

Index

- Aboriginal peoples, history and
 - culture 44, 45
- abstraction 51
- activities 68, 119, 120
 - access to and space for 117, 118
 - educator-led activities 91, 94
 - everyday activities 133
 - play-based activities 163–5
 - preparing activities 119
 - range of 117
 - science in regular activities 69
 - space and inside activities 117
- aesthetics 117
- agents of change 155
- alternative concepts 59–60
 - aspects 59
 - case studies 61–2
- analysis 200–4
- anecdotal note-taking 196–7
- anecdotal records 194
- animals 123
 - case study – small animals in the garden 124–6
- annotated drawings 78
- Asia
 - Australia's engagement with 44–5
- assessment 190–6
 - assessing science learning 189–204
 - Australian Curriculum set ideas 189
 - educator questions regarding 190–1
 - informal/formal assessment
 - approaches 191
 - of lesson plans 185
 - of science 172–85, 189–204
 - using interviews 191–3
 - using observations 193–5
 - using rubrics 195–6
- attention deficit hyperactivity disorder (ADHD) 155–7
- attitudes 55–6
 - see also dispositions
- Australian Curriculum
 - assessment, monitoring and reporting
 - process 189
 - components 33, 40–6
 - Design and Creative Technology 74
 - development 32
 - history 32–3
 - Indigenous perspectives of science
 - knowledge 82
 - online availability 32
 - science definition 10–11
 - science in 32–48, 174
 - set learning outcomes 194
 - and sustainability 156
- Australian Curriculum, Assessment and Reporting Authority (ACARA) Board 32
- Australian Curriculum: Science 33–4, 138–40, 173
 - aims 33
 - content – year groupings 33–4
 - focus 189
 - science rubric based on Foundation level
 - biological science 195–6
 - science year groupings 33–4
 - strands 34–40
- behaviour 52, 96
 - decisions regarding 46
- beliefs 11, 55–6
 - naïve beliefs 75
- Belonging, Being and Becoming* 17, 106, 110
 - challenges – using as springboard 24
 - in early childhood settings 133
 - see also Early Years Learning Framework
- 'Big Bang' lesson 143–4
- Big Book Planners see floorbooks

- biological sciences (SU sub-strands) 34, 40, 138, 211–13
- biophilia/biophobia 150, 156, 159
 - see also empathy
- built environment 128–9
- bush kindergartens 157, 158–60
- checklists 194
- chemical sciences (SU sub-strands) 34, 138, 213–4
- child development 11, 86, 93
 - cognitive development 51–2
 - conceptual development 51, 89
 - learning environments and 116
 - play as support for 87–91
 - promotion through symbolic play 86
 - scientific development 87–91
 - social development 95
 - zone of proximal development 54–5, 57
- children
 - 3- and 4-year-old children, enhancing science for 110
 - child-centred learning 73–4, 86
 - child-instigated *versus* teacher-instigated activities 68
 - children's dispositions in science learning 201–2
 - children's ideas 11, 22, 23, 77
 - children's learning 102, 189–90, 191, 197
 - children's needs 119
 - children's talk 75
 - cognitive development, understanding and 51–2
 - exploring the world 8, 75, 76, 155
 - EYLF Learning Outcomes 18
 - identity of 22, 27–8, 55–6, 135–6
 - individual capabilities 17
 - learning records 200
 - mistakes, incidental learning by 9
 - observing 9
 - positioning of 16, 18–19, 22–3, 29
 - science, capacity for 11–12
 - science understandings 102, 116–29, 132–44, 149–65
 - tasks 56, 89
 - technologisation of childhood 155
 - time requirements 76
 - wonder, sense of *see* wonder
 - working theories 58–9
 - world, children's connection with and contribution to 22, 28
- children's concepts 51
 - alternative concepts 59–62, 77
 - everyday concepts 58–9
 - misconceptions 59
 - naïve concepts 51, 59, 75
 - partial concepts 60
 - schemas 53, 68
 - two concepts generation 53
- citizen science 37–40
 - case study 38–40
 - online surveys 39
- classifying 71
- COAG Productivity Agenda Working Group: Education, Skills, Training and Early Childhood Development 19
- coercion 201–2
- cognitive development 51–2
- cognitive skills 103
- collaboration 10–1, 74, 189–90
 - collaborative learning 200
 - collaborative play 87, 89
- commitment 201–2
- communication 23, 30, 71, 82, 138–9
 - communicating SIS sub-strand 36–7
