Will it be a tall child?

Hooray, a child! One of the first things we do when a baby is born is to send birth announcement cards to our families and friends. We put a sweet photo from the new-born on it, but also all sort of numbers: We indicate the date and the time of birth, as well as the height and the weight of the baby.
During the first years, a child is regularly measured and weighed. Based on those measurements, a check is made at the child healthcare centre to see whether growth is within the normal range.
Therefore, the health professionals use certain growth charts (percentiles tables). For parents, it is important to have some understanding of how to read such a growth chart.

Overview "Will it be a tall child?"

How can I read and interpret a growth chart of my child?

Context
Everyday life
Health and care

Cognitive processes
Managing situations
Analysing situations
Critical thinking

Target group (incl. necessary prior skills and competences)

Adult learners , parents with basic arithmetic skills

X2

Content
Quantity and number
Pattern, relationship aans change

Dispositions
Self-confidence
Affection
Beliefs

Outcomes and results

The learners understand the structure of a percentile table.

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Main information

Content	Natural numbers Decimal numbers Weight and height measurements Diagrams and graphs
Target group	Adult learners, parents or people preparing for the birth of a child
Learning intention	What is the intention of adults to face this problem? – Numeracy for personal and private purposes
Duration	Approx. 2,5 lessons
Material and resources	Examples of birth announcement cards; growth charts (percentiles tables).
Group size	Range from 5 to 10 learners
Problem statement	When a child is born, many parents are worried about whether the baby is developing normally. Has it a healthy weight and a "normal" height? Health professionals use percentiles tables to track the child's development and it is helpful for the parents to understand these tables.
Working questions	What is a percentiles table? Which information can we get from it? How can we read the diagram with axes? • Which information do we get from the vertical axe? • Which information do we get from the horizontal axe? How can we track the growth of a child using a percentiles table? Which percentile does represent the average? What is the meaning of "normal development" of a child?
Learning outcomes and results	The students are able to understand the structure of a percentiles table, even in other contexts (e.g., in education).
Reference to National Qualification Frame	Optional (country's decision)

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Working plan

Time (minutes)	Description of content/activities	Material	Methodical and didactic information[1]
25‘	**Activation** The trainer shows one or different birth announcement cards to the learners and asks them questions, e.g.: • What kind of information can we get from this card? • Do you have you children of your own? • Do you remember your own child’s height and weight at birth?	Birth announcement card (Appendix 1)	Questioning
50’	**Discover** The trainer shows a percentiles table. The learners work in pairs and discover the table. The trainer animates the learner to make assumptions and discuss them. The second step is to present their results in the plenary and complete them with the information of the other groups.	Percentiles table (Appendix 2)	Collaborative learning
50‘	**Interpret data** The trainer asks questions in relation to the table. The learners discuss and agree on a common response. The learners get the fictive data of a child. In small groups, the fill in a percentiles table and interpret it.	List of questions (Appendix 3) Worksheet (Appendix 4)	Collaborative learning Hands on learning
	Transfer The learners have acquired the knowledge that there are statistic methods to compare the development of a child’s growth. They can apply their knowledge (interpreting data from a diagram) in many other everyday life situations.		

[1] for description and explanation of kinds of tasks, HITs and other background information please consult the teachers’ guide

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Suggestions for the teacher

The example presented here should be considered as exemplary and inspirational material presenting a guideline with a high range of possibilities of adapting those suggestions to a specific group of learners or an individual learner with his or her very personal requirements.

In concrete terms, the example (Will it be a tall child?) could be adapted these ways:

- Further or additional material: An additional exercise for the activation could be letting the learners line up according to their size. The learner who stands in the middle is representing the average (P50). The height of the learners could be measured and noted on a flip chart.

  Further material according to weight and height measurement can be proposed, e.g., converting grams into kilograms or centimeters into meters.

- Dispositions taken into account: Percentiles tables are generally used by health professionals. It is important to focus on the concept of "normal growth". The learners have to understand that these charts are showing whether the development of the babies is progressing normally. That doesn't mean that the child's value has to be close to P50. Only strong fluctuations and extreme deviations from the norm are especially examined more closely.

Our educational activities aim at numeracy skills being not only memorized, but first of all being practiced and functionally used by the learners in daily life or/and vocational situations. It is therefore recommended to implement the idea of HITS[2] (higher impacts of teaching skills) as far and often as possible: ...

