

Concept Index of KISS Topics, years 7-10

We have covered the Australian Curriculum with a simple and logical topic structure, but it is almost certainly different to your school's teaching / learning plan or program. Use this index to locate important concepts within our topics. Teachers may then "cut-and-paste" to match the school teaching program.

Stage 4 (yr 7-8) Topics

Topic 01 The Variety of Life

PAGE Content, Concepts, Explanations

- 03 How many life forms on Earth?
- 03 What is life?
- 04 Why & how we classify living things
- 05 History... how modern classification began
- 05 Technology can cause changes
- 06 The Five Kingdoms
- 07 Dichotomous keys
- 08-9 The Plant Kindom
- 10-11 The Animal Kingdom
- 12 Classes of Vertebrates
- 13 Summary of Classification scheme
- 14 Kingdoms, Phyla, Classes, etc.
- 15 Species & Scientific names

Worksheets

- 17 1. Defining & Classifying.
- 18 2. Five Kingdoms.
- 19 3. Plant Types.
- 19 4. Make a Dichotom Key.
- 20 5. Key to Animals.
- 21 6. Summary Chart.
- 22 7. Classif. & Naming.
- 23-24 Topic Test

Answer Section

25-26 **Suggested answers all worksheets & test**

Topic 02 Living Environments

PAGE Content, Concepts, Explanations

- 03 **Ecology & Ecosystems**
- 04 **Adaptations**
- 05 **Producers & consumers**
- 06 **Food chains**
- 07 **Decomposers**
- 08 **Food webs**
- 09-10 **Human impacts on ecosystems**
- 11 **Different viewpoints**
- 12 **How Science can help**
- 13 **Fire, flood & drought**
- 14 **Managing the environment**
- 15 **An Australian scientist**

Worksheets

- 17 1. Adaptations.
- 19 2. Producers, Consumers & Food Chains.
- 19 3. Food Chains.
- 20 4. Decomposers.
- 20 5. Food Webs.
- 21 6. Make a Food Web.
- 21 7. Human Impacts.
- 22 Topic Test

23-24 Answer Section

Suggested answers all worksheets & test

Topic 03 Separating Mixtures

PAGE Content, Concepts, Explanations

- 03 **What is a mixture?**
- 03 **Scientific models**
- 04 **Mixtures around us**
- 04 **Natural and made resources**
- 05 **Solutions & suspensions**
- 06 **Solute, solvent, dilute, concentrated, saturated**
- 07 **Importance of water as a solvent**

Separation Methods:

- 08 **Sieving**
- 09 **Flotation & sedimentation**
- 09 **Centrifuging**
- 10 **Filtration & Evaporation**
- 11 **Distillation**
- 12 **Chromatography & Crystallisation**
- 13 **Obtaining resources by separation**
- 14 **Separations at home**

Worksheets

- 15 1. **Mixtures.**
- 15 2. **Solutions & Suspensions.**
- 16 3. **Separating Mixtures.**
- 16 4. **Methods of Separat.**
- 17 5. **Flowcharts of Separations**
- 18. 6. **Occupations.**
- 19. **Topic Test**

Answer Section

20-21 **Suggested answers all worksheets & test**

Topic 04 The Earth in Space

PAGE Content, Concepts, Explanations

- 03 **The Science of Astronomy**
- 04 **The Solar System**
- 05 **Day & night, years & seasons**
- 06 **Phases of Moon**
- 07 **Sun, Moon & the tides**
- 08 **Eclipses**
- 09 **The Sun & planets**
- 10 **Stars, galaxies & nebulae**
- 11 **Brief History of Astronomy**
- 12 **Technology, society & Science**

Worksheets

- 13 1. **Solar System.**
- 13 2. **Model of Sol.Syst.**
- 14 3&4. **Sun, Earth, Moon**
- 15 5. **Phases of Moon**
- 16 6. **Eclipses**
- 16 7. **Stars, Galaxies, etc**
- 17 **Topic Test**

18-19 Answer Section

Suggested answers all worksheets & test

Stage 4 (yr 7-8) Topics

Topic 05 Earth Resources

PAGE Content, Concepts, Explanations

03	Resources: renewable, natural...
04	Atmosphere, lithosphere, etc.
05	Water cycle
06	Human impacts on water cycle
07	Water conservation
08	Energy resources
09	Electricity from fossil fuels
10	Electricity from renewables
11-12	Problems with fossil fuels
13	Strategies for change
13	Renewable fuels
14	Choices for the future
15	Ethanol & carbon capture
16	Coal Seam Gas & Fracking

