Be Seizure Smart

Teacher Resource Pack

EPILEPSY NEW ZEALAND
Kia titiro ki te tangata | See the person

Teacher Resource Pack

In this pack there are simple tasks to introduce your children to; Epilepsy, how the brain works, how to protect it and keep it healthy and the function of the brain cells or neurons.
We encourage you to also read stories or watch children's video’s (youtube) that introduce your children to seizures and epilepsy.

We hope you find these task cards helpful in class.

Contents

EPILEPSY NEW ZEALAND
Kia titiro ki te tangata | See the person

The Brain Station

Story starter (told at the beginning of the topic. Use picture props and model of a brain if you have one)

Wilf first noticed something was not right when he stepped onto Platform 3 at the train station. He was on his way to see his grandparents. He was so excited; he hadn't slept very well and didn't want to eat breakfast.

As Wilf and his family stood waiting for the train, Wilf got a terrible taste in his mouth (like acid) and he had a really weird sensation that something was about to happen. Wilf suddenly fell to the ground, his body began to shake and quiver. His parents didn't know what to do but a train guard did. The train guard came over and made everyone move back. He put his jacket under Wilf's head and when Wilf stopped shaking, he gently rolled him over onto his side.

DO YOU THINK YOU KNOW WHAT HAPPENED? (QUICK DISCUSSION)

Wilf was 7 years old and had experienced his first epileptic seizure. Wilf didn't get to see his grandparents that day, instead he went to hospital. He can't remember what happened but was able to tell the doctors about the strange taste and weird feeling he had before he fell on the floor. Wilf was asked lots of questions and the hospital took special pictures of what his brain was doing.

Over the next few weeks Wilf saw a Dr Debbie and she did some more tests on him. Dr Debbie gave Wilf a special gift. She told Wilf the gift was a Neuron and she had named it Neut. She began to explain that inside all of our brains there are billions of Neurons, that look similar to Neut……but very, very tiny. These Neurons pass special messages around our brain and through our body to help us do everything we do, like walking, talking, thinking and even breathing. "But"….she said, "Every now and then, your Neurons get a little over excited and want to all pass messages at the same time. This make your brain and body get a little jumbled up and that is why you had a seizure, but we are going to get your sorted by giving you some special medicine that will try and stop your Neurons getting over exciting". "Perhaps", said Dr Debbie "you can take Neut home and see if you can find out a little more about how the brain works……it really is rather an amazing thing. Then next time we meet you can tell me all the new things you know".

Wilf and Neut went everywhere together. All the children at his school wanted to know what Neut was. So Wilf's teacher asked if Wilf would mind sharing with his class all the information he had found out about Neurons and what happens when they get a little over excited. That is what Wilf did, his friends all decided to make their own Neut and now they all know what to do if Wilf ever has a seizure again.

The following week Wilf stepped back out onto platform 3. He had his backpack on, his new medicine and one strange looking purple thing poking out from the top of the backpack pocket. What could have that been?

Wilf and Neut

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Electrifying Neurons

Show Neut the Neuron Poster included in this pack

Explain

The human body is made up of trillions of cells. Cells of the nervous system are called Neurons. Inside our brain there are billions of neurons collecting messages and passing the messages on using an electrical and chemical process. These messages contain information about what's happening and how you will respond. Sometimes these neurons get overly stimulated and become hyper-excitable, this can then mean a person with epilepsy, might have a seizure.

Explain what the neuron does

- Neurons are nerve cells that send messages all over your body
- The dendrites bring electrical signals to the cell body
- The axon takes information away from the cell body
- When one neuron talks to another it sends chemical messages from the terminals, over a gap to the dendrites of the next neuron (neurons don't touch each other)
- The Nucleus contains genetic material; stuff that makes you, you!

Children can work in pairs to make a neuron model or as individuals, following the instruction card attached. You may find it easier to have a model you have already made to show the children.

Process for pairs

Child 1: cut up the straw
Child 2: cut first pipe cleaner to make the terminals (into 3 or 4 pieces)
Child 1: thread the straw segments on a pipe cleaner (bend the ends so they don't fall off)
Child 2: add dendrites to the bottom
Child 1: loop the top of the pipecleaner to make the 'head' of the neuron
Child 2: cut the last pipe cleaner to make the dendrites on the 'head'
Child 1: cut a paper circle and draw on the nucleus
Child 2: cut the labels out and add the 'cells' onto the straw segments with permanent marker
Both children stick the nucleus and labels on the model
Both children add a label with their names on.

