

NAME INDEX

- Abrahamson, D.: 178
 Abramovich, S.: 121, 138
 Acredolo, C.: 105, 110, 112
 Afantiti Lamprianou, T.: 96, 317
 Ahlgren, A.: 54, 45, 75, 216, 220, 232, 291, 304, 305, 307
 Ainley, J.: 182, 186
 Albert, J.: 57
 Amir, G.: 81, 83, 147, 149, 154, 317, 318
 Andrews, J.: 69
 Aristotle: 18
 Aspinwall, L.: 282
 Atkinson, D.: 290
 Austin, J.: 78
 Baker, D.: 42
 Ball, D.: 351, 353
 Banks, L.: 105
 Barbat, I.: 113
 Bar-Hillel: 254
 Baron, J.: 49, 55
 Bart, W.: 233
 Batanero, C.: VII, 15-37, 241-266, 2, 3, 16, 28, 29, 30, 44, 48, 55, 57, 66, 75, 81, 83, 107, 123, 124, 125, 126, 127, 161, 162, 191, 243, 244, 245, 246, 247, 256, 257, 260, 308, 316, 327, 336, 348, 352
 Bauersfeld, H.: 79
 Beatty, J.: 40
 Begg, A.: 81, 351
 Beilin, H.: 963
 Bellhouse, D.: 20
 Beltrami, E.: 39, 47
 Bennett, D.: 17, 39, 47, 371, 301
 Benson, C.: 81, 106, 107, 131, 192, 196
 Bentz, H.: 16, 106, 123, 152, 216, 221
 Ben-Zvi, D.: 356
 Berenson, S.: 148
 Bernoulli, J.: 15, 18, 21, 23, 32
 Bernstein, P.: 300
 Best, J.: 313
 Beyth-Marom, R.: 48, 52
 Collier, R.: 328
 Bieler, R.: 79, 81, 269, 269, 276, 278, 281, 287, 356
 Biggs, J.: 105, 146, 195, 198, 199, 221, 272
 Bjork, E.: 137
 Bloom, B.: 78, 328
 Borba, M.: 271
 Borel, E.: 24, 25, 26
 Borovcnik, M.: 1, 4, 16, 96, 106, 121, 123, 367, 152, 177, 216, 221, 241, 314
 Boyd, B.: 346
 Boyce, S.: 260
 Bostrom, A.: 43
 Brandsma, J.: 148
 Bright, G.: 82, 217, 358
 Brousseau, G.: 82, 83
 Brown, C.: 136, 219
 Brown, S.: 136
 Bruce, B.: 260
 Bruner, J.: 26
 Budescu, D.: 51
 Burgess, T.: 82
 Cabriá, S.: 24, 25, 31
 Callingham, R.: 45
 Canada, D.: 159, 160, 234
 Cãnizares, M.: 161, 162
 Cardano, G.: 15, 21
 Carey, S.: 128
 Carlson, J.: 77
 Carnell, L.: 352
 Carpenter, T.: 201
 Case, R.: 192, 198, 199, 200, 206, 211, 212
 Castro, C.: 81, 83, 227, 229
 Chaitin, G.: 26, 300
 Chance, B.: 83, 286, 311, 326, 341, 358
 Chervany, N.: 328, 329
 Ciancetta, M.: 159, 160, 234, 250
 Chapman, L.: 255
 Clark, S.: 257
 Clemen, R.: 43, 80
 Cobb, P.: 79, 82, 134, 179, 267, 269, 285, 290, 291, 346

- Cohen, J.: 74, 216
 Collis, K.: 3, 66, 105, 146, 151, 163, 195, 198, 199, 221, 272
 Colvin, S.: 339
 Condorcet: 313
 Confrey, J.: 179
 Cosmides, L.: 44
 Courtebras, B.: 17
 Coutinho, C.: 261
 Cox, J.: 51
 Cross, T.: 257
 Curcio, F.: 281
 Daane, C.: 358
 Darnton: 353
 Daston, L.: 40, 298, 300, 301, 302, 313
 David, F.: 298, 301
 Davidson, D.: 156
 Davis, P.: 267, 298, 303, 304, 310
 Dekel, S.: 48, 52
 Delahaye, J.: 26
 de Moura, L.: 361
 Dessart, D.: 47, 81, 100, 158
 D'Alembert, J.: 32
 De Fermat, P.: 15, 16
 De Finetti, B.: 24, 31
 De Guire, L.: 122, 125
 De Moivre, A.: 21
 del Mas, R.: 76, 79, 233, 286, 287, 326
 Diderot, D.: 18
 di Sessa, A.: 171, 175, 179, 183, 185
 Doumbai, S.: 318
 Dugdale, S.: 356
 Dubois, J.: 125, 242
 Durand, J.: 248
 Edward, R.: 81, 351
 Edwards, A.: 15
 Einstein, A.: 19
 Engel, A.: 69
 English, L.: 121-141, 29, 81, 106, 121, 123, 129, 130, 134, 135, 136, 137, 191, 196, 197, 204, 205, 242
 Erickson, T.: 317
 Er-sheng, O.: 308
 Estepa, A.: 81, 256
 Evans, J.: 80
 Even, R.: 82, 361
 Everitt, B.: 39, 50, 339
 Falk, R.: 75, 81, 105, 110, 111, 112, 216, 225, 251, 254, 307, 314, 352
 Fay, A.: 96
 Feldman, L.: 57
 Feller, W.: 26, 251
 Fennema, E.: 201
 Fermat, P.: 21, 121
 Fey, J.: 217
 Fienberg, S.: 328
 Fillenbaum, S.: 51
 Fine, T.: 25, 26
 Finkelstein, M.: 313
 Fischbein, E.: xv, xvi, 1, 2, 3, 6, 16, 26, 27, 65, 70, 71, 72, 73, 76, 78, 79, 81, 95, 96, 101, 105, 107, 110, 113, 114, 115, 127, 147, 150, 151, 152, 153, 154, 156, 161, 174, 175, 179, 191, 218, 219, 221, 227, 228, 229, 241, 242, 245, 248, 249, 261, 302, 312, 320, 336, 340, 346
 Fischhoff, B.: 43
 Fitzgerald, W.: 217
 Flavell, J.: 128
 Fong, G.: 337
 Forsyth, B.: 51
 Fournival, R.: 20
 Francis, G.: 286
 Franklin, J.: 298, 299, 300, 303, 314, 316
 Freedman, D.: 331
 Friel, S.: 217, 358
 Frierson, D.: 217
 Freudenthal, H.: 84, 121, 254, 302, 309
 Fuson, K.: 135
 Gabriel, K.: 301, 318
 Gagnon, A.: 269
 Gal, I.: vii, 39-63, 2, 3, 26, 40, 42, 44, 45, 46, 50, 52, 54, 55, 80, 311, 326
 Galileo: 16, 20, 299
 Garber, D.: 299
 Gardiner, A.: 134
 Garfield, J.: 75, 76, 79, 81, 150, 161, 216, 220, 232, 247, 262, 286, 291, 304, 305, 307, 311, 326, 329, 330
 Gattuso, L.: 353

