

Environmental Protection

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C O N N E X I O N S

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Table of Contents

1 a general knowledge course	
1.1 Nature of the Internship	1
1.2 To discuss the role of rivers in nature	3
1.3 an ecological crisis	10
Attributions	13

Chapter 1

a general knowledge course

1.1 Nature of the Internship¹



NOTE: This module has been peer-reviewed, accepted, and sanctioned by the National Council of Professors of Educational Administration (NCPEA) as a scholarly contribution to the knowledge base in education administration. In addition to publication in the Connexions Content Commons, this module is part of a larger published Collection entitled Guidelines for Interns, Mentors, and Home School Principals, 2009-2011,² and is also published in the International Journal of Educational Leadership Preparation.³

1.1.1 Nature of the Internship

You must have a variety of substantive leadership, administrative, and supervisory experiences in diverse settings during the two years of the internship. The operational words in this statement are variety, substantive, and diverse. You must attend closely to each in your internship.

Variety is demonstrated by the different leadership, administrative, and supervisory experiences that you have in the internship. The objectives have been developed to guide you into experiences where you will take leadership and followership roles, perform administrative-managerial tasks, and lead projects involving others. The objectives are classified in Table 1 by NPBEA/ELCC standard element. You will note that the objectives include all of the standard elements and include the essential aspects of the everyday work of administrators and supervisors. Your mentor and you may develop additional objectives or revise these objectives to meet the related standards or elements and to assure that you are participating in a variety of learning experiences across the areas of administration and supervision.

Table 1

NPBEA/ELCC Standard Elements and Assessed Objectives in the Internship

¹This content is available online at <<http://cnx.org/content/m18753/1.4/>>.

²<http://cnx.org/content/m18753/latest/> <http://cnx.org/content/col10609/latest/>

³<http://ijelp.expressacademic.org>

NPBEA/ELCC standard element assessed	Objective(s)[performance(s)]assessed
1.1 Creating a vision	1, 34
1.2 Articulate a vision	2, 34
1.3 Implement a vision	1, 34
1.4 Steward a vision	34
1.5 Promote community involvement in the vision	34
2.1 Promote positive school culture	6, 32
2.2 Provide an effective instructional program	4, 5, 16, 17, 18
2.3 Apply best practice to student learning	2, 3
2.4 Design comprehensive professional growth plans	14
3.1 Manage the organization	12, 13, 27, 28, 29, 30, 31
3.2 Manage operations	26
3.3 Manage resources	11, 15, 18, 24, 42, 44
4.1 Collaborate with families and other community members	19, 21, 39
4.2 Respond to community interests and needs	7, 8, 9
4.3 Mobilize community resources	20, 22, 37, 38
5.1 Acts with integrity	45
5.2 Acts fairly	45
5.3 Acts ethically	45
6.1 Understand the larger context	1, 36, 43
6.2 Respond to the larger context	32, 37
6.3 Influence the larger context	22, 38
Dispositions	33
Application of technology	18
Diversity	6, 32, 33

Table 1.1

Your internship has a diversity of settings (see Table 2). Note the addition of the schools with diverse populations. If you live and work in a rural area, ask your mentor to help you locate experiences in an urban center. If you live and work in an urban center, ask your mentor to help you locate experiences in a rural area. Find experiences that take you into settings where you will work with diverse teacher and student populations.

Table 2

Internship Settings and Associated Clock Hours

Setting		
School	Central office	Community agency
ElementaryMiddleSecondaryCareer and technical(120 clock hours at the primary site—minimum, 40 hours at each of the other sites—minimum)Schools with diverse populations of teachers and students—40 hours minimum	(40 clock hours—minimum)	Family protective servicesSocial servicesOther agencies(30 clock hours—minimum)(These experiences must be in agencies and organizations that provide services to children or families.)

