

## Chapter 1 The basic principles – sizing – using the blocks

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## Metric sizing and size charts

### *Size designation and the Centilong system*

Size charts are based on body measurements, and are constructed to allow manufacturers to grade sizes efficiently and retail customers to be able to identify clothes to fit a body size.

The British Standards Institution, as early as 1982 (BS 3728), tried to encourage manufacturers and retailers to designate sizing for children by height in centimetres (Centilong system). This Centilong system was the base for the British Standard (BS 7231), published in 1990. It issued a specification for the size designation for children's wear and body measurement size charts to be used by children's clothing manufacturers. Loughborough University undertook the large sizing survey. The adoption of three European Standards (BS EN13402 1-3: 2000-2004) has reinforced the use of the system in the UK.

Although the Standards are voluntary, most manufacturers and retailers have now accepted the grading and labelling of sizes by height, particularly for those children under twelve. Very few retailers now use age only on their labels, but many add age as extra descriptive information. However, some retailers see height designation as less useful for older girls and boys where the correlation of girth and limb length to height becomes more variable. For this group these retailers mark the garments with chest or bust, waist, hip and inside leg measurements.

Using height as the main control measurement is also considered to be a problem for the increasing proportion of overweight and obese children who find sleeve lengths and trouser lengths of garments far too long for them.

#### *The Centilong system*

The Centilong system designates the different sizes of children by 6cm height intervals, i.e. 98cm, 104cm, 110cm, which roughly correspond with age intervals. The fixed points are mid-way in a size range.

Example: the range for the 110cm size label will be from 107cm to 112.9cm height. A child who is 108.5cm in height will be seen as a size 110cm.

#### *British Standards publications on sizing*

*BS 7231-1: 1990 Body measurements of boys and girls from birth up to 16.9 years. Information in the form of data.*

Part 1 contains raw data from the Loughborough University survey shown in centile tables.

*BS 7231-1: 1990 Body measurements of boys and girls from birth up to 16.9 years. Recommendations of body dimensions for children.*

Part 2 contains size charts of body measurements that were commissioned by the technical committee.

*The British Standard BS EN 13402-1: 2000 Size designation of clothes. Terms, definitions and body measurement procedures.*

The Standard illustrates methods of taking body measurements and the positions on the body where measurements should be taken.

*The British Standard BS EN 13402-2: 2002 Size designation of clothes. Primary and secondary dimension in garments.*

The Standard identifies height as the primary dimension on labels for children's clothes and suggests the secondary dimensions that could be used to identify the size of the garment.

*The British Standard BS EN 13402-3: 2004 Standard size designation systems for clothing.*

The standard designates the size intervals and a secondary measurement range to attribute to the size. Example:

Primary (p) and secondary (s) dimensions	Height, chest and waist girths for infants and boys (centimetres)		
height (p)	104	110	116
chest (s)	56	58	60
range	55.5-57	57-59	59-61
waist (s)	53	54	55
range	52.5-53.5	53.5-64.5	54.5-55.5

#### *Labelling – size designation*

##### *Basic information*

The basic control dimension of most infants' and children's garments is the primary dimension of height, based on 6cm intervals. Secondary dimensions add additional information.

**Primary dimension** 'Those body measurements, in centimetres, that shall be used to designate the size of the garment for the consumer' (BS13402-2).

**Secondary dimension** 'Those body measurements, in centimetres, that may additionally be used to designate the size of the garment for the consumer' (BS13402-2).

Examples of these are: chest girth for jackets, waist girth for trousers or skirts, and neck girth for shirts.

The Standards also recommended the use of a pictogram; a diagram of a figure with body measurements indicated. However, no UK companies appear to use one.

##### *Other additional information*

**Weight** The difficulty of measuring babies' height is recognised. Mothers are more likely to know the weight of their baby rather than their height. Approximate weight is therefore seen as valuable additional information.

**Age** It is recognised that age alone is an unreliable guide to fit, as children's stature in relation to age is very variable. However, approximate age in addition to height is seen as useful additional information. Some companies are using alternate sizing (12cm) intervals and labelling clothes as 7–8 years but using the measurements attributed to larger sizes.

**Garment measurements** These should not be used on garment labels as they can be confusing. However, extra information, listed in mail order catalogues or on the internet, such as dress or skirt lengths, can be useful for customers.