 - scientific communication 10
 - see also information; information and communication technology
- community
 - children's identity within 22
 - context, setting and cultural diversity of 190
 - informal learning contexts 132–44
 - research on science in 132–4
- comparing/comparison 71
- competence 40–4
 - personal and social competence 44
- conceptual conflicts 95
- conceptual understanding 79–80
 - continuum 60
- concern (value) 82
- confidence 29, 55–6, 197, 201–2
 - educator's lack of 137
- consciousness raising 21
- construction 120–1, 127
 - case study 121
- constructivism 53–4, 68, 70
 - case study 57
 - personal constructivism 53–5
 - principles of 54
 - science planning, constructivist approach to 175
 - social constructivism 54–5, 86
- cooking 120, 123
 - case study 124
- cooperation 10, 82, 201–2
 - cooperative play 87, 89
- Council of Australian Governments 15, 19

- creativity 74, 89, 118, 201–2
 - Creative Little Scientist Project 91
 - creative spaces 116
 - critical and creative thinking 40–4
 - learning – creative/co-creative 52
 - science – a dynamic, collaborative and creative endeavour 10–11
- critical and creative thinking 40–4
 - application to science 42
- critical reflection 10
- cross-curriculum priorities 44–6
 - application to science in early years 45
 - purpose of 44
- culture
 - of Aboriginal and Torres Strait Islander people 44, 45
 - cultural and intellectual resources 133, 135
 - intercultural understandings 40–4
 - role in knowledge construction 55
 - socio-cultural learning approach 190
- curiosity 10, 11–12, 22–3, 76, 102, 103, 180, 201–2
- curriculum
 - cross-curriculum priorities 44–6
 - curriculum decision making 190
 - early years curriculum, structured play in 91–4
 - emergent curriculum 72
 - enhancing via materials use 117–19
 - integration approaches 174
 - international curriculum frameworks 15–16
 - international principles 16
 - online availability of 32
 - planned curriculum 189
 - reflection of societal values 18–19
 - science curriculum for informing teaching 138–40
 - see also Australian Curriculum; New Zealand early childhood curriculum
- decisions/decision-making 46, 190, 194
- demonstrations 20, 74, 201
- diagnostic assessment 191
- digital technology 122–3, 143–4
 - case study 122–3
- discourse 55
- discovery learning 96–7, 119
 - guided discovery 53–4, 72, 73
 - science discovery tables 120
- discussion 75, 77, 152, 194
 - group discussion 75
 - whole-group discussion 119
- dispositions 201–2
 - biophilia/biophobia dispositions case study 150–1
 - learning dispositions 12
 - positive dispositions 201–2
- diversity 190
- dividers (in classrooms) 117
- documentation
 - educator involvement in documentation and analysis 191
 - of lesson plans 185
 - science learning documentation 191, 195–200
 - using floorbooks or children’s own learning records 200
 - using learning stories 197–8
 - using portfolios 199–200
- drawing 78
- early childhood science education 94–7
 - learning theories related to 51–62
 - ‘Operation Spider’ 38–40
 - play pedagogy 86–97
 - principles 86
- early childhood settings
 - Belonging, Being and Becoming* 133
 - focus – planned curriculum 189
 - knowledge generation 53
 - room layout 117
 - theoretical perspectives and positioning of children 18–19
- early childhood years
 - application of cross-curriculum priorities 45
 - early years curriculum, structured play in 91–4
 - environmental education for 153–4
 - importance and place of science in 8–12
 - pedagogical approaches in 157–65
 - planning for teaching science 172–85
 - science learning see science learning
- early years learning centres 92
 - planning for 173–4
 - topic planning 180–1
- Early Years Learning Framework (EYLF) 138
 - approach 20
 - Australian context 16
 - Belonging, Being and Becoming* 17, 24, 106, 110, 133
 - curriculum decision making 190
 - descriptors 23, 18, 23, 27–30
 - differing pedagogies 20–1
 - emphasis 19–20, 193–4
 - enabling educator focus 20

- Early Years Learning Framework (*cont.*)
 - evolution 15
 - general capabilities – key learning outcomes
 - complementarity 41
 - international context 15–16