- Gauss, C. F.: 25, 27
 Gazit, A.: xv, 72, 78, 127, 147, 150, 151, 152, 153, 218, 219, 221, 227, 228, 229, 242, 245
 Gelman, R.: 96
 Gigerenzer, G.: 40, 53, 55, 369, 156
 Ginsburg, H.: 46
 Gratch, G.: 69
 Griffiths, T.: 300
 Girard, J.: 32, 260
 Gedenko, B.: 23
 Glasersfeld, E.: 346
 Glickman, L.: 326
 Godino, J.: 123, 124, 125, 126, 243, 256, 326
 Goldenberg, E.: 137
 Goldman, S.: 163
 Gras, R.: 251, 252
 Graunt, J.: 268
 Gravemeijer, K.: 269, 271
 Green, D.: 16, 47, 66, 77, 78, 79, 81, 100, 104, 148, 149, 150, 152, 153, 157, 158, 163, 194, 218, 219, 221, 225, 245, 256, 336, 338
 Greenhouse, J.: 58
 Greer, B.: viii, 297-324, 3, 4, 31, 82, 113, 114, 115, 268, 316
 Gregory, R.: 43, 80
 Grinstead, C.: 59
 Harlow, L.: 300
 Hacking, I.: 16, 17, 24, 31, 83, 297, 298, 299, 300, 301, 302, 303, 304, 313
 Haller, S.: 355, 358, 359, 360
 Halliday, M.: 50
 Hancock, C.: 79
 Hansen, A.: 182
 Harel, I.: 186
 Hawkins, A.: 82, 107, 124, 310, 313, 317, 326, 336, 340, 341
 Healy, C.: 136
 Heger, M.: 134
 Heibert, J.: 135
 Heidelberger, M.: 300
 Heinz, K.: 346, 358, 360
 Heisenberg, W.: 19
 Heitele, D.: 26, 27, 28, 31, 242
 Hendrickson, J.: 336
 Hersh, R.: 267, 298, 303, 304, 310
 Hirsh, C.: 122
 Hirsch, E.: 57, 121, 122, 248
 Henry, M.: viii, 15-37, 2, 31, 32, 44, 66, 107, 308, 316
 Hernández, R.: 253
 Hoemann, H.: 77
 Hoffrage, U.: 156
 Hogg, R.: 215, 216
 Holmes, P.: 305, 307, 325, 327
 Hopfsenberger, P.: 369
 Horobin, K.: 105
 Horrying, J.: 271
 Horvath, J.: 96, 105, 106, 107, 108, 115
 Howson, A.: 304, 305
 Hoyles, C.: 181, 183
 Huck, S.: 257
 Huygens, C.: 21, 299
 Inhelder, B.: 1, 6, 29, 65, 66, 67, 68, 72, 77, 96, 98, 99, 100, 101, 104, 105, 106, 110, 112, 127, 130, 173, 218, 225, 242, 245, 254, 255, 302, 336
 Ismael, A.: 318
 Jepson, C.: 336
 Jenkins: 255
 Jolliffe, F.: viii, 325-344, 4, 59, 83, 311, 326, 328, 331, 336, 338, 340
 Johnson, S.: 132, 133, 328
 Johnston, B.: 42
 Joiner, B.: 276, 277, 358
 Jones, G.: xv-xvi, 1-12, 65-92, 367-371, 3, 16, 27, 55, 66, 76, 77, 81, 82, 83, 96, 101, 105, 106, 107, 108, 109, 110, 112, 113, 124, 131, 132, 137, 154, 155, 173, 174, 191, 192, 195, 196, 197, 198, 199, 201, 203, 209, 215, 217, 218, 221, 223, 227, 228, 229, 230, 231, 246, 249, 250, 260, 287, 330, 336, 348, 350, 352
 Kafoussi, S.: 96, 340
 Kahneman, D.: 3, 30, 43, 55, 65, 73, 74, 75, 76, 79, 96, 155, 156, 162, 164, 173, 184, 215, 216, 220, 221, 231, 247, 336

- Kapadia, R.: 1, 4, 16, 107, 123, 216, 367, 336
 Kapur, J.: 121, 122, 126
 Kaput, J.: 303, 317
 Keeler, C.: 59, 339
 Kelly, B.: 101
 Kelly, I.: 101, 159, 160, 216, 234
 Kenny, M.: 121, 122
 Kett, J.: 57
 Keynes, J.: 24
 Kiczek, R.: 227, 229
 Kilpatrick, J.: 42
 Kinzel, M.: 346
 Kipp, W.: 78
 Klahr, D.: 96
 Kline, M.: 301
 Koirala, H.: 229
 Kokonis, S.: 286
 Kojeve, A.: 19
 Kolmogorov, A.: 23, 25, 26, 27, 28
 Konold, C.: 27, 50, 52, 75, 76, 81, 82, 83, 96, 100, 114, 150, 154, 174, 177, 178, 218, 220, 221, 249, 269, 270, 290, 276, 278, 280, 287, 288, 307, 314, 336, 338, 346
 Kosonen, P.: 80
 Kranendonk, H.: 369
 Krantz, D.: 336, 337
 Kruger, L.: 40, 300
 Kunda, Z.: 336
 Kuzmak, S.: 96
 Kvatinsky, T.: 82, 361
 Kyburg, H.: 24
 Lahanier-Reuter, D.: 22
 Lamon, S.: 195
 Lamprianou, L.: 96, 317
 Landwehr, J.: 39, 69, 80, 280, 357
 Lane, S.: 329, 331
 Langrall, C.: ix, 95-119, 3, 4, 16, 17, 27, 66, 74, 81, 83, 96, 105, 107, 108, 112, 124, 132, 137, 173, 192, 195, 201, 203, 217, 231, 326, 330
 Lannin, J.: ix, 215-238, 28, 81, 125, 191, 250, 251, 330, 352
 Laplace, P.: 15, 18, 22, 25, 28, 32, 313
 Lappan, G.: 217
 Lave, J.: 185
 Lecoutre, M.: 81, 160, 161, 174, 192, 248
 Leffin, W.: 77, 78
 Lefoka, P.: 96, 192
 Lehrer, R.: 96, 105, 106, 107, 108, 115, 179
 Leibnitz, G.: 18, 21
 Lesh, R.: 134, 135
 Levin, B.: 313
 Li, J.: 83, 161
 Lichtenstein, S.: 74
 Lightner, J.: 268
 Lipson, A.: 3, 81, 154, 218, 260, 286, 287, 336
 Löf, M.: 26
 Lohmeier, J.: 3, 81, 154, 218
 Lopes, C.: 361
 Lovett, M.: 58
 Lovitt, C.: 217
 Lowe, I.: 217
 Maher, C.: 81, 82, 134, 227, 229
 Mahoney, P.: 50
 Manzat, I.: 70, 71, 72
 Marino, M.: 16, 101, 153, 218, 242, 248, 249
 Martino, A.: 72, 81, 134
 McCabe, G.: 260
 McClain, K.: 134, 269, 358
 McLeod, D.: 45
 Metz, K.: 83, 96, 101, 102, 108, 111, 112, 114, 282, 312, 315, 336
 Miller, C.: 288
 Mills, J.: 260
 Minzat, I.: 105, 113
 Mogill, A.: 3, 27, 66, 81, 96, 107, 132, 137, 192, 217, 231, 330
 Monod, J.: 19
 Mooney, E.: ix, 95-119, 3, 4, 16, 17, 27, 74, 81, 83, 124, 173, 195, 326
 Moore, D.: 46, 47, 50, 57, 96, 97, 105, 112, 260, 267, 275, 280, 285, 286, 290, 291, 308, 315, 325
 Morgan, F.: 57
 Morin, E.: 19

