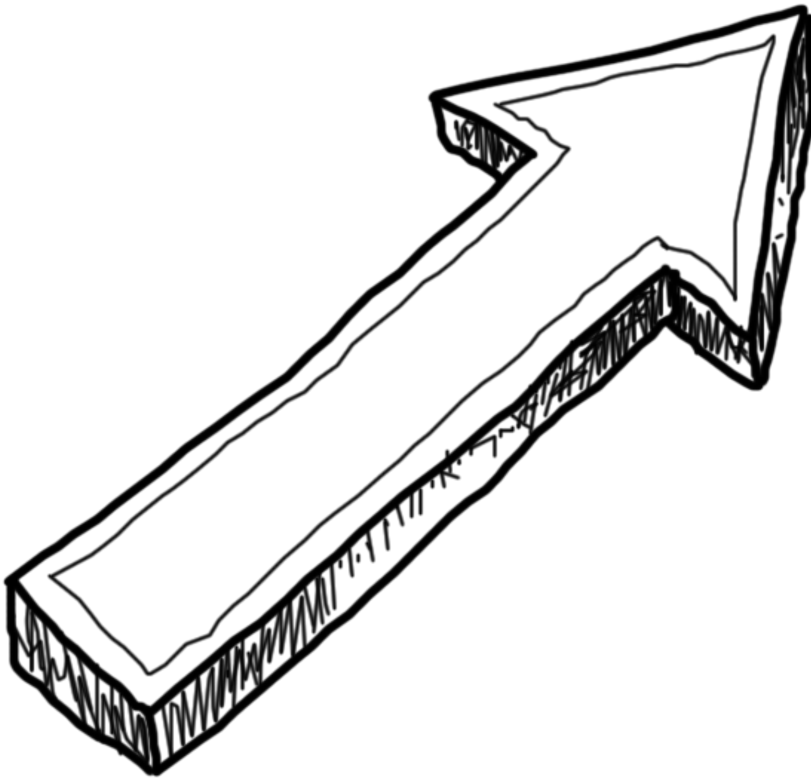


# Solutions

## Steps of the Scientific Method

### 1) Steps in the Scientific Method

Can you select the correct steps in order?



**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 : The evidence from this study shows that 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?



### 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.

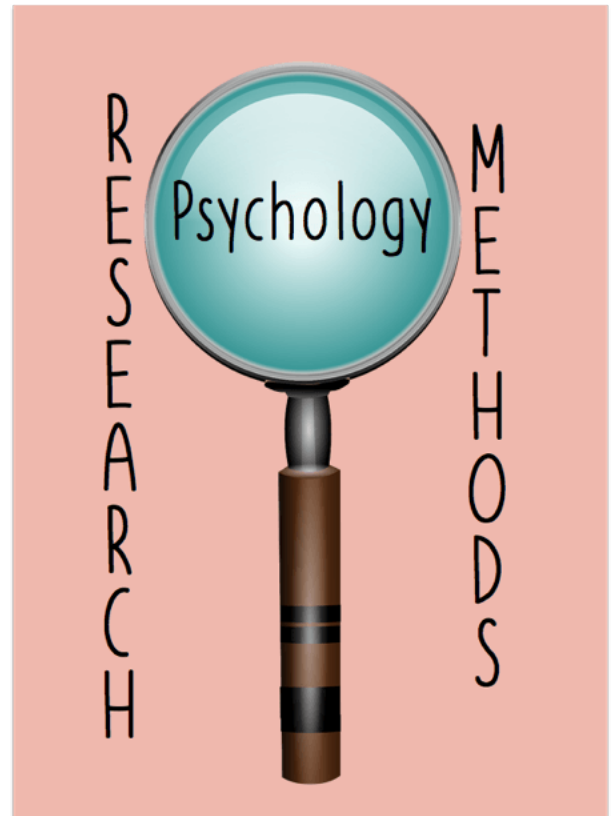
4)

### Crucial Definitions

Type the correct word or phrase in each space below, using the list of gap fillers provided.

behaviour • correlational study • empirical •  
experiment • hypothesis • mental states •  
psychology • replication • scientific method

**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 scientific 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

**h** experiment : The only research method that allows one to establish a cause-effect relationship, if well conceived and appropriately carried out

**i** correlational study : A study that allows one to investigate the relationship between two variables (such as age and number of car accidents), yet WITHOUT establishing a cause-effect relationship