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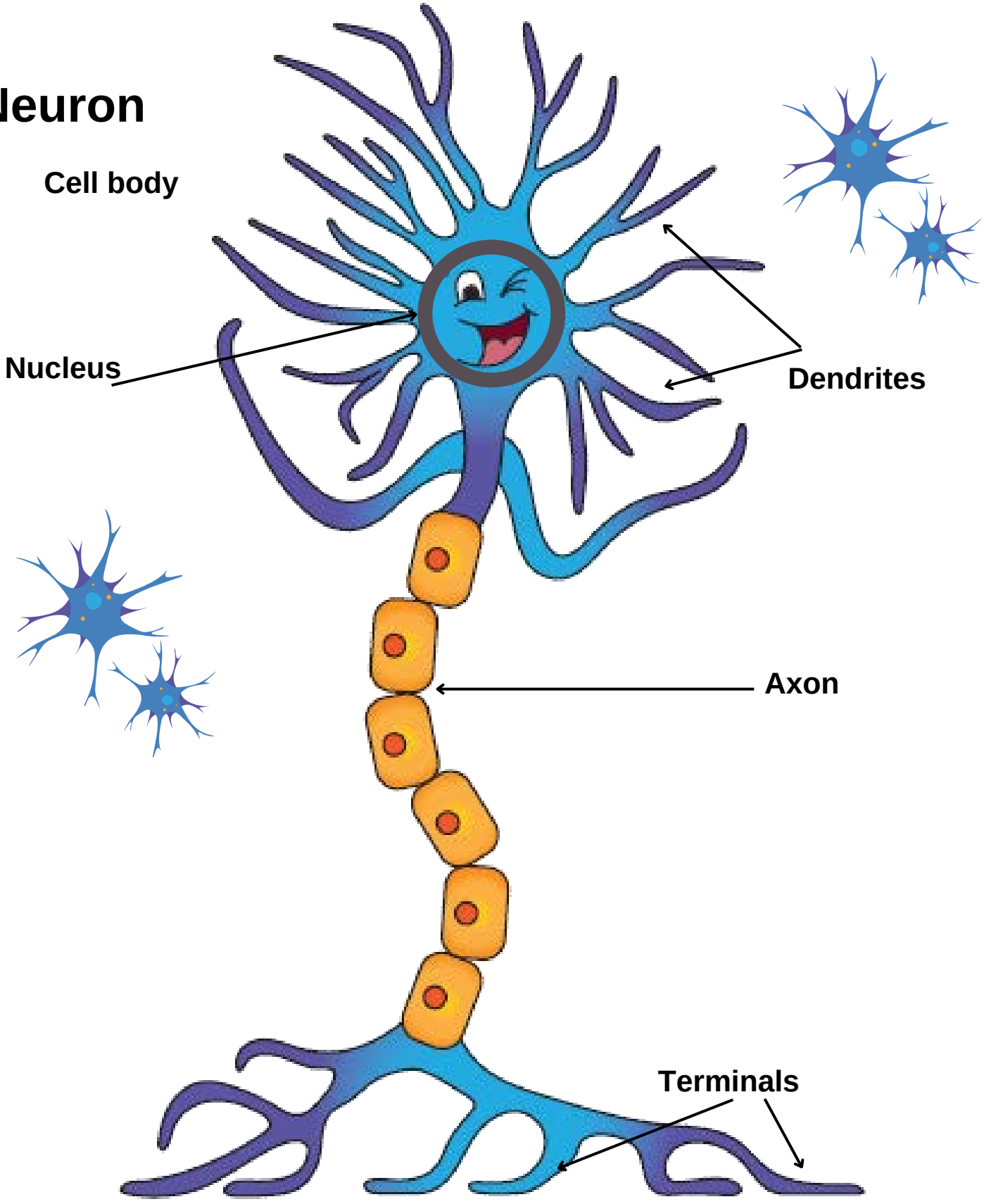
Neut the Neuron