- ... work with concrete and authentic material that learners will recognize from everyday life situations. The learners will find percentiles tables when it comes to do the regular children's check-ups with pediatricians.
- ... ask the learners questions and let them raise questions themselves. It can be crucial to discuss numeracy themes, contexts and numbers.
- ... think of possible ways of transfer: understanding the structure of percentiles tables is also helpful in other everyday life situation, as they are also used for instance in education to record children's performance in language or math.

[2] For general information and explanation on HITS please see (link)

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Appendix 1

Example birth anouncement card

Source photos: www.pixabay.com

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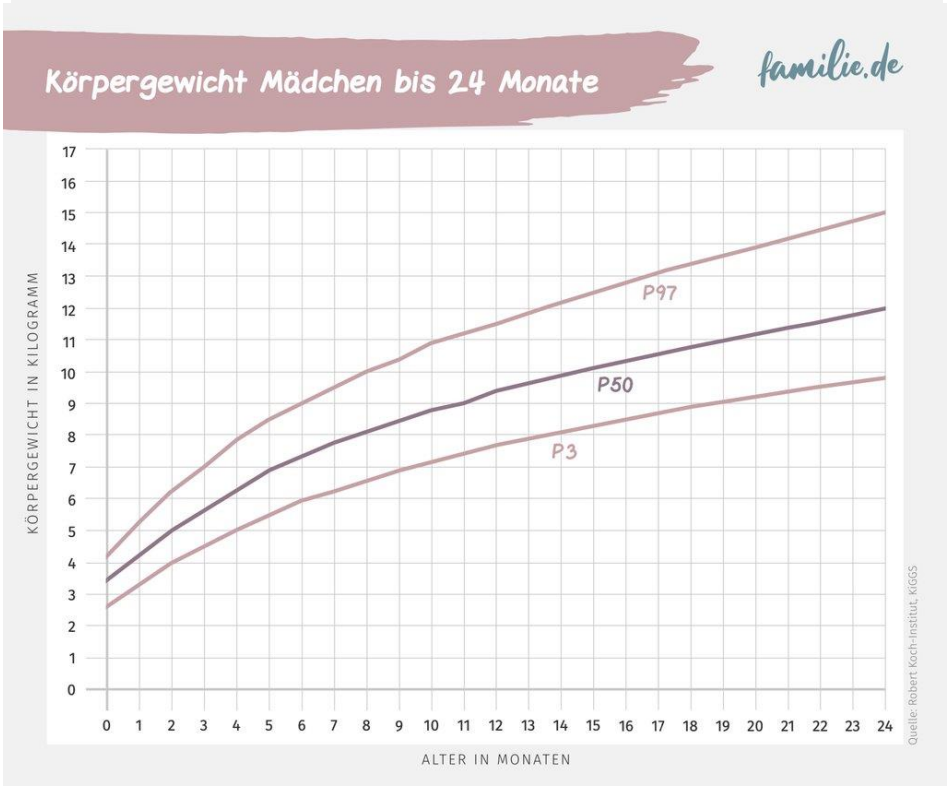
Appendix 2

Example percentiles table (weight)



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Gewichtstabelle Jungen und Mädchen

familie.de

ALTER	GEWICHT IN GRAMM					
	P3		P50		P97	
	MÄDCHEN	JUNGEN	MÄDCHEN	JUNGEN	MÄDCHEN	JUNGEN
0 Monate	2.590	2.700	3.390	3.530	4.180	4.350
1 Monat	3.250	3.460	4.200	4.490	5.270	5.600
2 Monate	3.920	4.220	5.000	5.430	6.280	6.770
3 Monate	4.440	4.790	5.610	6.130	7.050	7.620
4 Monate	4.990	5.390	6.250	6.840	7.810	8.490
5 Monate	5.490	5.900	6.820	7.450	8.480	9.230
6 Monate	5.910	6.340	7.300	7.960	9.050	9.850
7 Monate	6.270	6.730	7.720	8.400	9.550	10.390
8 Monate	6.600	7.070	8.090	8.790	9.990	10.870
9 Monate	6.890	7.380	8.430	9.150	10.400	11.300
10 Monate	7.170	7.650	8.750	9.470	10.800	11700
11 Monate	7.430	7.910	9.060	9.760	11.170	12.060
12 Monate	7.670	8.140	9.340	10.030	11.530	12.400
15 Monate	8.310	8.750	10.100	10.750	12.500	13.300
18 Monate	8.850	9.310	10.760	11.410	13.350	14.150
21 Monate	9.340	9.850	11.350	12.050	14.140	14.980
24 Monate	9.820	10.370	11.950	12.680	14.940	15.800

