

**Modelling Activities to  
Develop Fine and Gross  
Motor Skills in Children  
with Down Syndrome**

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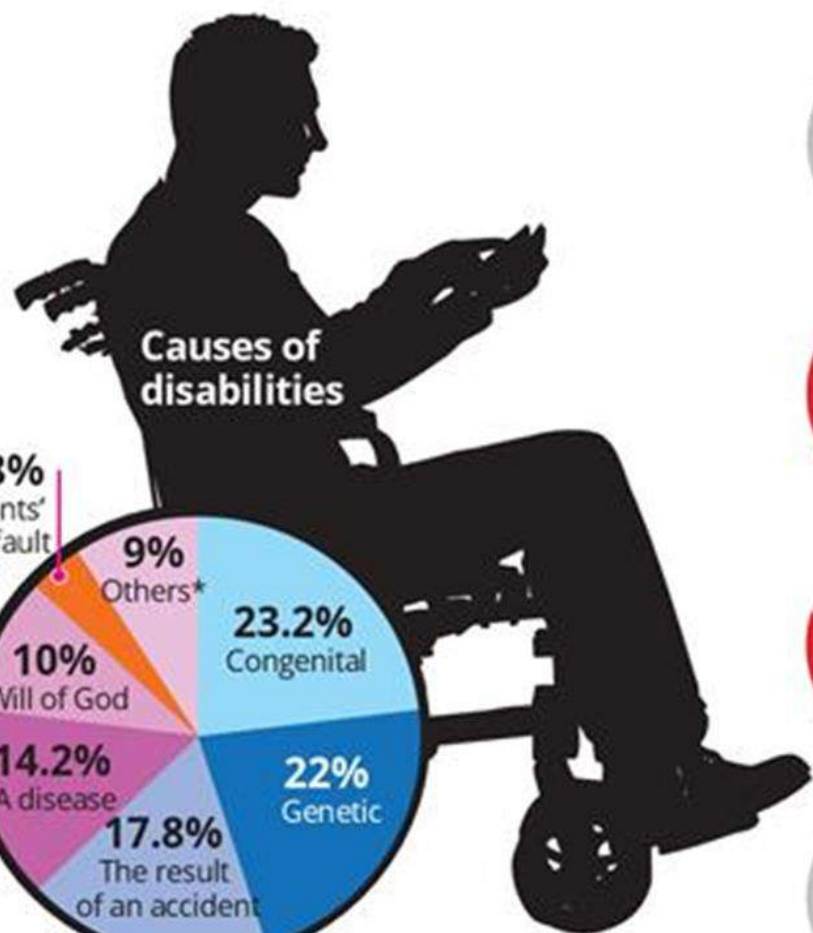
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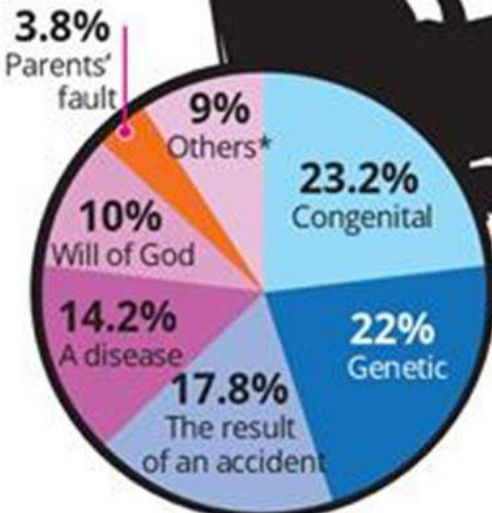
## Contents of the Topic

- **Down syndrome - Features, causes and risk factors in young children**
- **Fine and gross motor disabilities in children with Down syndrome**
- **Modelling activities for children with Down syndrome to develop their fine and gross motor skills**

