

# SUPPORT FILES



## How to Use the Hanks Paediatric Test Cards

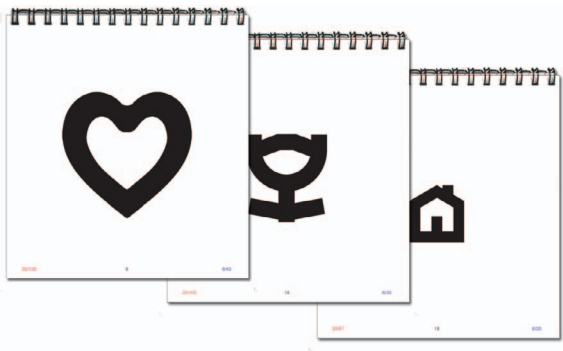
The *Hanks Paediatric Test Cards* provide a convenient and accurate way to assess the visual performance of young children.

### VISUAL ACUITY

The most common tests for visual acuity are line charts consisting of letters or numbers. Symbols on these charts are known as “optotypes” and they are usually separated by a distance that is equal to the width of the symbols.

#### Test Cards

The symbols used in these test-cards have been developed for infants and children who are unable to read. They use simplified illustrations that have been tested for recognition by children and calibrated so that the strokes and separations correspond to the visual acuity measurements shown.



#### Testing Distance

Distance visual acuity is normally measured with tests positioned at 6 metres (20 feet) from the patient. For infants and children this distance may not be practical and the cards can be effectively used at 3 metres. While they use a visual acuity notation for 6 metres, this can easily be converted to any other testing distance.

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### Presentation to the Child

The flash-cards can be presented in random order to prevent memorising. If using the *Illiterate E* targets, the book can be rotated for the alternative orientations. (Note that these targets are also printed in a variety of orientations so that the spine of the book cannot be used as a clue to the direction of the target).

- First ask the child to identify “your drawings” in a large size to confirm that they recognise them.
- Cover one eye with either a patch or the child’s own hand (using the palm, not the fingers).
- Continue to present smaller targets until they can no longer be seen accurately.
- Record the size that was last seen correctly.
- Repeat for the other eye.

### “Crowded” or “Uncrowded”

There is a difference in the visual acuity when measured with single symbols (flash-cards) and when measured with crowded symbols (line charts).

The second set of symbols is more difficult because red *Contour Interaction Bars* (Crowding Bars) have been added.



These will produce results that are more comparable to a standard line chart and are generally up to two lines worse than the measurements taken with single (uncrowded) symbols.

### Converting the Result - If Necessary

If the test was conducted at a distance shorter than 6 metres, this can easily be converted to the standard 6 metre (20 feet) notation.

For example, if visual acuity is tested at 3 metres and the result is the 6/10 symbol. This is a measurement of 3/10 at 3 metres; equivalent to 6/20 at 6 metres. (See the conversion table at the back of the book).

**Converting the Measured VA for the Testing Distance**

Distance visual acuity (VA) is normally tested at a distance of 6 metres (20 feet), so "normal vision" is 6/6 metres (or 20/20 in feet).

If a shorter distance is used, the result can still be converted to the equivalent visual acuity at 6 metres.

As shown in the table below, if the flash-card labelled 6/20 is the best result at 3 metres, then the VA is 8/20 and this is the equivalent of 6/60.

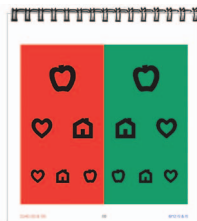
VA Label	Testing Distance							
	6M	5M	4M	3M	2M	1M	60cm	60cm
6/6	6/60	6/72	6/96	6/120	6/180	6/360	6/600	
6/5	6/45	6/54	6/58	6/60	6/135	6/270	6/575	
6/4	6/30	6/36	6/40	6/45	6/90	6/180	6/450	
6/3	6/20	6/24	6/30	6/40	6/60	6/120	6/300	
6/2	6/15	6/18	6/22	6/30	6/45	6/90	6/225	
6/1	6/12	6/14	6/18	6/24	6/36	6/72	6/180	
5/5	5/9	6/11	6/14	6/18	6/27	6/54	6/135	
5/4	5/8	5/9	6/12	6/16	6/24	6/48	6/120	
5/3	5/6	6/8	6/10	6/12	6/24	6/48	6/120	
5/2	5/5	6/6	6/8	6/12	6/24	6/48	6/120	

*A Note: Those who prefer to work with the NODS notation, an equivalent table is available for download from [www.horwathoptics.com.au](http://www.horwathoptics.com.au)*

# DUOCHROME

This is a test for refractive error that is based upon chromatic aberration, whereby the different wavelengths of light (corresponding to different colours) are bent to different extents.

A clearer green target indicates that the subject's eye is hyperopic (long-sighted), while a clearer red target indicates that the eye is myopic (short-sighted).

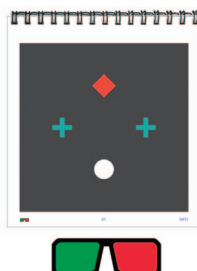


Note that results for this test can also be affected by the subject's accommodative effort and that this is especially relevant for children (unless a cycloplegic has been used).




## WORTH 4 DOT (WFD)

This is a test for binocularity and is conducted with the subject wearing red/green anaglyph filters (red on the right eye).

- With both eyes open and the anaglyph filters being worn, ask the child to identify what they can see on the card.
- Ask “how many symbols?”, “what shape are they?” and “what colours are they?”.



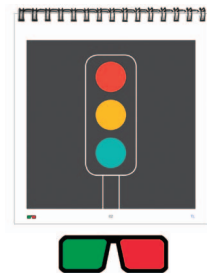
- From these answers binocularity can be confirmed or suppression can be identified as being of the right or left eye.

WORTH 4 DOT		
Binocular		4
Right Eye Suppression		3
Left Eye Suppression		2




## TRAFFIC LIGHTS (TL)

This is an alternative test for binocularity and suppression. It is also conducted with the subject wearing red/green anaglyph filters (red on the right eye).

- With both eyes open and the anaglyph filters being worn, ask the child to identify what they can see on the card.
- Ask “how many lights are there?” and “what colours are they?”.



- From these answers binocularity can be confirmed or suppression can be identified as being of the right or left eye.

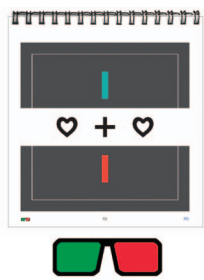
TRAFFIC LIGHTS		
Binocular		3
Right Eye Suppression		2
Left Eye Suppression		2

## FIXATION DISPARITY (FD)

This is a test for misalignment during binocular vision and is conducted with the subject wearing red/green anaglyph filters (red on the right eye).

- First confirm that there is binocularity (no suppression) with the WFD or TL test.
- With both eyes open and the anaglyph filters being worn, ask the child whether the coloured vertical bars are above one another or over to the toward the sides.

- Ask about the direction away from one another.
- From these answers the type of fixation disparity can be determined.



FIXATION DISPARITY			
Result			
Associated Phoria		Exophoria	Esophoria
Prism to Reduce FD		Base In	Base Out

- For particularly cooperative children the amount of fixation disparity can be measured by using prisms to align the two vertical bars. This is called the associated phoria.

