



Technical Report

ISO/TR 8124-8

Safety of toys —

Part 8:

Age determination — First age grade for the appropriate play of toys

Sécurité des jouets —

*Partie 8: Détermination de l'âge — Première tranche d'âge pour
l'utilisation appropriée des catégories de jouets*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 181, *Safety of toys*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 52, *Safety of Toys*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO/TR 8124-8:2016), which has been technically revised.

The main changes are as follows:

- the title of the document has been revised to better align with the scope and intent of the contents therein;
- clarification has been added that this document only provides information for use in the determination of the lowest age at which children start playing with toys in specific toy sub-categories;
- "projectile toys" and "soft compound materials" have been included as sub-categories;
- [Annex C](#) has been added to provide visual examples of the differing levels of complexity or play pattern of product categories from the simplest operation (starting age grade) to higher appropriate age grades.

A list of all parts in the ISO 8124 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document provides information for use in the determination of the lowest age at which children start playing with toys in specific toy sub-categories. Toys of the same sub-categories suitable for older children due to additional skills or complexity are not listed. Due to a number of factors, including size, complexity or other considerations (e.g. the number of pieces, dimensions, weight, level of detail and realism, brand or licence and special functions), the actual appropriate age grade for a specific toy can vary compared to the intended age. Specific products can therefore carry an age grade which is appropriate for a child that is older than the starting age grade listed in this document.

This document is based on the advice of experts and on the traditional play patterns of children.

NOTE It is possible that national or regional regulations or directives will classify a toy, or category of toy, as being intended for a different age.

[Annex B](#) gives details on how information on electronic toys and electronics in toys was considered in the development of this document.

[Annex C](#) gives details on how differences in complexity or play pattern will affect the appropriate age grade beyond the starting age grade.

Safety of toys —

Part 8:

Age determination — First age grade for the appropriate play of toys

1 Scope

This document provides an indication of the lowest age at which children start playing with toys in specific toy sub-categories. It is primarily directed to manufacturers and agencies that evaluate the compliance of toys with safety standards.

This document can be used as a reference to determine the appropriateness of toys by earliest age, for use by distributors, institutions and organizations involved with child play, as well as by paediatric institutions, teachers, other professionals that use toys in their routine activities, and consumers.

The age at which children develop different abilities is unique for each individual child. This document illustrates the age ranges during which a typical child has developed certain abilities.

Although age grading has safety implications, this document is not intended to address specific safety requirements. Specific safety requirements for toys (e.g. restriction of the presence of small parts and small balls in toys intended for certain age groups, due to the choking hazard) can be found in the ISO 8124 series and in other regional toy safety standards and regulations.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

age group

children that are all within a specified age range which is generally associated with certain developmental milestones or certain behaviours, or both

Note 1 to entry: Adapted from Reference [5].

3.2

toy category

classification of a toy according to its specific purpose and function

Note 1 to entry: This document implements the following seven toy categories (see [Annex A](#)):

- toys for sensorimotor activities;

- toys for physical activities;
- toys for intellectual activities;
- toys that reproduce the technical world;
- toys for the development of feelings and empathy;
- toys for creative activities;
- toys for social relationships.

Note 2 to entry: See References [2] and [3].

3.3

toy sub-category

type or group of toys with similar play features within a toy category

3.4

gross motor skills

activities of the large muscles of the body, related to functions of sustaining head positions, sitting, walking and running

3.5

fine motor skills

clenching motion activities of the hands, such as gripping, clasping and pincer movements as well as fine movements used for drawing and writing

3.6

starting age

first age at which it is appropriate for a child to play with a specific type or group of toys

Note 1 to entry: At very young ages, “play” can be considered as the interaction between a caregiver and a child, where the caregiver is using the toy to entertain or attract the attention of the child such as with a rattle. It is only after further development that the child is able to interact and play with the toy by themselves.

Note 2 to entry: For the purposes of this document, a range of starting ages is presented for various toy sub-categories. The age range covers the first day of the lowest age to the day prior to the highest age in the range. For example, a starting age range of 4 months to under 8 months would be from the day that the child becomes 4 months old until the end of the day prior to the child becoming 8 months old.