### *The size charts published in this book*

#### *The historical background*

In 1982, when this book was first written, it was realised that the British Standards Institution's survey, undertaken by the University of Loughborough, was going to take some years. Therefore, the author undertook a smaller scale survey (see Appendix 1). The size charts offered in this book are based on this personal survey. The Standard (BS 7231) was published in 1990. But whilst the raw data in Part 1 has been very valuable to many companies, the interpreted size charts offered in Part 2 have been criticised (see Appendix 1) for anomalies, contradictions and some distorted measurements that are not suitable for cutting patterns. Therefore, the author decided to retain her own size charts in the main body of the book. She found that a great deal of the raw data collected in Part 1 of the Loughborough survey correlated closely with the data collected in her survey and some supplementary measurements were useful.

A national sizing survey (*Size UK*) completed in 2004 was a collaboration between the UK government, major UK retailers, leading academics and technology companies. It provided body measurement data of men and women. Only a pilot study was completed for children. However, it is hoped that work will commence on the main project in 2009 and will provide new data for companies.

The main size charts in this edition have had some modifications that account for changes in children's bodies during the past decade. The body sizing in the charts was based on the 75th centile (to fit 75% of children) and the waist measurement was always taken with the child's abdomen relaxed. Therefore, the sizing in the book has always been generous when compared with most of the major retailers' size charts. However, two extra charts have been added to this edition of the book: they are plus sizes developed for overweight children whose height/girth relationship is different from that offered in standard size charts. Clothes offered in these ranges are usually limited; for example, tee shirts, jeans or school uniform garments.

### *The size charts*

The Centilong system based on children's sizing intervals of height has been used, the interval between the sizes based on 6cm at specific points. The changing shape of the growing child, and the figure changes between sexes, means that the different size charts have to be offered for specific groups.

The following size charts are offered in this book:

1. **Size chart for boys and girls**  
56–92cm height (approx. age birth–2 years); page 16.
2. **Size chart for girls**  
98–164cm height (approx. age 3–14 years); page 17.
3. **Size chart for boys**  
98–170cm height (approx. age 3–14 years); page 18.
4. **Size chart for girls, plus sizes**  
98–164cm height (approx. age 3–14 years); page 19.
5. **Size chart for boys, plus sizes**  
98–170cm height (approx. age 3–14 years); page 20.
6. **Size chart for girls – developing figures**  
146–164cm height (approx. age 11–14 years); page 177.

**Note 1:** The trend towards distinctly different designs for boys' and girls' ranges has led to the elimination of the unisex chart that was included in the earlier editions of this book.

**Note 2:** Students should read the section on the growth of children and adolescents (pages 8–9). It explains the uneven growth and body shape changes that result in different measurement increments occurring between the sizes in the charts.

### *Retail size ranges and this book*

Retail size range groupings vary. They vary between stores where the marketing team decide how the range will target its particular customer base. Boys' and girls' clothing is often offered in separate ranges and in separate store sections from as early as two years. There can be variations within the same store where different product groups may offer overlapping size ranges. This can be very confusing, and particularly affects the transition from babywear to toddler's garments. Many of the main children's clothing ranges are now scaled down into the toddler ranges (2–4 years). The division of the size ranges in this book reflects the *general trends* in clothing marketing in 2008, but allows that each size range can be extended into another range using the appropriate measurements.

The book has been planned to be flexible but still offer accurate and well-fitting blocks appropriate to the product type. The grading decisions, complex or simplistic (dependent on range and style), proceed from a sound theoretical base. This book has also been planned to offer the means of constructing garments to individual measurements.

## Methods of measuring body dimensions

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Body measurements are taken over light underclothes with the child barefoot. The natural waistline should be identified with a piece of tape or elastic.

**A: Height** The child's height and other vertical measurements are taken with the child standing erect with the feet together. The height measurement is taken from the head crown to the soles of the feet.

**B: Chest/bust** The maximum girth measurement under the armpits with the tape passing over the shoulder blades and across the chest or bust.

**C: Waist** The measurement of the natural waist girth measurement with the child's abdomen relaxed.

**D: Hip/seat** The horizontal measurement taken round the fullest part of the seat.

**E: Across back** The measurement taken across the back from armhole to armhole mid-way between the cervical and the base of the armhole.

**F: Neck size** The girth measured around the base of the neck touching the cervical and the top of the front collar bone.

**G-H: Shoulder** The measurement taken from the base of the side neck to the shoulder edge.

**I: Upper arm** The girth measured around the upper arm mid-way between the shoulder and the elbow. The measurement is taken with the arm bent.

