## Research and Field Skills



1.

Derry, G. N. What is Science? (What science is and how it works: Prologue). in What science is and how it works (Princeton University Press, 1999).

2.

Leedy, P. D. & Ormrod, J. E. What is research? (Practical research: planning and design: Ch 1). in Practical research: planning and design (Pearson, 2015).

3.

Marder, M. P. Curiosity and research (Research methods for science: Ch 1). in Research methods for science (Cambridge University Press, 2011).

4.

Hulme, M. The performance of science (Why we disagree about climate change: understanding controversy, inaction and opportunity: Ch 3). in Why we disagree about climate change: understanding controversy, inaction and opportunity (Cambridge University Press, 2009).

5.

Derry, G. N. Difficult and important questions: science, values and ethics (What science is and how it works: Ch 11). in What science is and how it works (Princeton University Press, 1999).

6.

Derry, G. N. Nature's Jigsaw (What science is and how it works: Ch 2). in What science is and how it works (Princeton University Press, 1999).

7.

Derry, G. N. Thinking straight: evidence, reason and critical evaluation (What science is and how it works: Ch 7). in What science is and how it works (Princeton University Press, 1999).

8.

How Science Changes - The Atlantic. http://www.theatlantic.com/technology/archive/2012/12/how-science-changes/266145/.

9.

Funtowicz, S. O. & Ravetz, J. R. Science for the post-normal age. Futures **25**, 739–755 (1993).

10.

Stuart Firestein: The pursuit of ignorance | TED Talk | TED.com.

11.

Andrews, J. E. An introduction to environmental chemistry. (Blackwell, 2004).

12.

Leedy, P. D. & Ormrod, J. E. The problem: the heart of the research process (Practical research: planning and design: Ch 3). in Practical research: planning and design (Pearson, 2015).

13.

Sutherland, W. J. Planning a research programme (Ecological census techniques: Ch. 1). in Ecological census techniques: a handbook (Cambridge University Press, 2006).

Marder, M. P. Overview of experimental analysis and design (Research methods for science: Ch 2). in Research methods for science (Cambridge University Press, 2011).

15.

Watts, S. & Halliwell, L. The Good Scientist (Essential environmental science: methods & techniques: Ch. 1). in Essential environmental science: methods & techniques (Routledge, 1996).

16.

Goldacre, B. Bad science. (Harper Perennial, 2009).

17.

Kneale, P. Constructing an argument (Study skills for geography, earth and environmental science students: Ch. 11). in Study skills for geography, earth and environmental science students (Hodder Education, 2011).

18.

Leedy, P. D. & Ormrod, J. E. Planning your research project (Practical research: planning and design: Ch 5). in Practical research: planning and design (Pearson, 2015).

19.

Watts, S. & Halliwell, L. Sampling (Essential environmental science: methods & techniques: Ch. 2). in Essential environmental science: methods & techniques (Routledge, 1996).

20.

Watts, S. & Halliwell, L. Ecological fieldwork methods (Essential environmental science: methods & techniques: Ch 8). in Essential Environmental Science: Methods & Techniques (Routledge, 1996).

21.

Rice, S. Sampling in Geography (Key methods in geography: Ch 17). in Key methods in geography (SAGE, 2016).

22.

Visionlearning | Process of Science | Data Analysis and Interpretation. http://www.visionlearning.com/en/library/Process-of-Science/49/Data-Analysis-and-Interpretation/154.

23.

Field, R. Data handling & presentation (Key methods in geography: Ch 21). in Key methods in geography (eds. Clifford, N. J., Cope, M., Gillespie, T. & French, S.) (SAGE, 2016).

24.

Visionlearning | Process of Science | Using Graphs and Visual Data in Science. http://www.visionlearning.com/en/library/Process-of-Science/49/Using-Graphs-and-Visual-Data-in-Science/156.

25.

Berinato, S. Good charts: the HBR guide to making smarter, more persuasive data visualizations. (Harvard Business Review Press, 2016).

26.

Few, S. Show me the numbers: designing tables and graphs to enlighten. (Analytics Press, 2012).

