

Learn to move Move to learn

How to help children with co-ordination difficulties

Dorset County Council



Improving the quality of life for people in Dorset,
now and for the future



**How does being
physical help
children learn?**

Introductory Activities



**Time to explore
the Box in front of you**

Development of Movement

- Starts in Utero – Heartbeat, Flexion.
- Sequences of movement.
- Learning of early movement skills happens through play.
- Simple to Complex – positions against gravity

Normal Development

Baby on Back



- Strengthening tummy muscles (flexion)
- Learning to grade effort and movement against gravity

Baby on Tummy



- Strengthening back muscles (extension)
- Learning to grade effort and movement against gravity

Baby on the Move



- Pelvic Girdle Stability
 - Shoulder Girdle Stability
- Trunk Control



- Fine tuning
- Postural control mechanisms
- Balance reactions
 - Muscle strength and muscle control



Baby
Carrier



Baby
Walker



Baby
Seat



Baby door
swing

Normal development

- Linking of touch and vision and more specific responses – integration of sensory systems and exploration of the environment.
- Development of extension, rotation and weight shift underpin motor ability and these skills are lacking in children with movement problems.
- The five senses we all know:- Smell, Touch, Hearing, Taste and Vision

Other Senses

- Proprioception
 - The feedback from muscles, joints and ligaments telling you where you are in space
- The Vestibular system
 - The balance organs in the inner ear. It provides information on how the body relates to gravity and changes your posture and movement to compensate.

Learning by Being Physical

- Physical abilities and skills underpin all other learning.
- Muscles develop because we use them
- Posture, strength, balance develop with use
- Awareness of own bodies, co-ordination, knowledge of space around us, time, and effort develop with experience
- Skills develop by 'USE' and need lots of practice for pathways in brain and nervous system to establish well.



PSP GameShield
Flip Cover



LIFE STYLE

Terminology

- Clumsy Child
- Dyspraxic
- Perceptual motor Dysfunction
- **Developmental Co-ordination Disorder (DCD)**
 - umbrella term (Diagnostic and Statistical Manual of Mental Health Disorders DSM-IV-TR, 2000).
 - It is diagnosed as a child having significant motor difficulties over and above that expected for their age and intelligence.
 - The motor impairment significantly and negatively affects activities of daily living and/or academic achievement and cannot be explained by a known medical condition e.g. cerebral palsy or learning difficulty

Sensory Processing Difficulties

- When our nervous systems integrate vestibular, tactile and proprioceptive information correctly then we have a good body scheme and we can then motor plan effectively.
- Some children with poor coordination may also have sensory processing difficulties - if you have concerns discuss first with your SENCo.