**J: Wrist** The girth measured at the base of the arm over the wrist bone.

**K-L: Scye depth** The measurement from the cervical to a line which touches the base of the armhole (armhole line).

**K-M: Neck to waist** The measurement taken from the cervical to the waistline.

**M-N: Waist to hip** The measurement taken from the waistline to the hip/seat line.

**K-O: Cervical height** The measurement taken from the cervical to the soles of the feet.

**M-P: Waist to knee** The measurement taken from the center back waistline to the crease at the back of the knee.

**Q-R: Body rise** The measurement is taken on a seated figure from the side waistline to the top of the stool. This measurement can also be calculated by measuring M-O (waist height) and subtracting S-O (inside leg) from M-O.

**S-O: Inside leg** The measurement taken from the crotch to the soles of the feet.

**H-T: Arm length** The measurement from the shoulder edge to the wrist bone.

**U: Head circumference** The horizontal girth of the head.

**V: Vertical trunk** The measurement taken from the center of one shoulder, down the back, under the crotch returning over the abdomen and chest to the original shoulder position.

**W:** The girth measured at the base of the leg just above the ankle bone.

**X-Y:** The measurement of the foot from the heel to the top of the big toe.

### *Extra measurements (garments)*

Extra measurements are standard measurements of specific parts of basic garments. They are offered as a guide to be used when drafting basic blocks. They are:

Cuff size, two-piece sleeve

Cuff size, shirts

Trouser bottom width

Jeans bottom width.

## Drafting the blocks for individual figures

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The blocks can be drafted for individual figures by substituting the personal measurements of a figure for the standard ones shown in the standard size charts on pages 16–20 and 177. Successful blocks can only be drafted if the personal measurements are taken accurately in the correct position on the body. The description of the measurements listed above should be read carefully before measuring the figure.

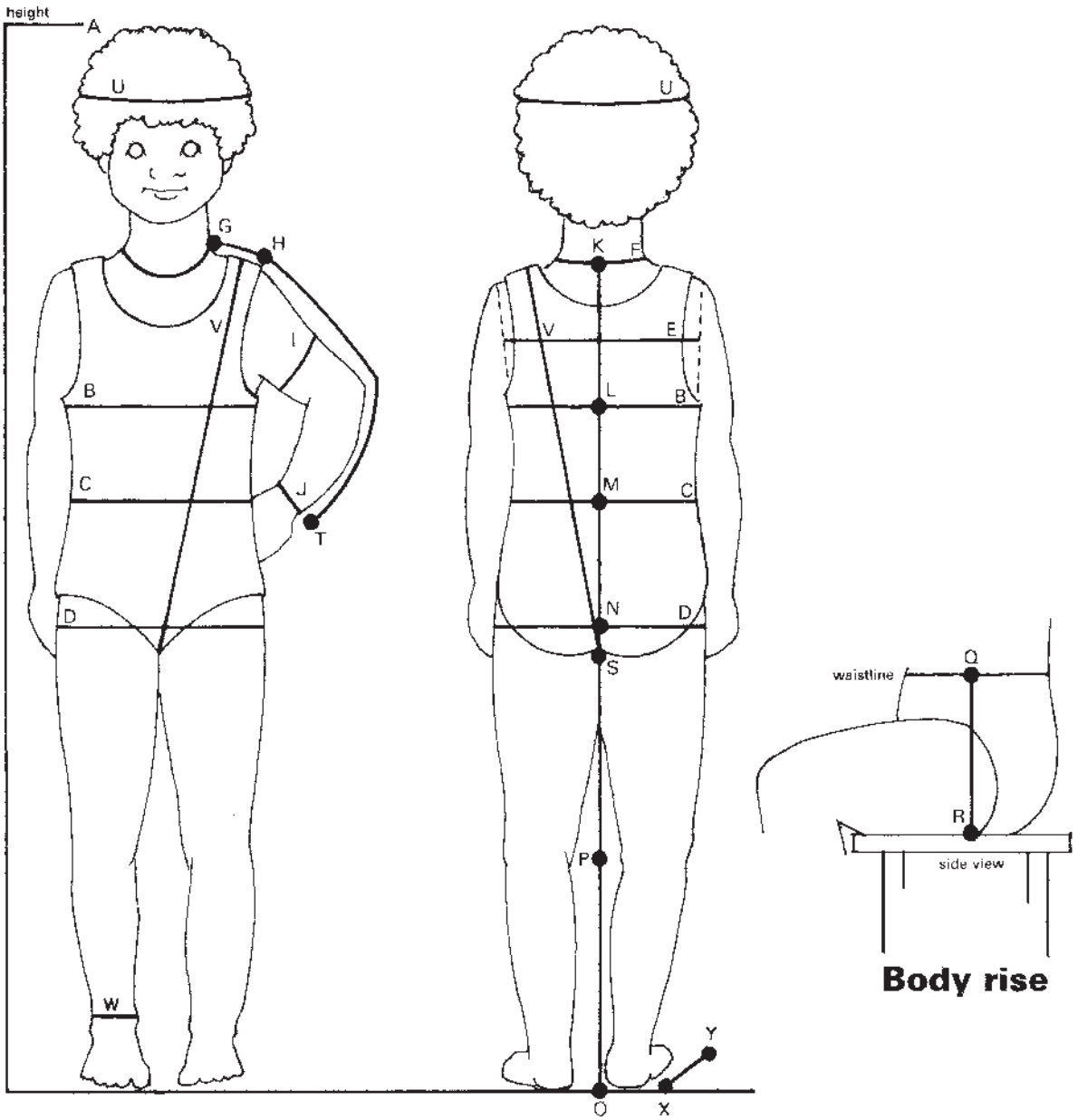
All the body measurements listed should be taken except the scye depth and the waist to hip. These measurements are difficult to take accurately, therefore they should be taken from the standard