- Moritz, J.: 3, 66, 81, 114, 147, 148, 149, 150, 151, 153, 154, 155, 157, 158, 162, 163, 192, 199, 216, 218, 231, 258, 282
 Moses, B.: 137
 Mulder, J.: 319
 Mukhopadhyay, S.: x, 297-324, 4, 31, 82, 115, 268
 Mulaik, S.: 300
 Navarro-Pelayo, V.: 123, 125, 136, 127, 243, 327
 Nello, M.: 16, 72, 81, 101
 Nemetz, T.: 306, 309
 Neter, J.: 328
 Nguyen, H.: 300
 Nicholson, J.: 353
 Nisbet, R.: 218, 242, 248, 249, 336, 337
 Nisbet, S.: 124, 132
 Nitko, A.: 329, 331
 Nobre, S.: 319, 320
 Noss, R.: 99, 82, 83, 102, 104, 115, 171, 178, 181, 183
 Novick, L.: 135
 O'Connor, I.: 105
 O'Donnell, A.: 248
 Offenbach, S.: 69
 Ovchinnikov, S.: 300
 Packer, A.: 44, 58
 Pampu, I.: 70, 71, 72, 105
 Pange, J.: 328
 Pannone, M.: 353
 Paparistodemou, E.: 83, 99, 178
 Papert, S.: 186
 Parzys, B.: x, 15-37, 2, 25, 44, 66, 306, 308, 316
 Pascal, B.: 15, 16, 21, 57, 121, 298
 Pasteur, L.: 39
 Paulos, J.: 53, 312
 Peard, R.: 1, 3, 4, 16, 83, 96, 121, 177, 241, 314
 Pereira-Mendoza, L.: 82, 83, 150, 161, 353
 Petersen, W.: 46, 319
 Phillips, E.: 217, 287
 Philipp, R.: 346
 Piaget, J.: 1, 6, 29, 65, 66, 67, 68, 70, 72, 76, 77, 96, 98, 99, 100, 101, 104, 105, 106, 110, 112, 127, 128, 173, 192, 218, 225, 242, 245, 254, 255, 256, 302, 336
 Pichard, J.: 21
 Pieper, A.: 121, 138
 Pimm, D.: 50
 Pisani, R.: 331
 Pfannkuch, M.: x, 267-294, 4, 32, 80, 81, 241, 258, 262, 270, 271, 275, 276, 278, 280, 308, 351
 Poincaré, H.: 18, 19
 Poisson: 313
 Polaki, M.: x, 191-214, 4, 27, 29, 81, 82, 83, 96, 109, 110, 112, 123, 124, 130, 153, 192, 194, 195, 196, 197, 198, 199, 201, 206, 209, 210, 212, 317
 Pollatsek, A.: 3, 81, 154, 218, 225, 260, 269, 270, 276, 278
 Popper, K.: 32
 Porter, T.: 40
 Pratt, D.: xi, 171-189, 3, 4, 66, 74, 76, 81, 82, 83, 99, 102, 104, 105, 108, 109, 114, 115, 149, 153, 154, 175, 178, 181, 182, 183, 186, 191, 209, 218, 233, 234, 317, 340, 351
 Prigogine, I.: 19
 Purves, R.: 331
 Quadrel, M.: 43
 Rochelle, J.: 171, 175
 Rider, R.: 357
 Rouncefield, M.: 307, 154, 156, 174
 Ross, B.: 77
 Rous, A.: 132
 Rubick, A.: 270
 Rychen, D.: 58
 Rubin, A.: 260
 Ramsey, F.: 24
 Rapoport, A.: 51
 Reading, C.: 81, 158, 159
 Renyi, A.: 23
 Resnick, L.: 211
 Ritson, R.: 101, 112
 Ruelle, D.: 19

- Rutherford, J.: 58
 Sáenz, C.: 262
 Saldanha, L.: 281, 282
 Salganic, L.: 58
 Sánchez, E.: xi, 241-266, 3, 4, 16, 28, 29, 30, 55, 75, 81, 82, 83, 123, 125, 161, 191, 253, 257, 308, 327, 336, 348, 352, 356, 357
 Saporta, G.: 24
 Scardamalia, M.: 123
 Schauble, L.: 179
 Scheaffer, R.: 39, 69, 80, 98, 369, 280, 285, 287, 357
 Schlottmann, A.: 81
 Schau: 46
 Schnarch, D.: 2, 3, 72, 81, 95, 113, 153, 230, 232, 233, 250, 251, 282, 330, 352
 Schwartz, D.: 163
 Seber, G.: 274
 Selin, H.: 301
 Serrano, L.: 16, 66, 81, 161, 246, 247
 Shafer: 303, 317
 Shamos, M.: 42
 Shaughnessy, J. M.: 1, 2, 3, 4, 16, 71, 72, 73, 75, 76, 78, 81, 83, 96, 100, 114, 369, 145, 158, 159, 160, 216, 217, 218, 220, 223, 224, 225, 227, 228, 231, 232, 234, 241, 250, 270, 280, 304, 307, 317, 336, 346, 350, 362
 Shepler, J.: 66, 78, 79
 Shevokas, C.: 290
 Shin, K.: 258
 Shulman, L.: 351, 353, 360
 Siegel, S.: 69
 Silver, E.: 136
 Simon, J.: 82, 202, 288, 290, 346
 Simon, M.: 82
 Singer, J.: 212
 Skovsmose: 271, 304
 Slovic, P.: 30, 43, 173, 247, 336
 Smith, J.: 74, 171, 175
 Snell, L.: 46, 53, 57, 59
 Speiser, R.: 81, 82, 192
 Sriraman, B.: 134, 135
 Steen, L.: 42, 58, 50
 Steinbring, H.: 66, 78, 79, 80, 114, 349, 350, 355
 Steinhorst, K.: 59
 Stengers, I.: 19
 Stevenson, H.: 69
 Stewart, I.: 300, 302, 304
 Stohl, H.: xi, 345-366, 4, 76, 81, 82, 83, 138, 177, 209, 229, 233, 282, 304, 327, 340, 345, 357, 360
 Street, B.: 42
 Steiger, T.: 300
 Swijjink, Z.: 40
 Székely, G.: 16
 Tall, D.: 175
 Tanis, E.: 191, 215, 216
 Tarr, J.: xii, 215-238, 28, 81, 82, 105, 109, 125, 138, 149, 153, 154, 155, 177, 191, 201, 215, 217, 218, 219, 221, 225, 227, 228, 229, 230, 232, 233, 250, 251, 282, 330, 352
 Tauber, L.: 81, 257
 Thislewaite, L.: 54
 Thom, R.: 18, 19
 Thomas, C.: 217
 Thompson, P.: 281, 282, 346
 Thornton, C.: xii, 65-92, 3, 16, 27, 55, 66, 81, 96, 105, 107, 109, 110, 113, 124, 132, 137, 173, 174, 192, 201, 217, 218, 223, 231, 246, 249, 330, 348, 350, 352
 Tenenbaum, J.: 300
 Tenney, Y.: 260
 Tong, R.: 300
 Tooby, J.: 44
 Toohey, P.: 246
 Torok, R.: 159
 Totohasima, A.: 251, 252
 Trefil, J.: 57
 Truran, J.: 29, 97, 305, 311
 Truran, K.: 98, 101
 Tversky, A.: 3, 30, 43, 65, 73, 74, 75, 76, 79, 96, 155, 156, 162, 164, 216, 220, 221, 231, 247, 336
 Tzur, R.: 346
 Utts, J.: 49, 54