 - interpretation 23
 - learning environment definition 116
 - Learning Outcomes 17, 18, 21–5, 27–30, 194
 - learning through play 19–20
 - planned curriculum 189
 - play-based learning 19–20, 189
 - Practices 17–18
 - Principles 16, 17
 - science in 15–25
 - structure of 17–18
 - valuing different views – flexibility 18–19
- earth and space sciences (SU sub-strands) 34, 138, 214–15
- ecological principles and concepts 154
- ecological systems theory 52
- education
 - connecting science and environmental education 151–3
 - environmental education 163–5
 - science education 94–7
 - using natural spaces 153–4
- educators 91, 94, 103–9, 162–3, 189–90
 - analysis by 200–4
 - case studies*, interpretations and relation to EYLF 103–9
 - enhancing learning role 189
 - EYLF enabling of focus 20
 - ‘helper’ position regarding learning 72
 - involvement in science learning
 - documentation/analysis 191
 - questions regarding monitoring and assessment 190–1
 - roles 103–9
 - school-term planning 174–5
 - sensitive and attached relationships with children 193
- Elaborate phase 176–80
- empathy 156–7, 161
- Engage phase 176–80
- engagement 103, 202
- enthusiasm 10, 201–2
- environmental awareness 22, 152
- environmental education 149–65
 - connecting science and environmental education 151–3
 - for early years 153–4
 - in play spaces 149–65
 - play-based early childhood environmental education 163–5
- environment(s)
 - built environment 128–9
 - case studies*, interpretations and relation to EYLF 103–9
 - children’s identity within 22
 - constructed environments 22
 - effective learning support 54–5
 - environmental effects 11
 - environmental immersion *case study* 161
 - environmental sustainability 149
 - inside environment, supporting science learning through 116–23
 - learning environments *see* learning environments
 - modelling environmental attitudes 150–1
 - natural environments 22, 83
 - outside environment, supporting science learning through 123–9
 - science-rich environments 180–1
 - social environments 52
 - wonderment about 154–5
- ethical understanding 40–4
 - application to science 43
- Evaluate phase 176–80
- evaluation 36–7
- everyday concepts 136–7
- everyday science 8, 58–9
- evidence 10
- excursions 161
- experience(s)
 - adult-guided and child-directed experiences 20
 - construction of meaning 53–4, 56, 68
 - experiential strategies 74
 - learning experiences 189–90
 - play-based experiences 180
- experimentation 12, 22–3
- Explain phase 176–80
- exploration 8, 22, 77, 88, 90–1, 95
 - case studies*, interpretations and relation to EYLF 103–9
 - case study* 162–3
 - educator-led explorations 162–3
 - exploratory play 8, 88, 90–1, 93, 189
 - exploring the natural world 155
 - feedback during 191
 - of ideas 22
 - targeted exploration 75
 - world, children’s exploration of 8, 75, 76
- Explore phase 176–80

- family
 - children's identity within 22
 - context, setting and cultural diversity of 190
 - partnerships with 133
- fear 155
- feedback 103, 191
- 5E teaching and learning model 176–80
 - case study 177–80
- flexibility (of environment) 117
- floorbooks 200
- flow 117
- forces 93, 128–9
- forest kindergartens 158–9
- formative assessment 191
- gender differences 150
- general capabilities (Australian Curriculum component) 40–4
 - case study 41–4
 - inter-related and interconnected nature 41
 - science, application to 42
- gravity 128–9
- groups
 - group discussion 75
 - whole-group discussion 119
- guided discovery approach 72, 73
 - versus discovery learning 53–4
- habit of mind 201–2
- hand-eye coordination 120
- home, the
 - informal learning contexts 132–4
 - informal science learning at home
 - case study 140–1, 142–4
 - linking home and pre-school learning 164–5
 - research on science in 132–4
- hypothesising 22–3
- ideas 11
 - exploration of 22
 - expressing 23
- identity 22, 27–8, 55–6, 135–6
- imagination 201–2
- incidental science 9, 72
- inclusivity 158
 - inclusive science learning approaches 82–3
 - inclusive spaces – room dividers 117
 - inclusive teaching approach 82
- incursions 160–1
- independence 10, 89
- Indigenous peoples 82
- indirect instruction 74
