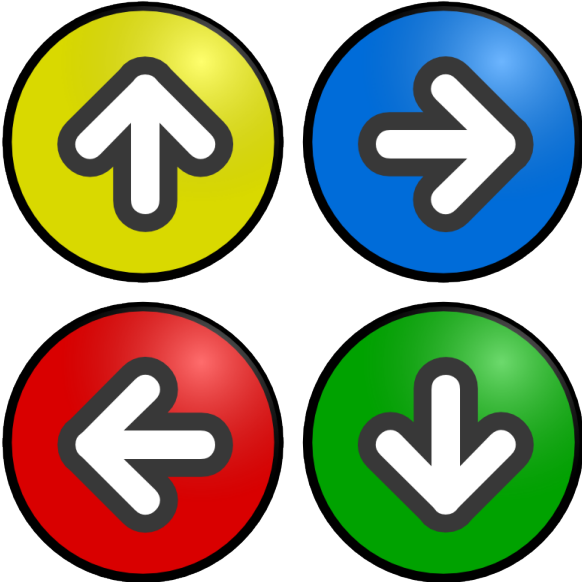


Solutions

Steps of the Scientific Method

1) Order the Steps in the Scientific Method:



Step 1: Identify the research topic

Step 2: Formulate the research hypothesis

Step 3: Design the research

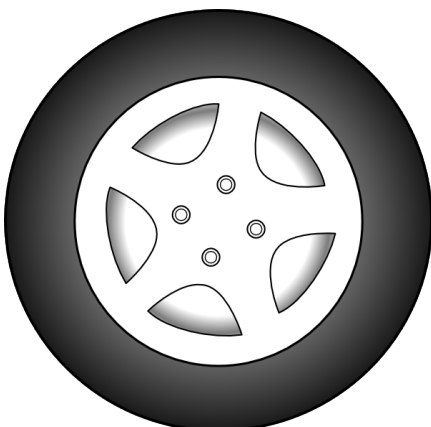
Step 4: Collect the data

Step 5: Analyse the data

Step 6: Interpret and evaluate the results

Step 7: Report the research findings

2)



Identify the Steps of the Scientific Method:

Study 1

In a study about "Helping Others", researchers set out to determine in which circumstances people are likely to help others. The steps of the study are shown below in a jumbled order. Can you determine for each one which research step is involved?

Interpret and evaluate the results : People are indeed influenced to help others if they see someone else helping in similar circumstances.

Collect the data : Count the number of cars that stop in each condition.

Design the research : Control condition - busy street with a broken-down car; experimental condition - add a car with the same problem one-third of a kilometre back, with someone helping the affected driver. Count 2000 cars in each condition.

Analyse the data : A larger percentage of people stopped to help when they had just seen someone being helped.

Formulate the research hypothesis : People will be more likely to help someone change a car tyre if they

have just seen someone else offering this kind of help.

Identify the research question : What influences people to help others?

3)



Identify the Steps of the Scientific Method: Study 2

In a study about "Alcohol and Driving Ability", researchers set out to determine how alcohol consumption affects driving. The steps of the study are shown below in a jumbled order. Can you determine for each one which research step is involved?

Design the research : Control group consumes non-alcoholic drink ("placebo"); experimental group consumes pre-determined amount of alcohol; participants undergo a simulated driving task.

Identify the research question : How does alcohol consumption affect driving skill?

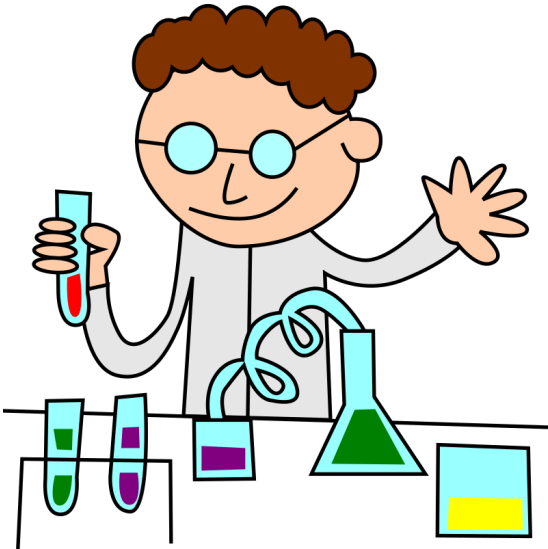
Interpret and evaluate the results : Alcohol consumption impairs driving ability.

Analyse the data : The mean number of errors for the experimental group was 48, compared to the control group's error rate of 16.

Formulate the research hypothesis : The participants who consume alcohol will make more errors in the driving simulation task than the participants who consume no alcohol.

Collect the data : Gather the results of all participants on the driving simulation task.

4) Definitions



a replication : Running a study again in order to establish whether the results can be duplicated and are therefore reliable and accurate.

b behaviour : Any observable action carried out by a person or animal

c hypothesis : A testable prediction about the relationship between variables in a study

d psychology : The systematic study of thoughts, feelings and behaviour

e empirical : Information based on observation and experiments rather than speculation and theory

f mental states : Thoughts and feelings

g scientific method : Following a systematic, predetermined set of steps in order to plan and conduct research and collect empirical evidence