Neuron



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Create a Neuron Model

Resources

3 pipe cleaners, tissue paper, scissors, glue, tape, labels and permanent pen

1
Cut one straw to 2cm lengths

2
Cut one pipe cleaner into 6 cm pieces
Bend around the bottom of a pipe cleaner to make terminals

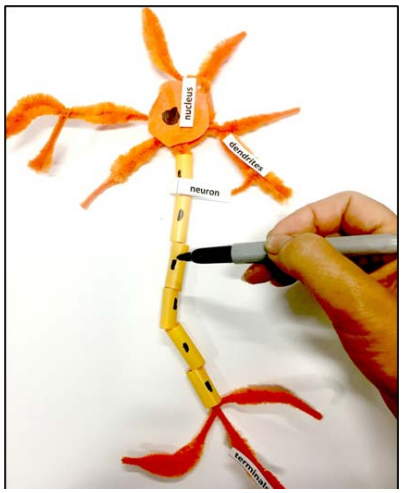
3
Thread the 2cm length straws onto your pipe cleaner model
Leave a piece of pipe cleaner about 7cm poking out of the top

4
Loop the pipe cleaner at the top to make the cell body

5
Cut up the last pipe cleaner and loop and twist around the cell body to make the dendrites at the top

6
Cut a circle to fill in the cell body
Draw in the nucleus
Stick the circle on your model

7
Cut up the labels and stick them on your model



8
Add the final cells to the outer sheath.
Make a label and add your name to the model.

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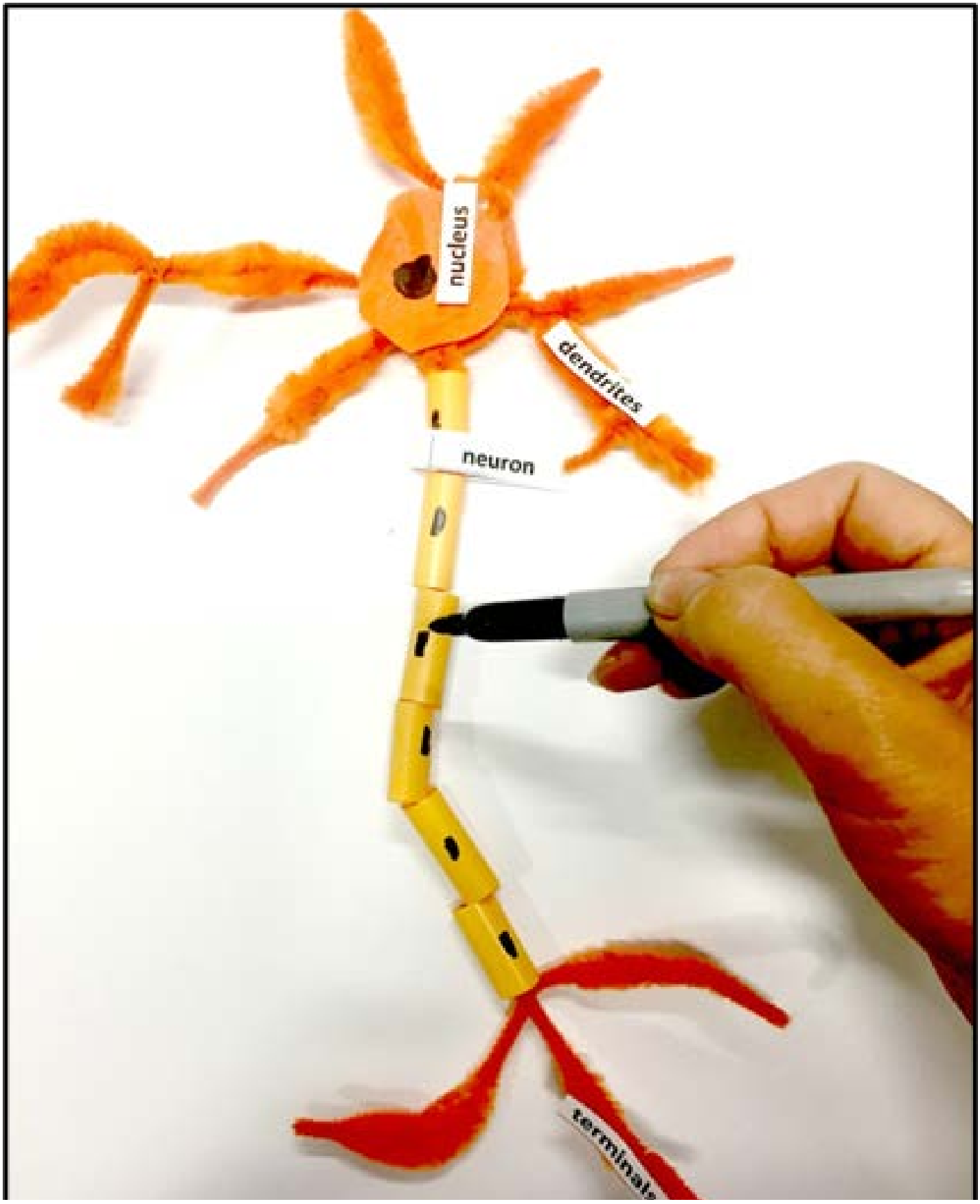
Kia titiro ki te tangata | See the person