Physical Building Blocks for Learning

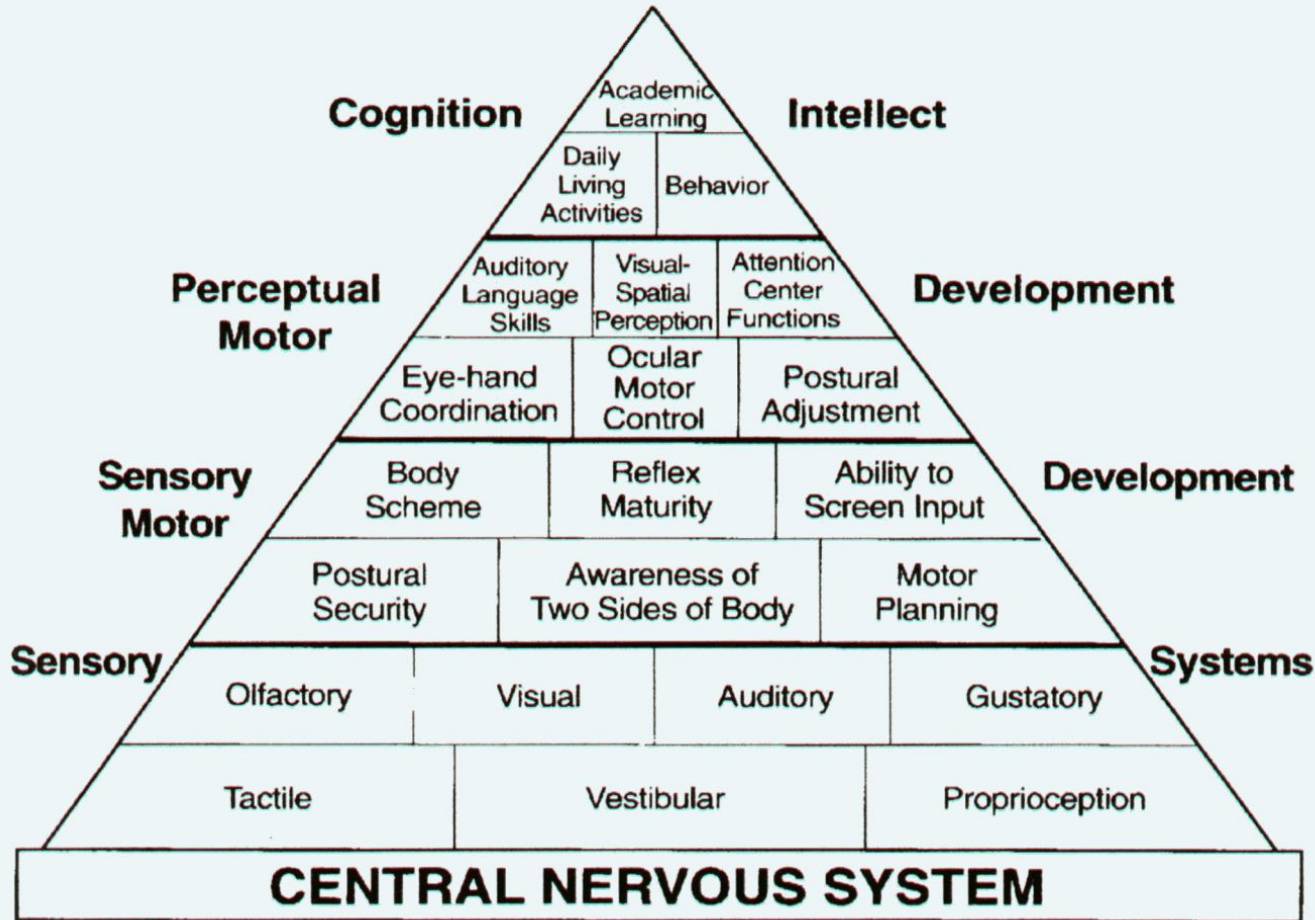


Figure 5. Pyramid of Learning. (Williams & Shellenberger, 1-4)

Cognitive Function

- Capacity to recognise, remember and symbolise information to be used in future experiences.
- Lack of movement will reduce exploration of environment and limit experiences that the child can learn from and build upon.

Activity

Draw a Square

Auditory processing

Hearing

Recognition of shape and objects

Understanding of the language

Motor planning-find the paper and pencil

Adjusting position

Sitting in the chair

Triggering core stability muscles

Stabilising the shoulder girdle

Proprioception of where hand and arm is and where it needs to move to

Track and fix eye movements

Co contraction of muscles to move and pick up pencil

Pencil grip

Selectivity of movement

Use of intrinsic hand muscles

Tightness of grip

Fundamental Movement skills (FMS)

- FMS - Gross motor (skipping, jumping), fine motor (in hand manipulation, eye-hand co-ordination) and perceptual motor skills (visual motor and auditory)
- Usually in place by aged 6/7 year of age

Physical Activity and health

- National Institute for Health and Clinical Excellence (NICE) guidelines for promoting physical activity for children and young people – 60 minutes of moderate to vigorous intensity of physical activity per day. Low levels of activity in childhood predisposes to obesity and Type 2 Diabetes in adulthood.
- Change for life and Move For Health Campaigns.
- The relationship between physical activity and health is complex and further complicated when children have poor FMS
- Children who have mastered FMS are more likely to enjoy physical activity in childhood and adulthood
- Improving self-esteem has positive effects on psychological health in children and this tracks to adulthood

What do you
see in school?



What you might see

- Having difficulty with tasks expected of his or her age group
- Unsettled at school
- Poor pencil grip, writing ability and presentation of work
- Behavioural problems-pushing, shoving; not realising what it feels like to others
- Difficulty mixing with other children

... And then there's ...