Note 3 to entry: When a starting age is mentioned for specific categories of toys, it does not mean that all the toys belonging to that category are to be classified as suitable for that age. The number of pieces, dimensions, weight, level of detail and realism, brand or licence and special functions of the specific toy can change or increase the intended age (see the examples provided for reference in [Annex C](#)).

4 Starting ages

4.1 Children with starting ages birth to under 4 months

4.1.1 Aspects related to motor and cognitive development, and behaviour of children with starting ages birth to under 4 months

Usually, the following development and behaviour can be observed in children with starting ages birth to under 4 months.

- They do not yet have the motor abilities required to play with toys; toys are only used as objects for exploration and entertainment rather than for play.
- They do not yet have the ability to interact with books due to the lack of physical, cognitive and visual abilities required for this activity.

- They are attracted by multi-sensory elements and are able to recognize their parents; have sucking and breastfeeding reflex, but are unable to sit up by themselves; have abrupt, uncontrolled and limited motions. They touch, grab, hold, press and shake anything in their hands unaware of the strength in their arms.
- Around 3 months, they are capable of grabbing (reflex grasp) and holding objects (whether suspended or not). They detect, explore and feel objects with their hands and mouth.
- The learning process occurs through the senses and reflexes by assimilating reactions to stimuli and repetitive motions.
- The auditory system is functional at the time of birth, but it needs neurological maturation and sensory experiences for the hearing functions to develop fully. Children demonstrate a lot of sensitivity to ambient sounds due to their immaturity and lack of experience. From birth, children begin to react to sounds and human speech. By around 2 months, most babies become quiet when they hear familiar voices. By 3 months, they locate and respond to sounds and make vocalizations. Examples of these could be related to sensations associated with bathing and feeding.
- They turn the head towards a sound and are attracted by objects that emit sounds that are known to them as being a part of their routine.
- Vision development is progressive. At birth, the eye focus of the child is best at about 20 cm. After 1 month, children are able to focus on objects up to 30 cm away, and by 3 months they can see some meters ahead. Visual acuity upon birth is from 2,5 % to 5 %, and improves to near 20 % up to the third month.
- They are attracted by bright colours such as yellow and red although they cannot clearly distinguish between them. At the age of 2 months, the primary colour receptors are developed and they can distinguish between contrasts and the primary colours blue, red and yellow.

4.1.2 Recommended toy sub-categories

The toy sub-categories in [Table 1](#) are recommended for this age group.

Table 1 — Toy sub-categories for children from birth to under 4 months of age

Sub-category	Starting age	Description and examples of appropriate toys
1.01	0 months +	Rattles and rings.
1.03	0 months +	Mobiles, with or without sound – toys with miscellaneous figures and shapes to be mounted above the crib and intended to be out of the reach of the child.
1.47	0 months +	Musical boxes – toys to be mounted on or near a crib with handle or button for adult activation.
1.04	2 months +	Crib gyms and playmats – mats with simple play features or activities; can include overhead structures that can have dangling objects intended for the child to reach, grasp, or hit.
1.13	2 months +	Simple dolls and animals – soft-stuffed dolls and animals made of fabric or plush with or without clothes and fixed details which cannot be removed.
1.05	3 months +	Cradle and playpen toys – balls, characters attached to cribs, strollers or enclosures.
1.09	3 months +	Squeeze toys – constructed of soft material, with or without internal rattle or noise feature.
1.25	3 months +	Cloth and similar soft material balls and geometric forms.

4.2 Children with starting ages 4 months to under 8 months

4.2.1 Aspects related to motor and cognitive development, and behaviour of children with starting ages 4 months to under 8 months

Usually, the following development and behaviour can be observed in children with starting ages 4 months to under 8 months.