- Vacc, N.: 345
 Van Dooren, W.: 319
 Varga, T.: 69, 314
 Venezky, R.: 42
 Ventsel, H.: 23
 Vessel, A.: 358
 Vidakovic, D.: 148, 192
 Vinner, S.: 175
 Voigt, J.: 346
 Volkova, T.: 96
 Von Mises, R.: 23, 26, 28
 Vos, K.: 339
 Vygotsky, L.: 79
 Wallman, K.: 44
 Wallsten, T.: 51
 Walter, C.: 82, 192
 Walter, M.: 136, 137
 Ward, W.: 255
 Warfield, V.: 82
 Watkins, A.: 39, 69, 80, 280
 Watson, J.: xii, 145-169, 3, 4, 16, 17,
 28, 30, 45, 66, 75, 81, 82, 83, 101,
 114, 147, 148, 149, 150, 151, 152,
 153, 154, 155, 156, 157, 158, 159,
 160, 162, 163, 173, 174, 191, 192,
 199, 216, 217, 218, 231, 234, 248,
 258, 270, 280, 281, 282, 285, 319,
 326, 336, 348, 352, 354, 357, 358,
 360
 Way, J.: 72, 101
 Well, A.: 3, 154, 218, 260, 269, 336
 Wild, C.: 262, 271, 274, 275, 276, 278,
 280
 Wilensky, U.: 175, 177, 178
 Wilkening, F.: 111, 112
 Whinne, P.: 80
 Wild, C.: 271, 274, 275, 276, 278, 280
 Williams, J.: 81, 83, 147, 148, 149,
 Wilensky, U.: 175, 177, 178
 Wilkening, F.: 111, 112
 Williams, J.: 81, 83, 147, 148, 149, 154,
 317, 318
 Winograd, K.: 136
 Wood, R.: 328, 329, 331
 Yackel, E.: 134
 Yager, R.: 300
 Yáñez, G.: 218, 233
 Yarbrough, S.: 358
 Yates, F.: 43, 260
 Yoon, C.: 270
 Zabell, S.: 26, 299
 Zaslavsky, O.: 39
 Zawojewski, J.: 21
 Zigler, E.: 69
 Zimmermann, G.: 82, 132, 191, 209,
 260
 Zwick, R.: 51
 Zwiers, F.: 216

SUBJECT INDEX

- Addition rule: 27
Adjustment & anchoring –see Heuristics
Adult literacy: 40-42
Adult numeracy: 40, 42-44
Animal Lottery: 319
Animistic behaviors: 101,
Anything can happen: 149, 151, 152, 160
Assessment: 5, 10, 11, 49, 58-59, 60, 76, 78, 85, 87, 89, 90, 111, 123, 133, 156, 205, 219, 227, 228, 250, 252, 270, 271-274, 290, 305, 309, 310, 311, 317, 325-341, 370, 371
 Alternative forms of: 311, 327, 339-340
 Authentic: 339, 370, 371
 Diagnostic: 325, 336, 338
 Evaluative: 325, 326
 Formative: 325, 326, 333, 338, 341
 Frameworks for: 305, 327-330, 331, 341
 Oral: 331, 338, 339, 340
 Portfolio: 330, 339
 Summative: 325, 326, 333
 Tasks: 194, 202, 209, 227, 229-230, 233, 327, 328, 329, 330-338, 339, 340, 341, 351
Association: 242, 254-257, 369
 Contingency tables: 242, 254-257
 Direct: 256
 Empirical: 256
 Inverse: 255, 256, 257
Astronomy: 301
Attitudes: 42, 45-46, 55, 60, 329, 340
Availability-see Heuristics
Bayes' Theorem: 24, 49, 253, 335
 Bayesian methods: 260
 Bayesian school: 24
 Bayesian theory: 313, 327
Beliefs: 3, 8, 11, 15, 42, 45-46, 49, 55, 60, 61, 70, 71, 73, 80, 81, 90, 92, 102, 147, 148, 154, 164, 184, 209, 220, 255-257, 260, 261, 263, 281, 287, 281, 287, 301, 303, 318-320, 329, 337, 340, 346
Binary-choice task: 110, 112
Bloom's taxonomy: 328
Cartesian Product: 122, 123
Centre for Statistical Education, Sheffield: 305
Certain (Certainty): 48-53, 59, 67-69, 97, 107, 112, 313, 353
Chance: 1, 2, 6, 8, 11, 15-16, 20-21, 27-31, 67-68, 72-73, 75-76, 80, 81, 83, 95-98, 101-104, 107-108, 112-115, 128, 146, 147, 148-152, 154, 159, 160, 162-163, 171-174, 194, 199, 206-208, 248, 249, 262, 267-268, 277, 278, 280, 281, 285, 287, 288, 290, 298-301, 304, 313, 317, 318, 320, 327, 336, 338, 339, 352, 354-358, 367, 368, 371
 Chance and causality: 17-19
 Chance and determinism: 17-19, 300
 Chance in philosophy: 17, 19, 25, 30, 31
Chance-Maker: 102-104, 154, 178, 179-187
Chance News: 319
Choice and decision making: 43, 57, 63
Cognitive obstacles: 302
Cognitively Guided Instruction: 201
Coin(s): 147, 154, 162, 177, 179, 181-182, 246, 247, 254, 328, 329, 338, 348, 349, 352
 Fair Coin: 198, 207, 209, 247, 329, 338, 348, 349
Combinations: 15, 29, 67, 68, 73, 122-124, 127-130, 133, 137, 172, 173, 174, 197, 241, 242, 244, 332