- Difficultly sitting still
- May dislike PE and have difficulty with the physical aspects of school-based tasks
- Slow and disorganised with belongings
- Only able to do one thing at a time
- Appears clumsy, often failing or bumping into things and does not appear to look where he or she is going

... Not to forget!

- Difficulty with organisational of tasks relative to peer group
- May feel unusually threatened when off the ground on apparatus or on moving surface
- Self care tasks (eating, toileting, dressing) and slow with developing milestones and/or slow in learning

Pre-School

- Problems with : Cutting, Colouring, adjusting clothing, using playground equipment.
- Avoidance of challenging activities may mask true ability.
- Changes in legislation (reduced direction to task and reduced planning in sessions).

School Age

- Child has no option to avoid the activities they find difficult.
- Child has to now participate in structured activities Such as : recording information, sports activities, getting dressed for P.E, etc.
- As the child moves through education the demands of the National Curriculum increase.
- Transition to Secondary educational settings poses further demands on Organisational skills.

Trunk Control

- This is the ability to use flexion (bending) and extension (straightening) in the trunk
- Allows us to sit well at a table or stand well for a given period of time
- It is the combination of these which allows us to rotate in the trunk



Trunk Control

3 year old child showing flexion



Trunk Control

9 year old child showing good flexion control



Trunk Control

3 Year old showing extension



Trunk Control

9 Year old child showing good extension control



Shoulder Girdle Control

- The strength and laxity around the shoulder joint
- Allows us to move our arms and smoothly and freely
- Allows us to place our hands and move them in order to utilise our fine motor skills
- Lack of control leads to compensation

Shoulder Girdle Control



Winging of the shoulder blades

Shoulder Girdle Control



- The shoulder blade is easily lifted from the chest wall
- This shows a degree of laxity or looseness in the shoulder girdle
- A sure signal for large messy writing, difficulty colouring between lines or in the older child lack of fluency and speed of writing

Compensation

- By bracing the shoulders
- By pressing down with elbow
- By pressing down hard through a pen
- The upper body may follow arm or be pressed into the back of a chair
- There is erratic presentation particularly noted with handwriting skills

Motor milestones seen in the hand in preparation for writing include:



Development of palmar arches =
Ability to maintain curve in palm.



Development of controlled wrist extension
Necessary for skilled finger movements.



Separation of two sides of the hand
Through stabilisation of the ulnar side allowing skilled use of thumb and 1st two fingers.



Development of web space :
The open/ curved space between thumb and index finger



Development of intrinsic muscles of hand
Allowing fine push and pull movements of fingers and thumb (flexion / extension).
Often requires tips of thumb and 1st two fingers to be touching-used extensively in hand writing.

Pelvic Girdle Control

- Strength and joint laxity around the pelvis
- Allows us to move our legs smoothly in a controlled way in order to place our feet
- Allows us to balance, kick a ball, or hop
- Lack of control leads to compensation

Balance

- Static balance - the ability to hold a position still e.g. standing on one leg
- Dynamic balance - being able to maintain balance whilst moving e.g. cycling or walking along a beam.
- The ability to balance is linked with the strength and control of the trunk, shoulder and pelvic girdles, muscle tone and postural stability.



Balance, the story it tells.

- A child working hard to maintain balance who lacks easy spontaneous postural control.
- Note legs firmly fixed together
- Arms clamped by side
- Body twisted
- Anxious face
- Balancing foot working very hard

Compensation

- Fixing the pelvic girdle
- By tensing in the trunk
- By hooking a leg around the supporting leg
- Results in a reduced quality of movement
- Often more apparent with speed

Eye and Head Movements

Can the child

- Move their eyes separately from their head as when copying from a blackboard
- Move their head separately from their eyes as when looking at someone and nodding
- Can their eyes move and adjust to track the movement of a ball coming towards them, or children running around in a playground

Eye-Hand Co-ordination

- This is the ability of the hands and eyes to work together
- Needed for catching, throwing or writing
- For using a computer / laptop
- The eyes don't need to look at the hands to know what they are doing
- If the eyes have to look there is loss of skill or speed

Bilateral Integration and Crossing Midline

- The ability of the top, the bottom and both sides of the body to move in a coordinated and fluent way
- Can you pat your head and rub your tummy?
- Can a child hold paper still whilst cutting?
- Any other examples?