- They are attracted by multi-sensory elements and have increasing interest in the environment surrounding them. They are in the oral phase and teeth begin to appear. They have natural involuntary motions. The learning process still occurs through the senses, especially the mouth, and reflexes, by assimilating reactions to stimuli and repetitive motions.
- Their hearing development continues and they already use their visual and motor abilities to play with other people. They are capable of interacting with toys and objects. They are beginning to be aware of the existence and permanence of objects (objects continue to exist even when out of sight). They imitate simple motions and gestures.
- They are perfectly capable of locating sounds. They engage in vocal games that emphasize repetition of a same syllable like “mamama”, “papapa”, from 4 months on. They start interacting with adults to develop language games in which words are spoken in a repetitive way. They enjoy songs and sounds. From 4 to 6 months, they are more sensitive to sounds, and they react to changes in voice tones and sounds.
- They use their limbs to move, for example, rolling onto their sides or launching themselves forwards and backwards. They have greater ability to position themselves on the floor to play. They start sitting by themselves, and start crawling between 5 and 6 months.
- They have low gross and fine motor coordination, as well as involuntary motions of the limbs. The fine motor coordination of hands is still developing. They grab objects with the palm of hands (primitive grasping). They grab strongly, extend the palm of their hand to reach objects, and are capable of transferring objects from one hand to another.
- They have a progressive development of motions, such as holding, grabbing, pressing, shaking, pulling and throwing objects onto the floor. Grabbing and holding are fully mastered at around 6 months. They are capable of turning thick pages clumsily.
- At around 6 months, visual acuity and colour receptors are almost equal to that of an adult. They are attracted by red and yellow colours and printed patterns.

4.2.2 Recommended toy sub-categories

The toy sub-categories in [Table 2](#) are recommended for this age group.

Table 2 — Toy sub-categories for children starting ages 4 months to under 8 months

Sub-category	Starting age	Description and examples of appropriate toys
1.02	4 months +	Teethers and teething rings.
1.07	4 months +	Activity playboards – boards that are attached to the crib with various play features such as miscellaneous coloured shapes, shatterproof mirrors, spinners that rattle, buttons to push, parts that slide on guides, doors that open.
1.11	4 months +	Bath toys – animals, small boats and floating objects.
1.45	4 months +	Balls or cylinders – clear material with visible contents.
1.17	5 months +	Simple blocks, nesting toys, and stacking toys.
1.12	6 months +	Simple books made of textiles or plastic.
1.18	6 months +	Simple ball and track toys.
1.20	6 months +	Simple push/pull rolling toys (without cord or handle) which make sounds or have coloured lights, or both – wheeled animals or vehicles.
1.48	6 months +	Simple keyboards or hand-held toys with buttons that activate lights and sounds.

4.3 Children with starting ages 8 months to under 12 months

4.3.1 Aspects related to motor and cognitive development, and behaviour of children with starting ages 8 months to under 12 months

Usually, the following development and behaviour can be observed in children with starting ages 8 months to under 12 months.

- They are potentially anxious in case of the parent's absence or in the presence of strangers. They become attached to objects (blanket, plush toy, etc.) which provide comfort and a sense of security. They start the development of imitative behaviours and are able to recognize and imitate voices, songs and sounds. They can repeat songs and sounds after hearing a number of repetitions.
- From 8 months, their babbling is similar to the sounds of their mother tongue. They start to imitate some actions that are familiar to them with the use of materials or toys, like cradling a doll (this is the first phase of symbolization) and understand the meaning of some gestures (e.g. kiss, goodbye, come here). They start to express themselves through gestures (such as extending and contracting the hand when they want something). However, they still only recognize what is in their immediate field of vision. During this age range, they start to verbalize their first words and associate them with actions, but they limit themselves to the knowledge of their immediate surroundings. Therefore, intentional verbal and physical communication is already occurring. They are still attracted by elements that stimulate the senses.
- They start to relate objects to their intended purposes and have full awareness of an object's existence and permanence (continue to be aware of them even when out of sight). They are able to turn the pages of a book with more ease, understand simple cause and effect relationships, and are more aware of themselves. They begin to have a notion of heights and the dangers of falls.
- They have better body balance, interest in the movement and placement of objects (balance, motion), and also greater refinement and ability of movement. They have interest in exploring the environment, and can crawl and sit unaided. They can remain standing and can make their first steps with support.
- They have muscle control and more developed fine motor coordination. Primitive clenching is more coordinated (holding, pincer grip) and they are able to play instruments with the fingers (usually the forefinger). They use the forefinger with the purpose of pointing out objects and people.
- They are able to hold two objects simultaneously, but cannot coordinate them. Objects remain in their hands for longer periods of time and they grab and beat objects with more frequency. They practice their fine motor skills by grabbing, pushing, pulling, pressing, clapping, caressing, nudging, shaking and scribbling. They are capable of scribbling with crayons and felt-tipped pens, but are not able to draw or write effectively.