- Combinatorics (Combinatorial): 6, 7, 8, 29, 69-70, 72, 100, 121-141, 242-245, 299, 301, 310, 357, 368
- Configurations: 125-127, 242, 245
 - Counting: 20, 121-122, 125, 134, 137, 241, 243
 - Distribution problems: 126-127, 243, 244
 - Error of order: 244
 - Error of repetition: 244
 - Models: 123, 135, 242-244
 - Operations: 123, 127, 128, 242
 - Partition problems: 125-126, 242, 244
 - Permutations: 123, 127, 241, 242, 243, 245
 - Procedures: 123-124, 130, 137, 242, 243
 - Reasoning: 121-122, 124, 127-131, 132-134, 242-245
 - Selection problems: 127, 242-243, 244
 - Type of object: 244-245
- Comparison of events-see Probability comparisons
- Compound probabilities: 75, 249, 251
- Diachronical situations: 253
 - Synchronical situations: 253
- Computational orientation towards teaching: 346, 347, 360
- Computer: 31, 33, 59, 79, 154, 177-179, 187, 208, 233, 257, 258, 260, 316, 331, 339, 340, 356
- Assessment: 331, 339, 340
 - Environment: 99, 109, 113, 186, 288
 - Games: 99
 - Literacy: 41, 180
 - Microworld: 82, 102, 104, 115, 138, 177-180, 263, 369
 - Simulation: 202, 208, 260, 292-283, 285-287, 290, 356, 357
 - Technologies: 83, 115, 138
- Concept
- Concept formation: 216, 220
 - Concept image: 175
 - Conceptions: 241, 250, 252, 257, 262, 281, 283, 286, 287, 302, 310, 315, 317, 369
 - Cardinal conception: 252
 - Causal conception: 252, 257
 - Chronological conception: 252
 - Probability conceptions: 2, 3, 6, 9, 65, 70, 79, 81, 145, 148, 346, 369
- Concrete operational stage: 67-69, 72, 128
- Concept-tool gap: 79
- Conditional Probability: 9, 28, 49, 75, 81, 96, 105, 132, 155-156, 192, 193, 215-234, 241, 242, 250-254, 307, 313, 327, 328, 330, 335, 352, 354, 368, 369, 370
- Conditional probability and causality: 251-253
 - Conditioning event: 75, 219, 227, 232, 252, 254, 352
- Conjecture: 203, 208
- Conjunction Fallacy: 74-75, 156, 157
- Constructionism (t): 186
- Constructivist learning: 316, 346
- Controversies around the meaning of chance and probability: 16, 31
- Critical question: 44, 46, 53-56, 59
- Cross-cultural studies: 317
- Cultural evolution: 303
- Curriculum: xvi, 1-9, 11, 12, 46, 66, 69-70, 72, 75, 79-81, 83, 115, 121-122, 124, 127, 136, 138, 145, 148, 151, 155, 160, 162, 164, 176, 216, 217, 234, 242, 269, 275, 281, 286, 304-308, 311, 314-318, 345, 351, 353, 357, 359, 367, 369, 371
- DataScope: 288
- Degree of belief: 300
- Determinacy: 96-97
- Determinism: 115, 298, 300, 312
- Deterministic
- Thinking: 2, 18, 27, 77, 97, 102, 104, 109, 112-113, 115, 175, 193, 195, 198, 337, 347, 351, 353, 360, 362

- Phenomena: 19, 95, 347, 360, 361, 368
- Developmental stages: 72, 146, 286-287
- Diagnostic testing: 313
- Dice: 147-148, 150, 153, 154, 160, 163, 164, 179-180, 182, 186, 207, 298, 299, 316, 347, 357
- Discrete mathematics: 121-122, 134
- Disjunction Fallacy: 75
- Distribution: 8-10, 29, 30, 67-69, 77, 81, 96, 98-101, 104, 106-108, 112, 157, 158, 159, 164, 172-173, 176, 183-184, 193, 223, 234, 241, 242, 245-247, 256, 257-258, 259, 262, 268-291, 306, 312, 327, 336, 356, 368, 369, 370
- Distribution models:
- Binomial: 247, 301
 - Empirical: 248, 288
 - Normal: 257-258, 268, 275, 283, 285, 311
 - Population: 247, 280, 284, 350
 - z-score(s): 257
- Divination: 298
- Divine intervention: 298, 318
- Enumeration process: 122-124, 138
- Epistemological anxiety: 175, 177
- Epistemological obstacles: 178, 252
- Epistemology: 83, 174, 299, 304, 311, 312, 314, 350
- Equidistribution: 28-29
- Equiprobability: 316
- Equiprobability Bias: 146, 160-161, 174, 248
- Eurocentrism: 301
- Events
- Certain events: 150, 155
 - Complement: 110, 191, 193, 226, 334
 - Compound events: 8, 9, 16, 27-29, 124, 146, 147, 153-154, 161, 162, 191-192, 196-198, 199, 200-201, 204-205, 206-211
 - Conditional events: 146, 155-156, 162, 233
 - Conjunction events: 146, 156-157, 352
 - Contiguous events: 76-77
 - Favorable event: 21-22, 254
 - Impossible event: 112, 150, 155, 249
 - Independent events: 153, 154, 191, 193, 216, 222, 224, 252, 327, 355
 - Noncontiguous events: 77
 - Simple events: 28, 108, 124, 146, 151-152, 153, 191, 194-196, 198-200, 202-203, 205-206, 211, 252, 306
 - Uncertain event(s): 318
- Evolutionary epistemology: 303
- Expectation: 21, 29, 81, 148, 149, 242, 255, 261, 313, 348, 355
- Experimental approach: 350, 357
- Experimental contract: 318
- Experimental (Empirical) probability: xv, 3, 105, 107-109, 124, 172, 192, 206, 208, 209, 347-348, 368, 369
- Experimentation: 101, 108, 192, 207-209, 262, 316
- Experiments
- Compound (Two- or more-dimensional, two- or more-stage): 100, 106, 123, 131-133, 192, 194, 196, 197-198, 200, 203, 206, 209, 241, 261, 369
 - Large-scale (long-term): 184-186, 280
 - Simple (One-dimensional, one-stage): 100, 124, 132, 194, 196, 199, 202
 - Fair (Fairness): 8, 81, 103, 104, 112, 147-148, 153, 164, 175-176, 179, 181, 196, 272, 319, 350, 368
 - Fair game: 99, 162, 203, 207, 208, 210, 211, 230, 356
- Fallacy of the Time Axis: 75, 251-253
- Fathom: 288, 364
- Formal Operation Stage: 67-69, 72, 77, 128, 130, 243, 247
- Formatting power: 304
- Fractions: 210, 217, 315, 354, 355, 362

- Framework (cognitive): 9, 12, 105, 106, 109, 112-114, 154, 172, 183, 192-193, 196, 201, 221-224, 228, 229, 231, 250, 242, 269, 270, 275, 276, 284, 290, 330, 331, 340, 368
 Framework: Teachers' Subject Matter Knowledge of Probability: 361-362
 Fundamental Counting Principle (Multiplication Rule): 122, 125, 197-198, 204, 205, 212
 Fundamental stochastic ideas: 26, 31, 35, 242
 Fuzzy logic: 300
 Gadget: 179-187
 Gambler's Fallacy: 55, 74, 246, 348
 Gambling: 301-303, 318, 320
 Games of chance: 22, 26-29, 31, 121, 262, 246, 268, 298, 299, 301, 316, 318, 320
 Generative strategy: 193, 196, 198, 204-205, 210
 Heuristics: 73-76, 173-174, 246, 318, 352
 Adjustment and anchoring: 74
 Availability: 74, 174, 221, 336
 Representativeness: 74, 76, 88, 174, 193, 220, 222-224, 229, 233, 234, 246, 247-248, 250, 261, 336, 359
 Historical development of probability: 29, 268, 298-302, 316
 Illusory correlation: 255
 Implications for teaching (see Teaching implications)
 Inconsistency (ies): 176,
 Independence: 3, 8, 9, 25, 28, 37, 46-48, 50, 55-56, 76-77, 81, 96, 98, 154, 155, 164, 192-193, 215-234, 241, 242, 250-254, 256, 257, 306, 307, 310, 352, 357, 361, 368, 369, 370
 Statistical independence: 307, 310, 333
 Independent thinking: 134
 Indeterminate situations: 97
 India: 301, 302
 Indigenous games: 318
 Inference: 9-10, 163, 172, 177, 242, 253, 258-260, 267-291, 302, 350, 353, 354, 369, 370
 Classical approach: 285-287, 291, 337, 370
 Distributional reasoning: 275, 279-280
 Formal inference: 268, 269, 270, 275-290, 291
 Informal inference: 269-275, 280, 282, 284, 370
 Resampling approach: 288, 290-291
 Sampling reasoning: 275, 280-283
 Simulation and classical approach: 286-287, 370
 Simulation approach: 285, 287-290, 370
 Input probabilities: 65, 69
 Instructional sequence design: 202, 211
 Insurance: 298, 301, 303
 International Conference on Teaching Statistics (ICOTS): 305
 Interpretation: 41-46, 56, 63, 97, 100-102, 109, 112, 145, 148, 149, 151, 152, 163, 164, 173, 195, 198, 200, 300, 319, 320, 325, 327, 328, 329, 347, 348, 354, 357
 Intuition: xv, 70-73, 95-98, 100, 102-103, 112-113, 115, 154, 162, 173-177, 179, 184, 187, 229, 234, 241, 245, 256, 261, 262, 277, 300, 302, 303, 314, 315, 318, 320, 325, 336, 346, 348, 362, 369, 370, 371
 of chance: 6, 26, 72, 73,
 of randomness: 175-176, 179, 181
 of relative frequency: 72
 primary: xv, 70-71, 113-114, 175, 191, 248, 318, 325, 362, 367
 secondary: 70-71, 113-113, 175, 28, 29, 146, 164, 216, 232
 Irregularity: 98, 175
 Journal of Statistical Education: 319
 Judgment under uncertainty: 73, 75
 Kolmogorov axioms: 25, 306