Make A Neuron



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Kia titiro ki te tangata | See the person

axon	dendrites	nucleus	terminals	neuron
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axon	dendrites	nucleus	terminals	neuron
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axon	dendrites	nucleus	terminals	neuron

Pass The Signal

Resources -Messages and response cards (see below)

How do we know to remove our hand from a hot object?

Our Neurons work together in our nervous system to pass the signal along until it reaches the brain.
Our brain then works out the signal and sends a message back, telling our body how to react.

We are going to have a go out acting this out

Arrange children in a line

- The person at the front is the body, the person at the other end the brain
- In between are the neurons-make gaps between the neurons -they need to stretch over the gaps/synapse

Explain; I have a message that needs to get to my brain really quickly to tell me what to do. As soon as the message is given to the 'body' you must pass it as quickly as possible down your nervous system (neurons to brain). The brain must then select the right message to send back to the body so the body can react

Give a signal message to the body
(see below for messages to print out and laminate)

Call "GO'
The message passes along the line and the brain reads the signal and responds with an appropriate message that is sent back down the neurons.
Discuss with the children-are they able to tell you how a message is translated by our brain?

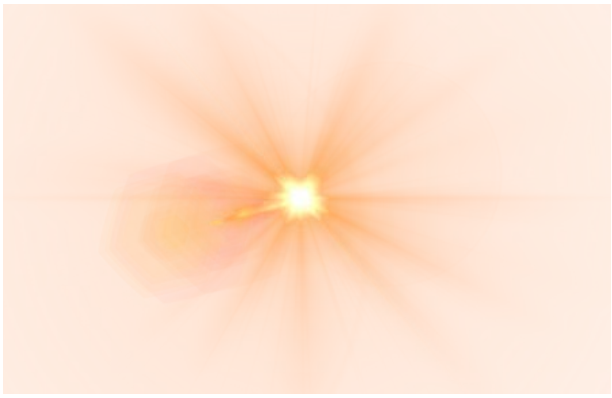
Pass The Signal - Cards

Signal message to give to the body- One at a time. They pass this to the first neuron, to pass to the other neurons to pass to the brain

Burn hand on iron

Pick up food with fork

Freezing ice in hand



Bright light in eyes

Signal answer cards to give to the 'brain' - Give the 'brain' children all the cards, so the children have to find the right message to pass back down the line to the body.

Remove hand from heat

Put hand towards mouth

Drop the cold object

Squint or close eyes

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Memory Joggers

You will need to gather these resources- A tray, 9 random objects but with a few matching things e.g. 3 red items, 3 yellow items, 3 bits of stationary/art resources pen, pencil, crayon and a tea-towel

Every day we learn something new and remember old things

How do you remember what we ate for breakfast? - wait for children to answer

In brief, we remember by. ...(Accentuate these facts by raising a finger for each, then repeating)

1. Learning and collecting information
2. Storing and saving information
3. Recalling the information when we need it

At times we have lots to remember; we need to find ways to help our memory. Sometimes people with epilepsy find it even more difficult to remember, due to their seizures or medication. We all have to think of ways to help us remember things.