- infancy 51–2
- inference 22, 71
- information 11, 12
 - processing and analysing data and information SIS sub-strand 36–7, 138–9
 - see also communication; technology
- information and communication technology (ICT) 127
 - application to science 42
 - competence 40–4
- initiative 22
- inquiry 12, 22–3
 - inquiry learning and teaching, multidisciplinary approach 24
 - inquiry learning approach 24, 72–3
- intelligence 51
- intentional teaching 20, 68–69, 136, 190
 - case study 202–4
- interaction 23, 74, 193, 195–200
 - children's needs and 119
 - interactive approach 72
 - social interaction 95, 103
 - teacher-led interactions 118
 - through scaffolding 154
- intercultural understandings 40–4
 - application to science 43
- interest (children's) 11–12, 55–6, 94
 - case studies 83, 93
 - customised experiences based on 119
 - play-based learning and 56
- interviews 79, 79
 - about instances 79–80
 - monitoring and assessing using 191–3
 - problem-solving interviews 79
- inventiveness 118
- investigations 12, 22–3, 72–3, 74, 76, 77, 198, 201
 - science investigations 41
- journals 200
- knowledge 22, 51, 77
 - Australian scientific knowledge 44, 45
 - conceptual, procedural and attitudinal knowledge 9
 - content knowledge 201
 - demonstrating 22
 - funds of knowledge 133
 - generation of 53
 - Indigenous knowledge systems 82

- knowledge (cont.)
 - knowledge construction/
 - co-construction 54–5, 150
 - prior knowledge 54, 68, 77, 95, 103–9, 133
 - provisional nature of 10
- language
 - language development 95
 - language in learning, importance of 86
 - role in knowledge construction 55
 - scientific language 10, 11
- learners
 - confident and involved learners 29, 55–6, 201–2
 - influence of social environment on 52
 - learning responsibilities 54
- learning 102, 189–90, 191, 197
 - affective factors 55–6
 - alternative frameworks 58–9
 - approaches 24, 68–83, 190
 - biological learning 83
 - case study 60
 - child-centred and experiential learning 86
 - depth of 200
 - discovery learning 53–4
 - engagement in 202
 - enhancing 68–83, 86–97, 102–10
 - EYLF implications for 17–18
 - holistic learning 193–4
 - informal learning contexts – home and community 132–44
 - language in learning, importance of 86
 - learning agenda 102
 - learning centres 92
 - learning dispositions 12, 22–3
 - learning experiences 189–90
 - learning goals 191
 - learning processes 22, 202
 - learning spaces 117
 - learning stories, documenting using 197–8
 - linking home and pre-school learning 164–5
 - new thinking about 21
 - pedagogical practices for 102–10
 - place-based learning 46
 - planned situations 9
 - play as learning context 19–20
 - play-based learning 19–20, 56, 68–9, 189
 - prior learning 202–3
 - recording learning 194–5
 - research regarding learning 189–90
 - science learning *see* science learning
 - situated cognition perspective 52–3
 - social settings for 54–5
 - strategies relating to learning requirements 191
 - supporting learning in science 141–2
 - theories of 52–7
 - transference of 108–9
 - wellbeing–learning interconnectedness 17
 - see also* meaning
- learning environments 17–8, 102–3
 - arrangements 116
 - definitions 116
 - inside environments 116–23
 - science understandings, enhancement 116–29, 132–44, 149–65
 - understandings, supporting 116–29
- Learning Outcomes (EYLF) 17, 18, 21–5, 106, 109
 - broad application to science 194
 - holistic nature of 24
 - links to science 23, 27–30
 - science content, dispersal throughout outcomes 22
- lessons/lesson plans 143–4, 181–5
 - assessment/documentation 185
 - teaching parts 185
- literacy 40–4, 43
 - application to science 42
- living things 123
- local world 189
- logic 51
- loose parts theory 118, 121
- machines 120–1
- materials 93, 117–19
 - access to 117, 118
 - case studies 91–3, 96, 118–19, 127, 128
 - consumption of 149
 - exploring 126
 - natural materials 157–8
 - principles for using 117–18
 - properties of 92
 - see also* resources
- meaning 11–12
 - adding meaning to observations 200–4
 - construction of 23, 53–4, 56, 68, 193–5
- measurement 71, 120, 123
- mediation 58–9
- memory 51
