

## **Career Profile: High School Science Teacher**

You may have had direct exposure to one or more high school science teachers, and have been inspired, confused or depressed by that learning experience. Learning science requires hard work in order to understand the concepts, laws and principles that can unlock a fascinating world, and deepen our understanding of reality. If you were lucky enough to have been taught by a dedicated science teacher, you will understand what a difference a good science teacher can make in the lives of his/her students. We are frequently reminded that South Africa needs people with a thorough background in every aspect of science and students with sound scientific knowledge and skills can contribute significantly to growth and development in all areas of endeavour in South Africa.

Teaching science at grade 11 and 12 levels requires you to develop a thorough understanding of both physics and chemistry as well as the ability to communicate effectively with your students. You cannot take it for granted that the students will come to class with a burning curiosity about science. You will have to capture their imagination, create an interest, while keeping up with the demands of the curriculum.

Typical activities in a day in the life of a high school science teacher include:

- preparing lesson plans for students based on relevant scientific methods
- preparing and presenting demonstrations and experiments in the science laboratory
- facilitating learning activities that encourage critical and scientific thinking and behaviour
- preparing laboratory activities for the students to carry out under supervision
- keeping the science laboratory in good running order
- setting appropriate assignments and tests
- marking the students' efforts and giving supportive feedback
- keeping abreast of current developments in science
- finding out about additional resources you can draw on to complement your lessons and improve the students' knowledge and competence
- setting and marking examinations.

# Education Requirements

## National Senior Certificate (NSC)

For a career in Science teaching at high school level students are advised to select English, Science and Mathematics, and to add to this a selection from the *designated* subjects. These are subjects that are particularly suitable for tertiary study.

## Bachelor Degree

### **Bachelor of Education – (4 years)**

A four year degree programme that focuses on developing knowledge and skills for entry into teaching.

### **Bachelor of Science (Physics/Chemistry) – 3 years + Post Graduate Certificate in Education (PGCE) (1 year)**

#### **Offered at:**

##### **North-West University**

[Faculty of Education](#)<sup>1</sup> (Mafikeng) and [School of Curriculum-based Studies](#)<sup>2</sup> (Potchefstroom)

[School of Physical and Chemical Sciences](#)<sup>3</sup>

##### **University of Johannesburg**

[Faculty of Education](#)<sup>4</sup> ( Information on Career and Academic Development)

[Faculty of Science](#)<sup>5</sup> (Information Brochure)

##### **University of Limpopo**

[School of Education](#)<sup>6</sup> (including PGCE)

[Bachelor of Science](#)<sup>7</sup>

##### **University of Pretoria**

[Department of Science, Mathematics and Technology Education](#)<sup>8</sup>

[Faculty of Natural and Agricultural Sciences](#)<sup>9</sup> (Undergraduate Programmes)

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<sup>1</sup> [http://www.uniwest.ac.za/faculties/edu/Schools/school\\_graduates.html](http://www.uniwest.ac.za/faculties/edu/Schools/school_graduates.html)

<sup>2</sup> [http://www.puk.ac.za/fakulteite/opvoed/sks/index\\_e.html](http://www.puk.ac.za/fakulteite/opvoed/sks/index_e.html)

<sup>3</sup> [http://www.puk.ac.za/opencms/export/PUK/html/fakulteite/natuur/phys/Bursary\\_brochure.pdf](http://www.puk.ac.za/opencms/export/PUK/html/fakulteite/natuur/phys/Bursary_brochure.pdf)

<sup>4</sup> <http://www.uj.ac.za/LinkClick.aspx?fileticket=KNPwU/97fVw=&tabid=16134>

<sup>5</sup> <http://www.uj.ac.za/LinkClick.aspx?fileticket=8FGKYNNYBc8=&tabid=739>

<sup>6</sup> [http://www.ul.ac.za/index.php?Entity=sch\\_edu\\_prog](http://www.ul.ac.za/index.php?Entity=sch_edu_prog)

<sup>7</sup> [http://www.ul.ac.za/index.php?Entity=spms\\_aca\\_pro](http://www.ul.ac.za/index.php?Entity=spms_aca_pro)

<sup>8</sup> <http://web.up.ac.za/default.asp?ipkCategoryID=2689>

<sup>9</sup> <http://web.up.ac.za/default.asp?ipkCategoryID=1233&sub=1&parentid=48&subid=1232&ipklookid=11>

### University of South Africa (UNISA)

[Bachelor of Education](#)<sup>10</sup> (Further Education and Training Phases)

[Bachelor of Science](#)<sup>11</sup>

[PGCE](#)<sup>12</sup> (Postgraduate Diploma and Certificate in Education)

### University of Venda

[School of Mathematics and Natural Science](#)<sup>13</sup> (Physics Department)

### University of the Witwatersrand

[School of Education](#)<sup>14</sup>

[School of Physics](#)<sup>15</sup> (Undergraduate BSc Degree)

[Bachelor of Education \(B Ed\)](#)<sup>16</sup>

[Postgraduate Certificate in Education \(PGCE\)](#)<sup>17</sup>

After qualifying with a BEd or PGCE, you will need to register with the [South African Council for Educators](#)<sup>18</sup> and for appointment as a teacher in a South African school on Form REQV14.