size charts (pages 16–20 and 177) using the child's height as a reference.

The dart size for blocks for girls with developing figures should be taken from the size chart on page 177 after reference to the notes on the development of the bust.

When the figure has been measured the individual measurements should be checked against a list of standard measurements for the height group of the child. If significant differences are apparent, the figure should be re-measured and checked to see if it is in fact wider or narrower than the average figure.

# Body measurements



**Body rise**

## Standard body measurements: birth–2 years

*Boys and girls, 56–92cm height*

**Important note** The standard measurements in this size chart are taken from the 75th centile of sizing surveys. They have been calculated so that when they are used to construct the blocks, the blocks will fit approximately 75% of babies in the height interval. The measurements have been marginally adjusted for easy size labelling and to give sensible grading intervals. However, the balance over a range of sizes has been maintained. Weights and ages are approximate.

Height (cm)	56	64	72	80	86	92
Approximate weight (kg)	4–5	6–7	8	9–10	11–12	–
Approximate age	birth	3m	6m	12m	18m	2yrs
B chest	41	44	47	50	52	54
C waist	41	43	45	47	49	51
D hip/seat	41	44	47	50	52	54
E across back	16.8	18	19.2	20.4	21.2	22
F neck size	22	23	24	25	25.5	26
G-H shoulder	4.4	5	5.6	6.2	6.6	7
I upper arm	14.4	15.2	16	16.8	17.4	18
J wrist	9.8	10.4	11	11.6	12	12.4
K-L scye depth	9	9.8	10.6	11.4	12	12.6
K-M back neck-waist	15.8	17.4	19	20.6	21.8	23
M-N waist-hip	7	8	9	10	10.75	11.5
K-O cervical height	42.2	49.4	56.6	63.8	69.2	74.6
M-P waist-knee	20.2	22.8	25.4	28	30	32
Q-R body rise	10.2	11.5	12.8	14.1	14.9	15.7
S-O inside leg	16	21	26	31	34.5	38
H-T arm length	19.2	22	24.8	27.6	29.8	32
U head circumference	42.5	44.5	46.5	48.5	49.5	50.5
V vertical trunk	66	73	80	87	92	97
W ankle girth	11	12	13	14	14.5	15
X-Y foot length	8.4	9.6	10.8	12	13	14
<b>Extra measurements (garments)</b>						
cuff size, two-piece sleeve	-	-	-	9.4	9.7	10
cuff size, shirts	-	-	-	14.5	14.8	15.1
trouser bottom width	-	-	-	14.5	15	15.5
jeans bottom width	-	-	-	2.5	13	13.5

## Standard body measurements: girls 3–14 years

Sizes 98–164cm height

**Important note** The standard measurements in this size chart are taken from the 75th centile of sizing surveys. They have been calculated so that when they are used to construct the blocks, the blocks will fit approximately 75% of children in the height interval. The measurements have been marginally adjusted for easy size labelling and to give sensible grading intervals. However, the balance over a range of sizes has been maintained. For girls 11–14 years with developing figures use the size chart and blocks in Chapter Five if ‘form’ cut, close-fitting garments are required.