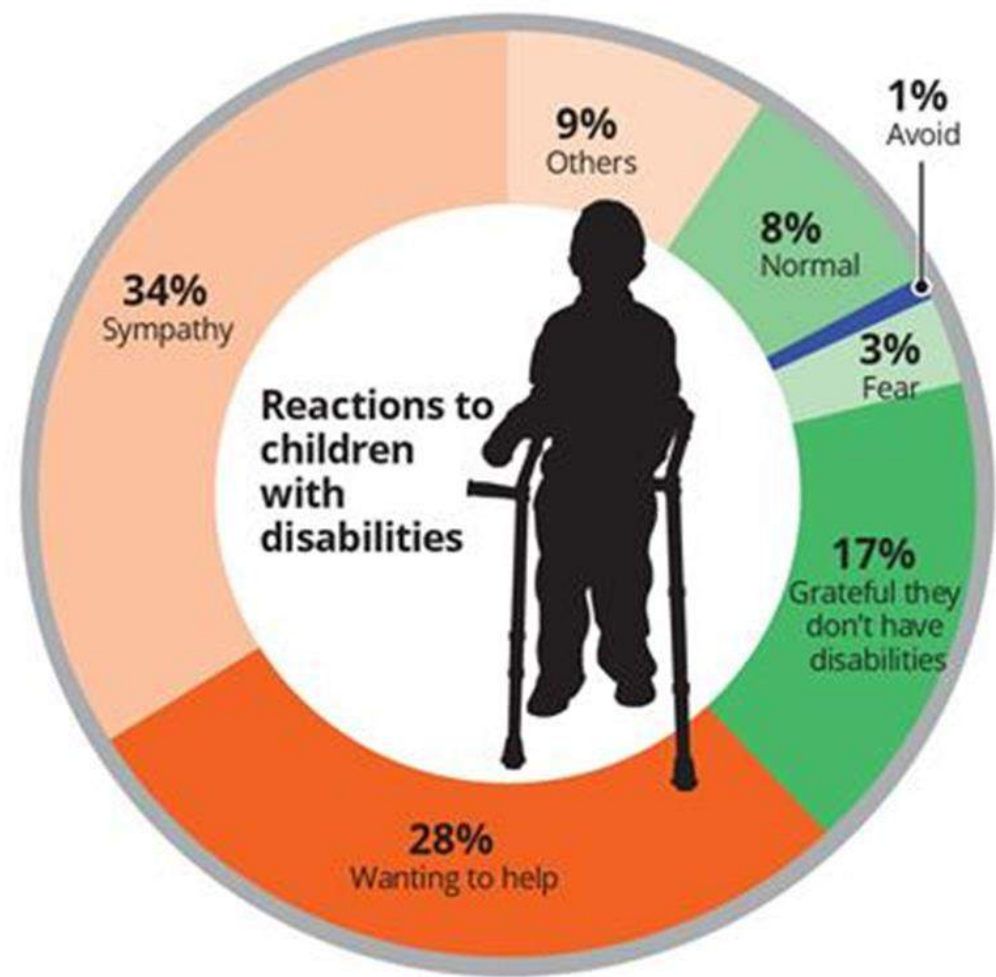
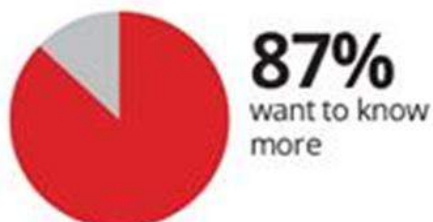
# How Malaysians understand disability



## Causes of disabilities



\* Fate/the environment/punishment/curse/spirits/etc



About **50%** of respondents don't want to live in the same neighbourhood as someone with a mental disability

**90%** don't mind living with someone with a physical disability



Less than **25%** would accept their child dating someone with a mental disability

**70%** don't mind if their child went out with someone with a physical disability



**87%** won't accept their child marrying someone with a mental disability

**60%** won't mind if their child married someone with physical disabilities

# Children with Disability



<https://www.youtube.com/watch?v=wJQQtM6240s>



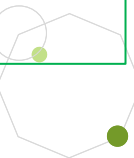
A child with a disability is unable to perform certain functions as well as most other normal children.