## Possible Employers

- Provincial departments of education
- Public schools
- Private schools

## Find out more

Find out more about science teaching in high school:

- [South African Environmental Observation Network](#)<sup>19</sup>.
- [Johannesburg's Technology Research Activity Centre](#)<sup>20</sup>.
- Some action to address the [shortage of scientists and mathematicians](#)<sup>21</sup> in Africa.
- An interesting initiative supporting [science teaching](#)<sup>22</sup>.
- Some useful [links for science teachers](#)<sup>23</sup>.
- Telkom has introduced a new [Educator of the Year award](#)<sup>24</sup>.

<sup>10</sup> [http://brochure.unisa.ac.za/brochure/showprev.aspx?d=l\\_2\\_3&f=p\\_02615](http://brochure.unisa.ac.za/brochure/showprev.aspx?d=l_2_3&f=p_02615)

<sup>11</sup> [http://brochure.unisa.ac.za/brochure/showprev.aspx?d=l\\_4\\_2&f=p\\_02089](http://brochure.unisa.ac.za/brochure/showprev.aspx?d=l_4_2&f=p_02089)

<sup>12</sup> [http://brochure.unisa.ac.za/brochure/showlist.aspx?d=l\\_2\\_4](http://brochure.unisa.ac.za/brochure/showlist.aspx?d=l_2_4)

<sup>13</sup> [http://www.univen.ac.za/math\\_natural\\_sciences/physics.html](http://www.univen.ac.za/math_natural_sciences/physics.html)

<sup>14</sup> <http://web.wits.ac.za/Academic/Humanities/Education/>

<sup>15</sup> <http://web.wits.ac.za/Academic/Science/Physics/Students/Undergraduate.htm>

<sup>16</sup> <http://web.wits.ac.za/Academic/Humanities/Education/Undergraduate/BEd.htm>

<sup>17</sup> <http://web.wits.ac.za/Academic/Humanities/Education/Diplomas/PGCE.htm>

<sup>18</sup> <http://www.sace.org.za/index.php>

<sup>19</sup> <http://www.saeon.ac.za/eNewsletter/Online/2009/february/doc13>

<sup>20</sup> <http://www.joburg.org.za/content/view/2249/199/>

<sup>21</sup> <http://www.scienceinafrica.co.za/2009/september/aims.htm>

<sup>22</sup> [http://www.mindset.co.za/News/Mintek\\_and\\_Mindset\\_enhance\\_school\\_science\\_learning\\_experience](http://www.mindset.co.za/News/Mintek_and_Mindset_enhance_school_science_learning_experience)

<sup>23</sup> <http://groups.google.co.za/group/science-teaching-alive/web/Useful+contact+information?pli=1>

<sup>24</sup> <http://www.itnewsafrika.com/?p=2698>

- An interesting outline of problems and [challenges facing science teachers in South Africa](#)<sup>25</sup>.
- Views of a Danish science teacher, who has taught in Tanzania and Botswana, on [what makes a science teacher successful](#)<sup>26</sup>.
- Outline of [teaching careers and requirements](#)<sup>27</sup>.
- Included on this website is a table giving a list of [approved university subjects and teaching subjects](#)<sup>28</sup>.
- The [South African Council for Educators](#)<sup>29</sup>.

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<sup>25</sup> <http://www.scienceinafrica.co.za/scicrisis.htm>

<sup>26</sup> <http://www.scienceinafrica.co.za/2001/november/teaching.htm>

<sup>27</sup> [http://www.careerplanet.co.za/\\_sectors/teaching](http://www.careerplanet.co.za/_sectors/teaching)

<sup>28</sup> <http://web.wits.ac.za/Academic/Humanities/Education/Diplomas/PGCE.htm>

<sup>29</sup> <http://www.sace.org.za/index.php>

## Are you suited to this career?

This quick quiz can help you to identify whether you are suited for this career.

Quiz	YES	NO
Did you do achieve a good pass in Science and Mathematics?		
Do you like the idea of teaching young people and helping them discover the fascinating world of science?		
Do you keep informed about scientific and technological developments?		
Are you approachable and do people consider you to be a good listener?		
Are you imaginative and creative?		
Are detail and accuracy in your work important to you?		
Do you persevere when faced with a problem?		
Can you communicate well in speech and in writing?		
Do you work well with other people and communicate clearly with them?		
Are you able to cope with heavy pressures on your time?		

If you have mainly yes answers it may be an indication that this is a career to consider.