Acacia International School Science Curriculum Framework
Zambian Curriculum Coverage Document

This documents contains details of how the full Zambian Science Curriculum Grades 4 to 7 is covered by the Acacia International School Science Curriculum Framework.

This document contains the full Zambian Grade 4 to 7 curriculum framework, arranged by Grade.

There are many similarities in content between the two curricula. However in several cases where the learning objectives are similar, the grade at which the content was delivered differs. In such cases we have tried to follow the timing of the Cambridge curriculum, so as to ensure the development of deep subject knowledge and coherent progression. This is why you might find, for example, that an objective from Grade 7 of the Zambian syllabus is mapped to an objective at Grade 5 in the Acacia Curriculum Framework, or visa versa. Deep subject knowledge is important in order to develop the ability to solve problems, to apply understanding to new situations and to enable learners to progress to the next stage. Our frameworks have been carefully designed to ensure students are fully prepared for success in the Zambian Grade 7 exams.

After each Zambian learning objective (LO) in this document, there is an Acacia curriculum code in brackets. This is the Acacia curriculum reference, and shows where that LO is covered by the Acacia curriculum. For example:

4.1.1 Eyes (A5Pl6a)
4.1.1.1 Identify the basic parts of an Eye.
4.1.1.2 State the function of eyes

Shows that the Zambian objective 4.1.1 is covered by the Acacia Curriculum objective with the code A5P16a), which means it covered at Grade 5, subject: physics, topid: light. Where it has been judged that an objective from the Zambian curriculum would most appropriately be taught as part of the Personal, Social and Health Education (PSHE) or the Social Studies (Geography) framework, this has been indicated in this document with the relevant curriculum name in brackets after the LO.

Grade 4

4.1.0 The human body

4.1.1 Eyes (A5Pl6a)
4.1.1.1 Identify the basic parts of an Eye.
4.1.1.2 State the function of eyes

4.1.2 The Ear (**A4Ps2a)**
4.1.2.1 Identify the basic parts of an ear.
4.1.2.2 State the function of ears.

4.1.3 The skin (A6Bh5)
4.1.3.1 Identify the parts of the skin.
4.1.3.2 State the functions of the Skin.

4.2.0 Health

4.2.1 Personal Hygiene **(PHSE framework)**
4.2.1.1 Describe the care for eyes
4.2.1.2 Describe the care for ears
4.2.1.3 Describe the care of the feet.
4.2.1.4 Describe the care for the skin

4.2.2 Water in the body (**A4Bh6)**
4.2.2.1 Explain the importance of water in the body.
4.2.2.2 Explain the effects of dehydration.
4.2.2.3 Explain how to prevent and treat Dehydration

4.2.3 Medicines (C4Bh5)
4.2.3.1 Identify traditional and conventional medicines for common ailments.

4.3.0 The Environment

4.3.1 Forests (**C6Be2a)**
4.3.1.1 Explain the importance of forests to people and other forms of life.
4.3.1.2 Explain the effects of human activities on forests.
4.3.1.3 Describe ways of conserving Forests.

4.3.2 Game Management Areas (GMA) (**A4Be2b)**
4.3.2.1 Explain how to control the wild animal population in the GMA
4.3.2.2 Explain threats to wildlife
4.3.2.3 State the importance ofconserving wildlife.

4.3.3 Fertile Soils (**A5Bp9)**
4.3.3.1 Classify soil samples according to types
4.3.3.2 Describe how soil fertility can be improved.

4.3.3.3 Explain why natural methods of improving soil fertility are better than artificial ones

4.3.4 Pollution (**A4Be4)**
4.3.4.1 Identify different types of Pollution. (C4Be3)
4.3.4.2 Identify the sources pollution in the community (C4Be3)
4.3.4.2 Explain ways of conserving natural resources.

4.4.0 Plants and Animals

4.4.1 Flowering plants
Describe the functions of
parts of the flowering plant. (C5Bp6)

4.4.2 Plant
Growth
4.4.2.1 Identify conditions necessary for seed Germination (C5Bp4)
4.4.2.2 Investigate factors necessary for plant growth (C5Bp1)
4.4.2.3 Grow maize seeds to Maturity (C5Bp8)

4.4.3 Domestic Animals (**A6Be10)**
4.4.3.1 List the main animals kept by farmers in the community
4.4.3.2 Explain why some animals are kept in certain areas only.
4.4.3.3 State the importance of animals in the community.