Height	98	104	110	116	122	128	134	140	146	152	158	164
Approximate age	3	4	5	6	7	8	9	10	11	11	11	14
B chest	55	57	59	61	63	66	69	72	75	78	81	84
C waist	52	54	56	58	60	61	62	63	64	65	66	67
D hip/seat	56	59	62	65	68	71	74	77	80	83	86	89
E across back	22.8	23.6	24.4	25.2	26	27.1	28.2	29.3	30.4	31.5	32.6	33.7
F neck size	26.6	27.2	27.8	28.4	29	30	31	32	33	34	35	36
G-H shoulder	7.4	7.8	8.2	8.6	9	9.5	10	10.5	11	11.5	12	12.5
I upper arm	18.5	19	19.5	20	20.5	21.3	22.1	22.9	23.7	24.5	25.3	26.1
J wrist	12.8	13	13.2	13.4	13.6	13.9	14.2	14.5	14.8	15.1	15.4	15.7
K-L scye depth	13.2	13.8	14.4	15	15.6	16.3	17	17.7	18.4	19.1	19.8	20.5
K-M back neck-waist	24.2	25.4	26.6	27.8	29	30.4	31.8	33.2	34.6	36	37.4	38.8
M-N waist-hip	12.3	12.9	13.5	14.1	14.7	15.4	16.1	16.8	17.5	18.2	18.9	19.6
K-O cervical height	80	85.4	90.8	96.2	101.6	107	112.4	117.8	123.2	128.6	134	139.4
M-P waist-knee	34	36	38	40	42	44.2	46.4	48.6	50.8	53	55.2	57.4
Q-R body rise	16.8	17.6	18.4	19.2	20	21	22	23	24	25	26	27
S-O inside leg	41	44.5	48	51.5	55	58	61	64	67	70	73	76
H-T arm length	34	36.5	39	41.5	44	46	48	50	52	54	56	58
U head circumference	51.2	51.8	52.4	53	53.6	54	54.4	54.8	55.2	55.6	56	56.4
W ankle girth	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21
<b>Extra measurements (garments)</b>												
cuff size two-piece sleeve	10.2	10.4	10.6	10.8	11	11.4	11.8	12.2	12.6	13	13.4	13.8
cuff size, shirts	15.4	15.8	16.2	16.6	17	17.5	18	18.5	19.5	20	20.5	21
trouser bottom width	16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5
jeans bottom width	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19

## Standard body measurements: boys 3–14 years

Sizes 98–170cm height

**Important note** The standard measurements in this size chart are taken from the 75th centile of sizing surveys. They have been calculated so that when they are used to construct the blocks, the blocks will fit approximately 75% of children in the height interval. The measurements have been marginally adjusted for easy size labelling and to give sensible grading intervals. However, the balance over a range of sizes has been maintained.

Height	98	104	110	116	122	128	134	140	146	152	158	164	170
Approximate age	3	4	5	6	7	8	9	10	11	12	13	-----	14
B chest	55	57	59	61	64	67	70	73	76	79	82	86	90
C waist	52	54	56	58	60	62	64	66	68	70	72	74	76
D hip/seat	55	58	61	64	67	70	73	76	79	82	85	89	93
E across back	23.2	24	24.8	25.6	26.8	28	29.2	30.4	31.6	32.8	34	35.6	37.2
F neck size	26.7	27.3	27.9	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5
G-H shoulder	7.8	8.2	8.6	9	9.5	10	10.5	11	11.5	12	12.5	13.1	13.7
I upper arm	18.5	19	19.5	20	20.8	21.6	22.4	23.2	24	24.8	25.6	26.6	27.6
J wrist	13	13.2	13.4	13.6	14	14.4	14.8	15.2	15.6	16	16.5	17	17.5
K-L scye depth	13.2	13.8	14.4	15	15.8	16.6	17.4	18.2	19	19.8	20.6	21.6	22.6
K-M back neck-waist	24.2	25.4	26.6	27.8	29.2	30.6	32	33.4	34.8	36.2	37.6	39.4	41.2
M-N waist-hip	12	12.6	13.2	13.8	14.4	15	15.6	16.2	16.8	17.4	18	18.8	19.6
K-O cervical height	80.4	85.8	91.2	96.6	102	107.4	112.8	118.2	123.6	129	134.4	139.8	145.2
Q-R body rise	17.2	18	18.8	19.6	20.4	21.2	22	22.8	23.6	24.4	25.2	26.2	27.2
S-O inside leg	41	44.5	48	51.5	55	58	61	64	67	70	73	75.5	78
H-T arm length	34.5	37	39.5	42	44.5	47	49.5	52	54.5	57	59	61	63
U head circumference	52	52.5	53	53.5	54	54.5	55	55.5	56	56.5	57	57.4	57.8
<b>Extra measurements (garments)</b>													
cuff size, two-piece sleeve	10.4	10.6	10.8	11	11.2	11.6	12	12.4	12.8	13.2	13.6	14	14.4
cuff size, shirts	15.4	15.8	16.2	16.6	17	17.5	18	18.5	19	19.5	20	20.5	21
trouser bottom width	16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22
jeans bottom width	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5

### Body measurements for plus sizes: girls 3–14 years

Sizes 98–164cm height

**Important note** The body measurements in this size chart are not constructed for very obese children. The size chart is approximately two sizes larger in width in proportion to the height, with extra allowance for the waist. The measurements have been adjusted within each size grouping in order to give sensible grading intervals. Manufacturers may wish to smooth the divisions between the groups with reference to their own size ranges.

