

The Brain Lesson

Time: 30-45 Minutes

Practice Schedule: Use the chime 3x a day prior to transitions. Add one of the exercises in the lesson to follow the chime.

- **Introduction:** This lesson is primary and foundational to all following lessons. Children learn how their brain works. They learn about three parts the brain: the prefrontal cortex, the hippocampus, and the amygdala. They learn how their brain influences their emotions, how to train their brain to manage those emotions, and how they use their brain in the classroom. It is the same lesson we teach to parents of infants and toddlers.
- **Goals of this lesson:**
 1. Children will learn three parts of the brain and their function.
 2. Children will understand that their brain allows them to think, feel, and make decisions about how they behave.
 3. Children will know that they are in charge of their brain using breathing and various tools to help them.
 4. Teachers/parents learn the same information. With awareness of how the brain works, they will experience increased compassion and patience toward children. With this fundamental knowledge, adults can model healthy social-emotional skills.
 5. Teachers and parents practice calming and focusing skills using them daily. Their brains are training for a quiet presence to emotionally co-regulate with young children in their care.
- **Exercises**
 - The Breath
 - Breathing with the ball
 - Controlling your breath with the pinwheel
 - The Body
 - The Mountain Pose
 - Rock-a-bye
 - The Senses
 - Listening to the Chime
 - Watching your glitter settle
- **Why it Works:** Children love this lesson. The puppets engage them, the big brain words excite them, and the concept that they can be in charge of their brain empowers them. It also gives the teacher and students a common language for dealing with emotional upset.



Materials

- Brain Chart
- Brain Model (Optional)
- Hand Model Chart
- Neuron picture and facts
- Puppets (or stuffed animals)
- Calm Down Basket with Tools:
glitter jar, pinwheel, Hoberman
Sphere,
squish ball, stuffed animal, coloring
materials • Chime

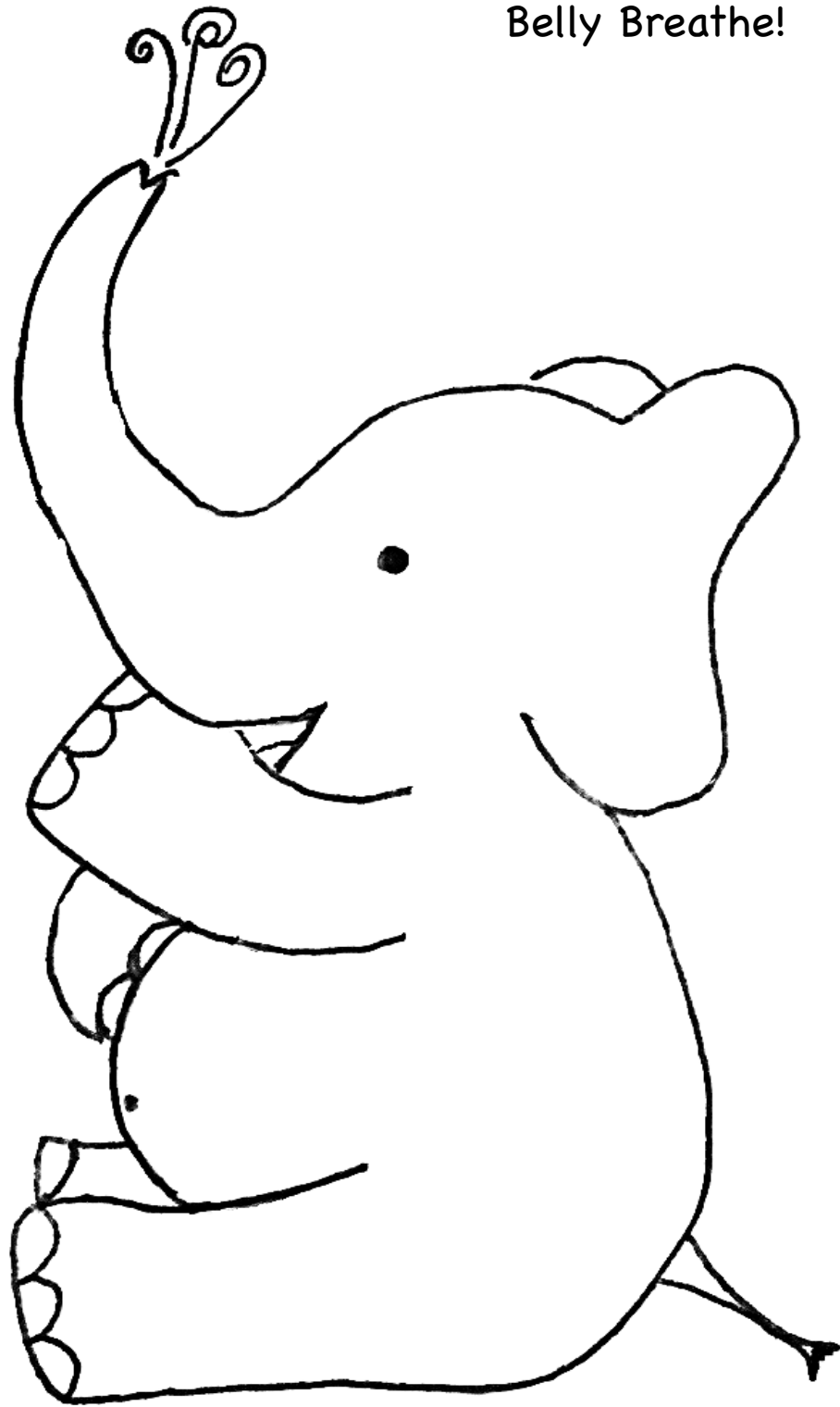
- Getting ready for the lesson:

Explain that we are going to learn something new today, and that before we do we need to get our brains ready. Our brains need to be calm and focused.

1. Show them the chime.
2. Ask them to sit up straight like a mountain and take a deep breath filling their belly. You can invite them to place their hands on their tummies so they can feel it filling and emptying with their breath.
3. Tell them you will strike the chime.
4. Ask them to listen quietly until they can no longer hear the tone, and then raise their hand.



Belly Breathe!



Ms Elefante feels so much better when she takes a deep breath filling her belly, and then lets it out s-l-o-w-l-y.

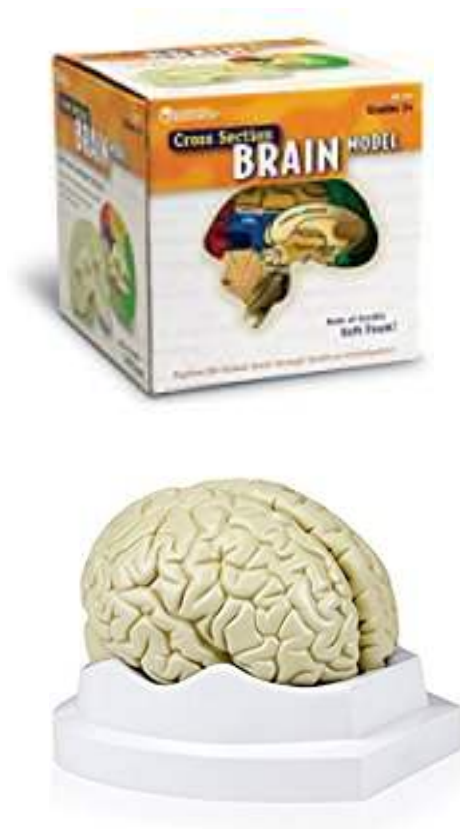
- Starting the lesson:

1. Use the brain chart to show what we are going to be learning. Ask if everyone knows where their brain is. Most point to their head, some to their heart. I explain that there is a "heart brain," but that we are going to talk about the "skull brain." The skull is the hard part you can feel when you touch your head. It protects your brain like a helmet. (Kids have dubbed it the "brain helmet").

