

**Early Support**

Helping every child succeed

# Developmental journal

for babies and children  
with visual impairment

Record of developing vision





## Some definitions

**Visual lures** or **targets** are the objects used to attract your baby's visual attention and interest and to encourage them to look more closely or shift their gaze. These could be faces, people, everyday objects, toys, lights etc.

### Visual awareness, visual interest and visual acuity

- **Visual awareness** – alerting to/detecting the presence of a visual stimulus.
- **Visual interest** – looking at a visual lure to learn about it.
- **Visual acuity** is a *measure* of how well a child sees detail of standard black and white materials at different distances, eg letter charts and acuity cards (stripes) used by eye specialists.

### Functional vision and visual function

- **Functional vision** is a measure of how well a child sees the visual **lures** important for their current developmental needs and of their level of control of eye movements and gaze at various distances. The **Record of developing vision** measures your baby's functional vision and is the basis of the activities on the **Developing vision activity cards** – the activities that make up your child's individual programme to promote development of vision.
- **Visual function** is how a child functions visually within the everyday environment.

### Eye movements

- **Directing gaze** – turning eyes to look at someone or something to which one has been alerted in near and far distance.
- **Following** – movement of the eyes as they keep a moving object in focus.
- **Tracking** – movement of the eyes as they keep an object in focus as it rolls along a surface or along a track.
- **Convergence** – inward movement of the eyes towards the nose in order to focus on very near objects.
- **Scanning** – movements of the eyes searching to find something, eg one's shoe in a room or the red flower in a complex picture.

This booklet is published as part of the Early Support *Developmental journal for babies and children with visual impairment*.

## Development of vision – general points

Record of developing vision

- This booklet is designed to help you improve your child's vision as fast as possible as this will benefit overall development and ensure your child achieves their full potential for vision.
- Vision normally improves from birth through early childhood as babies learn to control their eye movements and to focus their gaze on near and far objects.
- The vision of children who have difficulties with seeing (visual impairment) usually develops more slowly than the vision of other children.
- In most of the eye conditions that lead to visual impairment in childhood, vision tends to improve throughout the early years. How much a baby's vision will be able to develop depends on the nature and severity of their visual problem. The potential for visual progress and actual rate of progress differ considerably from baby to baby – in some children there is quite a lot of development and it's quite fast and in others there is only very little development and it comes slowly. A very few eye conditions preclude development of vision, eg anophthalmia (where children are born without eyes). You might want to talk about this with your specialist professional.

Sometimes the development of vision in babies with visual impairment is slower than need be and children have been shown to benefit from a programme to promote vision.<sup>1</sup> **Active encouragement** improves the rate of visual progress in most babies.

- The [Record of developing vision](#) is made up of a series of [Record charts](#) that you can use with your specialist professional to note down your baby's visual progress. Each chart has an accompanying [Activity card](#) for you to work through.
- The [Record of developing vision](#) and suggested activities follow the steps, pattern and sequence seen in children with full sight but they cannot be linked to specific stages of the [Developmental journal](#), because the level of vision of one baby may be much better than that of another, although developmentally they are both at the same stage.
- As you progress through the [Development of vision activity cards](#), you will notice that some of the activities require your baby/child to be at a certain level of development in relation to [Play and learning](#), [Communication, language and meaning](#) or [Movement and mobility](#) so you shouldn't try to record these visual stages until your baby has these developmental skills.
- Check the [Record of developing vision](#) regularly with your specialist professional and decide together on the best visual [lures](#), speeds of movement and distances to help your child.
- Visual [lures](#) should not make a sound if they are being used to fill in the record.
- Activities that promote development of vision will be hard work for your baby or child, as this is an area that is difficult for them, so you need to use all your ingenuity to keep their interest and show pleasure in their success.

<sup>1</sup> Sonksen P M, Petrie A and Drew K J

*Promotion of visual development of severely visually impaired babies: evaluation of a developmentally based programme*  
Developmental Medicine and Child Neurology **33**: 320-335 (1991)



## Record 1

The early stages of visual development involve awareness and subsequent interest in looking at faces, people, diffuse light, light reflections and gently oscillating objects in the near environment. Newborn babies move their eyes to each side and up and down. Movements are often jerky and the two eyes may not move perfectly together – most cannot converge. Gradually movements become smoother, quicker and more in unison.