The disability or impairment may be involved:-

- **Physical** handicapped
- **Sensory** : like seeing or hearing
- **Intellectual**: inability to think clearly
- **Mental**: retarded, etc.
- **Disability is common** : about 1 in 50 children has a disability



Your Logo or Name Here



# Modelling Activities



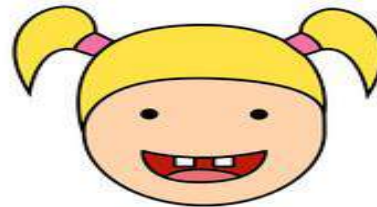
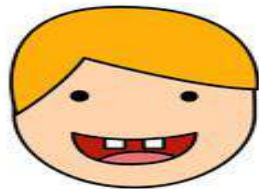
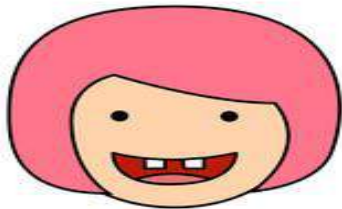
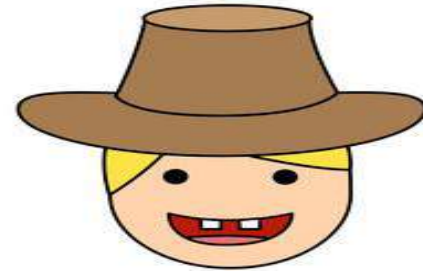
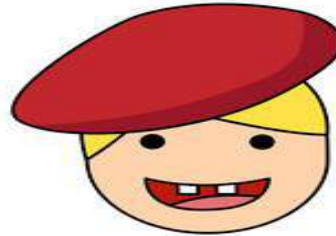
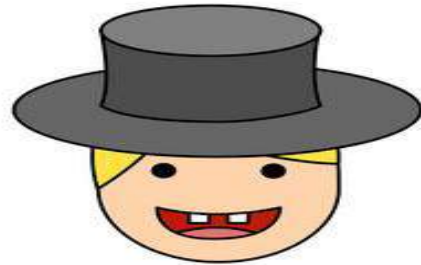
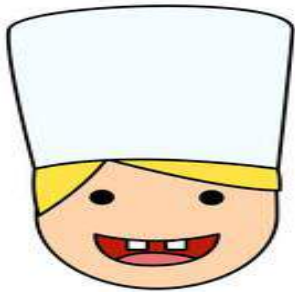
- **Parents play an important role in modelling healthy behaviours to their children.**
- **From child psychology perspective, parents are not only to model the healthy behaviours to their children, but also to model any positive activities that can enhance and promote the development of their children (Kaiser, 2017).**
- **There is a greater influence of parental modelling on children's physical activities (Stephanie et al., 2016).**



# COVID-19 AND DOWN SYNDROME

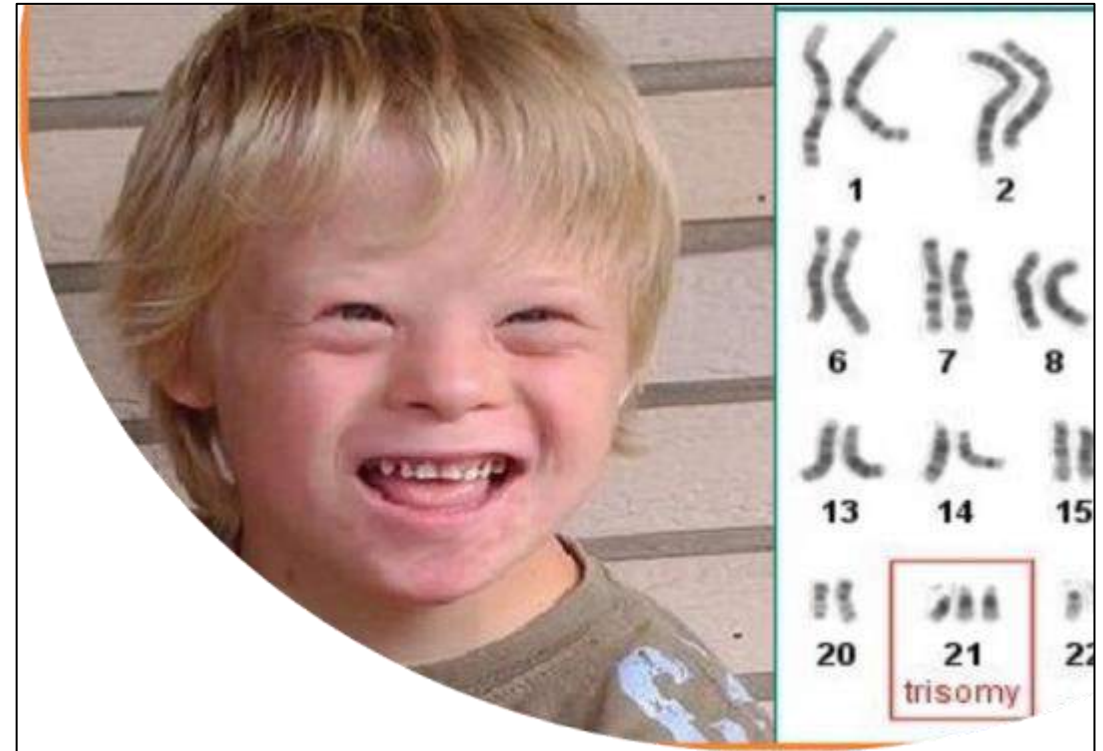
- **In relation to COVID-19 pandemic, the current advice for children with Down syndrome is the same as for everyone else, that is to follow local guidance in terms of precautions, dependent on an individual's personal risk category.**
- **According to Down Syndrome Medical Interest Group (DSMIG) UK and Ireland (2020) in this regard,**
- **There is no evidence now of people who have Down Syndrome being at particular risk of this coronavirus, though of course people who have Down Syndrome may be more at risk from infections generally and respiratory infections.**
- **However, there is evidence to suggest it may pose a greater risk to those with other chronic health conditions, including pre-existing respiratory conditions, heart disease, diabetes, and immune deficiency. Usually, children and adults who have Down syndrome will fall within these higher risk groups.**