2. Then, to further engage the kids, ask if everyone brought their brain with them today. (This gets pretty silly) Some left it in their backpack, on the bus, in bed or otherwise just forgot it. I ask them to whisper to their brain to come along quickly as we need it to learn our lesson.

3. I have a small model of the brain that I pass around. It opens down the middle and shows various parts. You can substitute a the brain chart. Explain that the brain has many parts, and each one has a job to do. They each do their job best if they are calm and working together. We are going to be talking about only three key parts today and learn some ways to help them do their job well.

Brain Model



Key Players in the Brain

Prefrontal Cortex (PFC)

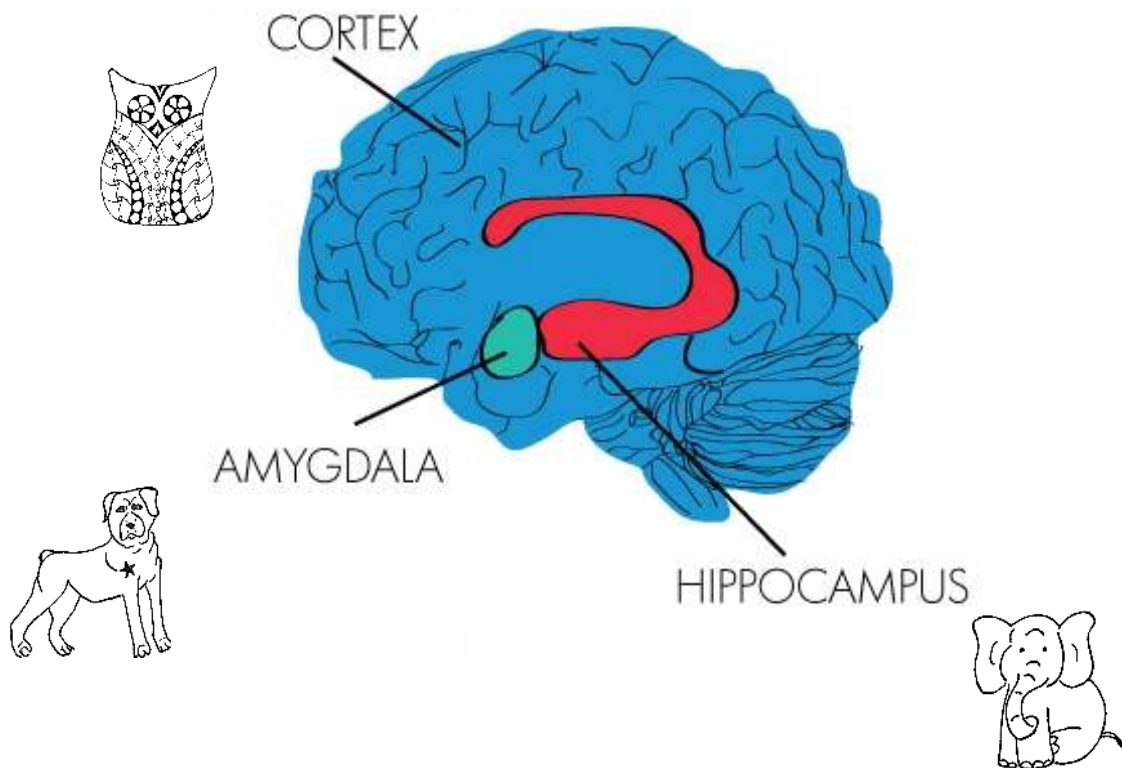
(Wise Leader)

*Thinking, planning, problem solving,
learning new things.*

Helps you wait before acting.

Helps you understand your feelings.

Executive functions.



Amygdala

(Guard Dog)

Reacts to threat (fight, flight, freeze).

Helps keep us safe.

*It's also in charge of curiosity, so can get
us into trouble, too!*

Hippocampus

(Memory)

Processes and stores memories.