Table 1.2

The extent of your engagement in the internship will depend on your mentor's willingness to involve you in the important work of the school or division and your ability and willingness to perform. You will be under continual assessment by your mentor and campus supervisor. As you develop confidence, ability, and willingness to perform, the tasks that you will be asked to do will increase in number and complexity. So, be prepared to take on additional work when you are requested to do so. It is part of the internship experience. Referencing Table 1 from time to time will help you to keep track of the work that you are doing and will provide assurance to you that you are covering the range of tasks in administrative and supervisory positions.

1.2 To discuss the role of rivers in nature⁴

1.2.1 NATURAL SCIENCES

1.2.2 The earth and beyond

1.2.3 Rivers and their catchment areas

1.2.4

1.2.5 EDUCATOR SECTION

1.2.6

1.2.7 Memorandum

Assignment 10:

1. Assignment clear in module. Assignment can lead to an exhibition of collected samples, photos and notebooks.

Follow-up visit for cleaning up is recommended.

Assignment 11:

Listen at least to Wendy Oldfield's song "Acid Rain". Learners take the lead and answer the following question:

"Which environmental issues are addressed and what solutions do we have for the problems?"

Assignment 12:

Help the learners with a framework, e.g.

- The river as an environment wherein plants and animals can live

- light

⁴This content is available online at <<http://cnx.org/content/m20260/1.1/>>.

- visibility
- oxygen
- no poison
- protection against temperature changes

- Life in a river (above-mentioned environment)

- types of plants
- types of animals
- mutual dependence of plants and animals

1.2.8 LEARNER SECTION

1.2.9 Content

1.2.10 ACTIVITY: To discuss the role of rivers in nature [LO 1.1, LO 1.2]

IN THE LEARNING UNIT DEALING WITH FOSSILS WE SAW THAT THE DRY KAROO USED TO BE A MARSHLAND THAT COVERED APPROXIMATELY THREE-QUARTERS OF THE SURFACE AREA OF SOUTH AFRICA. IT IS CLEAR THAT FRESH WATER HAS PLAYED AN IMPORTANT ROLE IN THE LIVES OF PLANTS AND ANIMALS AS WELL AS PEOPLE FOR MILLIONS OF YEARS. A RIVER IS MORE THAN WATER!

- Rain absorbs carbon dioxide and oxygen when it travels through the atmosphere. While it travels down a mountain slope, tiny plant particles from the vegetation are also caught up in it. In this way water takes up sufficient soluble nutrients to sustain animals that live in water, as well as plants.
- Rivers are generally endangered. The fact that people need water for survival, places a great deal of pressure on rivers to meet this need and to carry away waste material.
- Rivers are not drainage conduits for the removal of waste: they are complex systems.
- Different plants and animals exist along the different reaches of a river. These organisms utilise the natural materials contained in the river in the natural process of their lives. This ensures that the water in the river is purified continually. Rivers are also able to absorb much pollution.
- This unique characteristic of rivers is largely destroyed by excessive pollution, damming up of water and canalisation.

- The Department of Water Affairs and Forestry acknowledges that rivers are living systems that should be conserved. Healthy rivers are attractive features that provide us with water and make it possible to save money. The capacity for self-purification that is observed in rivers can make it possible to save thousands of rand that would have to be spent on building purification projects, provided that we protect this capacity.
- Rivers need people to protect their interests and to fight for them.

River catchment areas

- The catchment area of a river, is the area between the mountain peaks where the river has its source and the coast where the river mouth is. The area that is drained by a single river forms its catchment area.
- The characteristic feature of any river is determined by the activities (human and natural) that take place in the catchment area. All the water that is precipitated as snow, dew, mist and rain in any particular catchment area flows together in a river. Only a very small quantity of this water is lost through evaporation.