# CHILDREN WITH DOWN SYNDROME



# What is Down Syndrome?

- **Down syndrome is a condition in which a child is born with an extra copy of their 21st chromosome.**
- **Also known as Trisomy 21.**
- **This causes physical and mental developmental delays and disabilities, such as mental retarded.**





# How to Identify a Down Syndrome Baby?

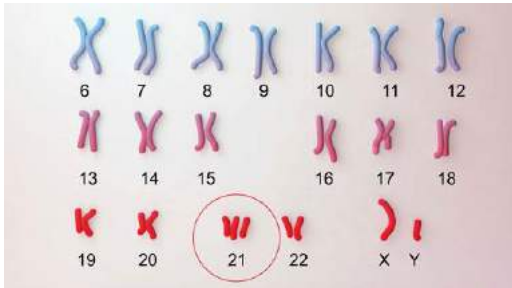
- At birth, babies with Down syndrome usually have certain characteristic signs, including:



# Causes and Risk Factors

## The Extra Chromosome 21

- **Trisomy 21** means there's an extra copy of chromosome 21 in every cell.



- This leads to the physical features and developmental challenges that can occur among children with Down syndrome.

## Mother's Age

- One factor that increases the risk of having a baby with Down syndrome is the mother's age.
- **Women who are 35 years or older when they become pregnant for the first time, they are more likely to have a pregnancy affected by Down syndrome.**

# Detection of Down Syndrome (During Pregnancy)

## Screening Test

- Screening tests often include a combination of blood tests and ultrasound.
- **Blood test**
  - The test measures the amount of various substances in the mother's blood, such as MS-AFP, Triple Screen, and Quad-screen.
- **Ultrasound**
  - During an ultrasound, the fluid behind the baby's neck will be looked at.
  - Extra fluid in this region could indicate a genetic problem.

## Diagnostic Test

- Diagnostic tests are performed after a positive screening test in order to confirm a Down syndrome diagnosis.
  - **Amniocentesis**
  - **Chorionic Villus Sampling (CVS)**
- All these tests look for changes in the chromosomes that would indicate a Down syndrome diagnosis.



**DELAYS IN  
MOTOR  
DEVELOPMENT IN  
CHILDREN WITH  
DOWN  
SYNDROME**

# Motor Skills Development

Motor skills refer to the development of motor control, precision, and accuracy in the physical and behaviour performance of both fundamental and more complex movement. They involve the movement of the muscles in the body. Motor skills are used everyday throughout our lives. Motor skills and motor control begin developing after birth, and will progress as children grow.