*Learning, experiences, and emotional
responses are stored here.*



Brain Parts - What to Say:

Guard Dog is loud, active, and explains that its job is to keep you safe, and also it is in charge of being curious. It is full grown when you are born, and is often in charge until you are 4 or 5 years old.

Dialog: “HELLO! My name is Guard Dog. My brain name is a funny word, amygdala. Repeat after me (3 times).” I have a huge job...I have to keep you safe. When you are scared, or sad, or angry, or hungry, or tired, I’m the one who lets everyone else know that you need help. I do this by (bark). I am also in charge of “curiosity.” Do you know what that is? It’s when you are doing one thing, and then something else happens, and you want to know what it is. So you stop what you are doing, and go to the new thing.” (Demonstrate with the puppet by sniffing, and moving and sniffing something else.)



To remember my name try this chant:

A-myg-da-la, I keep you safe!
A-myg-da-la, I keep you safe!
A-myg-da-la, I keep you safe!

Have guard dog pick the next puppet, and introduce it. “Wise Owl is really smart, and helps me learn how to control myself!”

Wise Owl is quiet, focused, and moves it’s head around to take in everything. It talks quietly. Its job is to learn, solve problems, figure out feelings. It grows rapidly when you are 0-5 years old, and is grown up when you are around 25.

Dialog: Have the owl facing you, and explain that owls sleep during the day. You have to wake him up when you are teaching the brain to kids, and it sometimes takes awhile. Ask owl to please wake up and help you. Have him shake his head “no.” Say “but I need your help, and these children are very cute.” Shakes his head “no.” Then coax him to look at the group, slowly. He turns his head a little each way but quickly looks back. Have the kids say “please Wise Owl, help us learn.” Slowly have him turn around. He says, “Good morning boys and girls. My name is Wise Owl, and my brain name is a huge word. Are you ready? Prefrontal cortex. Repeat after me (5 times) ‘prefrontal cortex.’ My nickname is PFC. Repeat. My brain job is to learn, solve problems, and help you understand what you are feeling. It’s a big job since you will be learning for the rest of your life. I get bigger as you get older, and am grown up when you are 25 years old.”



To remember my name try this chant:

P-F-C, follow me!
P-F-C, follow me!
I’ll make you smart!



Have *Wise Owl* get *Ms. Elefante* and introduce her. “This is my friend Ms. Elefante. Her job is to remember everything, which helps me with my job. “I learn and solve problems, she remembers what we did before and stores what we are learning now.”

Ms. Elefante is active, and I make her silly. She has trouble straightening out her trunk which is where she takes in all the memories. The kids help straighten it, and Miss Elefante thanks them for their help. Now she can do her job.

Dialog: “My name is Miss Elefante. My brain name is hippocampus. (Repeat 5 times together) “My job is remembering everything that happens to you, even before you are born. Like I can remember the sound of your mommy’s voice before you were born! When you are born, I am ready to do my job and continue to remember everything from that point on. I am good friends with Wise Owl and Guard Dog, and when we work together, we do an excellent job.”



To remember my name try this chant:

Hippo-camp-us, remember me!
Hippo-camp-us, remember me!
Hippo-camp-us, remember me!

All the Parts Work Together:

We then have a short puppet show in which the guard dog detects a threat (like being mad, sad, scared, tired, hungry, teased, you pick the feeling) and hijacks the other two puppets - jumps on their heads and won’t let them do their job. They can’t get back to work until Guard Dog calms down. “What does Guard Dog need to settle down?” Kids might say breathe, or use the chime. If they make these suggestions, congratulate them on their hippocampus working well. They remembered what to do! If they don’t say anything, remark “Hmmmm. Your hippocampus must not have stored this information in the past. Let’s give it a hint.” Breathe.