- In front of you are 9 objects
- Remove the cover from the tray-the objects should be place randomly
- You have 30 seconds to observe and remember all the objects

Once the tray is covered, older children can write down the 9 objects, younger children can verbally recall them, share the answers and congratulate the effort

- Did anyone use a way to remember all 9 objects?
- If we found it difficult is there any easier way to jog your memory?
- Uncover the tray
- What if we put the 3 yellow objects together, the 3 red objects together, the art things together?
- Look at the objects again; remember how they are sorted into groups
- Cover the tray
- Is it easier to remember the 9 objects now?

Afterwards talk about ways we can help ourselves to remember things or get information to stay in our brains.

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Brain Protections

Resources – Egg that has been blown, selection of safety head gear e.g., bike helmet, riding hat, rugby protection, sun hat, beanie etc

We all know how important our brain is. Its like a computer system for the body.

But your brain is a little like an egg yolk inside an eggshell. (Hold up the 'fake' egg)

The eggshell is like your skull, the egg yolk is like your brain and the egg white is the fluid that surrounds your brain.

We all know eggs shells can break! And so can our skulls!

What if I went out on my bike without my helmet on and then I crashed into a tree?

What might happen to my skull? (overly dramatically- put the blown egg between your hands and bring the other hand down to crush the egg)

Our brain is inside the skull and is surrounded by a fluid (just like in an egg)

The fluid around our brain acts like a cushion and absorbs any sudden movements but it is not much help when a more serious accident happens

I have some hats (Show the pile of hats)

Let a child pick out a hat.

Why would somebody wear this hat?

Would it protect the brain from a knock to the head?

Would it protect the brain from anything that could harm the brain? (Sun/heat, freezing cold)

Afterwards talk about how we should always protect our brain, not just by wearing protection by also by keeping healthy life habits.

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Kia titiro ki te tangata | See the person

Brain Habits

Would you like to become smarter?

Remember things easier?

Increase your brain's overall strength?

Then you need to have good brain habits.

Have you heard the phrase "you are what you eat"?

It means what we do or put inside our body can make us feel and look the way we do.

To keep our brains in tip-top shape we need to keep up some healthy habits.

We are going to do an activity and decide if something is a healthy or unhealthy brain habit

Young group:

Resources- cut out and laminate the cards and baseboard (enlarge to A3) below

Do the activity in a small group.

Place the cards picture side down. One child turns a card over. He/she decides to place it by the healthy/unhealthy brain habit. (Next child) Some words may need to be explained to very young children.

Older group

Split the group into two. Give each the large baseboard on paper. Instruct them to think of healthy and unhealthy brain habits and draw or write these in the baseboard. Compare and discuss when groups finished. The older children may include drugs and alcohol use.

