

Integers of Stress

Pillar: Positive Social Environments

Division: II- III

Grade Level: 6-7

Core Curriculum Connections: Mathematics

I. Rationale:

This lesson will serve as an introduction to integers while helping students understand the impact of stress. Students will learn the difference between positive stress and negative stress, actively analyse the triggers and effects of stress, and then explore effective ways of dealing with stress in their own lives. To demonstrate their understanding of integers both concretely and symbolically, students will assign positive and negative integer values to the corresponding positive and negative effects of stress. Rating scales, number lines, and bar graphs are used to help students make connections between stress and integers through reasoning and visualization. By the end of the lesson, students will understand that stress is a natural response in the body and that their attitude towards stress determines whether its effects are positive or negative.

II. Positive Social Environment Focus:

The students will:

- ✓ understand that stress is normal part of life and is experienced by everyone.
- ✓ recognize the signs and symptoms of stress.
- ✓ understand the importance of a balanced lifestyle and a positive attitude in dealing with stress effectively.
- ✓ articulate the difference between the positive and negative effects of stress.
- ✓ identify personal triggers of stress and explore personal stress management strategies.

III. Curriculum Outcomes: Grade 6 Math

Strand: Number

General Outcome: Develop Number Sense

Specific Outcome:

7. Demonstrate an understanding of integers, concretely, pictorially and symbolically. [C, CN, R, V]

Strand: Statistics and Probability

Collect, display and analyze data to solve problems.

Specific Outcomes:

1. Create, label and interpret line graphs to draw conclusions.

[C, CN, PS, R, V]

2. Select, justify and use appropriate methods of collecting data, including:

- questionnaires
- experiments
- databases
- electronic media.

[C, CN, PS, R, T] [ICT: C4–2.2, C6–2.2, C7–2.1, P2–2.1, P2–2.2]

3. Graph collected data, and analyze the graph to solve problems.

[C, CN, PS, R, T]

[ICT: C6–2.5, C7–2.1, P2–2.1, P2–2.2]

IV. Materials:

- a bag full of checkers or poker chips (equal amounts of red and black, and 5 white)
- Post-it notes (5 yellow and 5 pink for every group of four)
- markers - one light and one dark one per group of 4
- Flip chart paper and felt pens
- Graph paper
- Stress symptom signs that are given to students who receive a white chip. (neutral - sweaty palms, heart racing, anxious, short of breath, etc.)
- props to correspond with a way to cope with the stress: CD, book, blanket, phone, running shoes, water bottle, yoga mat, stress ball, funny movie etc.)
- handout: "Ranking Stress"

Supplementary Resources:

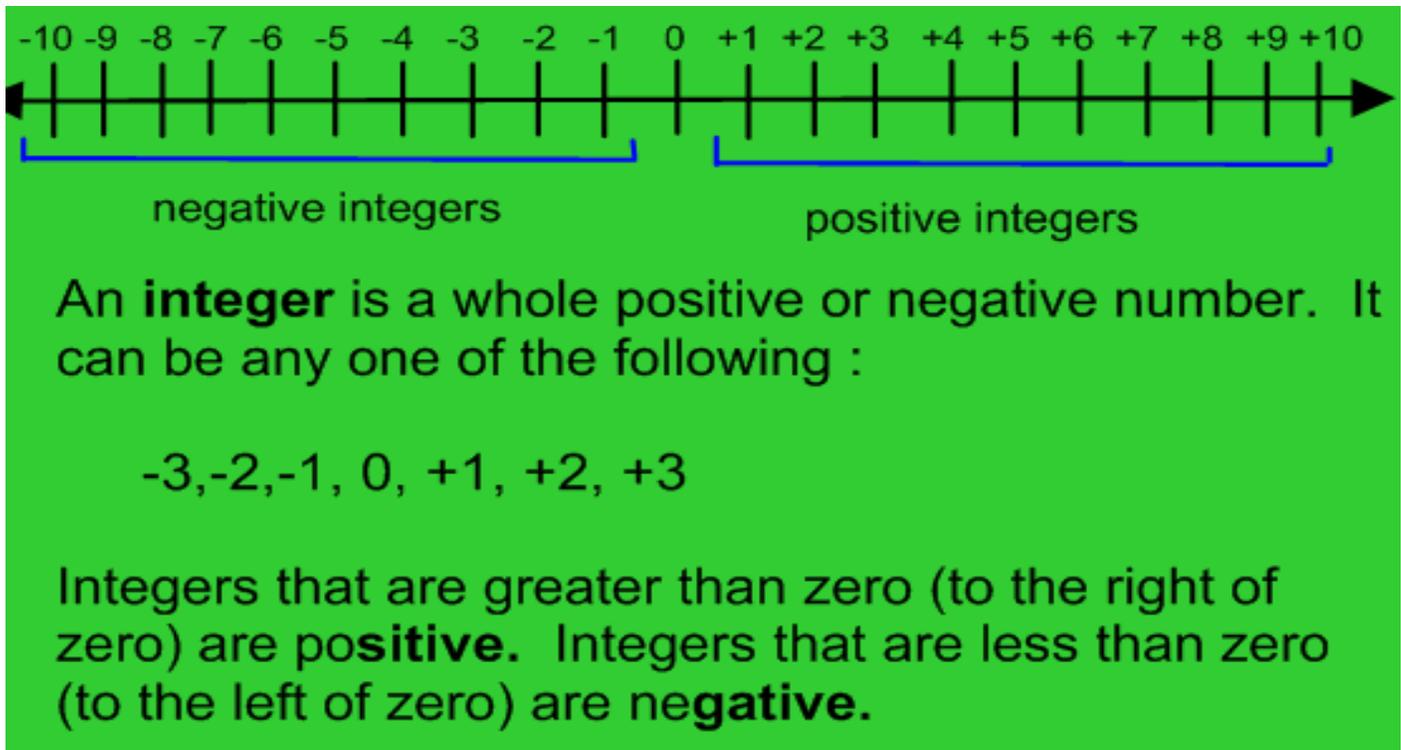
- Any grade-appropriate math text that includes a chapter on integers
- Teacher-generated list of positive and negative effects of stress (about 10 items) - sample included
- [Introduction to Integers](#) - Smart Board Lesson
- [Introducing Integers](#) - Smart Board Lesson
- handout: "Teen Stress Busters" (optional)

V. Procedure:

Introduction:

1. Have students draw one poker chip from a bag full of red, black, and white poker chips. Include equal amounts of red and black chips and only 5 white chips.
2. Ask all students who received a white chip, to come up to the front of the room. Then, allow students who are still sitting to trade chips if they want. Be sure to reinforce that the choice is up to them though.
3. Hand out a minor physical symptom of stress each student with a white chip who came to the front of the room. Have them conceal this sign from each other and the rest of the class as you pass out one of these items to each of them: CD, book, blanket, phone, running shoes, water bottle, yoga mat, stress ball, funny movie. A sign with one symptom to each student: racing heart, sweaty, dry mouth, anxious, uncomfortable, and one prop that could be used to cope with the stress. Have the student volunteers line up at the front of the room and only hold up their prop for the rest of the group to see. Once all students have shown their items, discuss with the class.
 - *What do these items have in common?* (used to help people relax)
 - *Why might these people need these items?* (Feeling stressed) - have them now hold up their signs so that their sign is now visible to the class.
 - *Now discuss how their item could help them manage their stress symptom.*
 - *What are some other things that people can do to deal with stress?*
 - *What is stress?* (Normal physiological response of the body to situations or stimulus which are perceived as 'dangerous' to the body.)

2. Discuss and define integers. The following information can be used to introduce the concept:



Ask students to continue the number sequence in both a positive and negative direction.

3. Pass out the handout, "**Rank Your Stresses**". Remind students that stress is normal and an inevitable part of life, so all experiences in life carry some amount of stress. Have students assign a number value to each relationship, experience, and/or activity listed. Rate each activity, relationship, and/or experience according to the impact it has on them - or what they perceive to be the most stressful and least stressful. The most positive and least stressful will be assigned an integer value of +5 and the most stressful and negative will be assigned a -5.