Coach guard dog (while he is still on top of owl and elephant) to take a breath. “Guard Dog, you need to take a deep, slow breath now so that you can calm down. Have him do so, with difficulty. Check in and ask if he is feeling better. He shakes his head no. Once again. Repeat three times. With the third breath have him slowly slide down off of the other puppets. Have the puppets be close together, maybe high-5 the guard dog, and exclaim they are ready to cooperate again.

To reinforce this lesson, have students complete the picture below.



The Brain Parts

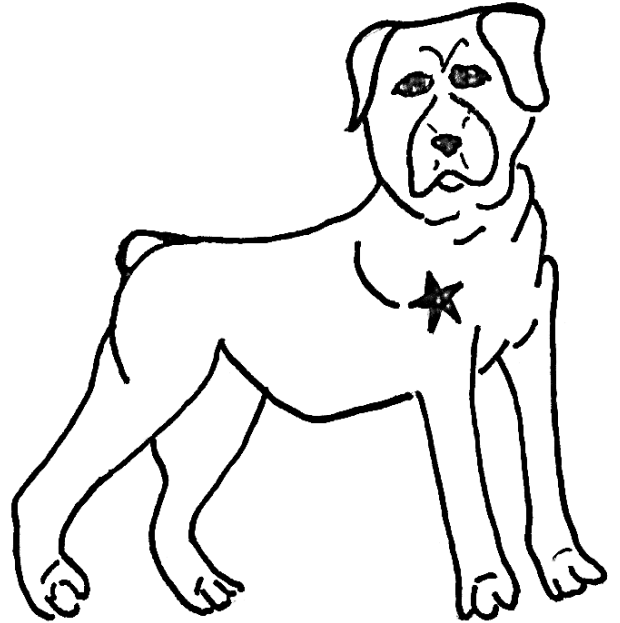


Name the Brain Part and Its Job!



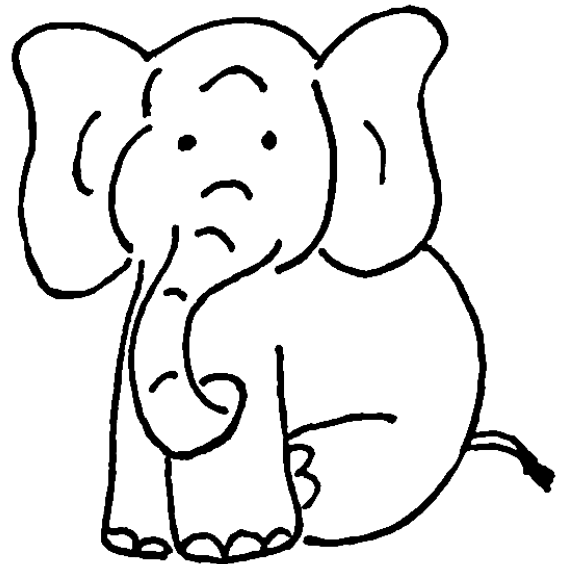
Name_____

Job_____



Name_____

Job_____



Name_____

Job_____



Exercises: (After teaching each technique to the class, practice using one of the exercises three times a day.)

The Breath

- Breathing with the ball - (5 minutes)
(Hoberman Sphere)

While we always have our breath with us to use as a calming tool, when teaching young children it is helpful to have props for demonstration. The Hoberman Sphere is a favorite with the kids.

1. Have students slowly inhale while you slowly expand the sphere and then exhale as you slowly shrink it back to its original size.
2. Watching the ball as you breathe helps children regulate their breathing without producing more anxiety.
3. Take five breaths or as many times as you want!
4. Allow children to take turns with the ball. Invite the Guard Dog puppet to help maneuver the ball. (18 children x 1 turn each = 18 breaths = a very calm group!)