Worksheets

17	1. Resources.
17	2. Types of Resources.
18	3. Water Cycle.
18	4. Water Cycle Effects.
19	5. Water Conservation.
19	6. Energy for Society.
20	7. Using Fossil Fuels.
21	Topic Test

22-24 Answer Section
Suggested answers all worksheets & test

Topic 06 Forces

PAGE Content, Concepts, Explanations

03	What is force?
03	Safety devices in cars
04	Measuring forces
04	Force & movement
05	Simple machines
05-06	Force, work & machines
07-08	Friction
09	Force & Isaac Newton
09	Contact & field forces
10	Gravity
10	Mass & weight
11	Orbits & weightlessness
12	Magnetic forces
13	Magnetic attraction & repulsion
13	Magnetic compasses
14	Electromagnets
15	Magnetic fields
16	Scientific models & theories
17-18	Electrostatic force
18	Electroscopes
19	Charging & discharging
20	Scientific knowledge impact

Topic 06 Forces (cont.)

PAGE Worksheets

21	1. Forces.
21	2. Machines & Work
22	3. Friction
22	4. More Forces
23	5. Mass & Weight
24	6. Gravity
24	7. Mass, Weight, Gravity
25	8. Magnetism
25	9. Magnetic Poles
26	10. Electric Charges & Force
26	10. More Charge & Forces
27-28	Topic Test -

29-32 Answer Section
Suggested answers all worksheets & test

Topic 07 Living Cells

PAGE Content, Concepts, Explanations

03-04	Intro. to cells, history, images.
05	Cell Parts... Animals & Plants
06	Movement across the Cell Membrane
07	Unicellular & Multicellular
08-09	Micro-Organisms. "Germs" & Disease
10	Health, Science & Society
11	Science & Technology Impacts
12	Genetic Information & Mitosis cell division

Worksheets

13	1. Cells
13	2. Cell Structure & Function
14	3. Identifying Cell Parts
15	4. Microbes
15	5. More about Microbes
16	6. Cell Division
16	7. Mitosis
17	Topic Test -

18-19 Answer Section
Suggested answers all worksheets & test

Topic 08 Plants & Animals

PAGE Content, Concepts, Explanations

03	Cells & "Life Functions"
03-04	Body Structures in Multicellular Lifeforms
04	Food & Energy for Living Things
05	Cellular Respiration
06	Photosynthesis
07	How Science Works
08	Body Systems in Plants
08	Leaf Structure
09	Plant Transport Systems
10	Human Body Systems Overview
11	Human Respiratory System
12	Gas Exchange in other animals
13	Sexual & Asexual Reproduction
14	Meiosis & Sexual Reproduction
15	Fertilisation in Plants & Animals
16	Human Reproduction
16	Male Reproductive System
17	Female Reproductive System
17	Pregnancy & Birth

Stage 4 (yr 7-8) Topics

Topic 08 Plants & Animals (cont)

Worksheets	
19	1. Structure & Function
19	2. Respiration & Photosyn.
20	3. Plant Systems
21	4. Human Body Systems
22	5. Comparing Different Respiratory Systems
23	6. Sexual & Asexual Reproduction
23	7. Internal & External Fertilisation
24	8. Human Reproduction
25	Topic Test
26-28	Answer Section

Suggested answers all worksheets & test

Topic 09 Solid, Liquid & Gas

<u>PAGE</u>	Content, Concepts, Explanations
03-04	States of Matter & Change of State
05	Moving Particle Theory of Matter
06	Particles & Heat
06	Changes of State & Moving Particles
07	Heat Expansion
08	Expansion of Gases & Gas Pressure
09	Air Pressure
10	Density... meaning & calculation
11	Density & the Moving Particles
12	Density & Heat Expansion
13	Density & Flotation
13	Diffusion in Fluids

Worksheets	
15	1. States of Matter & Particle Theory
15	2. More on States of Matter
16	3. Particles & Heat
16	4. More Particles & Heat
17	5. Density Calculations - simple problems
18-19	6. Calculating Volume & Density - more difficult
20	7. Density & Particle Model
20	8. Sink or Float?
21-22	Topic Test
23-25	Answer Section

Suggested answers all worksheets & test

Topic 10 Elements & Compounds

<u>PAGE</u>	Content, Concepts, Explanations
03	What are the Elements? Some history.
04	Chemical Elements & Periodic Table
05	Some Elements & Their Uses
06	Elements & Atoms
07-08	Science, Technology & Research
09-10	Properties of Metals & Non-Metals
10	More about Periodic Table
11	Chemical Compounds
12	Chemical Reactions
13	Chemical Reactions in Living Things
14	Compounds v. Mixtures
14	Physical v. Chemical Changes
15	Elements, Compounds & Mixtures