- Lack of cultural support: 312
- Language of probability (chance): 50, 52, 59, 70, 81, 146, 148-152, 171, 172, 199, 290, 368
- "50-50" chance: 149-150, 159, 160, 171, 174, 218-219, 224
- Law: 298, 299, 303, 313-314
- Law of large numbers: 8, 23, 67-69, 75, 78, 99, 100, 109, 172, 173, 176, 183-185, 209, 245, 337, 348-350, 357, 360-362, 369
- Law of small numbers: 184, 348
- Learning environments (experiences): 8, 83, 138, 192, 203, 206, 213, 227-229, 368
- Learning trajectories: 82, 83
- Levels of reasoning (thinking): 3, 105-106, 220-224, 229, 250, 259, 302, 330
- Likelihood: 3, 68, 76, 105, 108-111, 148-150, 155, 162, 185, 198-200, 206, 211, 225, 241, 246, 247, 281, 290, 349, 369
- Lottery: 147, 148, 307, 319, 338, 339
- Luck: 8, 81, 101, 146-14, 317, 319, 355
- Margin of error: 313
- Mathematical structure: 249-250, 316
- Mathematics Framework for California Schools: 306
- Meanings of probability (see Probability)
- Measures of center: 275, 276-278, 279, 284
- Media: 311, 312-313, 319
- Medicine: 299, 301, 339
- Mental Counting Line: 195-196, 199-200, 206, 212
- Misconception (s): 3, 7, 9, 12, 15, 27, 28, 37, 70-71, 73-75, 81, 96, 107, 113, 124, 138, 171, 173-176, 183, 195, 203, 218-227, 227, 229, 231, 241-242, 247-250, 251-252, 257, 262-263, 302, 313, 340, 341, 370, 371
- Modeling (Probability modeling): 10, 24, 30-31, 33, 35, 106-107, 114, 186, 208, 276, 278, 287, 300, 302, 304, 306, 308, 312, 313, 314, 315-317, 320, 329, 370
- Multidisciplinarity: 308
- National Curriculum (UK): 172, 216, 217, 304, 305, 307, 320
- National Statement (Australia): 66, 79, 96, 171, 172
- Native Americans: 318
- Negative recency: 74, 154, 222, 223, 338, 359
- Nondeterministic: 268, 278, 315
- Novel problems: 129, 131, 134, 137
- Numeracy in the News: 319
- Odds: 72-73, 163, 193, 223, 225, 226, 227, 233, 302, 320, 338, 353, 354, 371
- Odometer strategy: 123, 125, 129-133, 197-198, 204-205, 208
- Operations: 205, 212, 225, 347
- Opinion polls: 312
- Order: 206, 210-212, 195-196, 198-200, 202, 300
- Origins of probability: 302
- Outcome approach: 75-76, 249
- Parameters: 245, 258, 285
- Part-part relationships/comparisons (schema): 112, 193 195-196, 199-200, 206, 210-212, 224, 225, 226, 354
- Part-whole relationships/ comparisons (schema): 110-112, 193, 195, 199-200, 206, 212, 224, 225, 354
- Pedagogical framework: 269, 275-276, 284, 290
- Physical sciences: 307, 315
- Pluginski: 334, 335
- Positive recency: 74
- Possibility theory: 300
- Practical work: 325, 340
- Prediction (Predicatability): 98, 99, 101, 106, 108, 154, 155, 159, 191, 192, 198-202, 206, 209-212, 222- 224, 229, 249, 250, 268, 278, 284, 307, 315, 320, 341

- Preoperational stage: 67, 128
- Principles and Standards for School Mathematics (NCTM): 66, 79, 96, 121, 172, 216, 217, 241, 306, 307, 345, 346, 357
- Probabilistic reasoning (thinking): xv, 1, 4, 6-7, 9-12, 95-96, 105-106, 109, 112-113, 132, 145, 146, 147, 162, 192, 200-202, 211-212, 218-221, 224, 227-228, 229, 230, 234, 241, 242, 262, 268, 269, 275, 276, 278, 280, 281, 284, 297, 300-303, 319, 312, 314, 315, 317, 325-327, 330-334, 336-339, 341, 345, 346, 351, 357, 368, 369, 370
- Probability
- Axiomatic approach (meaning of): 16, 19, 24, 25-26, 28, 30-31, 306, 310, 361
 - Classical approach (meaning of) [Laplacean approach]: 2-3, 6, 10, 21-24, 27, 31, 44, 48-49, 56-57, 66, 69, 72, 78-80, 81, 98, 99, 101, 145, 165, 262, 313, 347, 348, 350, 353, 360-362, 368, 369
 - Frequentist approach (meaning of): 2-3, 22, 23-24, 30, 32, 44, 47-49, 56-57, 66, 72, 75, 78, 79, 81, 83, 107, 163, 192, 249, 260, 262, 306, 347, 348, 361, 368, 369
 - Subjective approach (meaning of): 2, 6, 22, 24-25, 29, 32, 43-44, 48, 51, 55, 56, 66, 75, 81, 83, 145, 164, 260, 262, 300, 302, 319, 326, 361
- Probability-adjustment task: 111
- Probability comparisons (most favorable sample space): 68, 76, 101, 105, 132, 152-153, 192-193, 225, 228, 231-232, 330
- Probability Explorer: 177, 357
- Probability in real world situations: 39, 42
- Probability literacy: 3-4, 5-7, 80, 368
- Context: 40-41, 43, 44, 45-47, 52-56, 57, 58, 59
 - Dispositions: 40, 41, 45-46, 56, 58-59
 - Knowledge bases: 41, 44-46, 52, 55, 58
 - Skill transfer: 58-59
- Probability measurement: 81, 226
- Probability of an event (most likely/least likely event): 8, 74, 76-77, 105, 107, 110-113, 132, 192-193, 198, 200-202, 205-206, 208, 219, 220, 223, 328, 330, 347
- Probability questions (see Assessment-Tasks)
- Problem posing: 136-137
- Problem solving: 125, 242-245, 252, 263, 329, 368
- Problem structures: 126, 135-138
- Projects 217, 330, 331, 334, 339, 340
- Proof beyond reasonable doubt: 303
- Proportion (Proportionality): 96, 100, 110-112, 146, 152-153, 175, 261, 282, 308, 335, 340, 347-349, 350, 351, 354
- Proportional reasoning: 96, 110-112, 151, 152, 159, 164, 315
- Pseudorandom: 186, 338
- Purpose and utility: 182-183, 185, 186-187
- Quantitative literacy: 42, 58, 61-62, 358, 359
- Randomness: 46-48, 50, 52, 55-56, 60-62, 69, 78, 80-81, 96, 101, 115, 172-179, 181, 183-184, 186, 242, 262, 277, 288, 298, 300, 312, 316, 337, 338, 368, 369, 371
- Meanings of randomness: 16, 17, 20-22, 30, 34, 35, 98, 100, 102, 104, 175-176
 - Perception of randomness: 67, 69, 77, 175-176, 245-247, 369
 - Random behavior: 146, 157-158, 368
 - Random distribution: 77, 98-102, 157
 - Random draw: 98, 100-101, 105, 332, 337
 - Random experiment: 69, 132, 175-176, 191, 194-196, 200-212, 215-216, 233-234