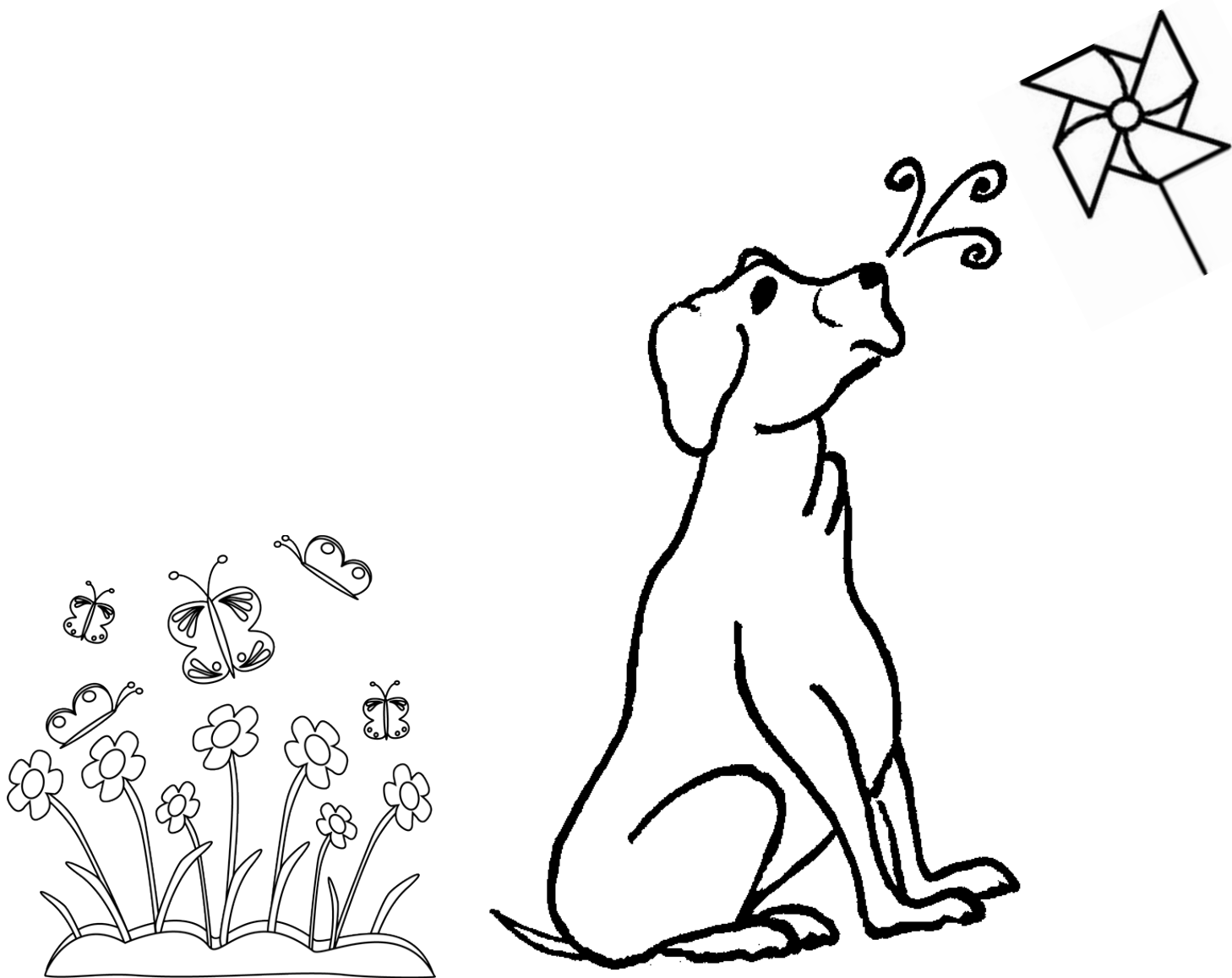
- Controlling your breath with the pinwheel - (5 minutes)

1. Hold the pinwheel facing you.
2. Practice deeply inhaling and then use the exhale to control the speed of the pinwheel: fast, slow, medium. How does each way feel?
3. Take a deep breath down into your belly. Let your breath out slowly, slowly. See how long you can make the pinwheel go.