Height	98	104	110	116	122	128	134	140	146	152	158	164
Approximate age	3	4	5	6	7	8	9	10	11	-----	-----	-----
B chest	60	62	64	66	69	72	75	78	81	84	87	90
C waist	56	58	60	62	64	65	66	67	68	69	70	71
D hip/seat	62	65	68	71	74	77	80	83	86	89	92	95
E across back	24.8	25.6	26.4	27.2	28.2	29.3	30.4	31.5	32.6	33.7	34.8	35.9
F neck size	28.2	28.8	29.4	30	31	32	33	34	35	36	37	38
G-H shoulder	7.8	8.2	8.6	9	9.5	10	10.5	11	11.5	12	12.5	13
I upper arm	19.5	20	20.5	21	21.8	22.6	23.4	24.2	25	25.8	26.6	27.4
J wrist	13.2	13.4	13.6	13.8	14.2	14.5	14.8	15.1	15.4	15.7	16	16.3
K-L scye depth	13.6	14.2	14.8	15.2	16	16.7	17.4	18.1	18.8	19.5	20.2	20.9
K-M back neck-waist	24.2	25.4	26.6	27.8	29	30.4	31.8	33.2	34.6	36	37.4	38.8
M-N waist-hip	12.3	12.9	13.5	14.1	14.8	15.5	16.2	16.9	17.6	18.3	19	19.7
K-O cervical height	80	85.4	90.8	96.2	101.6	107	112.4	117.8	123.2	128.6	134	139.4
M-P waist-knee	34	36	38	40	42	44.2	46.4	48.6	50.8	53	55.2	57.4
Q-R body rise	17.1	17.9	18.7	19.5	20.5	21.5	22.5	23.5	24.5	25.5	26.5	27.5
S-O inside leg	41	44.5	48	51.5	55	58	61	64	67	70	73	76
H-T arm length	34	36.5	39	41.5	44	46	48	50	52	54	56	58
U head circumference	51.2	51.8	52.4	53	53.6	54	54.4	54.8	55.2	55.6	56	56.4
W ankle girth	16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5
<b>Extra measurements (garments)</b>												
cuff size two-piece sleeve	10.6	10.8	11	11.2	11.6	12	12.4	12.8	13.2	13.6	14	14.4
cuff size, shirts	16.2	16.6	17	17.4	18	18.5	19.5	20	20.5	21	21.5	22
trouser bottom width	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22	22.5
jeans bottom width	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20	20.5

### Body measurements for plus sizes: boys 3–14 years

Sizes 98–170cm height

**Important note** The body measurements in this size chart are not constructed for very obese children. The size chart is approximately two sizes larger in width in proportion to the height, with extra allowance for the waist. The measurements have been adjusted within each size grouping in order to give sensible grading intervals. Manufacturers may wish to smooth the divisions between the groups with reference to their own size ranges.