- mental representations *see* schemas
- metacognition 51

- mind
 - habit of mind 201–2
 - theory of 53
- monitoring 190–6
 - Australian Curriculum set ideas 189
 - educator questions regarding 190–1
 - informal/formal monitoring approaches 191
 - using interviews 191–3
 - using observations 193–5
 - using rubrics 195–6
- motivation 10, 11, 55–6, 103
 - task selection and 56
- narrative 197–8
- National Quality Agenda for Early Childhood Education and Care 15
- National Quality Standard (Quality Area 1) 15
- natural environments 83
 - respect and care for 22
- natural materials 126, 157–8
- natural places 158–9
- natural play spaces 149–65
 - education using 153–4
- natural scientists 105
- natural world 46, 47, 150
 - children exploring 155
- needs 119
- negotiation 89
- New Zealand early childhood curriculum,
 - working theories 58–9
- numeracy 40–4
 - application to science 42
- observation 9, 71
 - analysis – adding meaning to observations 200–4
 - of change 22
 - children’s observations 75, 94
 - close observation 122
 - effective observation 193–4
 - formal and informal observation 194
 - monitoring and assessing using 193–5
 - observing science learning 189–204
 - and recording learning 194–5
 - systematic observation 200
 - unusual observations 10
- open-mindedness 10
- originality 10
- partnerships 133
- pathways (in classrooms) 117
- pedagogy
 - differing pedagogies – EYLF 20–1
 - pedagogical approaches 73–74, 86, 94, 157–65
 - pedagogical practices 82, 102–10
 - play as pedagogical tool 56–7, 86–97
 - play pedagogy *see* play pedagogy
- perseverance 10
- persistence 201–2
- personal and social competence 40–4
 - application to science 43
- personal constructivism 53–5
- physical sciences (SU sub-strands) 34, 138, 215–9
- Piaget, Jean
 - personal constructivism 53–5
 - schemas 53, 68
 - types of play 86
- place-based learning 46
- planning
 - approaches 175
 - and conducting 138, 138–9
 - early learning centre topic planning 180–1
 - educators, school-term planning 174–5
 - with 5E model 176–80
 - individual lesson planning 181–5
 - learning outcomes determination 194
 - planned learning 9
 - planning and conducting SIS sub-strand 36–7
 - planning play 94–6
 - process 174–5
 - of science 172–85, 189–204
 - whole-school or centre planning 172–4
- plants 123
- play 76
 - block play 120
 - case study 90
 - collaborative play 87, 89
 - cooperative play 87, 89
 - epistemic play 88, 89
 - exploratory play 8, 88, 90–1, 93, 189
 - free play 86, 88–9
 - imaginative play 88
 - importance of 86
 - kindergartens and growth through 86
 - as learning context 19–20
 - ludic (fantasy) play 88
 - modelled play 163
 - natural materials, playing with 157–8
 - in natural places 158–9
 - open-ended play 163

- play (cont.)
 - parallel play 87, 89
 - planning play 94–6
 - play theory 56–7
 - play-based early childhood environmental education 163–5
 - play-based learning 19–20, 56, 68–9, 189
 - purposeful play 189
 - purposefully framed play 163–4
 - role play 91–3
 - socio-dramatic role play 88
 - solitary play 87, 89
 - spontaneous play 102, 108
 - structured play 91–94
 - symbolic play 86, 88
 - time for 103
 - types of 57, 86, 87–91
 - vehicle for planned curriculum 189
 - work–play distinction 87–8
- play pedagogy 56–7, 86–97
 - case study 96
 - importance in first year of school 94
 - play-based activities 163–5
 - reasons for use 94
 - supporting science education 94–7
- play spaces
 - environmental education in 149–65
 - stimulating 103
- portfolios 199–200
 - portfolio entries, example 199
 - purpose of 199
- positive dispositions 201–2
- practice
 - curriculum frameworks themes, implications 15–16
 - effective practice 17–18
 - EYLF Practice focus 17–18
 - EYLF Principles and 17
 - pedagogical practices 82, 102–10
- prediction 22, 36–7, 71, 77, 138–9
 - prediction interviews 79
- Primary Connections program
 - scope and sequence 172–3
 - units of work 189
- prior knowledge 54, 95, 103–9, 133
 - case studies, *interpretations and relation to EYLF* 103–9
 - importance of 68
 - using puppetry to determine 79–82
- prior learning 202–3
- problem-based learning approach 73–4
 - steps 73
