

Chapter 1 The basic principles – sizing – using the blocks

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Metric sizing and size charts

Size charts and measurement surveys

Manufacturers of mass-produced garments need body measurement data to create sizing systems. 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 their body size. Because of the cost of the studies, it is seen as commercially valuable and it is difficult for small companies to have access to this type of data. Some manufacturers undertake small scale body measurement surveys to gain information for their niche markets. Small scale surveys, particularly those done in developing countries, still use manual methods of body measuring.

In 2008, a sizing survey of children from 4–16 years (Shape GB), part publicly and part privately funded, was completed by a group of companies and universities. 3D scanning equipment was used. The system creates 3D scanning images of the body which give the added information about body shape changes. The results were published in a report in 2010. A later survey of babies and toddlers has now also been completed. The report is now available for purchase (info@shapegb.org).

An informative book, *Apparel, Size and Fit: A definitive guide*, was published by The Association of Suppliers to the British Clothing Industry (ASBCI) in 2015. It is a comprehensive review of the available information for companies in this complex area of size and fit.

The history of size designation and the centilong system

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 method was the base for the British Standard (BS 7231) published in 1990. It issued a specification for the size designation of children's wear and body measurement size charts to be used by clothing manufacturers. It was based on a large sizing survey undertaken by Loughborough University. The adoption of three European standards (BS EN13402 1–3 200–2004) reinforced the use of the system.

The European Committee for Standardisation (CEN) produces guides to measuring and labelling. Its aim is to provide a coherent method of sizing and labelling. It is signed up to by most European countries including the UK and is available to companies.

This book is based on metric sizing and divisions and is used globally. The size charts in this book therefore conform to the current CEN standards

listed in the UK as **BS EN** and are available from British Standards.

BS EN 13402-1-2001 *Size designation of clothes – Part 1: Terms, definitions and body measurement procedure.*

BS EN 13402-2-2002 *Size designation of clothes – Part 2: Primary and secondary dimensions*

The *primary dimension* denotes the size of the garment and identifies height as the primary dimension.

Secondary dimensions give additional size information: chest and waist for upper garments, coats and the inside leg length measurement for trousers.

BS EN 13402-3-2013 *Size designation of clothes – Part 3: Measurements and intervals*

The standard offers charts showing intervals between sizes using the primary dimensions. It also shows a range of alternative measurements that manufacturers can use for secondary dimensions. This offers them a choice when developing garments for particular markets.

In March 2016, the three standards were being revised and a draft was circulated to be approved by the member countries, (an English language version of the revised drafts is available from sales@beuth.de). It is expected that the revised standards will be published in the UK later in 2016, as new BS EN standards.

Note: The amendments to earlier standards listed in this 2016 draft do not affect the size chart information offered in this book.

Labelling and size designation

Height Although the use of standards is voluntary, most manufacturers and retailers use height as the control dimension on garment labels and use age as a description.

Height can be less useful in older children with developing figures as the correlation between girth and height becomes more variable. It is also a problem in obese children who find sleeve and trouser lengths too long. However, most large retailers' websites offer more detailed information, with body diagrams of body measurement positions (pictograms) and size charts in inches and centimetres.

Weight Measuring babies' height is difficult. Mothers are more likely to know the weight of their baby. Approximate weight of babies is therefore seen as valuable added information.

Age It is recognised that age is an unreliable guide to fit, children's height in relation to age is variable. However, most labels add the approximate age in addition as it is still a useful guide, particularly for customers who do not know the child's height.

Garment measurements Garment measurements should not be used on garment labels, as they can vary a lot. They depend on the style of the design or the product type. However, some useful extra information such as dress, tops or skirt lengths are often listed in mail order catalogues or on internet sites.

The historical background to sizing surveys and the charts in this book

In 1982 when this book was first written, it was realised that a government study undertaken by Loughborough University and to be published as a British Standard would not be completed for a number of years. The author therefore decided to undertake a smaller scale private study (100 children in each size group) and the measurements taken in centimetres. When the Loughborough University survey was completed, it was found that there was a strong correlation between their raw data and the author's study, so therefore the authors' study was retained. The size charts offered in this book (with progressive modifications) are still based on this study.

Although still based on the original study, each new edition has been modified to take account of changes to children's bodies over the last decades and to conform to the BS EN sizing recommendations. Two extra size charts were also added to the previous edition. They are plus sizes developed for overweight children where their height/weight relationship is different from that found in standard sizing. Garments offered in the plus ranges are usually limited to basic ranges such as, tee shirts, jeans and school uniforms.

The charts have been set at the 75th centile to fit 75% of children. Therefore, the sizing in the previous editions of this book was always considered generous when compared with other retailers' size charts.

The size charts in this book

The centilong system based on children's sizing intervals of height has been used and the intervals between the sizes are 6cm.

1. **Size chart for boys and girls**
56–92cm height (approximate age birth-two 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 20.
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: 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 between the sizes in the charts.

