE IS AT LEAST 28.3 GRAMS OF CHIPS IN EVERY BAG

$H_a$ : THERE IS LESS THAN 28.3 GRAMS OF CHIPS IN EVERY BAG



Inbox - Hannah....

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Unit 3



RecordexUSA XSi...



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What is the Rese...



PowerPoint Slide...



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5. Katie loves to listen to music while she does her school work. Her teacher does not allow headphones in class but Katie thinks that her grades are better when she listens to her music. (When there is not a set number you are trying to prove just use words!)

$H_0$ : MUSIC WILL NOT IMPROVE GRADES

$H_a$ : MUSIC WILL IMPROVE GRADES