Follow up with the coloring page below.



Guard Dog learns to control his breath blowing the pinwheel fast, slow, and then medium.



More Exercises:

The Body

- Mountain Pose - (1 minute)

1. With your knees tucked beneath you, or legs crossed in front of you, hands on your thighs or in your lap, sit up tall as a mountain.
2. You know a mountain is strong: Can the wind blow it over? Can the rain wash it away?
3. Sitting up straight lets your breath go all the way to your tummy.
4. Now, take a slow breath in and feel your belly get big. Let the air out, and feel it get small.
5. Repeat two more times.

- Rock a Pet - (3 minutes)

1. Lie on your back with legs flat on the floor, arms by your sides, and if you want to, close your eyes.
2. Place a stuffed animal on your tummy. Breathe in; your belly goes up, breathe out; your belly goes down.
3. Pretend you are giving your pet a gentle ride with your breath
4. As you breathe in your belly fills with air and the stuffed animal rocks up. As you breathe out, let your tummy empty and the stuffed animal rock down.
5. Pretend you are rocking him to sleep.

Follow up with the coloring page below.



Rock-A-Pet



If you want to help your "pet" feel calm, breathe in and out slowly, your belly goes up and down, and gently you rock your pet.

Senses

- Listening to the Chime - (1 minute)

1. Sit in mountain pose.
2. Close your eyes if you like.
3. Take a deep breath.
4. Listen for the sound of the tone.
5. Raise your hand when you can't hear it anymore.
6. Continue to focus on your breath for 15 seconds.
7. Work up to up to 3 minutes of breath awareness with daily practice over a period of 3 months.

- Watching Your Glitter Settle - (1 minute)

1. Fill a jar (10oz) or empty beverage bottle with warm water.
2. Add one tablespoon of glitter glue, and one tablespoon of glitter.
3. Shake It Up and let stand for 30 minutes.
4. Now shake it up again, and ask the children if they can see through the water to the other side.
5. Explain that when your brain is upset, it gets clouded like the glitter jar, and can't think.
6. As you quietly watch the glitter settle, the water gets clear.
7. Just like the glitter, when you quietly focus on one thing your brain settles down.

Follow up with the coloring page below.



When We Listen to the Chime,
We are Calm and Focused



Part 2

Brain Lesson (Optional)

What Neurons Look Like



Neurons fire to wire with other neurons 250,000 time per second!



When we are born, our brains have 300 billion neurons! If we don't use them, we lose them, and by the time we are adults we only have 100 billion.



Getting ready to take pictures of your neurons.



Mirror neurons: My neurons read your neurons and do the same thing!



When neurons fire together, they wire together, which means we are learning.

Neurons - What to say:

Show this picture of neurons, and explain that kids' brains have 300 billion of these. They are working to connect with each other all the time. They do this when we learn something new, and then the more we practice what we learn, the stronger they connect. That's how we grow our brain to be smart! (A good visual is a bucket of sand. If you had a full bucket and poured it out on the floor, and then count each grain, that might be 300 billion.)

Neurons are your brain's cells. They are what you use to learn new stuff!



Hand Model of the Brain

Prefrontal Cortex (PFC)

Wise Leader

Thinking, planning, problem solving, helps you wait before acting, helps you understand your feelings.



Amygdala

Guard Dog

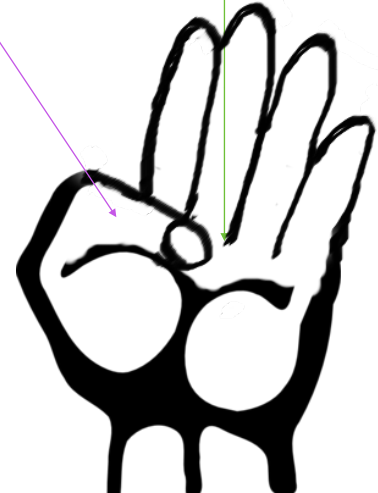
Reacts to threat, (fight, flight, freeze) Detects Helps keep Us safe, but can get us into trouble!