Retail store size ranges in this book

Retail size groupings vary. They vary between stores where the marketing department often decides how the range will target its particular customer base. Boys and girls clothing is often sold in separate ranges, they can be in different parts of the store. There can be variations where different product groups in concessions within the store offer different products and design styles. This can be very confusing and particularly affects the transition from babywear to toddler's garments and teenage wear. The divisions of the *size ranges* in this book reflect the general trends in clothing marketing. However, 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 divisions are constructed from a sound theoretical base. This book has also been planned to be used to construct garments to individual measurements.

Methods of measuring body dimensions

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 armscye to armscye mid-way between the cervical and the base of the armscye.

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 armscye (armscye 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 take 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

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.

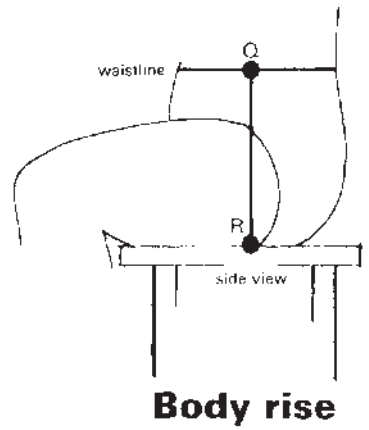
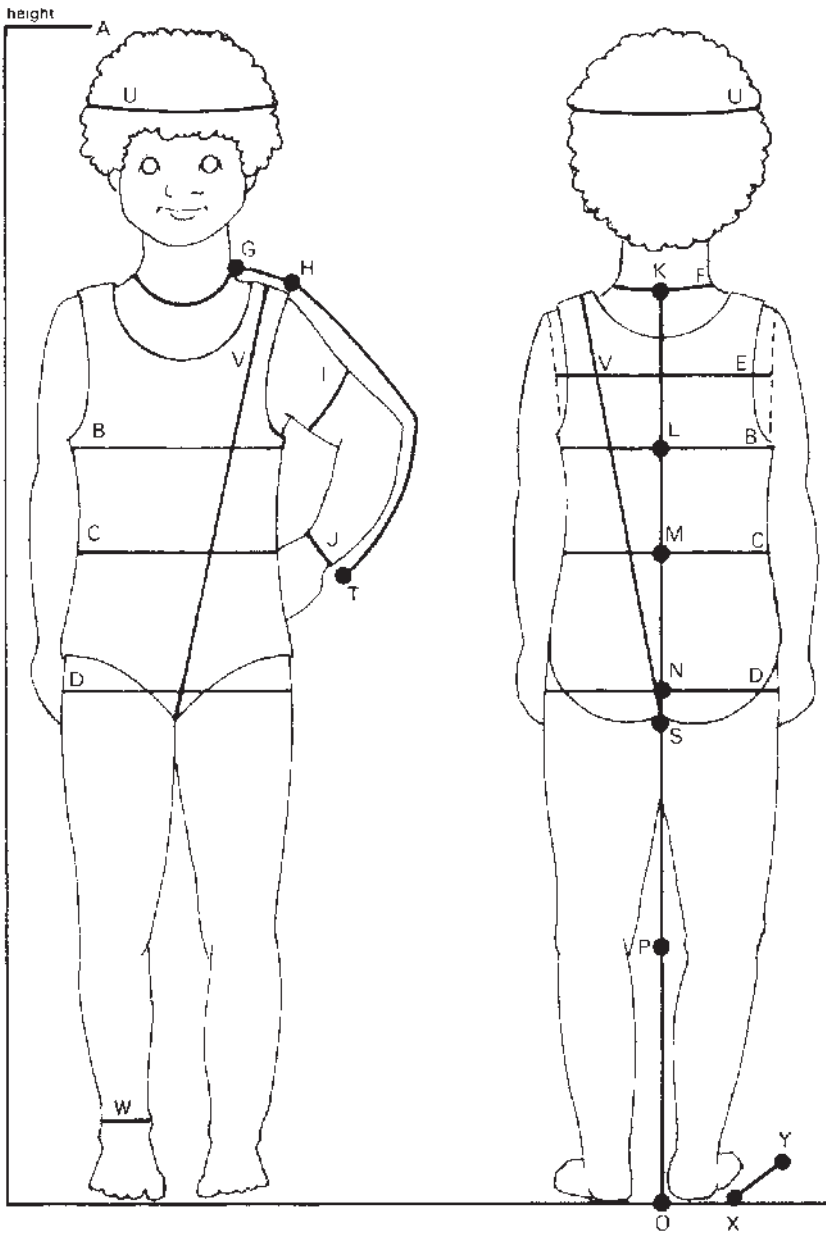
All the body measurements listed should be taken except the scye depth and the waist to hip. These measurements are difficult to take accurately, therefore they should be taken from the standard

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



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
Extra measurements (garments)						
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	-----	-----	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
Extra measurements (garments)												
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
Extra measurements (garments)													
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
Extra measurements (garments)												
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
Extra measurements (garments)													
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.