

## Scientific Method

### ASK A QUESTION

- What do you want to know about the world?
- Why do you want to know it?
- How can science answer the question?

### DO RESEARCH

- Has this question been asked before?
- Are there related questions?
- Can others provide information?

### FORM A HYPOTHESIS

- What do you think is the answer?
- Why do you think so?
- Can your prediction be tested?

### TEST THE HYPOTHESIS

- Design an experiment
- Perform the experiment carefully
- Record the data

### ANALYZE THE DATA

- Make a chart or graph
- Compare your data to others' data
- See if your data fits your hypothesis

### DRAW CONCLUSIONS

- What was learned from the experiment?
- Was the hypothesis correct?
- What questions remain?

## Engineering Method

### DEFINE THE PROBLEM

- Why is this a problem?

### DO BACKGROUND RESEARCH

- Have others investigated this if so, what did they discover?
- Does this information help you?

### SPECIFY REQUIREMENTS

- What are the time, resource, cost, and technical requirements?

### BRAINSTORM POSSIBLE SOLUTIONS

- Communicate, cooperate, and collaborate with colleagues

### CHOOSE THE BEST SOLUTION

- Why do you think the solution you chose will work?

### DEVELOP THE PROJECT

- Gather the required resources

### BUILD A PROTOTYPE

- What works? What doesn't work?

### TEST AND REDESIGN

- Make the required changes to your design