INFORMATION SHEET

DEPTH PERCEPTION & DEPTH/SPATIAL AWARENESS

DESCRIPTION

Depth Perception is the visual ability to see the world around us in three dimensions (3-D). Depth/Spatial Awareness is the ability to move or respond accurately based on our judgement of speed, motion and distance.

People with either of these difficulties may exhibit some of the following:

- Problems with judging height, distance and speed.
- Clumsy or ‘accident-prone’
- Difficulty with catching a ball.
- Difficulty with stairs: need to hold on to banister or trip up.
- Difficulty with escalators – hesitating to get on or off; experiencing dizziness.
- Tripping up.
- Running into doorways or furniture accidentally.
- Difficulty with heights; ladders; climbing frames.
- Knocking things over or dropping things easily.
- Fine motor skills – e.g. cutting along a line.
- Copying from the board.

To use our depth perception, we require a range of depth clues. The best information for these depth clues comes from binocular vision (using both eyes together - stereoscopic vision). Monocular clues, (using one eye only or using one eye at a time to avoid experiencing ‘double-vision’), provide distance information, but reduce the ability to accurately gauge the motion parallax (this is the combined movement and speed of an object). An example would be an aeroplane flying directly overhead appears to pass quickly whereas one in the distance appears to be moving more slowly or is even stationary; this is because the estimation of speed and distance appears most reliable within 10 metres and less reliable beyond this – good for catching a ball which appears to grow in size as it comes nearer so we can judge its speed and catch it.

We use this space and depth perception skill as adults when driving in order to gauge how far away the car in front is – to brake ‘in time’- to park within a designated space; and as pedestrians to avoid colliding with other people on the pavement or to walk up and down steps.
USEFUL STRATEGIES

- **Activities and games** - these can help a person begin to adjust in terms of where things are in relation to other objects and judging distances. Games that involve catching and throwing are good for this, for example football and cricket. However, one of the most effective activities is throwing a ball up against a wall and catching it. Activities such as these should be made simple to begin with and progress in complexity as the person's confidence increases.

- **Enlargement** - enlarging objects can sometimes help overcome some of the difficulties of not seeing something as 3D, for example using a low vision aid such as a magnifier.

- **Eye and/or head movements** - these can compensate for field loss and help the person gain similar information to that obtained when both eyes work together, such as size and distance etc. For example, by moving their eye and/or head from side to side a person can work out the width of a door and how to move through the doorframe safely. It should be noted that an individual may need to be taught to make these eye or head movements; they will not necessarily come naturally.

- **Both hands** - encouraging the person to use two hands for tasks will help with depth perception difficulties, for example to find something on the floor, use both hands to make contact and act as a reference to one another.

- **Look at Depth Perception in Art** – 2-dimensional buildings/ landscapes with people or animals in the foreground/background which provide the illusion of being 3-dimensional – discuss the illusion of things looking as though they are.