At the same time babies begin to learn to direct their gaze and to follow near faces, people and objects. A baby/child with visual impairment may show

their first visual response to a glowing light source in a dark room. If you find it difficult to tell what your baby/child is able to see, talk about this with someone with specialist knowledge.

Whenever lures are not specified below, list and describe them (their size and colour and whether they are light reflecting (LR) or non-light reflecting (N-LR)) in the empty spaces provided in the left-hand column. Record the distance (from lure to baby/child) and/or speed (slow, medium, fast) in the right-hand column.

**See Development of vision activity card 1**

Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Visual awareness</b>			
Alerting (eye widening, alert expression, or change in body tone)			
Aware of overhead lights being switched on/off			
<b>Distance: within 1/3 metre</b>			
Aware of a glowing light in a dark room, eg 'oogly' on a pen torch			
Aware of a glowing light in a day lit room			
Aware of a smiling expressive face			
Aware of a spinning light reflecting ball, eg tinsel (12cm)			
Aware of a spinning colourful woolly pom-pom ball (12cm)			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Visual interest or looking at</b>			
– a glowing/light-producing toy in dark room, eg 'oogly' on a pen torch			
– a glowing light in day lit room			
– a smiling expressive face			
– a spinning light reflecting balls, eg tinsel (12cm)			
– a spinning colourful woolly pom-pom ball (12cm)			
Others (describe)			
<b>Eye movements (near distance) – directing gaze</b>			
Detects and shifts gaze to a <b>lure</b> , eg towards light when you draw back the curtains or towards your face when you lean over your child			
<b>Eye movements (near distance) – following</b>			
Follows <b>lure</b> when it is moved slowly from side to side			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Eye movements (near distance) – following</b> continued			
Follows <b>lure</b> when it is moved slowly up and down			
<b>Eye movements (near distance) – convergence</b>			
Eyes converge (look in towards nose) when <b>lure</b> is moved slowly towards nose			



## Record 2

Record of developing vision

**Visual interest** and the control of **gaze** and **eye movements** for 'people' and large **lures** gradually extend to greater distances (up to three metres). Gaze shifting and **following** also expand and become smoother and quicker. Babies detecting **lures** of 12 to 25 cm begin to track them if rolled slowly across a table surface. At the same time, **visual awareness** and **interest** gradually develop for increasingly small items at table top distance (30 to 40cm).

Whenever **lures** are not specified below, list and describe them (their size and colour and whether they are light reflecting (LR) or non-light reflecting (N-LR)) in the empty spaces provided in the left-hand column. Record the distance (from **lure** to baby/child) and/or speed (slow, medium, fast) in the right-hand column.

**See Development of vision activity cards 2a and 2b**

Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Visual awareness and visual interest</b>			
Detects/looks at large <b>lures</b> (12cm or over) that 'move on the spot' eg dangling spinning ball, favourite cuddly toy (jiggled) or you waving			
Detects/looks at increasingly small single, stationary items on a well-contrasted table/highchair surface			
Detects/looks at a young child's football (12cm)			
Detects/looks at a tennis ball (6cm)			
Detects/looks at a toy brick/cube (2.5cm)			
Detects/looks at a raisin or cheerio (1cm)			
Detects/looks at a hundred and thousand (HTs) – sugar cake decoration (1 to 1.2mm)			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Visual awareness and visual interest</b> continued			
Others (describe)			
<b>Distance: from within 1/3 metre to 3 metres</b>			
<b>Eye movements – directing gaze at increasing distances</b>			
Detects and shifts gaze to large lures (you, toy more than 25cm) to each side.			
Detects and shifts gaze from one large lure (you, toy more than 25cm) to another one at the same distance			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Eye movements – following</b>			
Following a person moving across a room at increasing distances			
Following large lures (12 to 25cm) at increasing distances when moved across visual field from R to L or L to R			
Following large lures (12 to 25cm) at increasing distances when moved up and down			
<b>Eye movements – convergence</b>			
Sustained and nearer to nose than before for a lure (8 to 10cm) moved slowly towards nose			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Eye movements – tracking</b>			
Tracks a <b>lure</b> (25cm and 12cm) rolled from R to L and L to R across a table top			
Tracks a <b>lure</b> (25 and 12cm) rolled 'to' and 'fro' along a table top			