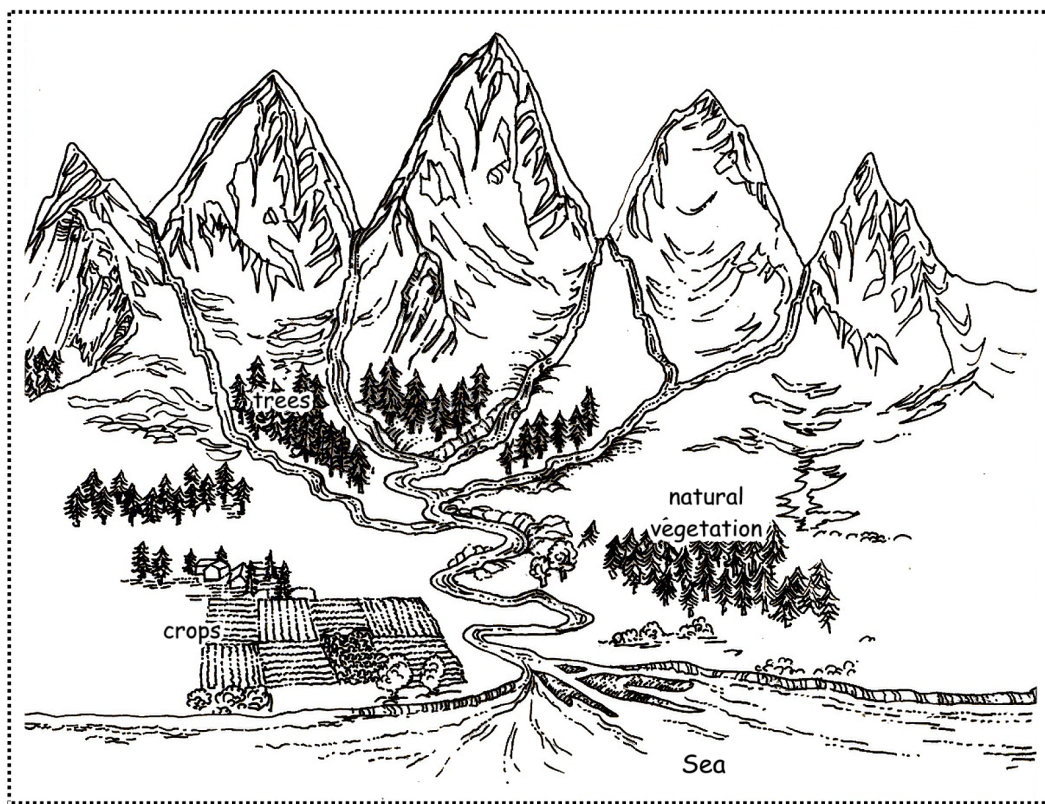


Figure 1.1

1.2.10.1 A catchment area

- The sizes of catchment areas vary greatly. Most of South Africa's large storage dams get their water from such mountain catchment areas.

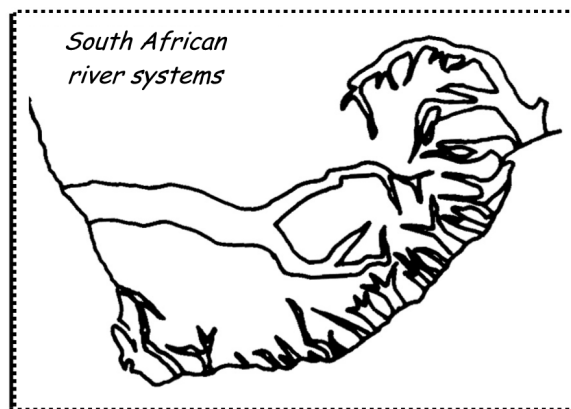


Figure 1.2

There is a close relationship between soil conservation and the use of water from catchment areas. Dense vegetation prevents soil erosion to a large extent. Where the vegetation is removed, especially on steep slopes, rainwater flows fast and the danger that a flash flood can occur is increased. This happened in 1981, when a flood caused serious damage to Laingsburg. When fertile topsoil is removed, storage dams and river mouths become silted up as the soil is deposited in these places.