## Fine Motor Skills

- Involve small movements of the fingers and hands.
- Example:
  - Using cups, spoons and forks,
  - Holding and using pencils, scissors
  - Drawing
  - Writing

## Gross Motor Skills

- Involve large movements of the body.
- Example:
  - Sitting
  - Walking
  - Running
  - Climbing stairs



# Fine and Gross Motor Disabilities

- **Children with Down syndrome have motor impairments and marked physical differences.**
- **They develop motor skills later than their peers.**
- **Fine Motor Disability**
- **They may struggle using smaller muscle groups, such as those in their hands.**
- **Gross Motor Disability**
- **They may have difficulty in coordinating large muscles, such as the muscles of the arms and legs.**

| Milestone                  | Range for Children with Down Syndrome | Typical Range  |
|----------------------------|---------------------------------------|----------------|
| <b>GROSS MOTOR</b>         |                                       |                |
| Sits Alone                 | 6 - 30 Months                         | 5 - 9 Months   |
| Crawls                     | 8 - 22 Months                         | 6 - 12 Months  |
| Stands                     | 1 - 3.25 Years                        | 8 - 17 Months  |
| Walks Alone                | 1 - 4 Years                           | 9 - 18 Months  |
| <b>LANGUAGE</b>            |                                       |                |
| First Word                 | 1 - 4 Years                           | 1 - 3 Years    |
| Two-Word Phrases           | 2 - 7.5 Years                         | 15 - 32 Months |
| <b>SOCIAL/SELF-HELP</b>    |                                       |                |
| Responsive Smile           | 1.5 - 5 Months                        | 1 - 3 Months   |
| Finger Feeds               | 10 - 24 Months                        | 7 - 14 Months  |
| Drinks From Cup Unassisted | 12 - 32 Months                        | 9 - 17 Months  |
| Uses Spoon                 | 13 - 39 Months                        | 12 - 20 Months |
| Bowel Control              | 2 - 7 Years                           | 16 - 42 Months |
| Dresses Self Unassisted    | 3.5 - 8.5 Years                       | 3.25 - 5 Years |

**Table 1:  
Milestone Gross &  
Fine Motors,  
Language and  
Social/Self Help of  
Children with Down  
Syndrome**

**What are the  
Modelling Activities  
Can Help Down  
Syndrome Children  
to Develop Their  
Fine and Gross  
Motor Skills?**





- **During COVID-19 pandemic, many parents or caregivers wondering if their kids will still receive services during an extended school shutdown?**
- **Parents or caregivers can conduct several enjoyable activities (play therapy interventions alike) which they can manage from home.**
- **Many families around the world are currently staying at home considering of the COVID-19 outbreak.**
- **Thus, it has encouraged them to use this extra time with their children to teach them something easy, and joy but very helpful!**

# STOP COVID-19

PANDEMIC 2019-20

STAY HOME, STAY SAFE

SOCIAL DISTANCING

AVOID TOUCHING  
NOSE, EYES & EARS



# STAY SAFE !

# FINE MOTOR SKILLS



- Fine motor skills involve the small muscles of the body that enable such functions as writing, drawing, colouring, gluing, cutting, grasping small objects and fastening clothing.
- Among the fine motor skills the child with Down syndrome are encourage to do in the preschool years are the abilities to:
  - Paste things onto paper
  - Clap hands
  - Touch fingers
  - Button and unbutton
  - Work a zipper
  - Build a tower of 6-10 blocks
  - Complete puzzles with five or more pieces

## EVERYDAY ACTIVITIES TO EXERCISE FINE MOTOR SKILLS

### Build a Tower of 6-10 Blocks

- These blocks, or any toy that can be stacked, are great developmental tools for toddlers.
- Physically, stacking blocks helps to develop hand-eye coordination and fine-motor skills.



