

### How is your Engine Running?

#### Teaching young children to self-manage arousal levels

As humans, we all have fluctuating levels of alertness in our nervous systems – known as the state of arousal. Our bodies need to be maintained at an optimal level of arousal for learning, concentration, attention and focus to occur. If the arousal level is too high, we need to self-regulate and calm down, if the level is too low, we need to provide stimulus to wake ourselves up. For example, when feeling lethargic you may grab a coffee in the morning to help get going. Later in the day you may struggle to focus during a long meeting, so you tap your foot, click your pen and stretch. Then, after the evening rush at home, you may read or do meditation to lower alertness. As adults, we subconsciously self-regulate our levels of alertness throughout the day, depending on the situation.

Young children are often not as skilled at self-regulation and at times they may remain stuck in high or low levels of alertness. This is not ideal for learning and can often lead to overwhelmed children having meltdowns, or uninterested, unmotivated learners. Adults can support children to understand and manage their arousal levels by using the 'Engine' analogy. The concept suggests that we all have an 'engine' inside our bodies which can be in high gear (hyper), low gear (lethargic) or in just-right gear (attentive and focused).

In order to learn how to self-regulate their arousal levels, children need to recognise whether their engines are in low or high gear, they need to be aware of various methods that can help shift arousal levels and they need to be empowered to respond in a way that suits them.

#### Identifying engine speeds

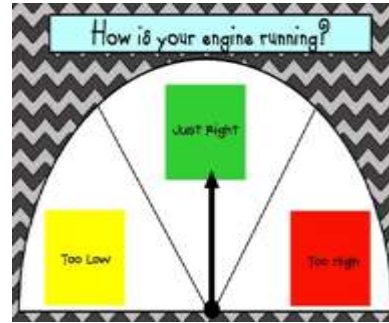
How can I teach this concept? Start by using the 'engine' words frequently with children – high, low and just right. Role modeling is one of the most effective teaching methods, therefore talk about your own engine with children. If your engine is revved up when you are rushing around or if it is low when you are feeling tired, communicate it. Once the language is more familiar to children, adults can increase children's self awareness by pointing out how it appears children are feeling – "Mary your engine looks like it is high because I can see you running and crashing into your friends." "Nathan your engine looks low right now because I can see you laying in the beanbag staring at the wall whilst Jimmy is talking to you."

## Visual supports

Visuals support all learning, especially tricky concepts such as an imaginary engine inside your body!



Visuals to represent the physiological signs that we may feel when we are in high, low and optimal arousal may be useful



A visual gauge that allows children to pinpoint how they are feeling may also assist in understanding the concept

### Explore methods to change engine speeds

Once the engine analogy is understood, it is time to teach children about the different strategies that can be put into place to shift engine speeds. Sensorimotor integration (activating the senses) has been identified as an extremely effective way to enhance the function of the nervous system and help alter 'engine speeds'.

1. Observe children to help decipher their sensorimotor preference: Oral, Vestibular/Proprioceptive, visual, auditory.
2. Teach children that there is a variety of ways to change our engine speeds by using our senses. Explore different options to see what helps them. (Remember that every child will have a different method that suits them best).

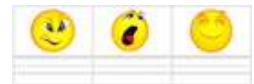
### Some Ideas to get you started

Sensorimotor term	Child friendly language	Activity Ideas
Oral	Mouth Tools	Blowing through whistles, bubbles, straws, musical instruments Sucking thick liquid through a straw eg: smoothie Chewing, crunching, biting & swallowing crunchy foods eg: carrot sticks, pretzels etc
Proprioceptive	Heavy Work	Pushing – wall pushups, pushing wheelbarrow / furniture, pedaling a trike, tree climbing, Pulling – tug-o-war game, pulling a wagon,
Vestibular	Body Tools	Star jumps, trampoline, swinging, spinning, bouncing on a gym ball, rocking horse
Visual	Eye Tools	Colour & Light variations of stimuli – dim, bright, natural
Auditory	Ear tools	Music – listening to, playing musical instruments, drumming, chanting in various volumes & speeds

As with all children's activities, it is vital to hook them in by using their interests. If trains are their interest and auditory supports calm them down, play songs about trains. If they are obsessed in doll play and need proprioceptive input, encourage them to carry large outdoor blocks across the yard to make a doll house.

If children are not interested, they will not engage.

Also, when setting up the visual supports it is advised that these are also tailored to interests. Eg: Cars, Animals, Pooh Bear, Emojis, Colours/Shapes etc



**The possibilities  
are endless!**

References:

<http://www.holisticlc.com/sensory-integration-occupational-therapy/>

<https://www.alertprogram.com/>

Reviewed by PSFO Team Jan 2020