4.5.0 Materials and energy

4.5.1 Forces (**A3Pf5)**
4.5.1.1 Name two types of force
4.5.1.2 Describe what forces can do
4.5.1.2 Explain ways in which animals or machines can help us to push or pull.

4.5.2 Air (**A4Cs6)**
4.5.2.1 Demonstrate the existence of air
4.5.2.2 Explain the uses of air.
4.5.2.2 Explain advantages and disadvantages of strong Winds.

4.5.3 Magnets (**C4Pm6)**
4.5.3.1 Explain what magnets do.
4.5.3.2 Identify different types of magnets
4.5.3.3 Identify magnetic & nonmagnetic materials.
4.5.3.4 Identify the poles of a magnet.
4.5.3.5 Demonstrate the laws of repulsion and attraction.
4.5.3.6 Relate the poles of a magnet to the earth's north and south Poles

4.5.4 Light (**A5PI9)**

4.5.4.1 Demonstrate the movement of light in a straight line
4.5.4.2 Investigate the passage of light through different materials.

Grade 5

5.1.0 The human body

5.1.1 The Heart (C6Bh6)
5.1.1.1 State the function of the heart.
5.1.1.2 Describe the structure of the heart
5.1.1.4 Demonstrate how to take the Pulse.

5.1.2 Puberty **(PSHE)**
5.1.1.1 Identify male and female parts of the body.
5.1.1.2 Describe changes that occur at puberty in human beings.

5.2.0 Health

5.2.1 Fresh Air **(A5Bh4)**
5.2.1.1 Explain the importance of good ventilation
5.2.1.2 Explain ways of providing good ventilation in buildings
5.2.1.3 Demonstrate ways of treating a suffocated person.

5.2.2 Air and water borne Diseases **(A5Bh1)**
5.2.2.1 Name common airborne and water borne diseases in Zambia
5.2.2.2 Describe symptoms of common air borne and water borne diseases.
5.2.2.3 Describe how to prevent air and water borne diseases

5.2.3 Malaria **(A6Bh2)**
5.2.3.1 Identify causes of malaria
5.2.3.2 State the symptoms of malaria
5.2.3.3 Describe ways of preventing and treating of malaria

5.2.6 HIV and AIDS and STIs **(A6Bh3)**
5.2.6.1 Describe ways in which STIs and HIV are transmitted.
5.2.6.2 Identify ways of preventing the spread of HIV and STIs
5.2.6.3 Describe the care and treatment for AIDS patients.

5.2.7 Harmful Substances and their Effects **(PSHE)**
5.2.7.1 Mention the substances which are harmful to the human body.
5.2.7.2 State the harmful effects of substance abuse on the body.
5.2.7.3 Explain the effects of drinking Alcohol

5.3.0 The Environment

5.3.1 Soil (**A5Np11)**
5.3.1.1 Explain the importance of water in the soil.
5.3.1.2 Mention ways in which water can be retained in the soil.
5.3.1.3 Demonstrate the drainage rates of soils.

5.3.2 Fertilizer (**A5Np10)**
5.3.2.1 Explain what organic and inorganic fertilizers are.
5.3.2.2 Demonstrate how to prepare compost manure.
5.3.2.3 Explain the importance of maintaining a supply of composted materials.
5.3.2.4 Explain the advantages and disadvantages of chemical fertilizers in Agriculture

5.4.0 Plants and Animals

5.4.1 Non Flowering Plants (A5Be2b)
5.4.1.1 Identify different types of nonflowering plants.
5.4.1.2 Identify use of ferns and fungi.

5.4.2 Invertebrate Animals (**A4Be2c)**
5.4.2.1 Identify the different types of invertebrate animals
5.4.2.2 Investigate the basic structure of insects
5.4.2.3 Explain the difference between insects and spiders
5.4.2.4 State ways in which insects are useful.

5.4.3 Pest and Parasites (**A5Np12)**
5.4.1.3 Identify common pests and parasites in the local environment.
5.4.1.4 Describe the harm caused by pests and parasites on plants and animals.
5.4.1.5 Explain how pests and parasites can be controlled using local plant materials and commercial chemicals.
5.4.1.6 Explain how chemical pesticides can cause harm to the environment.

5.5.0 Materials and energy

5.5.1 Electricity (**C6Pm6)**
5.5.1.1 State what electricity can do.
5.5.1.2 Identify sources of electricity
5.5.1.3 Identify electrical appliances used at home, school and in the community.
5.5.1.4 Identify good and bad conductors of electricity
5.5.1.5 Describe the uses of good and bad conductors of electricity.
5.5.1.6 Explain methods of conserving electricity in homes and schools.