## Record 3

## Record of developing vision

Control of **visual awareness**, **visual interest**, gaze and eye movement for 'people' and large **lures** gradually extends even further – up to six metres. Gaze shifting and following also expand. Tracking along the floor can be recorded once a baby can sit supported on the floor, both across the visual field and 'to and fro'. At the same time, **visual awareness** and **visual interest** for increasingly small items at tabletop distance (30 to 40cm) continue to progress. Once aware and interested in large **lures** (yourself or an object of 20 to 30cm) at two metres, babies begin to detect similar-size **lures** when popped out from behind a screen or armchair with a non-patterned cover placed at a one metre distance from them. Some children with limited vision

continue to improve more and faster in near than far distance. Children need to understand the names of family, friends, pets, everyday objects and toys before you can try to complete some of the sections below.

Whenever **lures** are not specified below, list and describe them (their size and colour and whether they are light reflecting (LR) or non-light reflecting (N-LR)) in the empty spaces provided in the left-hand column. Record the distance (from **lure** to baby/child) and/or speed (slow, medium, fast) in the right-hand column.

**See Development of vision activity cards 3a and 3b**

Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Distance: from within 1/3 metre to 6 metres</b>			
<b>Visual awareness, visual interest and visual acuity</b>			
Detects/looks at large <b>lures</b> (12cm or over) that 'move on the spot', eg you waving, a favourite cuddly toy (jiggled) or a dangling spinning ball			
Detects/looks at increasingly small single, stationary items on a well-contrasted table or highchair surface			
Detects a tennis ball size (6cm)			
Detects a wooden brick/cube (2.5cm)			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Visual awareness, visual interest and visual acuity</b> continued			
Detects a raisin or cheerio (1cm)			
Detects/looks at a hundred and thousand (HTs) – sugar cake decoration (1 to 1.2mm)			
<b>Looks actively or scans room, visually finds and indicates recognition by looking and smiling at, pointing to or saying ‘there’ for the following</b>			
– a familiar person or pet when asked, eg ‘where’s daddy?’			
– a familiar object or toy when asked, eg ‘where’s teddy/your beaker?’			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Looks actively or scans room, visually finds and indicates recognition by looking and smiling at, pointing to or saying 'there' for the following</b> continued			
– an object of a familiar type, eg beaker or brush, but different in colour from their own			
<b>Distance: from within 1/3 metre to 6 metres</b>			
<b>Eye movements – directing gaze at increasing distances</b>			
Detects and shifts gaze from one large lure (12 to 25cm) to another			
Detects and shifts gaze when large lure, eg your face or favourite cuddly toy, pops out from behind a screen/armchair – see introduction to Record 3 on page 12			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Eye movements – following at increasing distances</b>			
Follows person moving across a room at increasing distances			
Follows large lure (12 to 25cm) when moved from side to side			
Follows large lure (12 to 25cm) when moved up and down			
<b>Eye movements – tracking at increasing speeds and distances</b>			
Tracks ball rolled across their visual field and towards and away from them along the floor			
Tracks a large plastic football (about 25cm)			
Tracks a small child’s football – about 12cm			
Tracks a tennis ball size – 6cm			



## Record 4

## Record of developing vision

Continue to use Record 3 to record near and distant awareness/interest items and eye movement items until you reach their limits in terms of size, speed and distance. There are additional spaces to record steps in scanning and tracking. This section focuses mainly on recording further development of **functional acuity** through looking for detail in people, objects, pictures and photographs.

People and objects are three-dimensional and are easier to see than pictures or photographs, which are two-dimensional. If you have a digital camera, you can take and print off photographs of family faces against a plain background. Matt photographs are easier to see than gloss. Television programmes are on the whole like constantly changing photographs and it's difficult for a child with limited vision to work out what's happening. Vision for television is not included in the record as it is difficult to be sure what aspects are seen sufficiently well for understanding. Discuss TV programmes with your specialist teacher.

Understanding the names of family/friends/pets/everyday objects/toys/items in pictures is needed before you can try to complete this section. Some parts require the child to indicate what they see by naming, making a meaningful noise, eg 'brmm – brmm' or making a **gesture**, eg 'of drinking'.