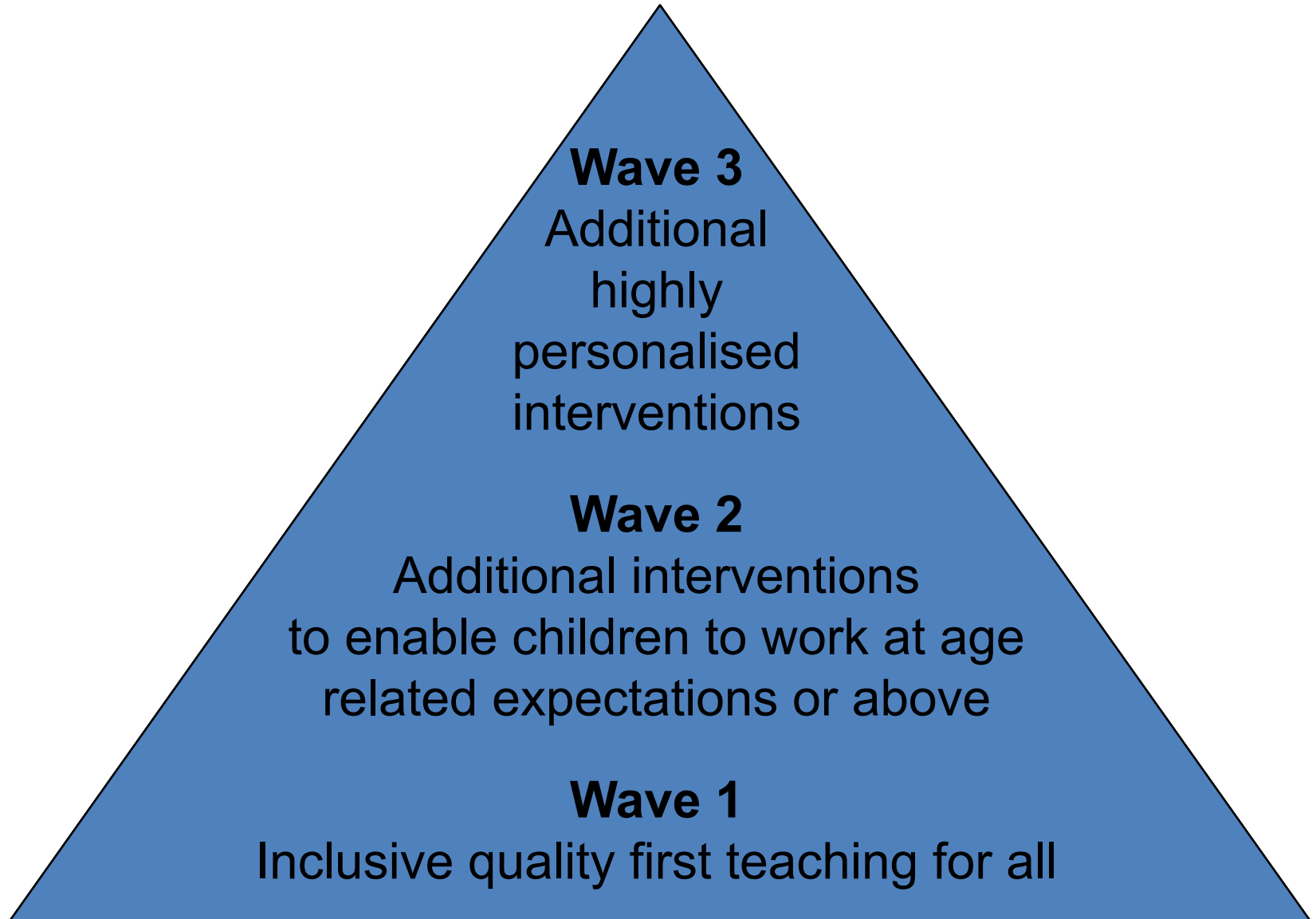
Bilateral Integration



Meeting the Needs of Pupils with Movement Difficulties

A Graduated Response

Waves of intervention model



Key features of effective practice

- A whole-school approach
- Detailed pupil tracking
- Auditing needs and planning provision
- Personalised, differentiated class teaching
- Use of evidence-based, time-limited interventions
- Monitoring the quality of interventions
- Evaluating interventions
- Involving parents