- Random generator: 65, 98, 101-102, 105, 108-109, 115, 147, 148, 151, 179, 186
 Random mixture: 67-68, 98-99, 101, 368
 Random pattern: 100, 352
 Random phenomena: xvi, 17, 23, 24, 97, 100, 102, 105, 107-109, 112, 194, 298, 315, 326, 333, 334, 339, 347, 353
 Random sequences: 25, 26, 245-247, 353
 Random variable: 20-30, 241, 242, 257-258, 311, 370
 Random variation: 250, 278, 288
 Randomness and probability: 2-6, 8, 20-24
 Reasons for learning probability: 39
 Redundant control: 184
 Relative frequency (ies): xv, 23, 30, 155, 175, 178, 192, 209, 246, 256, 327, 350, 356, 369
 Convergence to probability: 30, 172, 261, 348
 Religion: 301, 318
 Representational fluency: 134
 Representations: xv, 113-115, 131, 134-135, 224, 225-227, 286, 317, 347, 351, 357, 359, 361, 362
 Representativeness: see Heuristics
 Risk: 40-42, 46-47, 50-53, 55-56, 60, 62, 156, 162, 171, 297, 303, 304, 308, 313, 339
 Sample space: 3, 7, 8, 25, 27, 29, 32, 33, 67-69, 71, 76-78, 81, 96, 105-110, 115, 123, 124, 131-133, 157, 162, 163, 164, 192-198, 200-208, 210-212, 215-216, 218-220, 222, 225-228, 231-232, 241, 248, 250-252, 254, 280, 282, 284, 285, 286, 330, 333, 335, 361, 368, 369
 Sample space composition: 192, 200, 202, 203, 219, 226
 Sample space misconception: 107, 132
 Sample space symmetry: 192
 Samples (Sampling): 8-10, 29, 30, 32, 39, 48-49, 53-54, 96, 101, 103, 109, 123, 125, 146, 155, 158-160, 163, 177, 216, 219, 230, 233, 241, 242, 253, 258-260, 261, 281, 282, 284-288, 290, 291, 304, 313, 318, 328, 330, 336, 337, 353, 354, 357, 368
 Sampling distribution: 48, 49, 80, 241, 260, 327, 370
 Sampling procedures: 243
 Sampling reasoning (see Inference)
 Scaffolding: 83, 211
 School levels
 Elementary(Primary): 3, 5, 7-8, 69, 70, 77, 80, 81, 95-115, 121-138, 145, 147, 151, 192, 199-201, 209, 211-212, 217, 316, 345, 351-353, 356-359, 361, 367, 368, 369
 Middle: 5, 7-9, 70, 75, 77, 80, 81, 122, 131, 145-165, 171-187, 191-213, 215-234, 250, 282, 355, 357, 360, 361, 367, 368, 369
 Secondary (High): 5, 9-10, 70, 71, 77, 81, 122, 145, 209, 217, 219, 267-291, 306, 325, 345, 352-354, 356, 358, 361, 367, 369, 370
 Simulation: 11, 30-31, 33, 35, 79, 81, 100, 132, 138, 154, 179, 192, 202, 207-209, 233-234, 241-263, 241, 242, 260-261, 262, 263, 269, 282, 283, 284, 285, 286-289, 316, 317, 340, 350, 351, 354, 356-357, 360, 369, 370
 Situated Abstraction: 181-182, 185
 Small-group discussion: 202, 205
 Social contexts: 150, 155, 157, 163, 216
 Social sciences: 307, 308, 315
 South Africa: 320
 Spinners: 160, 191, 194, 203, 207, 210, 250
 Statgraphics: 258
 Statistical dead heat: 313
 Statistical literacy: 6, 12, 40-41, 44-46, 52, 55-57, 60, 62-63, 162, 319
 Statistical tests: 300

- Subjective judgments (Thinking): 67, 71, 95, 97, 101, 105, 107, 109, 132, 154, 155, 164, 193, 221-222, 330, 367
- Superstition: 101, 303
- Target event: 67-69, 71, 77, 110, 191, 226, 352
- Taxonomy of learning outcomes (SOLO): 105, 146, 195, 198, 19, 221, 272, 273
- Teacher(s)
- Beliefs about: 11, 310, 345, 346, 351-353, 360
 - Content knowledge: 11, 82, 351-353, 355, 359-361, 370, 371
 - Implementation of probability lessons: 341, 351, 355-356
 - Pedagogical content knowledge: 351-354, 358, 359, 360, 361, 362, 370, 371
 - Planning paradox: 182, 186
 - Understanding of students' understanding: 229, 275, 281, 339, 340, 351, 354, 370, 371
 - Use of simulation tools: 351, 356-357, 360
- Teacher development projects: 346, 351, 357-360
- Teacher education: 5, 11, 345, 346, 349, 351, 358, 360-362, 370
- Teaching experiments: 66, 107, 112, 218, 227-230, 269, 369
- Teaching implications (Implications for teaching/pedagogy): xvi, 31-34, 145, 182-187, 227, 230-234, 261-263, 300, 326, 327, 346, 368, 369
- Teaching objectives: 328
- Teaching of probability: xv, 3, 4, 7, 10, 245, 262, 270, 300, 305-307, 312, 314, 320, 326, 327, 349, 358, 360, 370
- Technology (Technological approaches): 8, 66, 70, 83, 138, 176-182, 185-186, 234, 286, 356, 360, 362, 368, 369
- Theoretical probability: xv, 78-80, 105, 192, 208, 205 109-110, 155, 159, 177, 228, 261, 282, 348-350, 354, 355, 357, 361, 368, 369
- Tilt box task: 99
- Tree diagram: 245, 252, 253, 354, 361
- Trial-and-error: 196, 198, 204, 205, 211
- Triangle of relationships (concept, object, sign) : 78, 350, 355
- Uncertainty: 6, 10, 12, 43, 45-47, 67-69, 73-75, 88, 96-98, 101-102, 115, 164, 173, 193, 199: 282, 285, 290, 297, 298, 300, 302, 303, 312, 315, 316, 347, 351, 353
- Unpredictability: 97, 101, 104, 152, 175-176, 246, 247, 360
- Unsteerability: 175
- Variation: 1, 8, 39, 44, 46-48, 52, 55-56, 81, 108, 114, 146, 148, 158-160, 172, 173, 176, 241, 245, 250, 257, 260, 268, 275-278, 281, 282, 284-285, 288, 291, 313, 318, 368
- Sampling variation: 313
- Whole-group discussion: 205

