Read each of the ten questions below. Write down the letters that best describes what you would do in each situation.

1. Tonight there will be a total eclipse of the moon. In your science lesson you hear that the moon looks red during the eclipse. Your teacher explains that you may also be able to see faint stars that are not visible when the moon is shining. You are asked to observe the eclipse and write a report for homework.

You borrow some binoculars but it is difficult to use them. You can't make out the faint stars and the moon doesn't look red. What do you do?

(A) Describe exactly what you saw with sketches and diagrams.

(B) Describe what you saw but add images from the internet to show the faint stars. Explain where you found the images.

(C) Watch for a bit but then look for a report on the internet. After changing this a bit you give it in as your own work.

(D) Assume that your teacher got it wrong and so give up.

2. A stream runs down a valley near your home. You and your friends have played and fished there since you were children. Recently you have noticed several dead fish. There is an intensive farm further up the valley and some local people believe that effluent from the farm is polluting the stream. What do you do?

(A) Start to keep a diary about the stream. Record when and where you see the dead fish and how many you find. Identify the species of fish (if you know them) and say how big they are. Write down any other changes in the stream life.

(B) Phone your local newspaper to offer them an interview. Tell them you have evidence that the farmer is damaging the environment. Hope they take a photograph of you for the front page.

(C) Get some indicator paper for pH and test papers (dipsticks) for nitrate from your teacher. Start your own programme of water tests.

(D) Get in touch with local experts on conservation. Your first step could be to tell your science teacher what you have found.
3. Last year you learnt about the Solar System and designed travel brochures for future visitors to Mars. The teacher gave yours the highest mark and put it on display for Open Evening.

Now your cousin, who lives in another part of the country, has sent you a message. He has been given the same task and wants you to send him a copy of your brochure. You are worried that he plans to copy it. What do you do?

(A) Refuse to help him.

(B) Send him your travel brochure but ask him to list it in his bibliography.

(C) Do not give him a copy but send him the addresses of the websites you used and offer to lend him your books.

(D) E-mail the brochure to him. Suggest he changes the font and the layout if he wants to copy it.

4. In the 1950s there was a government research laboratory in your town. There are rumours that research into nuclear weapons used to happen there. Your friend’s father believes that radioactive waste was buried deep underneath the field behind his garden. Recently he has noticed twisted plants and white earthworms. He asks you to take soil samples to school and test them with a Geiger counter. What do you do?

(A) Take the samples into school and try to test them yourself.

(B) Tell your friend and his father that the soil analysis needs to be done by experts in radiochemical analysis. Suggest they contact the National Radiological Protection Board.

(C) Start digging up the field to see what is buried there.

(D) Get in touch with the local Borough Council. You will probably find that they have been investigating the rumours; perhaps a public enquiry is already planned. Find out who is managing the site, they may be keen to talk to local people.

5. Yesterday you did an investigation. The teacher said ‘Make a table in your notebook and enter your data each time you take a measurement’. You didn’t take the advice. Instead you put your data on a scrap of paper and, unfortunately, left the paper on a windowsill in the cloakroom.

Today you came to school early, hoping the paper would still be there. It was gone. The school cleaners must have put it into a black dustbin bag. The caretaker says the dustbins were emptied this morning and the bags have already gone. What do you do?

(A) Rush to the tip to look for the school’s dustbin bags.

(B) Copy someone else’s data and pretend they are your own.

(C) Explain to your teacher what has happened.

(D) Nothing. Wait until the teacher notices you haven’t given in a report. Then think of some excuse.
6. You have done an investigation to compare the amount of water in different varieties of apples. Now you are writing up a report.

Unfortunately a vital measurement is missing. You weighed the apple slice and the dish together but forgot to weigh the dish separately. Now you can’t work out how much the apple slice weighed before it was dried.

What do you do?

(A) Invent a value for the weight of the dish. Check to be sure it gives an answer close to the one in the textbook. Put the fake value into your report.

(B) Write up what you can. Admit you forgot to weigh the dish.

(C) Confess your mistake to your teacher next day. Ask if you can find the dish you used and weigh it.

(D) Ring up someone who tested the same variety of apple. Persuade them to give you their results. Put these into your report as if they were your own.

7. The apple experiment took a long time. There were six varieties of apple but you only tested two of them. Someone suggests pooling all the results so that everyone has a complete set of data. What do you think of this idea?

(A) You like it and want to go ahead.

(B) You are not keen because pooling the results will take up time in the lesson. You may have to finish your work at home.

(C) You prefer to be independent because you don’t trust everyone. You think some may have made up their results or copied each other.

8. Why do elephants throw water over themselves? Some people think they do it to cool themselves down. You investigate if this could be true.

You have two plastic bottles full of warm water. One is wrapped in dry kitchen paper and the other in wet kitchen paper. The bottles are models for the elephants. Your plan is to measure the temperature of the water in the bottles as it cools down. Unfortunately, when you are half way through the test, the ‘dry’ bottle overbalances. You catch it in time to stop the water spilling but there is a splash and the kitchen paper gets soaked. Now both ‘elephants’ are wet and there isn’t time to start again. What do you do?

(A) Give up. Make do with the data you have.

(B) Explain what happened to your teacher and ask if you can repeat the experiment another time.

(C) Replace the wet paper with new dry paper and carry on taking measurements.

(D) The paper is wet but the bottle is still almost full. Note the time when the dry paper got wet and go on measuring the temperature inside. Explain what happened in your report.
9. You are hanging weights on a rubber band to find out how much it stretches (the extension). You have to plot the measurements on a graph of extension against weight.

Most of the points lie very nearly on a straight line (except when the weights are very large or very small) but there is one that doesn’t fit. This point is quite far from the line. What do you do with it?

(A) Do not put the point on the graph. Rub the measurement out altogether.

(B) Look back and realise that the ruler may have slipped when you took the measurement. Do not rub the reading out but make a note to explain why you think it is incorrect.

(C) Try to repeat the reading.

(D) Invent a point to fit the curve.

10. Your teacher has arranged a circus of different experiments. You go round the laboratory in groups and try out each experiment.

One experiment is tricky but your friend is very good at it. She likes the experiment and suggests she could repeat it to get several sets of results to share round. If other people choose a different experiment and do the same you could all swap results at the end.

How would you write about this in your report?

(A) Explain how you worked as one big team. Write a report on each experiment, noting who took each set of readings.

(B) Write a report on each experiment and claim that you took all the readings yourself.

(C) Just write up the one experiment you did yourself.