- problem-solving 12, 20, 22–3, 51, 73, 74, 76, 79, 103
- process skills approach 71, 77
- processed materials 126
- productivity agenda 15
- project approach 74
- puppetry 79–82
 - Puppets Project 81
- questioning 72–3, 75, 95, 138–9
 - case studies 78, 80
 - educator questions regarding monitoring and assessment 190–1
 - focus questions 193
 - for monitoring and assessing interviews 191–3
 - open questioning 20
 - as part of scaffolding 77–8
 - question stems 77
 - questioning and predicting SIS sub-strand 36–7
 - uses of 77
- reasoning 51, 77, 81
- records/recording
 - case study 195
 - children's own learning records 200
 - recording learning 194–5
- reflection 10
- reflexivity 201–2
- relationships
 - establishing 141–4
 - exploring 22
 - sensitive and attached relationships 193
- reporting 189
- research 12, 22–3
 - regarding children's learning 189–90
 - regarding environmental understandings linked with science 152
 - regarding puppetry 81
- resources
 - children's needs and 119
 - cultural and intellectual resources 133
 - introduction within scientific framework 118
 - for planning 174–5
 - structuring play 91
 - to support play 86
 - task-specific resources 91
 - of the world 149
 - see also puppetry
- responsibility 10
- role play 91–3, 152

- room layout 117
- rubrics 195–6
 - criteria 195
- scaffolding 76, 72–3, 75, 76, 86, 190, 193, 203
 - as element of science learning 194
 - interaction through 154
 - in play 95
 - questioning as part of 77–8
 - verbal scaffolding strategies 190
- schemas 53, 68
- science 8–12
 - for all ages 69
 - application of cross-curriculum priorities 45
 - application of general capabilities to 42
 - in Australian Curriculum 32–48
 - children’s capacity for 11–12
 - children’s understandings of 116–29, 132–44, 149–65
 - citizen science 37–40
 - concepts in science *see* scientific concepts
 - connecting science and environmental education 151–3
 - definitions 9–11
 - enhancing science 110
 - everyday science 8, 58–9
 - and EYLF 15–25, 27–30
 - importance of 11
 - incidental science 9, 72
 - informal learning contexts 132–44
 - integrated/separate science subject 174
 - learning area 33
 - learning processes drawn from 22
 - nature and development SHE
 - sub-strand 36, 138
 - place-based learning in 46
 - planning and assessment 172–85, 189–204
 - program components 175
 - research regarding 132–4
 - science content, dispersal throughout EYLF outcomes 22
 - scientific development 87–91
 - scientific terminology 10
 - skills associated with 10, 128–9
 - use and influence of science SHE
 - sub-strand 36
 - using puppets for 81–2
- Science as a Human Endeavour (SHE) 35–6, 41, 138–40
 - sub-strands 36
- science discovery tables 120
- Science Inquiry Skills (SIS) 138–40
 - sub-strands 36–7, 41
- Science Journals 200
- science learning 9, 60, 102–10, 140–1
 - approaches 68–71, 74–6, 82–3, 194
 - case studies 69–70
 - children’s dispositions in 201–2
 - customised experiences 119
 - educator involvement in documentation and analysis 191
 - inclusive science learning 82–3
 - scaffolding elements 194
 - science learning area – Australian Curriculum 33
 - science topics 173–4
 - strategies for enhancement 74–6
 - supporting 141–2, 180–1
 - supporting through inside environment 116–23
 - supporting through outside environment 123–9
- science teaching 8–12, 15–25, 32–48, 51–62, 102–10
 - principles 86
- Science Understanding (SU) 34–5, 138–40
 - sub-strands 34–5
- scientific concepts 51–2, 55, 136–7, 201
 - examples 211–19
 - informal science concepts
 - case study 134–6
 - recognition of 133
 - understandings of 9–10
- self-awareness 189
- self-belief 11
- self-confidence 55–6
- self-direction 118
- self-efficacy 55–6
- self-esteem 55–6
- senses 76, 126, 128
- settings
 - early childhood settings 53, 117, 189
 - of families and the community 190
 - social settings for learning 54–5
 - transitions from pre-school to school settings 94
- shared rules 92
- situated cognition 52–3
- size and space 117
- skills 103
 - associated with science 10
 - cognitive skills 103
 - demonstrations of 201
 - higher-order thinking skills 81, 200

- skills (cont.)
