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ENGAGE in research

The interactive resource for bioscience students

Introduction to the Site

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Getting Started in Science

Reviewing Literature

Planning Your Research

Step-by-Step Statistics

Writing Scientifically

Presenting Science

Going Professional

How Do I ... ?

one Local intranet

Conservation Research Questions

Potential research questions related to 'conservation' include:

Has the introduction of hedgerows increased the biodiversity of woodland invertebrates in South East England?

Large Blue butterfly on ragwort

How are ground beetle communities (*Coleoptera Carabidae*) affected by heathland management?

Is there a correlation between habitat selection and breeding numbers of Redstart and Tree Pipit at Abernethy Forest, Invernesshire, Scotland?

What effect has the introduction of spray margins had on pesticide

Oral Presentations

Whether you're giving a presentation to your peers as part of your coursework or speaking at a conference, there are a number of key points to remember when preparing your presentations. These include:

- using visual aids effectively
- structuring your presentation
- making effective use of your voice
- dealing with nerves
- dealing with audience questions.

If you're presenting to a small audience, it's common to give each member a copy of your handouts (complete with your contact details). Using objects to emphasise a point you're making can be a good idea, but remember that it can be disruptive to have too many objects, or large objects, passed around the audience.

Podcast

Dr Julian Park, Senior Lecturer at the University of Reading, discusses what he looks for in student presentations Play

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Help Sheet

In many cases you will be told the broad area in which you need to undertake research. However, if you have been given a free choice of topic, for example for your final year project, but are struggling to identify a research question on which to focus then the following may help to structure your thoughts. (Click here if you would like to print these points out as a checklist in hard copy.)

Have you been provided with topic guidelines? If so what are they?

What topics have you enjoyed studying or are interested to learn more about?

Write down the research topics which you are aware of that take place in your Department

Are there any topics (if known) which are relevant to your future career aspirations?

Are there any skills that you feel it would be useful for you to develop further?

Are there any areas of research that do not interest you?

Do you have access to research projects from students in previous years? If so, are there any that are of particular interest?

Now you have some ideas on what you are/are not interested in, and the research that's currently going on in your department, who will you approach to discuss you ideas?

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Finding Scientific Papers

The quickest and easiest way to search for relevant papers is to use an on-line database eg CAB Abstracts or ISI Web of Science. You should have access to these through your University library's home page. These databases work in a similar way to your library database in which you type in your keyword search and then view the 'hits'.

Searching for papers does take time and patience; if you try and rush your search you could miss interesting and important papers. When you start your search, make your keyword search as broad as possible. For example, if you were investigating the effect of aluminium toxicity on tropical forage legumes, your first search term could be 'aluminium and plants'.

Exercise

If you were researching the effect of organic farming techniques on invertebrate biodiversity, what search terms would you use?

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Calculating Probabilities

You have a tropical fish tank that contains 21 Neon tetras (*Paracheirodon innesi*) and four Clown Loach (*Chromobotia macracanthus*). If you captured one in a net, what is the probability of it being a clown loach?

Answer

You accidentally add your three Maris Piper seed potatoes to a bag of 50 King Edwards. What is the probability of you picking out a Maris Piper?

Answer

The zookeeper has left the cage doors open and the two male Siberian tigers (*Panthera tigris altaica*) escape into the female compound, which contains 20 animals. What is the probability of the first tiger you catch being male?

Answer

Quick Quiz

Test your understanding of planning your research by answering these short questions:

Question 1. Which of these statements best describes Experimental, Observational and Opinion-based research:

a. identifying opinions through the use of surveys, questionnaires and/or focus groups
b. using state-of-the-art equipment in a laboratory
c. application of a treatment to an experimental unit in the presence of a control
d. the study of communities and their interactions
e. working in the field?

Answer

Question 2. Primary data is ...

a. data collected solely from a laboratory/field situation
b. data collected by the researcher and used by someone else
c. collected and used by the researcher.

Answer

Question 3. Sarah is conducting an experiment looking at the effects of three chilling temperatures on the number of flowers produced by carnation plants. Can you identify:

a. the treatment
b. the experimental unit
c. a suitable control?

How Do I ... ?

This section is designed to give you quick hints and tips about a particular subject area. On each page the information can be downloaded as a PDF and printed out for future reference. For more detailed information about a subject, follow the links within the relevant pages below, or see the site Home page.

Start Out ...

- getting started with my research
- developing hypotheses.

Review Literature ...

- finding literature
- evaluating the quality of web sites
- reading effectively.

Essentials ...

- managing my time effectively
- statistically analysing my data

Write ...

- writing scientifically
- writing an abstract
- using and citing references
- using the Harvard referencing system
- publishing my research.

Present ...

- giving an oral presentation
- presenting a poster
- preparing for my viva.

Usage

- Launched in September 2007
- Steady increase in usage
- 6000 visitors to date
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- The Pentagon!
- Trying to break into US!