Quelle: Robert Koch-Institut, KiGGS

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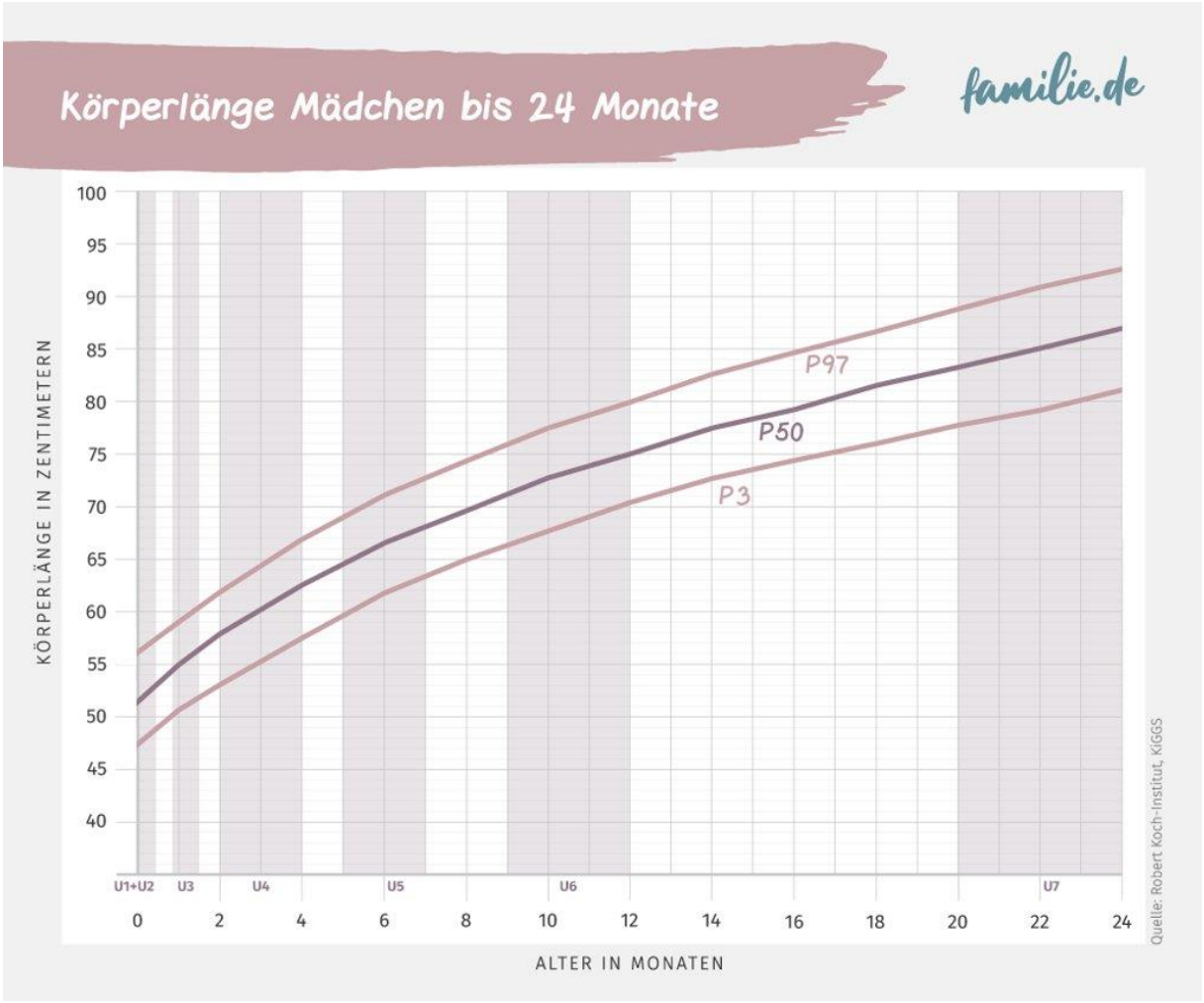
Appendix 3



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- What is measured in this graph?
- What do the numbers on the left of the graph tell you (the vertical axis)?
- What do the numbers below the graph tell you (the horizontal axis)?
- Could your child be 75 cm tall after 12 months?
- What does the picture tell you about the child's height after 4 months?
- Can you explain how growth occurs in the first 24 months?
- Your child is 68 cm tall after 4 months. Is that a lot?
- Is it possible that your child is 68 cm tall only after 10 months?
- The line in the middle is the 'average' growth curve, what does that mean?
- I read on a website that in the first year, the average growth is about 25 cm. Can you see the same in this graph?