Height	98	104	110	116	122	128	134	140	146	152	158	164	170
Approximate age	3	4	5	6	7	8	9	10	11	12	13	-----	14
B chest	60	62	64	66	70	73	76	79	82	85	90	94	98
C waist	58	60	62	64	66	68	70	72	74	76	80	84	88
D hip/seat	61	64	67	70	73	76	79	82	85	88	93	97	101
E across back	24.8	25.6	26.4	27.2	29.2	30.4	31.6	32.8	33	34.2	37	38.6	40.2
F neck size	28.2	28.8	29.4	30	31	32	33	34	35	36	37.5	38.5	39.5
G-H shoulder	8.2	8.6	9	9.4	10	10.5	11	11.5	12	12.5	13	13.6	14.2
I upper arm	19.5	20	20.5	21	22	22.8	23.6	24.4	25.2	26	27	28	29
J wrist	13.6	13.8	14	14.2	14.6	15	15.4	16	16.4	16.8	17.5	18	18.5
K-L scye depth	13.8	14.4	15	15.6	16.2	17	17.8	18.6	19.4	20.2	21	22	23
K-M back neck-waist	24.6	25.8	27	28.2	29.6	31	32.4	33.8	35.2	36.6	38	39.8	41.6
M-N waist-hip	12	12.6	13.2	13.8	14.4	15	15.6	16.2	16.8	17.4	18	18.8	19.6
K-O cervical height	80.4	85.8	91.2	96.6	102	107.4	112.8	118.2	123.6	129	134.4	139.8	145.2
Q-R body rise	17.6	18.4	19.2	20	20.8	21.6	22.4	23.2	24	24.8	25.6	26.6	27.6
S-O inside leg	41	44.5	48	51.5	55	58	61	64	67	70	73	75.5	78
H-T arm length	34.5	37	39.5	42	44.5	47	49.5	52	54.5	57	59	61	63
U head circumference	52.5	53	53.5	54	54.5	55	55.5	56	56.5	57	57.4	57.8	58.2
<b>Extra measurements (garments)</b>													
cuff size, two-piece sleeve	10.7	10.9	11.1	11.3	11.6	12	12.4	12.8	13.2	13.6	14	14.5	15
cuff size, shirts	16.2	16.6	17	17.4	18	18.5	19	19.5	20	20.5	21	21.5	22
trouser bottom width	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	21.8	22.1	22.4
jeans bottom width	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	19.8	20.1	20.4

## Using the blocks

Complicated designs may require a number of working shapes to be cut before the final shape is achieved. At this stage it is necessary to have as much information as possible written on the pattern.

A block is a foundation pattern from which style adaptations are made. The blocks include the amount of basic ease required for the function of the garment block (e.g. a coat block has more ease than a dress block).

In the clothing industry, the blocks are constructed to standard (average measurements) such as those given in the size charts on the previous pages. Because the size range is wide (birth to 14 years), different blocks are used at different stages, particularly for classic clothes that require a closer and distinct body fit. A list of the blocks is given in the next column; note that size is designated by the height of the child.

Girls with developing figures require blocks that allow for the bust shape, hence blocks with a dart allowance should be used (pages 178–183). A block can be drafted to fit an individual figure using personal measurements (page 14).

*The blocks do not include any seam allowance. This must be added after the pattern is completed.*

### Types of block

This edition of the book has been designed to demonstrate the two different types of cutting that are currently in operation in the garment industry. The division is possibly most evident in children's clothing, where the majority of garments are not tailored or shaped to fit the body (classic 'form' cutting). Instead, they are cut from 'flat' blocks to produce simple shapes and to allow the front body parts to be similar to the back parts. This can be done when:

1. the garment is a simple easy-fitting shape;
2. the garment style is cut with ease, such as gathers or pleats and fits very easily around the figure;
3. the fabric to be used has stretch characteristics and will therefore fit easily around the body shape.

Many children's wear manufacturers will cut only from flat blocks. They are useful in that they offer simpler grading and are more appropriate to the methods of manufacture.

Many students will find that the 'flat' blocks in Parts One and Two are sufficient for early experiments in children's clothing design. However, before they graduate, it is useful for them to recognise that better fitting clothes can be achieved by the use of the 'form' blocks in Part Three. These recognise the subtle but distinct changes in the child's shape as it grows.

### The 'flat' blocks

#### Chapter 2 Babywear (birth–2 years)

*Girls and boys 58–92cm height*

- 1 The 'flat' jersey body block (page 24)
- 2 The 'flat' woven fabric body block (page 24)
- 3 The 'flat' overgarment block (page 26)
- 4 The kimono block (page 26)
- 5 The two-piece trouser block (page 28)
- 6 The one-piece trouser block (page 28)
- 7 The one-piece sleepsuit block (page 30)

#### Chapter 4 Girls and boys (1–14 years)

*Girls and boys 80–170cm height*

- 1 The 'flat' body and shirt block (page 40)
- 2 The 'flat' sleeveless body block (page 42)
- 3 The 'flat' overgarment block (page 42)
- 4 The kimono block/adaptations (pages 44–46)
- 5 The tee shirt blocks (page 48)
- 6 The knitwear block (page 48)
- 7 The 'flat' one-piece trouser block (page 50)
- 8 The 'flat' two-piece trouser block (page 52)
- 9 The 'flat' skirt block (page 52)
- 10 The jeans block (page 54)
- 11 The underwear blocks (page 56)

