

# CLASSROOM DESIGN:

## IDEAS FOR SUPPORTING OPTIMAL LEARNING ENVIRONMENTS

*A list compiled by SD 42 school district occupational therapists and helping teachers.*

**“Learning can be enhanced or hampered by certain environmental conditions”<sup>1</sup>**

Just as you have your own **environmental needs to feel comfortable to teach**, each of your students has his/her own environmental needs to be ready to learn. BC’s new curriculum recognizes the **need for flexible learning environments<sup>2</sup>**.

When it comes to your classroom, consider the following ideas to support your students’ attention, engagement and self-regulation.

### **CLASSROOM FURNITURE & MOVEMENT**

- ✓ Use a variety of seating options that allow for movement and position changes
- ✓ Ensure children have access to seating and tables/desks that are the appropriate height for their size
- ✓ Create different areas for learning and clear pathways between them

### **VISUAL MATERIALS & LIGHTING**

- ✓ Declutter walls, bulletin boards, shelves and furniture
- ✓ Use borders around visual displays
- ✓ Create space for visual rest
- ✓ Use natural light when possible
- ✓ Preferential seating (to optimize vision for specific students)

### **NOISE**

- ✓ Music can be used to enhance attention – stimulating or calming
- ✓ Preferential seating (to optimize hearing/listening)
- ✓ Position of teacher in room when giving instructions
- ✓ Reduce background noise

### **TEMPERATURE CONTROL**

- ✓ Open or close windows
- ✓ Turn off a bank of lights to cool the room

### **CLASSROOM TEACHER**

- ✓ Consider yourself as part of the classroom environment

# CLASSROOM FURNITURE & MOVEMENT

## DID YOU KNOW?

- If children have **difficulty sustaining an upright posture**, or are having to maintain inefficient positions (eg. their feet do not touch the ground, so their feet are dangling in the air), **they will have less energy and capacity for learning**.
- “Physical movement increases alertness and helps encode and trigger memory”.<sup>1</sup>
- It is important to teach students to use the best seating options at the right times to meet their own learning needs.

## CONSIDER:

Do you have tables or desks? Can students change position?

**Some Ideas:** standing table, work at the counter-top, or a clipboard on the floor.



Are the tables, desks and chairs the right height for your students? You may need a variety of heights. Make sure their feet reach the floor when seated and desks are 2” higher than a student’s bent elbow.

Are there a variety of seating options?

**Some Ideas:**



- ✓ Chairs, stools, benches.
- ✓ Chairs that rock
- ✓ Stools that wobble
- ✓ Cushions to add movement
- ✓ Beanbag chairs
- ✓ Back supports for sitting on the floor
- ✓ Couches



Think about where you position furniture in the room:

- ✓ Create different areas for learning and clear pathways that make sense to people entering the room.
- ✓ Create movement in the classroom.
- ✓ Carpet area for primary grades. Think about seating options for the floor. Do you want the tables/desks grouped together for discussions or facing the front of the room so that students can work from the board? You may need to teach students to move furniture around for different activities.

# VISUAL MATERIALS & LIGHTING

## DID YOU KNOW?

- Everyone has different preferences for processing visual information. Some students thrive in a busy environment, other become very distracted. Consider the visual impact of your classroom.
- Grouping class materials on walls contained within a border provides grounding, helps create visual rest areas and mental organization.<sup>3</sup>
- Increasing daylight in classrooms has been shown to cut down on absenteeism and benefit learning.<sup>4</sup>

## CONSIDER:

- ✓ Declutter walls, bulletin boards, shelves and furniture.
- ✓ Display only key points/information.
- ✓ Get students involved in setting up and taking down displays.
- ✓ Use the smart board to provide visual directions.
- ✓ Use contrasting colors on the white board (eg. blue or black markers)
- ✓ Use borders to group and define information (bulletin boards and handouts), this can teach students how to organize their own thoughts
- ✓ Create space for visual rest (within classroom & on learning materials)
- ✓ Consider use of natural light and/or blinds within your classroom
- ✓ Provide a visually *'quiet'* spot that students can access when they need to down-regulate and/or complete tasks that require extra focus.
- ✓ Consider different lighting within the classroom (depending on the purpose)
- ✓ Label boxes, bins, shelves, learning areas
- ✓ Use a clear visual schedule with pictures; think about where this schedule is placed and what other visual information is near it – does this make it harder to locate/see?

