Thirty Questions

Come Up With 30 Questions in 30 Minutes

1) Go into the field, in a natural setting.

2) Be perfectly quiet and observant. Do not speak to anyone. Listen to the sounds of nature and observe the patterns that surround you. Focus your thoughts. Be a Darwin (or as the Germans would say, be an Alexander von Humboldt).

3) Based on your observations, what are some questions that come to mind? Write them down quickly and then move on to another question. You can move around, but do not talk. You must come up with at least 30 questions in 30 minutes.

4) Do not take time to refine or evaluate your questions; just write them down as they come to you. The objective is to write down as many questions as you can, with the time allotted, without evaluation (we are trying to promote creativity and originality, an essential component of science).

Share Your 30 Questions with a Group

1) Break into small groups of 3 individuals.

2) Allow each member to read their 30 questions aloud to the group, without comment or evaluation. Make sure all the questions are read before proceeding.

Discuss Your Questions with the Group (refine, evaluate & analyze)

1) What were some ideas that came up over and over again? Why are they particularly interesting?

2) What questions can be answered immediately without getting additional information or performing experiments?

2) What are some questions that can only be answered after getting more information? What information would you need to get? How could you get that information?

Crystallize your Ideas

1) Come up with three testable hypotheses that your group thinks are among the most interesting and doable. That is, reword three of your questions in the form of hypothesis statements, statements that are testable.

2) Make certain that your hypotheses are discrete enough to be tested within a one-week period (preferably one lab period worth of data collection by three persons).

3) Be prepared to share your three hypotheses with the entire class.