5.5.2 Heat Conductors (**A4Cs5)**

5.5.2.1 Describe what heat is
5.5.2.2 Determine the temperature of human body; boiling water; and air inside and outside the classroom.
5.5.3.2 Distinguish good and bad conductors of heat.
5.5.3.3 Identify materials which are good insulators.
5.5.3.4 Explain the uses of good and bad conductors of heat.

5.5.3 Measuring Matter (**A6Pf5)**
5.5.4.1 Identify instruments used to compare how heavy objects are
5.5.4.2 Demonstrate the effect of gravity on objects
5.5.4.3 Distinguish between mass and weight

5.5.4 Volume (**A6Pf7)**
5.5.3.1 Identify various instruments and apparatus used to measure volume
5.5.3.2Measure the volume of liquids.
5.5.3.3 Measure the volume of various regular and irregular solid Objects.

5.5.5 Simple Machines (**A6Pf6)**

5.5.5.1 Explain what simple machine is.
5.5.5.2 Identify six kinds of simple machines used in the home and school.
5.5.5.3 Demonstrate the use of simple machines in doing work

Grade 6

6.1.0 The human body

6.1.1 (**A6Bh7)**
6.1.1.2 Describe the composition of blood.
6.1.1.3 Describe the functions of blood in the body.
6.1.1.2 Describe how blood circulates in the body.

6.1.2 Features of Pregnancy **(PSHE)**
6.1.2.1 Describe features of pregnancy.
6.1.2.2 Identify signs and symptoms of Pregnancy.

6.1.3 Health risks **(PSHE)**
6.1.3.1 Identify health and social consequences of teenage pregnancy
6.1.3.2 Identify health risks associated with early sexual debut.

6.2.0 Health

6.2.1 Food Nutrients (**A6Bh8)**
6.2.1.1 List foods which are good sources of vitamins and minerals.
6.2.1.2 Explain the importance of vitamins and minerals in a diet.
6.2.1.3 Explain the importance of eating a variety of foods.
6.2.1.4 Explain the importance of food labelling and packaging.
6.2.1.5 Identify common deficiency diseases in the communities.
6.2.1.6 Interpret children's clinic cards in relation to dietary Intake.

6.2.2 Effects of harmful Substance **(PSHE)**
6.2.2.1 Explain how substance abuse can ruin the lives of people.
6.2.2.2 Explain how substance addicts can be helped.

6.2.3 Living with HIV and AIDS (**PSHE)**
6.2.3.1 Describe the challenges of living with HIV and AIDS

6.3.0 The Environment

6.3.1 The water Cycle **(Social Studies - Geography)**
6.3.1.1 Describe the water cycle System.
6.3.1.2 Describe the process of evaporation and condensation
6.3.1.3 State the effects of the water cycle in everyday

6. 4.0 Plants and Animals

6.4.1 Photosynthesis (**A5Bp1a)**
6.4.1.1 Investigate how water and mineral salts reach the leaves
6.4.1.2 Describe the process by which plants make food.
6.4.1.3 Test for the presence of starch in a leaf

6.4.2 Care for Domestic (**A6Be11)**
6.4.2.1 Explain the basic needs of livestock.
6.4.2.2 Explain the importance of cleanliness in the care of livestock.
6.4.2.3 Find out the advantages of keeping livestock together.
6.4.2.4 Find out the disadvantages of crowding livestock.

6.4.3 Vertebrate Animals (**A7Be5**)
6.4.3.1 Identify the different types of vertebrate Animals
6.4.3.2 Describe adaptations shown by vertebrate Animals
6.4.3.3 Describe the life cycle of vertebrate animals
6.4.3.4 State ways of conserving vertebrate animals

6.5.0 Materials and Energy

6.5.1 Nature of Air (**A5Cs6)**
6.5.1.1 Describe the composition of air.
6.5.1.2 State the physical properties of air.
6.5.1.3 Demonstrate that air has weight and occupies space.

6.5.2 Sound (**C4Ps6)**
6.5.2.1 Explain what sound is.
6.5.2.2 Demonstrate how sound is produced
6.5.2.3 Describe how sound travels from one place to another.
6.5.2.4 Demonstrate how the volume of sound can be increased.

6.5.3 Pressure (**A6Pf8)**
6.5.3.1 Show the effect of pressure on objects.
6.5.3.2 Explain why tools and implements should be sharp.
6.5.3.3 Explain why water tanks are placed on a higher level.
6.5.3.4 Demonstrate that air exerts pressure.
6.5.3.4 Explain why pumping a bicycle tube becomes more difficult as the tube gets inflated.