The fynbos kingdom, which is unique to the Western Cape, is threatened by urbanisation, planting of forests and deforestation in the catchment areas. It is important to protect catchment areas. Most of the plants in the fynbos kingdom are small, hardy and spiky to reduce loss of water during the dry summer months. Some well-known plants from this kingdom are the Ericas, Proteas and the Restios, which are grass-like members of the reed family.

- Invader plants like pine trees have been planted in many places in the catchment areas. Amongst other things, pine trees, together with hakea and Australian acacia species, disturb the natural balance of the river ecosystems of the Western Cape.

FACTORS THAT AFFECT THE QUALITY OF THE WATER IN THE RIVERS.

- All of us must share the responsibility of using water resources responsibly. Every person can make a contribution by becoming involved in our own communities. In this way we can also assist governing bodies and make it easier for them to function.
- All of us need inland water for personal use and we must remember that overpopulation and mismanagement of our limited resources is not a new problem. The Greek philosopher Plato was already complaining about environmental degradation two thousand years ago.
- **POLLUTION** refers to any substance that has a harmful effect on the natural environment. The pollutants might be in the atmosphere, or may occur in water that flows through any part of the catchment area. Pollutants may be very difficult to identify and control.
- **ARTIFICIAL FERTILISERS** are used by farmers to ensure bigger harvests. These nutrients are washed away in rivers. This encourages the growth of algae, which reduces the amount of oxygen in the water.
- **RUBBISH** like tins and plastic bags block up small streams.

- **SEWERAGE** water is rich in organic substances and nutrients that also reduce oxygen levels in the water during decomposition. This destroys many species of life that occur in rivers.
 - **HEAT POLLUTION** is caused by pumping warm water into rivers and lakes.
 - **TOXIC CHEMICALS** and heavy metals build up in living tissue and increase over time. This inevitably leads to the death of numbers of plants and animals.
 - **SOLID WASTE MATERIALS** like soil particles from eroded land, mining activities, coal, dust and builder's rubble also flow along down streams. This suffocates water creatures and their eggs, block up the gills of fish and buries food sources.
-
- **SALINISATION** indicates an increase of natural minerals in water or in the soil. Fresh water becomes saltier when minerals like sodium, potassium, magnesium, chloride, etc. build up in the water because of evaporation. Global calculations show that one million hectares of soil become unsuitable for agricultural use annually because of salinisation.
-
- Rivers do have the capacity to be restored, but the degree of pollution plays an important role in the extent to which complete restoration is possible.



Figure 1.3

“Self-restoration” of a river

z	Problems	Serious problems	On the way to recovery	Clear water
Much life oxygen No smell Clean water	Fungi develop Little oxygen Slightly smelly Grey or dark water	Organisms that do not need oxygen No oxygen A smell of rotten eggs Black water	A little sign of life A little oxygen Slightly smelly Water becoming clearer	Much life Sufficient oxygen No smell Clear water

Table 1.3

- A river can regain its original unpolluted condition provided that it is not diverted into a canal and that interference by people is not too serious.

ASSIGNMENT 10

Go for a walk along a river. What do you observe? Collect samples of shells, feathers, plants, etc. from along the route, but take care to avoid doing damage. Find out whether some parts of the river are more polluted than other parts and whether there are parts that have been restored after being exposed to pollution.

- Write notes in a notebook, take photographs and present your findings to the class.

If you identify an area where the levels of pollution are high, you could also return to it and launch a cleaning operation.



Figure 1.4

ASSIGNMENT 11

Listen to the song “Acid Rain” by Wendy Oldfield. There are more songs that have messages concerning the environment. Draw up a list of such songs and have a class discussion on the issues that are addressed in them.

ASSIGNMENT 12

- Write a composition (280 words) on life in a polluted river.