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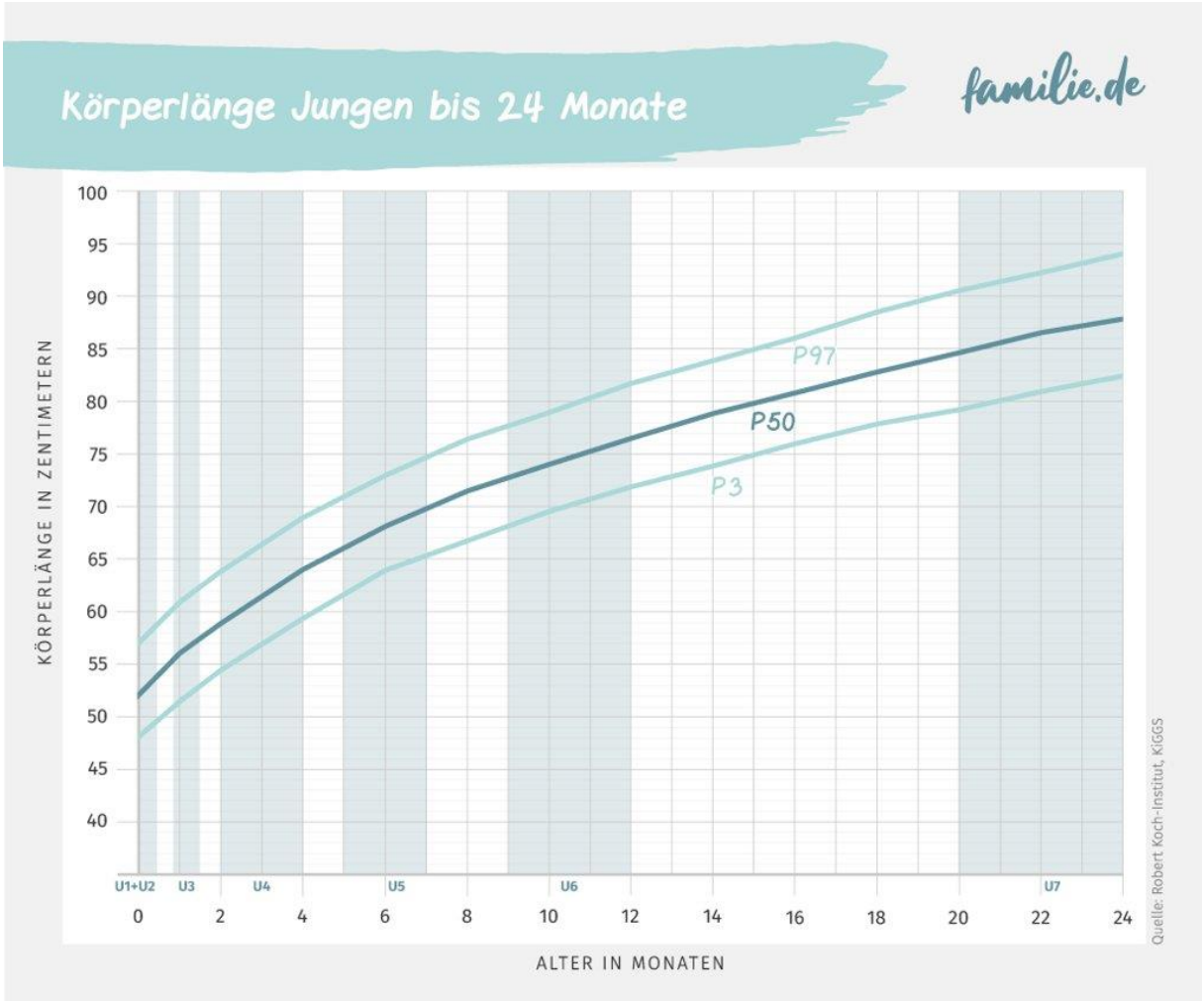
Appendix 4



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Maxi`s growth table:

at birth	51 cm	after 14 months	75 cm
after 2 months	59 cm	after 16 months	78 cm
after 4 months	63 cm	after 18 months	81 cm
after 6 months	67 cm	after 20 months	84 cm
after 8 months	70 cm	after 22 months	87 cm
after 10 months	73 cm	after 24 months	88 cm
after 12 months	75 cm		

Indicate Maxi's hight in the table above and discuss.

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