6.5.4 Communication (**A6Ps1)**
6.5.4.1 State methods of communication.
6.5.4.2 Explain the importance of communication
6.5.4.3 Describe how sound waves are used in communication.

Grade 7

7.1.0 The human body

7.1.1 The Digestive System (**A7Bh2a)**

7.1.1.1 Describe digestion
7.1.1.2 Identify the organs of the digestive system.
7.1.1.3 Identify parts of the alimentary canal where digested food is absorbed.
7.1.1.4 Explain what happens to undigested food.

7.2.0 Health

7.2.1 Diseases (C7Bc2a)
7.2.1.1 Distinguish between a virus and a bacterium.
7.2.1.2 Explain how viruses and bacteria can affect health

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7.2.1.3 Identify common diseases of the skin
7.2.1.4 Explain the prevalence of diseases in relation to the provision of health Services.

7.2.2 Fruits (A7Bh4)
7.2.2.1 Identify fruits used as food.
7.2.2.2 Identify seeds used as food.
7.2.2.3 State the importance of fruits in improving health

7.3.0 The Environment

7.3.1 Separating Substances (**A6Cc6)**
7.3.1.1 Demonstrate the separation of an insoluble solid from Water (C6Cc4)
7.3.1.2 Demonstrate the separation of a soluble substance from Water (A6Cc6)
7.3.1.3 Demonstrate the separation of iron fillings from sand (**C6Cc2a)**

7.3.2 Water supply System **(A7Be5)**
7.3.2.1 Identify sources of water in the village and towns.
7.3.2.2 Identify different types of water treatment systems.
7.3.2.3 State the importance of water treatment
7.3.2.4 Describe ways of conserving water

7.4.0 Plants and Animals
7.4.1 The flower (A5Bp5a)
7.4.1.1 Identify the parts of a flower.
7.4.1.2 Explain the functions of the parts of the flower

7.4.2 Pollination and fertilization in flowering Plants (Z5Bp5b)
7.4.2.1 Describe pollination.
7.4.2.2 Identify the agents of pollination.
7.4.2.3 Describe fertilization in flowering plants.

7.4.3 Fruits and Seeds (A7Bp2)
7.4.3.1 Explain why plants produce seeds.
7.4.3.2 Explain the importance of improving seed varieties

7.4.4 Seed dispersal (A5Bp3a)
7.4.4.1 Describe what seed dispersal is.
7.4.4.2 Describe ways in which seeds are dispersed.
7.4.4.3 Explain the importance of seed dispersal.

7.4.5 Propagation (A7Bp3)
7.4.5.1 Explain what plant propagation is.
7.4.5.2 State methods of plant propagation.
7.4.5.2 Demonstrate how some plants are propagated in the local area.

7.5.0 Materials and Energy

7.5.1 Energy (**A7Pe3)**
7.5.1.1 Explain what energy is.
7.5.1.2 Identify different types of energy
7.5.1.3 Explain how energy is converted from one

7.5.2 Electric current and Circuits (**A6Pm7)**
7.5.2.1 Explain what an electric current does
7.5.2.2 Demonstrate how to construct a simple electric circuit.
7.5.2.3 Distinguish between a series and parallel circuit
7.5.2.3 Describe the action of a switch in a circuit.

7.5.4 Lightning (**A6Pm8)**
7.5.4.1 Identify the causes of lightning.
7.5.4.2 Explain the effects of lightning on plants, animals and buildings.
7.5.4.3 Demonstrate how to prevent damage from lightning.
7.5.4.4 State the importance of lightning in farming

7.5.5 The solar System (**A7Pb5)**
7.5.5.1 Describe the solar system.
7.5.5.2 Explain the differences between the sun and its planets
7.5.5.3 State the source of light in the solar system.
7.5.5.4 State the reasons for seasons and day and night
7.5.5.5 Compare the movement of the earth and the moon
7.5.5.6 Describe the formation of solar and lunar eclipses.
7.5.5.7 State uses of solar energy

7.5.6 Metals and Non-metals (**C7Cp1a)**
7.5.6.1Identify types of metals and non-metals

7.5.6 Mining (**C7Cp3)**
7.5.6.1 Identify minerals mined in Zambia
7.5.6.2 List the properties of copper.
7.5.6.3 Explain how copper is extracted and refined.
7.5.6.4 Identify items made from copper within Zambia.
7.5.6.5 Explain the importance of making copper items within Zambia.
7.5.6.6 Describe the impact of mining on the environment.