### Paste Things onto Paper

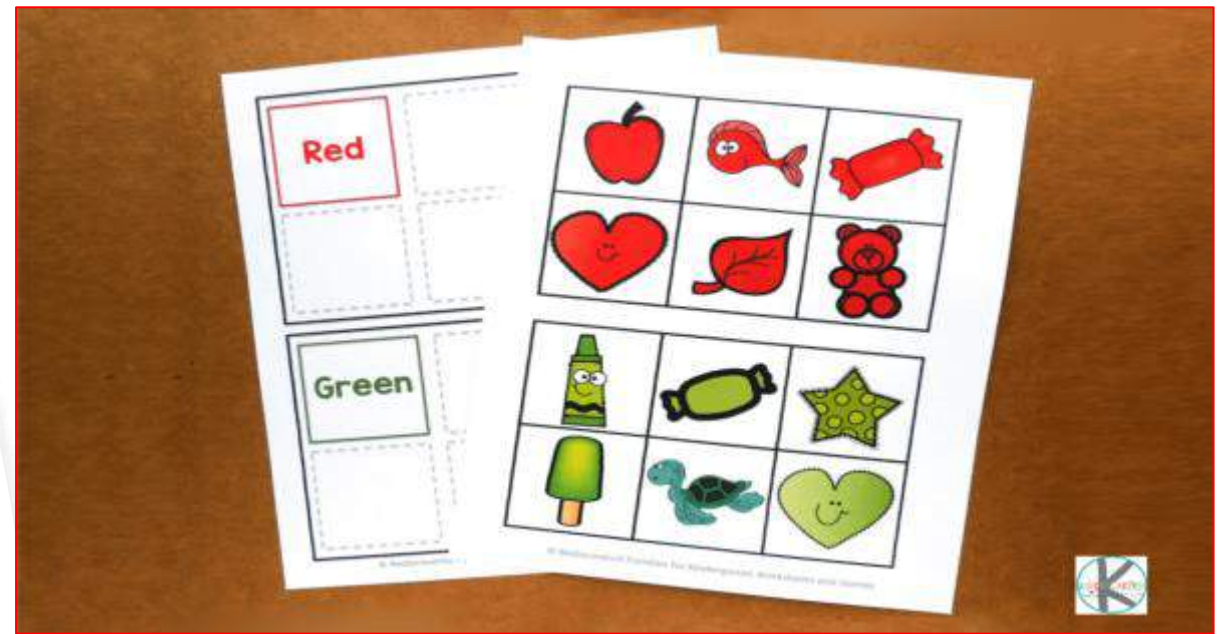
- It is among great skills to practice during arts and crafts time to work on those fine motor skills.
- One way to allow fine motor skills to develop is to use glue straight from the bottle.
- Strengthening of crucial fine motor skills that are imperative for hand and muscle development.