 - inquiry skills 40
 - negotiation skills 89
 - process skills approach 71, 77
 - scientific skills 128–9
 - technological skills 128–9
 - see also questioning
- SMART objectives 183
- social competence 40–4
- social constructivism 54–5, 86
- social dynamics theory 52
- social environments 52
- social interaction 95, 103
- social situations 193–5
- society
 - inclusive image of science 82–3
 - values of 18–9, 82
- socio-cultural learning approach 190
- sorting interviews 79
- space 180
 - characteristics 117
 - fixed spaces 117
 - inclusive spaces 117
 - learning spaces 117
 - natural play spaces 149–65
 - ‘need to know’ space (of children) 103
- spatial variability 117
- spontaneous play 102, 108
- stimuli 11
- stories
 - case study 198
 - learning stories 197–8
- structured play
 - case study 91–2
 - different amounts development 91
 - in early years curriculum 91–4
- summative assessment 191
- sustainability 46, 163–4
 - Australian Curriculum and 156
 - case study 46–7
 - definition 149
 - environmental sustainability 149
- systematic observation 200
- talking 75
 - science talk 81
 - talking about learning 200
- Talking and Thinking Books see floorbooks
- tasks
 - children’s tasks 56, 89
 - task selection and motivation 56
 - task-specific resources 91
- teachers
 - child-instigated versus teacher-instigated activities 68
 - teacher-led interactions 118
- teaching
 - approaches 24, 82
 - ‘double move’ in 144
 - early years teaching, planning for 172–85
 - EYLF implications for 17–18
 - intentional teaching 20, 68–9, 136, 190, 202–4
 - pedagogical practices development 102–10
 - purposeful teaching 17–18
 - science, information needed for 8–12, 15–25, 32–48, 51–62
 - science teaching see science teaching
 - teaching science 137
 - using science curriculum to inform 138–40
- technology
 - Design and Creative Technology 74
 - digital technology 122–3, 143–4
 - information and communication technology 40–4, 127
 - technological skills 128–9
 - technologisation of childhood 155
- theory of mind 53
- thinking 12, 51, 77
 - critical and creative thinking 40–4
 - divergent thinking 82
 - higher-order thinking skills 81, 200
 - learning, new thinking about 21
 - logical thinking 103
 - scientific thinking 11
 - sustained shared thinking 95
 - thinking through learning 200
- time 76, 95, 180
 - between activities 117
 - for play 103
- Torres Strait Islander peoples 20, 31, 44, 45
- transitions 94
- understanding 11, 128–9
 - children’s mechanism for advancing see working theories
 - co-construction/construction of 95, 193–5
 - cognitive development and 51–2
 - conceptual understanding 60, 79–80
 - contextualising – two concept generation 53
 - enhancing 132–4, 149–65

- environmental understandings 152
- ethical understanding 40–4
- experiential understandings 53–4, 68, 70
- individual understanding 54–5
- intercultural understandings 40–4
- learners' own understandings 54
- prior understanding 175
- probing for 76–82
- science understandings 9–10, 95, 102, 116–29, 200–4
- values 18–9, 82
- values (of society) 82
- Victorian Early Years Learning and Development Framework (VEYLDF) 16
- Vygotsky, Lev
 - language in learning, importance of 86
 - scientific concepts
 - development 55, 136
 - social constructivism 54–5, 86
 - zone of proximal development 54–5, 57
- wellbeing 29
 - responsibility for 22
 - wellbeing–learning interconnectedness 17
- whole-group discussion 119
- whole-school plan 172–4
 - contents 173
- wonder 8, 22, 102, 153, 180
- working theories 58–9
 - action – implicit mediators 58–9
 - development – everyday concepts 58
- work–play distinction 87–8
- world 189
 - children's connection with and contribution to 22, 28
 - children's exploration of 8, 75, 76
 - children's interest in 94
 - natural world 46, 47, 150
 - resources of 149
- zone of proximal development (ZPD) 54–5, 57, 103, 105
- zones (in classrooms) 117