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Brain Habits-cards

Wear head protection

Eat lots of fatty foods

Wear seatbelts and safety harnesses

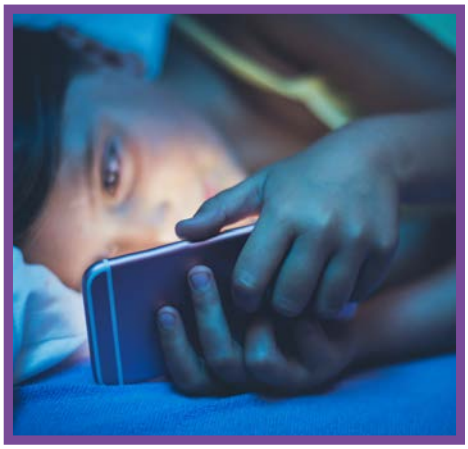
Remember to take your medication

Take a little time out to relax

Try to learn new things

Drink lots of sugary drinks

Eat a healthy balanced diet



Have as much screen time as possible

Brain Habits-cards

Listen to your body and sleep

Have lots of stress and worry

Do some light exercise every day

Get over heated

Skip out on meals

Don’t worry about passing on infections

Socialise and be around others

Stay hydrated

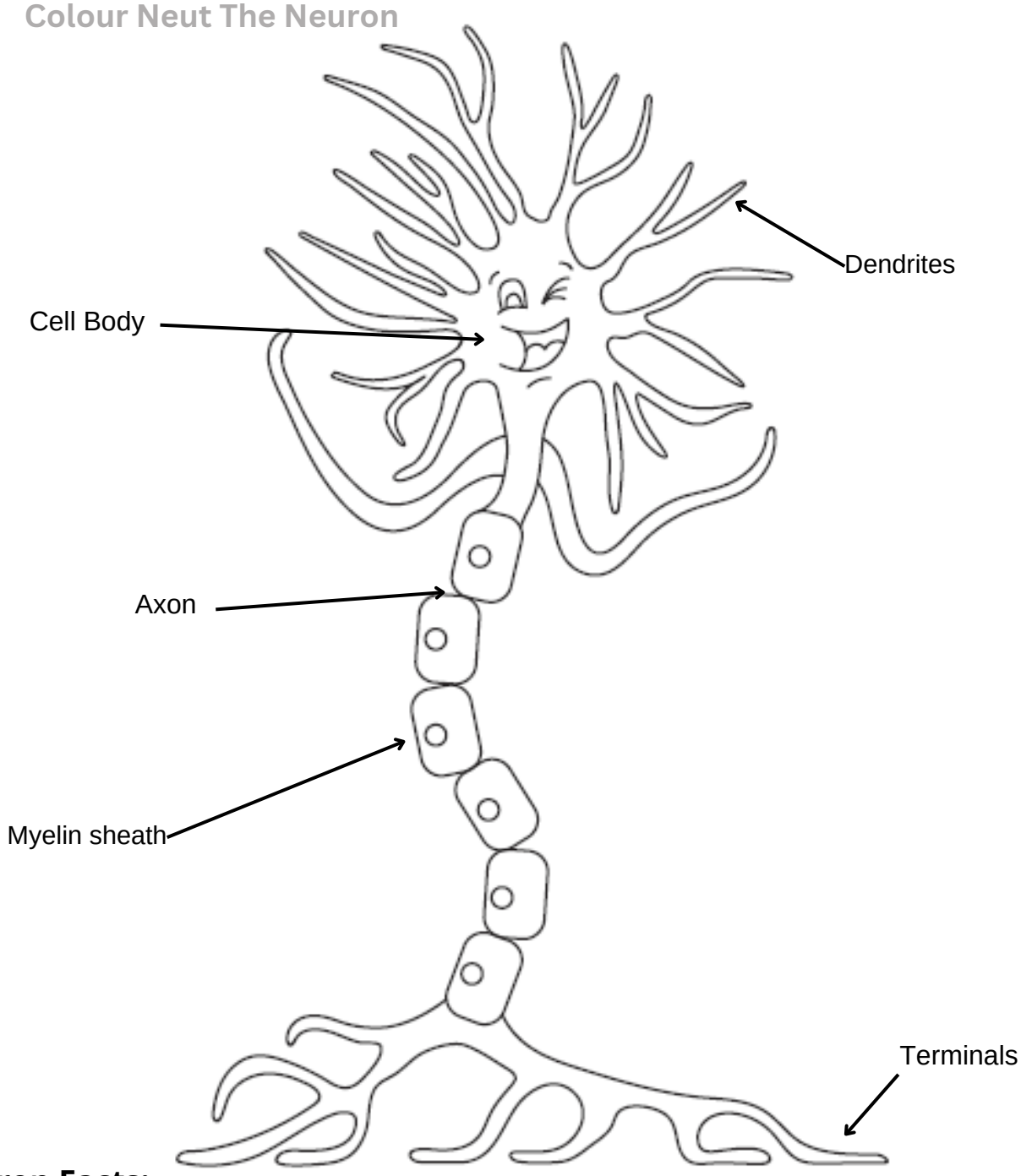
Be hygienic

Healthy Brain Habits

Unhealthy Brain Habits

NEUT THE NEURON

Colour Neut The Neuron

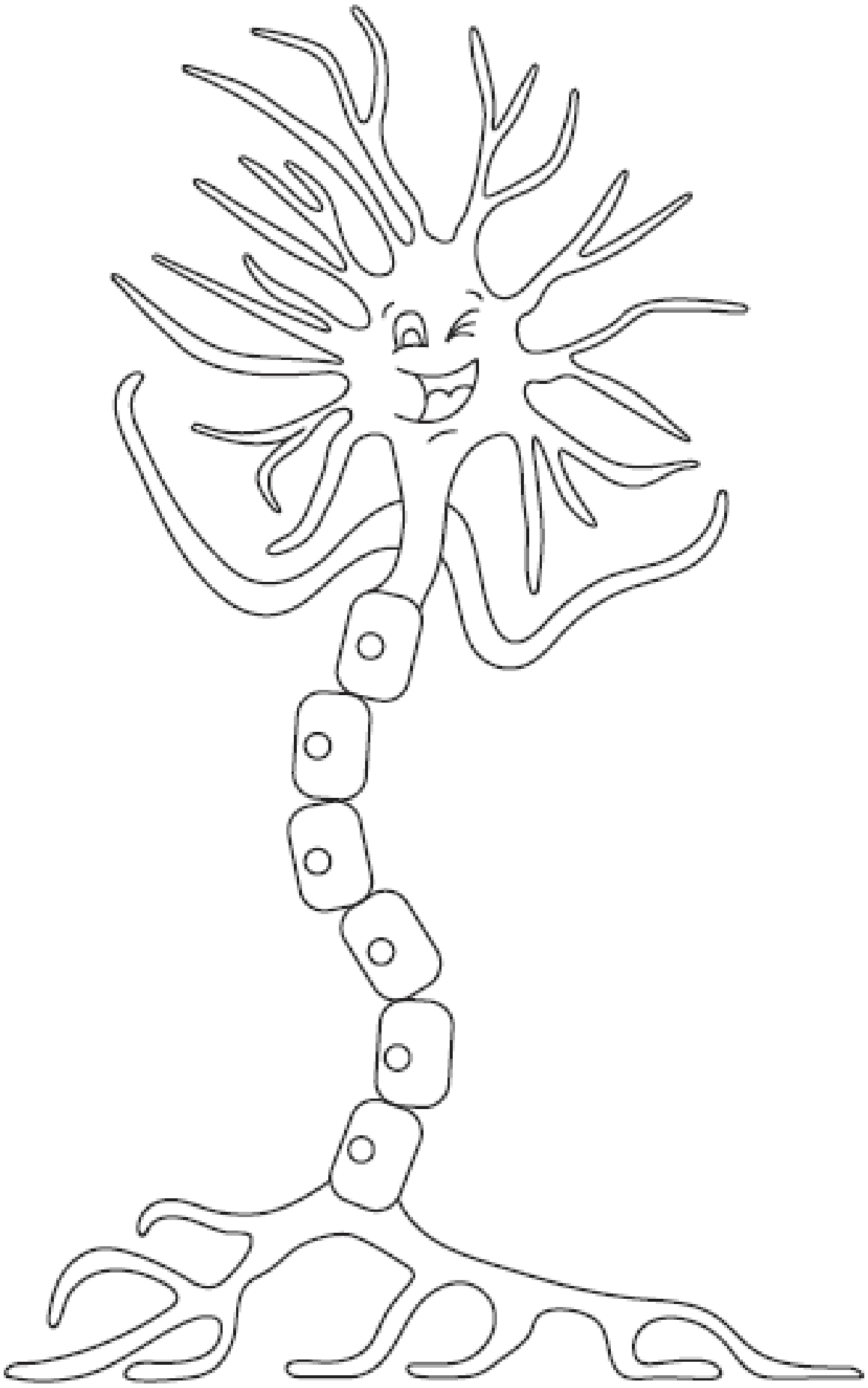


Neuron Facts:

- Neurons are nerve cells which are an important part of our nervous system.
- The average number of neurons in the human brain is about 100 billion.
- Neurons don't use words to share their messages; instead, they use chemicals and electrical signals.
- Neurons do not touch each other, they send chemicals between the gap which the next neuron picks up.
- When a person has an epileptic seizure it is because a group of neurons become over excited, causing the messages to get mixed up in the brain.

NEUT THE NEURON

Colour Neut The Neuron



COPING TOOLS

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WHAT HELPS ME AND MY BRAIN TO STAY CALM?

Tick what works for you

- ☐ Take slow, mindful breaths
- ☐ Drink a warm drink
- ☐ Rest and take a break
- ☐ Stretch
- ☐ Write in a diary or notebook
- ☐ Listen to your favourite music
- ☐ Talk to someone you trust
- ☐ Count slowly to 10 and breath out

Add in your own calming ideas

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____