Worksheets	
17	1. The Elements
17	2. Elements & Periodic Table
18	3. Names of Elements
18	4. Classifying Elements
19	5. Metals & Non-Metals
19	6. Useful Elements
20	7. Compounds & Reactions
20	8. Chem Formulas. Physical & Chem Changes
21	Topic Test
22-23	Answer Section

Suggested answers all worksheets & test

Topic 11 The Earth

<u>PAGE</u>	Content, Concepts, Explanations
03	Structure of the Earth
03	The lithosphere
04	Minerals
05	Mineral Wealth & Science
06	Igneous rocks
07	Sedimentary rocks
08	Metamorphic rocks
09	Fossils
10-11	Weathering & Erosion
12	Soil formation
13	Erosion Landscapes
14	The Rock Cycle

Worksheets	
15	1. Earth Structure
16	2. Minerals & Igneous Rocks
16	3. Sedimentary & Metamorphic Rocks
17	4. Fossils
18	5. Weathering & Erosion
19	6. Rock Cycle
20	Topic Test

21-22	Answer Section
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Suggested answers all worksheets & test

Stage 4 (yr 7-8) Topics

Topic 12 Energy

PAGE Content, Concepts, Explanations

03	Types of energy
04	Energy transformations
05	Sound energy
06	Light energy
07	Heat energy
08	Conduction, convection, radiation
09	Electrical energy
09	Elect. conductors & insulators
10	Circuits, voltage & current
11	Conservation of energy
12	Efficient energy use
13	Simple machines
13-14	Forces & "Work"
15	Work & energy

Topic 12 Energy (cont.)

	Worksheets
17	1. Energy Types
17	2. Identifying Energy Types
18	3. Energy Conversions
19	4. Sound
19	5. Light
20	6. Heat Radiation Exercise
21-22	7. Heat Conduction Exercise
23	8. Electrical Energy Conversions
24	9. Electrical Energy
24	10. Conservation of Energy
25	11. Work & Efficiency
26-27	Topic Test

Stage 5 (yr 9-10) Topics

Topic 13 Human Body

PAGE Content, Concepts, Explanations

03-04	Structure of multicellular life
05	Human body systems
06	Skeletal system
07	Digestive system
08	Circulatory system
09	Respiratory system
09	Excretory (urinary) system
10	Nervous system
10	Endocrine system
11	Male Reproductive system
12	Female Reproductive system
12	Pregnancy & birth
13	Hormones & reproduction
14	Body systems work together
15	Diseases
16	Pathogens
16	Barrier defences
17	Immune system
18	Immunity & vaccination
19	An Australian scientist
20	Effects of radiations on health

Worksheets

21	1. Structure & Functions of Living Things
21	2. Skeletal System
22	3. Digestive System
23	4. Circulatory System
24	5. Respiratory System
24	6. Excretory System
25	7. Control & Co-ordination
26	8. Male Reproductive System
27	9. Female Repro.Syst.
27	10. Hormones & Reproduction
28	11. Disease & Pathogens
28	12. Non-Infectious Diseases
29	13. Immune System
30-31	Topic Test

32-35 Answer Section
Suggested answers all worksheets & test

Topic 14 Ecology

PAGE Content, Concepts, Explanations

03	Ecology & Ecosystems
04	Adaptations
05	Producers & consumers
06	Food chains
07	Decomposers
08	Food webs
09	Relationships: mutualism, etc.
10-11	Changes in population size
12-13	Human impacts on ecosystems
14	Different viewpoints
15	Aborigine Land Management

Worksheets

17	1. Ecosystems
18	2. Food & Energy in Ecosystems
18	3. Food Chains
19	4. Food Webs
19	5. Sketch a Food Web
20	6. Living Things Affect Each Other
20	7. Population Changes
21	8. Human Impacts
22	Topic Test

23-25 Answer Section
Suggested answers all worksheets & test

Stage 5 (yr 9-10) Topics

Topic 15 Atoms

PAGE Content, Concepts, Explanations

03	Atoms & atomic structure
04	Atoms & elements
05	Elements in the Periodic Table
06	Mass of atoms
07-08	History of atomic discovery
09	Testing scientific models
10	Isotopes
11	Nuclear reactions
12	Discovery of Radioactivity
13	Alpha & Beta decay
14	Radioisotope occurrence
15	Nuclear energy
16	Uses of radioactivity
17	Nuclear problems & hazards