Meeting Needs

- The level of a student's motor functioning and the way they interact with their environment is on a continuum
- It is important to take a graduated but consistent approach to intervention to take into account their potential diverse learning needs

Learn to Move and the Waves of Provision

- Enhances quality first teaching at Wave One by improving staff awareness and embedding appropriate movement activities within the school day
- Offers a range of group activities at Wave Two to be implemented in very focussed co-ordination groups with pre and post evaluation
- Supports clearer identification of children needing Wave 3 specialist therapy provision

Why create a provision map?

- This allows the school to identify, assess and match provision to meet the needs of children with movement difficulties and to document the range of provision the school has in place
- It helps to highlight what is available at the three waves of provision giving regard to the classroom environment and whole class approaches as well as what is planned to support the development of specific skills using wave 2 and wave 3 interventions

Task

Consider what you have in place already to support the needs of pupils with movement difficulties.



Meeting the need

- Whole Class- but child specific.
- Small group work
- Co ordination group

The Handbook

	Page	
Introduction	1	
Ages and Stages of Development		9
Linking Problems in Classroom to functional Skills	17	
Advice Sheets	19	
Functional Skills		59
Movement ABC Checklist & Instructions		79
Adapted checklist (age appropriate)		83

Protocol for L2M

- Observe Child in class and playground
- Check against “Ages and Stages of Development” (section 2)
- Complete ABC checklist to provide initial assessment and baseline - Record Score
- Plan intervention with SMART targets using advice sheets (section 4)
- Decide method of support – individual and /or group
- Implement programme for 6 months (2 terms) and regularly review& record outcomes. If limited progress then consider referral to ITS.

ABC checklist

- Administration of the test takes 10 minutes
- Baseline and improvement measure
- ? Referral to therapy services
- Information for the therapists

The Process

Observation in Class / playground	Check age appropriate stages of skill acquisition	Complete ABC checklist. Fill in Score	Identify advice sheets needed and record	How to include in ? Group/ Class? individual	Set smart targets	Outcome
<i>Tripping and falling</i>	<i>Able to balance on one leg at 6 years for 10 seconds</i>	<i>65 – at risk</i>	<i>Advice on postural control p.18 and balance p.31 needed</i>	<i>Small group work on gross motor skills / PC / Balance Move and grove P.E</i>	<i>To be able to balance on one leg for 10 sec. within 6 weeks</i>	<i>Not achieved – unable to sustain concentration for 10 secs.</i>
<i>Immature pencil grip</i>	<i>Tripod grip by 4 years</i>	-----	<i>Postural control / handwriting</i>	<i>Assess for pencil grip / review environment/ small group work</i>	<i>Achieve appropriate grip by end of school year</i>	<i>Achieved -grip and slope recommended</i>

Different Ways to Use this Book

- To use for a group of children identified as less physically able than their peer group
- To use for an individual child to assess their level of motor skills and plan a programme to support their needs
- To use as a resource tool to help develop the skills needed for functional tasks
- To use as a reference manual

Implementing a L2M Programme

Remember

- To make a difference the child needs to develop skills:
- Developing skills requires practice which:
 - Happens little and often
 - Repeats the 'right skills' (quality performance)
 - Is delivered by a good 'coach' and good feedback is given
 - Is successful because the targets are achievable

You will need to consider

- What to do ?
- When ?
- Where ?
- Who ?
- How ?



Next Steps

- Read the paperwork and look through the manual.
- Think what you will need to do make 'Learn to Move' happen in your school?
- Whose support do you think you will need to make this happen ?
- What can you change immediately?
- Who else can you talk to in order to move things on ?

Future L2M

- Learning Support Services-Liaise with allocated LSS
- Integrated Therapy Services- Liaise with therapists coming into your school
- ITS Telephone Advice line- **03030333002**
- Website: **www.somerset.nhs.uk/integratedtherapies**