27.

Tufte, E. R. The visual display of quantitative information. (Graphics Press, 2013).

28.

Improving your graph: a case study. http://baryon.be/blog/2016/08/improving-your-graph-a-case-study/.

Watts, S. & Halliwell, L. Social surveys (Essential environmental science: methods & techniques: Ch 9). in Essential environmental science: methods & techniques (Routledge, 1996).

30.

Parfitt, J. Questionnaire design & sampling (Methods in Human Geography: Ch 6). in Methods in human geography: a guide for students doing a research project (Pearson/Prentice-Hall, 2005).

31.

McLafferty, S. L. Conducting Questionnaire Surveys (Key methods in geography: Ch 6). in Key methods in geography (eds. Clifford, N. J., Cope, M., Gillespie, T. & French, S.) (SAGE, 2016).

32.

Visionlearning | Process of Science | Scientific Ethics. http://www.visionlearning.com/en/library/Process-of-Science/49/Scientific-Ethics/161.

33.

Resnik, D. B. What is Ethics in Research and Why is it Important? http://www.niehs.nih.gov/research/resources/bioethics/whatis/.

34

Oliver, P. The student's guide to research ethics. (Open University Press, 2010).

35.

Marder, M. P. Overview of experimental analysis and design (Research methods for science: Ch 2). in Research methods for science (Cambridge University Press, 2011).

Leedy, P. D. & Ormrod, J. E. Planning your research project (Practical research: planning and design: Ch 5). in Practical research: planning and design (Prentice Hall, 2015).

37.

Risk assessments (Royal Geographical Society guidance). https://www.rgs.org/in-the-field/fieldwork-in-schools/fieldwork-safety-and-planning/risk-ass essments/.

38.

Risk Assessment | STEM. https://www.stem.org.uk/elibrary/resource/31202.

39.

Jensen, J. R. & Jensen, R. R. Georeferencing (Introductory geographic information systems: Ch 2). in Introductory geographic information systems vol. Pearson series in geographic information science (Pearson, 2013).

40.

Kennedy, M. D. Some concepts that underpin GIS (Introducing geographic information systems with ArcGIS: a workbook approach to learning GIS: Ch 1). in Introducing geographic information systems with ArcGIS: a workbook approach to learning GIS (John Wiley & Sons, 2013).

41.

Monmonier, M. S. Elements of the map (How to lie with maps: Ch 2). in How to lie with maps (University of Chicago Press, 1996).

42.

Monmonier, M. S. Map generalization: little white lies and lots of them (How to lie with maps: Ch 3). in How to lie with maps (University of Chicago Press, 1996).

Kennedy, M. Products of a GIS: Maps and Other Information (Introducing geographic information systems with ArcGIS: a workbook approach to learning GIS: Ch 3). in Introducing geographic information systems with ArcGIS: a workbook approach to learning GIS (John Wiley & Sons, 2013).

44.

Jones, C. (Kate) E. Cartographic Theory and Principles. in Interacting with geospatial technologies 37–65 (John Wiley, 2010). doi:10.1002/9780470689813.ch3.

45.

Haklay, M. Colour figures for Cartographic Theory and Principles (Interacting with Geospatial Technologies: Ch 3). in Interacting with geospatial technologies c1–c16 (John Wiley, 2010). doi:10.1002/9780470689813.ins.

46.

Wood, D. & Fels, J. The natures of maps: cartographic constructions of the natural world. (University of Chicago Press, 2008).

47.

Brotton, J. A history of the world in twelve maps. (Allen Lane, 2012).

48.

Longley, P., Goodchild, M. F. & Maguire, D. J. Georeferencing: (Geographic information science & systems: Ch 4). in Geographic information science & systems (Wiley, 2015).

49.

Longley, P., Goodchild, M. F. & Maguire, D. J. Geographic information: science, systems and society (Geographic information science & systems: Ch 1). in Geographic information science & systems (Wiley, 2015).

Jensen, J. R. & Jensen, R. R. Introduction to GIS (Introductory geographic information systems: Ch 1). in Introductory geographic information systems vol. Pearson series in geographic information science (Pearson, 2013).