Worksheets

19	1. Atoms & Elements
19	2. Describing Atoms & Elements
20	3. History of Atomic Theory
20	4. Atomic Models
21	5. Alpha & Beta Decay
22	6. Nuclear Reactions
22	7. Nuclear Technology
23-24	Topic Test

25-26 Answer Section

Suggested answers all worksheets & test

Topic 16 Chemical Changes

PAGE Content, Concepts, Explanations

03	Why Study Chemistry?
04	Mixtures, elements, compounds
05	Chemical compounds
06	Observing chem.reactions
07	Chemical & physical changes
07-08	Reactions & equations
08	Conservation of Mass
09	Endothermic & exothermic
10	Decomposition
11-12	Combustion & corrosion
13	Introduction to ions
14	Polyatomic ions
15	Precipitation reactions
16	Acids & bases
17-18	Acid reactions
19-20	Photosynthesis & Respiration

Worksheets

21	1. The Basics
22	2. Chemical Changes
23	3. Decomposition
23	4. Combustion
24	5. Corrosion
24	6. Precipitation
25	7. Neutralisation
25	8. Acids & Metals
26	9. Acids & Carbonates
26	10. Assorted Reactions
27	Topic Test

28 Answer Section

Suggested answers all worksheets & test

Topic 17 Plate Tectonics

PAGE Content, Concepts, Explanations

03	Structure of Earth
03	The Lithosphere
04	Seismology
05	Contin. Drift to Plate Tectonics
06	Tectonic plates
06	Plates move apart
07	Plates collide, Subduction & Mtn building
09	What Makes the Plates move?
10-11	Evidence for moving plates
12-13	Changing map of the world
14-15	Tectonic history of Australia
16-18	Impacts of tectonic events

Worksheets

19	1. Earth & Lithosphere
19	2. Locating an Earthquake
20	3. Plate Tectonics
20	4. When Plates Move
21	5. Evidence of Moving Plates
21	6. More Plate Tectonics
22	7. Changing Map of the World
22	8. Tectonic Impacts
23-24	Topic Test

25-26 Answer Section

Suggested answers all worksheets & test

Topic 18 Waves & Energy

PAGE Content, Concepts, Explanations

03	Types of energy (revision)
04-05	Waves carry energy. Waves and Mediums
06	Science Theories & New Technologies
07-08	Wave Amplitude, Wavelength & Frequency
09	The Wave equation
10	Electromagnetic waves
11	Light and colour
12	Absorption & reflection
13-14	Refraction & Lenses
15-17	Heat energy, Conduction & Convection
18	Electricity, Conductors & Insulators, Circuits
19-22	Voltage, current & resistance, Ohm's Law
23	Energy Conversions
23-24	Series & parallel circuits
25-26	Electrical Power & Energy
27	Impacts of Electricity on Society

Worksheets

29	1. Waves Carry Energy
30	2. Wave Characteristics
30	3. Using the Wave Equation
31	4. Wave Equation Problems
32	5. & 6. EM Waves
33	7. & 8. Colour
34	9. & 10. Refraction & Lenses
35	11. Heat Energy Moves Around
36	12. Electrical Charge & Circuits
36	13. Current & Voltage
37	14. & 15. Ohm's Law
38	16. Energy Changes, Circuits & Power
39	17. Elect. Power & Energy Problems
40-41	Topic Test

42-46 Answer Section

Suggested answers all worksheets & test

Stage 5 (yr 9-10) Topics

Topic 19 Genetics & Evolution

PAGE	Content, Concepts, Explanations
03	Genes & DNA.
04	Replication. Differentiation
05	Cell division: mitosis
06	Science & society
07	Genes, chromosomes & DNA
08	Sexual & asexual reproduction
09-10	Meiosis, chromosomes, sex
11	Mutations
12-13	Intro.to Genetics, simple crosses
14	Pedigrees
15	Linking genes to cell division
15	Genetics v. environment
16	Scientific theories
17-22	Evidence for Evolution
23-25	Darwin's Theory of Evolution
25-27	Variation, Isolation, Biodiversity & Extinction
28	Observing Evolution

Worksheets

29	1. DNA & Cell Division
29	2. Mitosis
30	3. & 4. Sexual & Asexual Reproduction
31	5. Genes & Chromosomes
31	6. Replication & Mutation
32	7. Simple Genetic Crosses
33	8. Genetics Problems
34	9. Pedigrees
35	10. Fossils & Earth History
35	11. Relative Dating of Fossils
36	12. & 13. Evidence for Evolution
37	14. & 15. Theory of Evolution
38-39	Topic Test
40-44	Answer Section Suggested answers all worksheets & test