### The classic 'form' blocks

#### Chapter 11 Classic blocks for schoolwear and formal wear girls and boys (3–14 years)

*Girls 98–164cm height; boys 98–170cm height*

- 1 The classic skirt blocks – girls (page 122)
- 2 The classic trouser block – girls (page 124)
- 3 The classic trouser block – boys (page 126)
- 4 The classic shirt block – girls and younger boys (page 128)
- 5 The classic shirt block – boys (page 130)
- 6 The classic overgarment block – girls and younger boys (page 132)
- 7 The classic overgarment block – boys (page 134)
- 8 The classic blazer block – girls and boys (page 136)
- 9 The classic bodice block – girls (page 138)
- 10 The classic dress blocks – girls (page 140)
- 11 The formal coat block – girls (page 142)
- 12 The one-piece sleeve block – girls and boys (page 144)
- 13 The two-piece sleeve block – girls and boys (page 146)

#### Chapter 15 Girls – Developing figures (11–14 years)

*Girls 146–164cm height*

- 1 The classic bodice block (page 178)
- 2 The dress block (page 180)
- 3 The classic jacket and overgarment block (page 182)
- 4 The classic trouser block (page 184)
- 5 The classic skirt block (page 186)

## From block to pattern

### *Pattern types*

**The block pattern** . . . is the basic pattern from which adaptations are made. The block chosen is traced or 'wheeled' on to pattern paper to produce a working pattern.

**The working pattern** . . . is used for cutting and adapting to achieve the final shapes required for the final pattern. Complicated designs may require a number of working shapes to be cut before the final shape is achieved. At this stage as much information as possible must be written on the pattern.

**The final pattern** . . . is the pattern from which the garment will be cut. It must have all the information required to make up the garment written on the pattern. The final pattern has to be very accurate; all pattern pieces that have to be joined together should match exactly. If ease is included in a seam this should be marked by notches. The pattern should have smooth lines and curves. Curved rules and shapes are excellent aids in the making of 'professional' curves, particularly at the neck and armhole.

### *Adapting the blocks – basic points*

The blocks include the correct amount of ease that is required for the function of the block (e.g. a coat block has more ease than a dress block). Before commencing any adaptation, the following points should be considered.

1. Choose the correct blocks; it is very important that the type of garment is related to the type of block. Most garments for children are now cut from the 'flat' blocks. The classic blocks are useful for conventional formal types of garments that are directly related to the child's body shape. They are used if well-fitting one-piece or two-piece sleeves are required. For easy-fitting less formal garments use the easy-fitting 'flat' blocks.
2. Decide the length; lengthen or shorten the block.
3. Make any adjustments to armholes or necklines before proceeding with drafting style lines or collars.

If this procedure is followed the correct basic shape will be achieved. This means that any styling will have the correct proportions.

### *Seam allowances*

Patterns used in industry have seam allowances added. Designers often adapt patterns from blocks that include seam allowances. This is a difficult task

for a beginner. Students will find that it is easier to work with nett patterns (those without seam allowances) especially during the development of complicated styles. The seam allowance can be added when the adaptation of the pattern is completed. The amount of seam allowance required in specific places is usually:

**basic seams** (e.g. side seams, style seams) 1.5cm.

**enclosed seams** (e.g. collars, facings, cuffs) 0.5cm.

**hem depth** depends on shape and finish 1–5cm.

**special seams** (e.g. welt seam) often require different widths of seam allowance on matching seam lines.

Fabrics that fray easily may require a wider seam allowance.

The width of the seam allowance must be marked on each piece of pattern by lines or notches.

Nett patterns are often produced for individual garments and the seam allowances are chalked directly on to the fabric lay. These garments are often cut with a standard 1.5cm seam allowance around enclosed seams as well as basic seams. The enclosed seams of individual garments can be trimmed during making-up.

### *Pattern instructions*

To enable the garment to be made up correctly the following instructions must be marked on the pattern.

1. The name of each piece.
2. Centre back and centre front.
3. The number of pieces to be cut.
4. Folds.
5. Balance marks . . . these are used to ensure that pattern pieces are sewn together at the correct points.
6. Seam allowances . . . these can be marked by lines round the pattern or notches at each end of the seam. If the pattern is nett (has no seam allowance) this must be marked on the pattern.
7. Construction lines . . . these include darts, buttonholes, pocket placings, tucks, pleats, decorative stitch lines. Construction lines are marked directly on the pattern or indicated by punch holes.
8. Grain lines . . . these indicate how the pattern must be positioned on the fabric. Mark the grain lines on the separate pattern pieces before the working pattern is cut into sections. Once it is in pieces it can be difficult to establish the correct grain, particularly if the pattern has been through a number of development stages.