



Science Behind the Story (SBS)
What Am I Feeling? (🌈 An Emotional Health Story)
(Kindergarten – 5-6 yrs)

The story introduces emotional health to younger children. The focus is on identification of emotions and understanding how our emotion affect how we “see” the world.

- 🌈 We all have emotions and being able to recognize them in ourselves and in others is what makes up our emotional intelligence.

As our world becomes more complex, so do the emotions that humans express. As emotional behaviors have a relationship to survival behaviors, there are primary emotions that are expressed, albeit in different ways, by many animals. The primary emotions of joy, fear and anger are related to survival behaviors, such as eating behaviors (finding and obtaining food) and reproductive behaviors (mating, caring for young) (Ekman, 1992).

Looking at human emotions, we find there are 8 basic emotions and that these can be organized into 4 pairs of opposites (Plutchik, 2001). These are joy/sadness, fear/anger, affection/disgust, and expectation/surprise. These basic emotions are seen in infants by about 8-9 months of age.

Emotional intelligence allows for the recognition and regulation of emotions (Kerr, 2019). Emotional Intelligence includes self-awareness, self-regulation, empathy, social skills and motivation.


Emotional intelligence is very similar to the five core social emotional competencies, including self-awareness -- being able to identify and articulate one’s own emotions; self-management -- being able to regulate one’s emotions; social awareness -- ability to recognize and understand other people’s emotions; relationship skills -- ability to build different relationships with different individuals and take different roles in groups; responsible decision-making -- understanding of one’s responsibilities, being rational and realistic (CASEL, 2017).

As a result of emotional development, individuals are able to acquire emotional intelligence. This means that areas of the brain that are involved in the recognition and regulation of emotions need to develop (Cromwell, 2020). This includes areas of the limbic system (important for the expression of emotion, reinforcement and emotional learning), areas of the cortex in the front part of your brain (important for the regulation of emotions), and the reward system (important for motivation).

- 🌈 The emotions we have can change the way that we see the world around us.

Feelings are mental experiences of body states (Damasio, 2013). They signify physiological need (for example, hunger), tissue injury (for example, pain), optimal function (for example, well-being), threats to the organism (for example, fear or anger) or specific social interactions (for example, compassion, gratitude or love).

Because our emotions are tied to our bodily state, we can manipulate the way we feel and “see” the world by putting a smile on our face (Cross, 2022). Positive emotions can help get through a lot of life’s trial and tribulations (Alexander, 2020).

 We can change how our emotions make us “feel”.

The ability that we have to recognize and label our emotions early in childhood helps us to regulate our emotional behaviors and actual can change how we feel about things (Elsayed, 2021).

National Standards:

Next Generation Science Standards

- Crosscutting Concepts:
 - **Cause & Effect:** Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.
 - Events have causes that generate observable patterns.
 - **Patterns:** Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.
 - Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

ASCA (American School Counselors Association):

Personal/Social Development

- **Standard A:** Students will acquire the knowledge, attitudes and interpersonal skills to help them understand and respect self and others.
 - PS:A1 Acquire Self-knowledge
 - PS:A1.5 Identify and express feelings
 - PS:A2 Acquire Interpersonal Skills
 - PS:A2.2 Respect alternative points of view
 - PS:A2.8 Learn how to make and keep friends
- **Standard B:** Students will make decisions, set goals and take necessary action to achieve goals.
 - PS:B1 Self-knowledge Application
 - PS:B1.4 Develop effective coping skills for dealing with problems

National Health Education Standards (Shape America) & CDC (Centers for Disease Control and Prevention)

- **Standard 1:** Students will comprehend concepts related to health promotion and disease prevention to enhance health.
 - 1.2.1: Identify that healthy behaviors impact personal health. **(CDC)**
 - 1.2.2: Recognize that there are multiple dimensions of health **(CDC)**
- **Standard 4:** Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
 - 4.2.1: Demonstrate healthy ways to express needs, wants, and feelings. **(CDC)**
- **Standard 8:** Students will demonstrate the ability to advocate for personal, family, and community health.
 - 8.2.1: Make requests to promote personal health. **(CDC)**

References:

Alexander, R., et al. The neuroscience of positive emotions and affect: Implications for cultivating happiness and wellbeing. *Neuroscience and Biobehavioral Reviews* 121 (2021) 220-249. <https://doi.org/10.1016/j.neubiorev.2020.12.002>

Collaborative for Academic, Social, and Emotional Learning (CASEL). (2017) Five Core Competencies of Social and Emotional Learning. Chicago. <https://casel.org/state-resource-center/frameworks-competencies-standards-and-guidelines/>

Cromwell, H.C. et al. Mapping the interconnected neural systems underlying motivation and emotion: A key step toward understanding the human affectome *Neuroscience and Biobehavioral Reviews*. 113 (2020) 204-226. <https://doi.org/10.1016/j.neubiorev.2020.02.032>

Cross, M.P., et al. How and why could smiling influence physical health? A conceptual review. *Health Psychol Rev* (2022) 1-23. doi: 10.1080/17437199.2022.2052740

Elsayed, N.M., et al. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* (2021); 6:89-98. <https://doi.org/10.1016/j.bpsc.2020.08.Q18>

Kerr, K.L., et al. Parental influences on neural mechanisms underlying emotion regulation. *Trends in Neuroscience and Education* 16 (2019) 8-13. <https://doi.org/10.1016/j.tine.2019.100118>

Plutchik R. The nature of emotions: Human emotions have deep evolutionary roots, a fact that may explain their complexity and provide tools for clinical practice. *American scientist*, 89(4):344–350, 2001.

Cromwell, H.C., *Neuroscience and Biobehavioral Reviews* 113 (2020) 204-226