People who are **lures** should not speak and objects should be silent, until your child has indicated their choice. Objects can be on a table if near or on the floor if further away. Describe the **lure** briefly in the left-hand column, eg for a photograph, the overall size, the content and the background – 16cm by 20cm grandpa's face, kitchen wall (cream emulsion). In pictures note size of picture and item and give brief description – 8cm yellow duck on green grass with tree to left – all separate and bold with clear outlines. Record the viewing distance in the right-hand column.

**See Development of vision activity cards 4a, 4b, 4c and 4d**

Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Acuity/visual interest</b>			
<b>Distance: from within 1/3 metre to 6 metres</b>			
Looking actively at people and able to distinguish between			
– two familiar people of different body shape/height or wearing clothes the child has seen them in before when asked 'Where's .....?'			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Acuity/visual interest</b>			
<b>Distance: from within 1/3 metre to 6 metres continued</b>			
– two familiar people dressed in similar colours and of similar body shape and height etc when asked 'Where's .....?'			
Looking actively at objects or scanning and able to distinguish between two objects or toys that do not make a sound, when named			
– two objects of similar size but different shape and colour			
– two objects of similar size, colour and overall shape			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Acuity/visual interest</b> <b>Distance: from within 1/3 metre to 6 metres continued</b>			
– several objects in a cluster or group of objects in a basket/pile of the same type but different sizes and colours, eg family beakers/shoes in a basket, in response to 'Where are Susan's shoes?' or 'Find Susan's shoes.'			
– several objects in a cluster/group of objects in a basket/pile of the same type and colour but different in size, eg family trainers in a basket, in response to 'Where are Susan's trainers?' or 'Find Susan's trainers.'			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Acuity/visual interest</b>			
<b>Distance: from within 1/3 metre to 6 metres continued</b>			
Looking actively and identifying pictures – your child says, makes a meaningful noise or gestures the names of items in ‘new’ pictures – that they have not previously seen, in response to the question ‘What’s/Who’s that?’ (within 1/3 metre)			
– an item of familiar type, eg beaker or bath duck. Picture of a single item (life size) in bold colours, clear outline, plain background and good contrast to background)			
– item(s) of the same type as above but embedded in a simple scene. Items in the scene should not overlap each other and be in bold colours, clear outline, plain background and good contrast to background			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Acuity/visual interest</b> <b>Distance: from within 1/3 metre to 6 metres continued</b>			
– item(s) but smaller and embedded in coloured picture of a natural scene – like a printed photograph			
– very small items in a visually complex coloured picture of everyday scene			
<b>Looking actively at photographs</b> – your child says, makes a meaningful noise or gestures the names of items in ‘new’ photographs – that they have not previously seen, in response to the question ‘What’s/Who’s that?’ (within 1/3 metre)			
A photograph of a single familiar face against a plain, well-contrasted background			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Acuity/visual interest</b>			
<b>Distance: from within 1/3 metre to 6 metres continued</b>			
A photograph of two familiar faces against a plain, well-contrasted background			
A photograph of a familiar person (full length) against a plain, well-contrasted background			
A photograph of two familiar people (full length) against a plain, well-contrasted background			
A photograph of a single familiar face in a natural indoor or outdoor setting			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Acuity/visual interest</b> <b>Distance: from within 1/3 metre to 6 metres continued</b>			
A photograph of two familiar faces in a natural indoor or outdoor setting			
A photograph of two familiar people (full length) in a natural indoor or outdoor setting			
A photograph of two familiar people in a natural indoor or outdoor setting			
A photograph of a family occasion (birthday tea or picnic) in a natural indoor or outdoor setting			



Steps in functional vision	Possibly	Definitely	Distance (cm) and speed of movement (slow, medium, fast)
<b>Eye movements – scanning</b>			
Introduction to scanning along a line of objects			
Three to five familiar toys/objects in row – child follows your finger along the row in either direction in search of the requested item			
Five familiar objects in a row – child follows your finger from L to R in search of the one requested			
<b>Eye movements – tracking</b>			
Tracking moving objects along an irregular pathway, eg train going around a winding track or a streamer in your hand			