1.2.11 Assessment

Learning Outcome 1: The learner will be able to act confidently on curiosity about natural phenomena, and to investigate relationships and solve problems in scientific, technological and environmental contexts.

Assessment Standard 1.1: We know this **when the learner** plans investigations;

Assessment Standard 1.2: We know this **when the learner** conducts investigations and collects data.

1.3 an ecological crisis⁵

1.3.1 GEOGRAPHY

1.3.2 Grade 5

1.3.3 POPULATION: DISTRIBUTION AND DENSITY

1.3.4 Module 27

1.3.5 NATURE CONSERVATION AREAS AND ENVIRONMENT

The United Nations Organisation's ideal is that countries should manage 10% of their territory as nature conservation areas. In South African terms this would include National Parks (like the Kruger National Park), reserves that are managed by the Departments of Nature Conservation of the different provinces, reserves that are under municipal control, as well as land owned privately, e.g. by mining companies and other organisations and farmers who manage a section of their land as reserves, game parks and game farms.

South Africa is not doing too well in this field, because only 7% of the country was managed as nature conservation areas in 2000. This situation may be improving as more land is continually being added to land that has already been set aside for conservation.

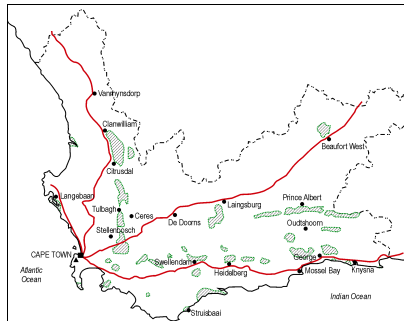


Figure 1.5

Land use in the Western Cape

⁵This content is available online at <<http://cnx.org/content/m22345/1.1/>>.

1.3.6 ACTIVITY 1:

1.3.7 TO IDENTIFY IMPORTANT NATURE CONSERVATION AREAS IN SOUTH AFRICA

1.3.8 [LO 2.1]

Complete the table:

The name of the National Park closest to your own town or city.	A description of the nearest provincial nature conservation area.
Does your municipality manage a proclaimed nature conservation area? Describe it.	Provide the name of a private nature conservation area near you.

Table 1.4

Nature conservation areas do not necessarily have to focus on the protection of plants or animals. Mountain catchment areas are frequently managed to protect vegetation so that rainwater will soak into the soil to supplement the underground water supply instead of flowing into the sea.

It should be clear why the nature conservation areas of any country would be the parts of the country with the lowest population density.

What about the people and the environment?

Mining and industry have many advantages for the country, but thorough consideration should be given to their effect on people and the environment.

In large mining and industrial areas, dust and gases are released into the air, and this has an effect on the people who work at the mines and in the industrial areas, and on the environment!

1.3.9 ACTIVITY 2:

1.3.10 TO FIND OUT HOW PEOPLE AND THEIR ENVIRONMENT INFLUENCE ONE ANOTHER

1.3.11 [LO 2.3]

- Make a list of the possible dangers to people and the problems for the environment in an area such as South West Mpumalanga with all its coal and platinum mines:

Dangers that threaten people:

Dangers that threaten the environment:

1.3.12 Assessment

LO 2

GEOGRAPHICAL KNOWLEDGE AND UNDERSTANDING

The learner will be able to demonstrate geographical and environmental knowledge and understanding.

We know this when the learner:

2.1 identifies and describes major physical features of South Africa, including those of the home province [people and places];

2.2 identifies links between natural resources and economic activities in South Africa [people and resources];

2.3 describes ways in which the physical environment influences human activity and how human activity is influenced by the physical environment [people and the environment]

1.3.13 Memorandum

ACTIVITY 2

- Dangers: - Poor health - Lower standard of life and life expectancy
- Problems: - Gases (air-pollution) - Polluted water - Soil absorbs toxic waste - Has an effect on quality of agricultural products

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