Mathematics Education Library

Managing Editor: A.J. Bishop, Melbourne, Australia

1. H. Freudenthal: *Didactical Phenomenology of Mathematical Structures*. 1983
ISBN 90-277-1535-1 HB; 90-277-2261-7 PB
2. B. Christiansen, A. G. Howson and M. Otte (eds.): *Perspectives on Mathematics Education. Papers submitted by Members of the Bacomet Group*. 1986
ISBN 90-277-1929-2 HB; 90-277-2118-1 PB
3. A. Treffers: *Three Dimensions. A Model of Goal and Theory Description in Mathematics Instruction The Wiskobas Project*. 1987 ISBN 90-277-2165-3
4. S. Mellin-Olsen: *The Politics of Mathematics Education*. 1987
ISBN 90-277-2350-8
5. E. Fischbein: *Intuition in Science and Mathematics. An Educational Approach*. 1987
ISBN 90-277-2506-3
6. A.J. Bishop: *Mathematical Enculturation. A Cultural Perspective on Mathematics Education*. 1988 ISBN 90-277-2646-9 HB; 1991 0-7923-1270-8 PB
7. E. von Glasersfeld (ed.): *Radical Constructivism in Mathematics Education*. 1991
ISBN 0-7923-1257-0
8. L. Streefland: *Fractions in Realistic Mathematics Education. A Paradigm of Developmental Research*. 1991
ISBN 0-7923-1282-1
9. H. Freudenthal: *Revisiting Mathematics Education. China Lectures*. 1991
ISBN 0-7923-1299-6
10. A.J. Bishop, S. Mellin-Olsen and J. van Dormolen (eds.): *Mathematical Knowledge: Its Growth Through Teaching*. 1991
ISBN 0-7923-1344-5
11. D. Tall (ed.): *Advanced Mathematical Thinking*. 1991
ISBN 0-7923-1456-5
12. R. Kapadia and M. Borovenik (eds.): *Chance Encounters: Probability in Education*. 1991
ISBN 0-7923-1474-3
13. R. Biehler, R.W. Scholz, R. Sträßler and B. Winkelmann (eds.): *Didactics of Mathematics as a Scientific Discipline*. 1994
ISBN 0-7923-2613-X
14. S. Lerman (ed.): *Cultural Perspectives on the Mathematics Classroom*. 1994
ISBN 0-7923-2931-7
15. O. Skovsmose: *Towards a Philosophy of Critical Mathematics Education*. 1994
ISBN 0-7923-2932-5
16. H. Mansfield, N.A. Pateman and N. Bednarz (eds.): *Mathematics for Tomorrow's Young Children. International Perspectives on Curriculum*. 1996
ISBN 0-7923-3998-3
17. R. Noss and C. Hoyles: *Windows on Mathematical Meanings. Learning Cultures and Computers*. 1996
ISBN 0-7923-4073-6 HB; 0-7923-4074-4 PB
18. N. Bednarz, C. Kieran and L. Lee (eds.): *Approaches to Algebra. Perspectives for Research and Teaching*. 1996
ISBN 0-7923-4145-7 HB; 0-7923-4168-6, PB
19. G. Brousseau: *Theory of Didactical Situations in Mathematics. Didactique des Mathématiques 1970-1990*. Edited and translated by N. Balacheff, M. Cooper, R. Sutherland and V. Warfield. 1997
ISBN 0-7923-4526-6
20. T. Brown: *Mathematics Education and Language. Interpreting Hermeneutics and Post-Structuralism*. 1997
ISBN 0-7923-4554-1 HB
Second Revised Edition. 2001
ISBN 0-7923-6969-6 PB

Mathematics Education Library

21. D. Coben, J. O'Donoghue and G.E. FitzSimons (eds.): Perspectives on Adults Learning Mathematics. Research and Practice. 2000 ISBN 0-7923-6415-5
22. R. Sutherland, T. Rojano, A. Bell and R. Lins (eds.): Perspectives on School Algebra. 2000 ISBN 0-7923-6462-7
23. J.-L. Dorier (ed.): On the Teaching of Linear Algebra. 2000
ISBN 0-7923-6539-9
24. A. Bessot and J. Ridgway (eds.): Education for Mathematics in the Workplace. 2000
ISBN 0-7923-6663-8
25. D. Clarke (ed.): Perspectives on Practice and Meaning in Mathematics and Science Classrooms. 2001 ISBN 0-7923-6938-6 HB; 0-7923-6939-4 PB
26. J. Adler: Teaching Mathematics in Multilingual Classrooms. 2001
ISBN 0-7923-7079-1 HB; 0-7923-7080-5 PB
27. G. de Abreu, A.J. Bishop and N.C. Presmeg (eds.): Transitions Between Contexts of Mathematical Practices. 2001
ISBN 0-7923-7185-2
28. G.E. FitzSimons: What Counts as Mathematics? Technologies of Power in Adult and Vocational Education. 2002
ISBN 1-4020-0668-3
29. H. Alrø and O. Skovsmose: Dialogue and Learning in Mathematics Education. Intention, Reflection, Critique. 2002
ISBN 1-4020-0998-4 HB; 1-4020-1927-0 PB
30. K. Gravemeijer, R. Lehrer, B. van Oers and L. Verschaffel (eds.): Symbolizing, Modeling and Tool Use in Mathematics Education. 2002
ISBN 1-4020-1032-X
31. G.C. Leder, E. Pehkonen and G. Törner (eds.): Beliefs: A Hidden Variable in Mathematics Education? 2002
ISBN 1-4020-1057-5 HB; 1-4020-1058-3 PB
32. R. Vithal: In Search of a Pedagogy of Conflict and Dialogue for Mathematics Education. 2003
ISBN 1-4020-1504-6
33. H.W. Heymann: Why Teach Mathematics? A Focus on General Education. 2003 Translated by Thomas LaPresti
ISBN 1-4020-1786-3
34. L. Burton: Mathematicians as Enquirers: Learning about Learning Mathematics. 2004
ISBN 1-4020-7853-6 HB; 1-4020-7859-5 PB
35. P. Valero, R. Zevenbergen (eds.): Researching the Socio-Political Dimensions of Mathematics Education: Issues of Power in Theory and Methodology. 2004
ISBN 1-4020-7906-0
36. D. Guin, K. Ruthven, L. Trouche (eds.) The Didactical Challenge of Symbolic Calculators: Turning a Computational Device into a Mathematical Instrument 2005
ISBN 0-387-23158-7
37. J. Kilpatrick, C. Hoyles, O. Skovsmose (eds. in collaboration with Paola Valero) Meaning in Mathematics Education. 2005
ISBN 0-387-24039-X
38. H. Steinbring: The Construction of New Mathematical Knowledge in Classroom Interaction: An Epistemological Perspective. 2005.
ISBN 0-387-24251-1
39. M. Borba, M. Villarreal: Humans-with-Media and the Reorganization of Mathematical Thinking: Information and Communication Technologies, Modeling, Visualization and Experimentation. 2005
ISBN 0-387-24263-5
40. G. Jones (ed): Exploring Probability in School: Challenges for Teaching and Learning. 2005
ISBN 0-387-24529-4