Topic 20 Patterns of Chemistry

PAGE	Content, Concepts, Explanations
03-05	Atoms & elements
06-08	Periodic table patterns
09	Decisions about new materials
10-12	Electron orbits & ion formation
13-15	Ionic compounds. Names, Formulas, Valency
16-17	Multi-valence & Polyatomic ions
18-19	Covalent bonding & compounds
20-21	Chemical reactions & equations & Balancing
21-24	Reaction patterns (revision)
25	Activity series of metals
26-28	Rate of chemical reactions

Worksheets

29	1. Atoms & Elements
30	2. Atomic Number, Mass, Particles
30	3. Periodic Table
31	4. & 5. Electron Arrangements. 5. Ions
32-33	6. & 7. Ionic Compounds, Names & Formulas
34	8. Multi-Valence Metal Compounds
35	9. Polyatomic Ion Compounds
36	10. Ionic Allsorts
37	11. Balancing Equations
38-42	12. - 18. Reaction Equations Practice
43	Topic Test
40-44	Answer Section Suggested answers all worksheets &

Topic 21 The Universe

PAGE	Content, Concepts, Explanations
03	Solar System & beyond
04-05	Stars. Energy from stars
05	Astronomical distances
06	Nebulae
07	How we study the Universe
08	Measuring star distances, temp. & chemistry
09	Radio telescopes
09	Difficulties getting information
10	Technology transforms Science
10	Impacts of Space Science
11	Star formation, life & death
12	Supernovas & black holes
13-15	Big Bang Theory & evidence
16	An Australian astronomer
16	Future of the Universe?

Worksheets

17	1. & 2. Stars & Galaxies
18	3. & 4. How We Study the Universe
19	5. Flowcharts of Star Life
19	6. Life & Death of Stars
20	7. Origin of the Universe
20	8. Evidence for the Big Bang
21	Topic Test
22-23	Answer Section Suggested answers all worksheets & test

Topic 22 Global Systems

PAGE	Content, Concepts, Explanations
03	Mother Earth
04	Atmosphere, lithosphere, etc.
05	Water cycle
05-06	Carbon cycle
07	Global climate & plate tectonics
07	Greenhouse on Mars & Venus
08	More global cycles
09-10	Evidence for the Greenhouse
11	Assessing global warming
12-13	Feedbacks & tipping points
14-15	Impacts of global warming
16-17	Deep ocean currents
18	Depletion of the ozone layer
19	Impacts of science on society
19	Science & economics

Worksheets

21	1. Spheres & Recycling
22	2. Carbon Cycle
23	3. Climate Control
23	4. Greenhouse Evidence
24	5. Analysing Correlations
25	6. Feedbacks & Tipping Points
25	7. Ocean Currents & Ozone
26	Topic Test
27-29	Answer Section Suggested answers all worksheets & test

Stage 5 (yr 9-10) Topics

Topic 23 Moving

PAGE Content, Concepts, Explanations

03	Speed & how to measure it
04	Average & instantaneous speed
05	Distance-time graphs
06	Acceleration
07	Equations of motion
08	Forces, balanced & unbalanced
09-10	Newton's Laws, Force & acceleration
11	Speed & Velocity
12	Mass, weight & gravity
13	Orbits & weightlessness
14	Testing theories & laws

Worksheets

15	1. Calculating Speed
16	2. Construct a Travel Graph
16	3. Velocity & Acceleration
17	4. Calculating Acceleration
18-19	5. Analysing Acceleration Data
20	6. Using Equations of Motion
21	7. Force & Acceleration
22	8. Newton's Laws
22	9. Mass, Weight & Gravity
23-24	Topic Test

25-27 Answer Section

Suggested answers all worksheets & test

Topic 24 Energy Transfers

PAGE Content, Concepts, Explanations

03	Energy transformation
03-04	Falling down, going up
05	Motion of a pendulum
06	Conservation of energy
07	Energy transfers in a car crash
08-09	Energy efficiency
10	Energy Resources
10-11	Fossil Fuels
12	Problems with fossil fuels
13	Economic dependence. Why Change?
14	Strategies for change
14-15	Energy from renewable sources
15	Scientific Impacts & Choices
17	Case studies: ethanol & CCS

Worksheets

19	1. Energy Transformations
20	2. Acceleration due to Gravity
21	3. Pendulum Experiments
22	4. & 5. Conservation & Efficiency. %Efficiency
23	6. Energy Supplies & Problems
23	7. Energy for the Future
24	Topic Test

25-27 Answer Section

Suggested answers all worksheets & test