# NOISE

## DID YOU KNOW?

- Listening and hearing are developmental skills.
- The ability to focus on speech does not mature until ages 12-15. To correctly interpret spoken words, children need to hear consonant sounds clearly. These sounds can be masked by equipment that hisses or rumbles louder than a loud whisper. <sup>4</sup>
- Children are much more impacted than adults by noise in tasks involving speech perception and listening comprehension. Non-auditory tasks such as short-term memory, reading and writing are also impaired by noise.
- In a poor acoustical environment, students with normal hearing can miss, or mishear, as much as 25 – 30% of instruction.

## CONSIDER:

- ✓ Seat your students with known hearing, processing or language deficits so they have a good view of your face when you're teaching
- ✓ Avoid teaching in dim light or with your back to the window so your face is in shadow
- ✓ Involve students in managing the noise level in the classroom
- ✓ Explore classroom noise monitor apps (Classroom Noise Monitor, Too Loud Kids, Class Monster)
- ✓ Be aware of background noise (lights, fans, noise in hallways, noise outside, chairs being moved, technology) and seat students away from noise sources as much as possible
- ✓ Use visuals during instruction
- ✓ Gain students attention before delivering information
- ✓ Review and summarize key points
- ✓ Music can be used to enhance attention – upregulating (stimulating) or downregulating (calming). Focus@will  
(<https://www.focusatwill.com/music/#player>) is a website developed in partnership with leading neuroscientists, a free 30 day trial is available.
- ✓ Noise cancelling headphones could be trialed to help block out environmental noise.

Other ideas that would require creative funding solutions (eg. PAC):

- ✓ Hush-ups on chair legs (noise reduction), FM system (sound amplification)

# TEMPERATURE CONTROL

## DID YOU KNOW?

- Poor temperature conditions in the classroom can impact learning, decrease memory abilities, contribute to lack of energy and loss of focus. These are just a few symptoms of poor temperature conditions (too hot/too cold) on an individual's learning abilities.

## CONSIDER:

- ✓ Open or close windows
- ✓ Turn off a bank of lights to cool the room
- ✓ Ensure students have access to water bottles throughout the day
- ✓ Move around, go outside
- ✓ Use a fan to cool the room

# CLASSROOM TEACHER

## DID YOU KNOW?

- The challenges of facing a classroom of children trying to cope with a variety of academic and psychological issues can be very taxing for teachers and a challenge to their own capacity to self-regulate.<sup>5</sup> (pg. 151)

## CONSIDER:

- ✓ Your contribution to the classroom environment in terms of voice, movement style, energy level
- ✓ Your own level of self-regulation
- ✓ Your own level of self-care/well-being

# FOOTNOTES:

1. **Class, Can I Have Your Attention? SPACE CAN HELP IMPROVE STUDENT ATTENTION, ENGAGEMENT AND LEARNING OUTCOMES:**  
<https://www.steelcase.com/insights/articles/class-can-i-have-your-attention/>
2. <https://curriculum.gov.bc.ca/curriculum-info>
3. **A Clinical Model for Developing Executive Function Skills.** (2014) Authors: Ward, Sarah; Jacobsen, Kristen
4. **The Third Teacher - 79 Ways You Can Use Design to Transform Teaching & Learning** (2011). A Collaborative Project: Cannon Design, VS Furniture and Bruce Mau Design
5. **Calm, Alert, and Learning - Classroom Strategies for Self-Regulation** (2013). Stuart Shanker.

# ADDITIONAL RESOURCES:

1. **Self-Reg Class Environment Reflection Tool:** [http://www.self-reg.ca/backup/wp-content/uploads/2015/09/environmental\\_reflection\\_v3.pdf](http://www.self-reg.ca/backup/wp-content/uploads/2015/09/environmental_reflection_v3.pdf)
2. **Self-Reg Knowledge Series – Info Sheets.** Developed by Dr. Stuart Shanker & TMC:  
<http://self-reg.ca/self-reg/self-regknowledge-series/>
3. **Study Shows How Classroom Design Affects Student Learning:**  
<http://www.fastcodesign.com/1671627/study-shows-how-classroom-design-affects-student-learning>
4. **How Seating Ergonomics Affect Learning:**  
<https://smithsystem.com/smithfiles/2014/08/06/seating-ergonomics-affect-learning/>
5. **Does noise affect learning? A short review on noise effects on cognitive performance in children.** (2013) Authors: Klatte, M., Bergstrom, K., Lachmann, T. Retrieved from:  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3757288/?report=classic>