Hippocampus

Memory

Processes and stores memories. Learning, experiences, and emotional responses are stored here.



- Amygdala is on alert
- Brain not able to think, solve problems, or remember
- Needs to calm down first



- Afraid, angry, emotional, hurt, tired, or hungry
- Child is having a meltdown!



Hand Model: What to Say:

The hand model is a favorite of teachers and parents. Hold up your hand, closed with your thumb tucked under your fingers, and explain that we can use this as a model of the brain. (See Chart)

While closed, the knuckles represent the PFC, the thinking, and problem-solving part. Then, open your hand as though you are opening your brain to look inside, point to your palm, and state that it is your hippocampus, the memory part. Wiggle your thumb; this is your amygdala.

Close your hand again, showing that this is how your brain is when it is calm and focused. All the parts are quiet and working together. Then quickly flip open your hand, extending the thumb and spreading the fingers. Say that's what happens when we have big feelings, our amygdala goes on alert and "flips our lid." The parts are not working together. It is very hard to think or remember what we are supposed to do when this happens. What do we need to do?

Take three deep breaths while slowly closing your hand back over your thumb. Now your brain is quiet again, and the parts are working together.

You can use this model silently during the day to demonstrate what you are seeing from the children. Closed fist: they are working hard, thinking and learning. Open hand and wiggling thumb, the brain is hijacked and needs to re-focus. How can you help?



- What We Learned

We learned about three parts of our brain. Review. Then we learned that when our brain feels sad, or, mad, or has big feelings, we can use our breath and our body to calm our bodies and our brains. That means we are in charge of our brains! We need to practice many times during the day so we can listen, pay attention, and use our brains to think. We can do this wherever we are, like at home, or at school, and when we are playing.

- Integrating the Lesson

Like learning to walk or to play the soccer, learning and integrating these skills takes a lot of practice. Young children need many times a day (at least 3). Because routine also helps children with self-regulation, practicing calm-down skills at regular times during the day is helpful. Use the chime to begin the day, and at times of transition like recess, lunch, nap time, and end of the day.

At times when the child is starting to spin out of control, notice out loud that the amygdala seems to need some help. Ask what might help. Encourage children to use the Calm Down Basket on their own when they need to. Finally, you can use the basket to role model for the children. "Let's use something from the Calm Down Basket to help us both feel better."

- Resources for Learning More About This Lesson

For adults:

Understanding the concepts behind FocusedKids will be easier for you to teach if you have familiarized yourself with the brain, the developing brain in particular. Read the material in the section titled "Before You Teach."

- *Your Fantastic, Elastic Brain*. It will give you an overall understanding of the brain in kids language. Since we are teaching young ones, we must keep that language very simple.
- Harvard's Center for the Developing Child website <http://developingchild.harvard.edu/science/>. Lots of information on brain development. Look through all the sections and watch some of the videos on this site. They are very descriptive and helpful.
- Sentis animated brain series. Very short (1-2 minutes) videos explain various aspects and functions of the brain.
<https://www.youtube.com/playlist?list=PL53nCCeNj-RQDhbjE9LjvnFad-wdB5bw7>
- *Whole Brain Child*, Daniel Siegle and Tina Payne Bryson. An in depth look at the developing brain and raising the "whole" child.



For Kids:

- *A Walk in the Rain with a Brain*, by Edward Hallowell, is a great book for younger students. The central message of the book is that “each brain finds its special way.”
- *Your Fantastic Elastic Brain*, published by Little Pickle Press. You can download an activity guide from their site. (Kindergarten and up)
- *Moody Cow Meditates*, Kerry Lee MacLean
- *Peaceful Piggy*, Kerry Lee MacLean
- *Think, Think, Think: Learning About Your Brain*, Pamela Hill Nettleton