4.3.2 Recommended toy sub-categories

The toy sub-categories in [Table 3](#) are recommended for this age group.

Table 3 — Toy sub-categories for children starting ages 8 months to under 12 months

Sub-category	Starting age	Description and examples of appropriate toys
1.14	8 months +	Roly-poly toys, bop-punching toys, and pop-up action toys – figures and animals that rock in a to-and-fro motion, made of rigid or inflatable plastic, jack in the box, push-down spinning toys.
1.16	8 months +	Books with thick (chunky) pages.
1.35	8 months +	Soft materials in various shapes for stacking.
1.31	9 months +	Learn to walk toys (walk behind) – wheeled unit with a solid base and handle to support the child in the early stages of walking.
5.02	9 months +	Dolls, imaginary animal characters, with no removable components – dolls representing fictional characters, including animal or human forms.

4.4 Children with starting ages 12 months to under 18 months

4.4.1 Aspects related to motor and cognitive development, and behaviour of children with starting ages 12 months to under 18 months

Usually, the following development and behaviour can be observed in children with starting ages 12 months to under 18 months.

- They are not yet necessarily able to alternate their feet when pushing ride-on toys and they cannot yet pedal. The first ride-on toys do not need steering mechanisms because young toddlers will not necessarily be able to use them effectively. Also, they can imitate sports only in a playful way, without rules.
- They grow slower and have more developed motions and gross motor skills. Fine motor skills are in continuous development, but dexterity is still limited. On-going enhancement of eye-hand coordination.
- They start to choose their own toys and keep them close by. They can remember past events and still like to explore objects with hands and mouth. They use all the senses to explore the world. They have simplistic symbolic thinking.
- Around 13 months, they start to sing to themselves. They have increasing linguistic skills, present more verbalizations as a means of communication, and understand the meaning of a number of words. They distinguish repetitive and rhythmic sounds. They like to hear simple stories and can relate the pictures with the spoken word.
- They adore songs that involve the body, appreciate rhythmic instruments and exploration play with musical instruments. They listen to rhymes and jingles, and are able to move objects according to the musical rhythm. They watch television and other media and want to watch the same programme repeatedly.
- They are increasingly curious and like new objects. Exploration play is the predominant activity in this phase.
- They start to see differences in the size, shape and mobility of objects. They are capable of matching simple shapes and start to recognize simple shape fits such as triangular, square, rectangular, etc. in terms of exploration. They are able to feel different textures.
- They are capable of handling and carrying toys and light objects. They can throw and kick soft and lightweight balls.
- They like small vehicle toys that can be pushed. They like toy cars with doors or compartments to carry toys.
- They like to turn knobs and dials that have low resistance. They can hold, handle and pass objects from one hand to another and release them deliberately. They can turn pages of books or magazines (several at one time), paying attention to images, not text. They can identify an illustration upside down. They like to scribble and can use dough and modelling clays with adult assistance.
- They observe and perform imitations of other children and adults. They have greater capacity for social contact, but are egocentric. They solve problems by trial and error.
- They are more able to walk but can still have unstable balance. Muscles are not well strengthened and developed yet. However, from around the age of 16 months, the majority of children are capable of walking and standing in place. They are beginning to explore their environment: starting to walk, going up and down stairs one foot at a time, climbing onto furniture, playground toys, etc. They rarely fall on smooth and even surfaces. They are aware of heights and the dangers of falls and rudimentary spatial relationships.
- Close to 18 months, they are able to run and stay on tip toes with no support. They have increased mobility, and they start to dance and to jump with both feet together. They can perform simple rotation of body parts.