51.

Jensen, J. R. & Jensen, R. R. Spatial data models and databases (Introductory geographic information systems: Ch 5). in Introductory geographic information systems vol. Pearson series in geographic information science (Pearson, 2013).

52.

Longley, P., Goodchild, M. F. & Maguire, D. J. Representing geography (Geographic information science & systems: Ch 3). in Geographic information science & systems (Wiley, 2015).

53.

Baban, S. M. J. & Flannagan, J. Developing and Implementing GIS-assisted Constraints Criteria for Planning Landfill Sites in the UK. Planning Practice and Research **13**, 139–151 (1998).

54.

Thornton, L. E., Pearce, J. R., Macdonald, L., Lamb, K. E. & Ellaway, A. Does the choice of neighbourhood supermarket access measure influence associations with individual-level fruit and vegetable consumption? A case study from Glasgow. International Journal of Health Geographics 11, (2012).

55.

Bagan, H. & Yamagata, Y. Landsat analysis of urban growth: How Tokyo became the world's largest megacity during the last 40years. Remote Sensing of Environment **127**, 210–222 (2012).

56.

Comber, A., Brunsdon, C. & Green, E. Using a GIS-based network analysis to determine

urban greenspace accessibility for different ethnic and religious groups. Landscape and Urban Planning **86**, 103–114 (2008).

57.

Lovett, A. A., Parfitt, J. P. & Brainard, J. S. Using GIS in Risk Analysis: A Case Study of Hazardous Waste Transport. Risk Analysis **17**, 625–633 (1997).

58.

Brown, L. J., Lamhonwah, D. & Murphy, B. L. Projecting a spatial shift of Ontario's sugar maple habitat in response to climate change: A GIS approach. The Canadian Geographer / Le Géographe canadien **59**, 369–381 (2015).

59.

Liang, Y. & Liu, L. Modeling urban growth in the middle basin of the Heihe River, northwest China. Landscape Ecology **29**, 1725–1739 (2014).

60.

Kneale, P. E. Practical reports, laboratory and field notebooks (Study skills for geography, earth and environmental science students: Ch 18). in Study skills for geography, earth and environmental science students (Hodder Education, 2011).

61.

Leedy, P. D. & Ormrod, J. E. Preparing the research report (Practical research: planning and design: Ch 12). in Practical research: planning and design (Pearson, 2015).

62.

Bradford, M. Writing essays, reports and dissertations (Key methods in geography: Ch 31). in Key methods in geography (eds. Clifford, N. J., Cope, M., Gillespie, T. & French, S.) (SAGE, 2016).

63.

Kneale, P. E. Effective essay skills (Study skills for geography, earth and environmental science students: Ch 17). in Study skills for geography, earth and environmental science students (Hodder Education, 2011).

64.

Greetham, B. How to write better essays. (Macmillan Education, 2018).

65.

Shields, M. Essay writing: a student's guide. vol. SAGE study skills (SAGE, 2010).

66.

The most commonly misused words and phrases in scientific writing | Adams Kaul. https://adamskaul.wordpress.com/2014/05/12/201452the-most-commonly-misused-words-and-phrases-in-scientific-writing/.

67.

Top Ten style checks for PhDs or creative non-fiction writers. https://medium.com/advice-and-help-in-authoring-a-phd-or-non-fiction/top-ten-style-checks-for-phds-or-creative-non-fiction-writers-9ca63542f5d#.yrmib5szu.

68.

Lesson 3: Scientific Writing - Concision and Simplicity (Duke University). https://cgi.duke.edu/web/sciwriting/index.php?action=lesson3.

69.

Style Points for Scientific Writing (University of Connecticut Writing Center).

70.

Scientific Writing Resource - Duke University. https://cgi.duke.edu/web/sciwriting/index.php?action=passive\_voice.

Effective Writing | Learn Science at Scitable. https://www.nature.com/scitable/topicpage/effective-writing-13815989.

72.

Active vs. Passive Voice in Scientific Writing.