## EVERYDAY ACTIVITIES TO EXERCISE FINE MOTOR SKILLS

### Colouring

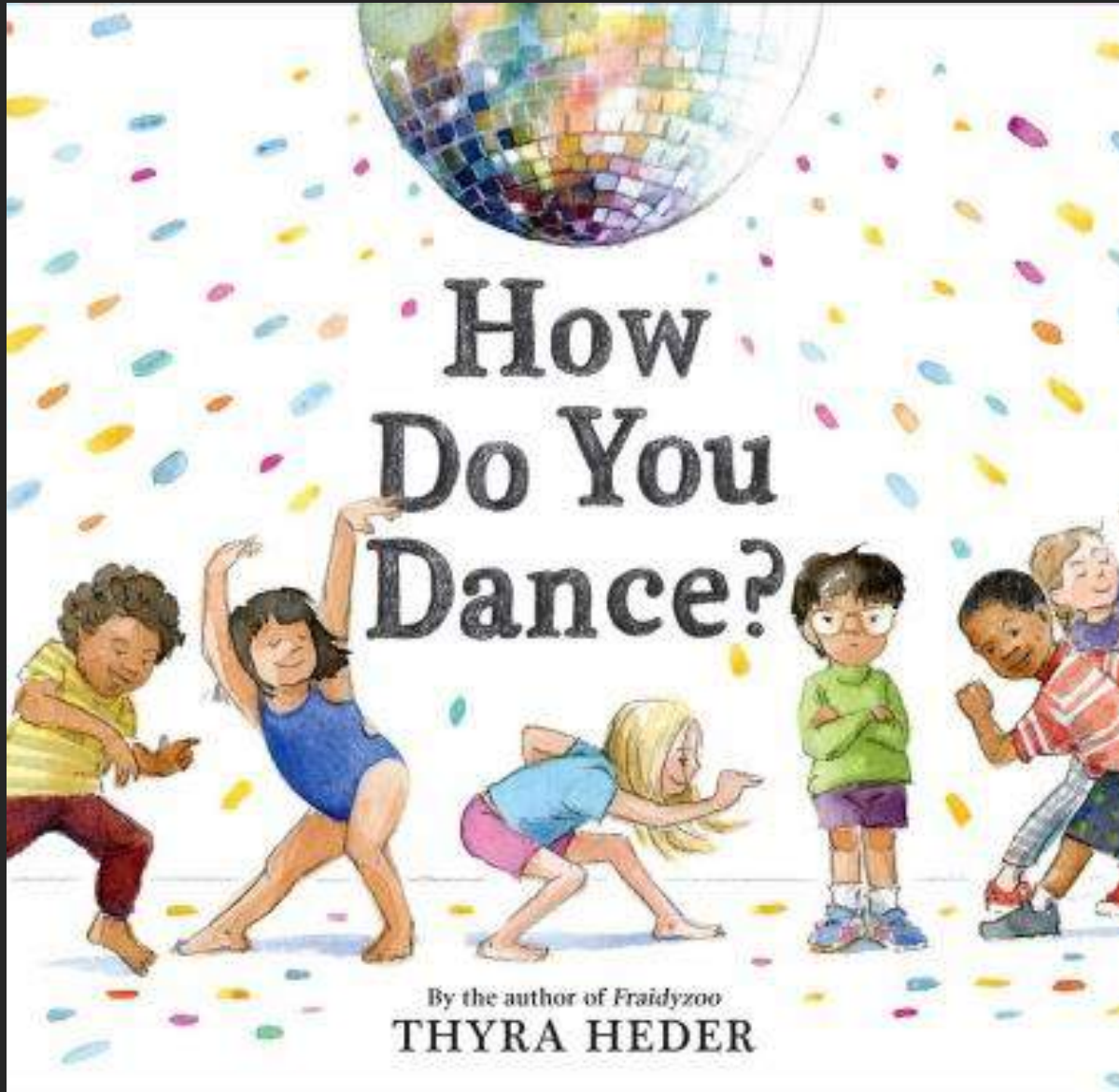
- Colouring pictures and shapes are essential part of the child's fine motor development.
- The act of colouring can help to improve fine motor skills in young children.



### Cutting

- The opening and closing motion of cutting with scissors helps children develop the small muscles in their hands.
- These muscles are crucial for holding a pencil or crayons and gripping and manipulating objects.
- Being able to use scissors to cut well is important for many preschool children with Down syndrome.





## GROSS MOTOR SKILLS

- **Gross motor skills are the abilities required in order to control the large muscles of the body for walking, running, sitting, crawling, and other activities.**
- **There are a range of diseases and disorders that affect gross motor skill development and skills.**
- **Children with Down syndrome sometimes have a hard time with these gross motor skills such as riding a bicycle, holding a tray.**

## EVERYDAY ACTIVITIES TO EXERCISE GROSS MOTOR SKILLS

### Line Maze

- It provides children with various types of sensory input such as proprioceptive and vestibular inputs as well as improving the development of both gross motor and visual skills.

### Walking on the Pillow

- This activity really gets the kid's leg muscles working in ways that they don't usually.
- Walking on pillows' surface is great to improve gross motor development.



## EVERYDAY ACTIVITIES TO EXERCISE GROSS MOTOR SKILLS

### Giant Bubble

- Many of the bubble activities can be played in the garden, the house must be under adult's supervision.
- For infants, toddlers and children, it is also a great way to develop their gross motor skills.

### Apple Picking

- To play this, it needs to tape off a tree trunk using the painters' tape in a spacious area of the house that would allow for a variety of movement.
- On each end of the branches, place apples for the kid to pick.

#### GIANT BUBBLE RECIPE

1 1/2 CUP LIGHT CORN SYRUP  
1 QUART WATER  
1 CUP LIQUID DISH SOAP

APPLE PICKING  
gross motor activity



## EVERYDAY ACTIVITIES TO EXERCISE GROSS MOTOR SKILLS

### Water Play

- Water play encourages children with Down syndrome to strengthen their gross motor skills by running, dodging water drops, and hopping through a sprinkler.



### Yoga Ball

- This activity is to improve the child's ability to hold the head erect or to maintain a sitting position.
- Improving balance and coordination.





# THANK YOU!



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