4. Have students share their most stressful (negative) and least stressful (positive) item. Compare stresses focussing on the fact that stress is very individual and different people have different triggers of stress. Choose one example such as grades and discuss how school can be a very motivating and validating for some and very frustrating for others. What is considered scary to one person may be exciting for another person (skydiving). Stress is really about perception.

5. On a piece of chart paper, brainstorm a list of possible effects of stress that may last longer than the temporary signals of stress such as a racing heart, dry mouth, feeling of uneasiness or discomfort, without judging whether they are positive or negative. For instance: worry, anxiety, excitement, anger, irritability, excitement, euphoria, achievement.

6. Have students get together in groups of 4. Have students categorize all the positive effects of stress (Eustress) and the negative effects of stress (Distress) that were brainstormed as a class, adding additional ones if desired. Write each positive effect on a pink post it note and each negative effect on a yellow post it note. Remind the students that for most people stress begins the same way. Most people experience very similar initial reactions to stress, such as racing heart, sweaty palms, dry mouth, rapid breathing, etc. so we can assign these early symptoms a neutral value (zero). Our body 'reacts' this way to warn us of a perceived danger or threat and alert us to take action. It is our chosen 'response' to the stress that determines whether the long

term effect will be a positive or a negative one. So even though stress begins that same way, it is how we deal with it that determines whether we use it to our advantage or suffer more harmful long term consequences.

7. To help students visualize the concept of integers, post a large number line at the front of the room or bring up on the smart board.



8. Ask students to reproduce this line on a sheet of graph paper. Explain that they will be required to rate positive and negative effects of stress listed below according to the values on the number line. The lower the value, the worse the effect; the more positive the effect, the higher the value. Assign integer values to each effect of stress on the list. Remind students that -5 would be the worst effect of pro-longed stress and a +5 would be the best effect of stress.

<i>Positive Effects (Eustress)</i>	<i>Negative Effects (Distress)</i>
<ul style="list-style-type: none"> • Productivity/Performance 	<ul style="list-style-type: none"> • Fear
<ul style="list-style-type: none"> • Excitement 	<ul style="list-style-type: none"> • fatigue
<ul style="list-style-type: none"> • Focus (improved mental clarity and concentration needed to initiate change) 	<ul style="list-style-type: none"> • irritability/anger
<ul style="list-style-type: none"> • Motivation to achieve a goal, make a change, accomplish a task, meet a challenge, activate creativity in the problem solving process 	<ul style="list-style-type: none"> • physical illness (headaches, ulcers etc.)
<ul style="list-style-type: none"> • A boost in immune function 	<ul style="list-style-type: none"> • mental illness (depression/anxiety)

9. Once they have finished making their number line, have them stick their post-it notes under each number that denotes the value the integer they assigned to each effect of stress. Discuss and compare class results.

10. Now, using their number lines, ask students create a line graph to show their results on graph paper. Use Student Handout I as an example. Ask students to create their own graphs based on their number lines. Collect the graphs and grade them for accuracy.

11. As a culminating activity, discuss the significance of the red and black poker chips that were handed out the beginning of the class. Each chip represents either a positive effect or a negative effect of stress. The black chips are negative effects and the red chips are positive effects. Emphasize that the effects of stress are not random by reminding them they were given a choice whether they kept the color chose or not (granted, they weren't aware of what the colors represented). Stress effects everyone in different ways. The one thing we all have control over is our attitudes and our reactions. Share this quote with the students:

"Adopting the right attitude can convert a negative stress into a positive one" -Hans Selye

VI. Extensions and Variations:

1. As an extension activity, students will investigate the top causes of teen stress at different grade levels to and analyse the differences. In groups of two, students select, justify and use appropriate methods of collecting data, including:

- questionnaires
- experiments
- databases
- electronic media.

Grade level expectations require that students complete the following steps:

2. Have students refer back to their ranking sheet at the beginning of the class. Use this sheet to examine the sources of their stress to determine the area of their lives that cause them the most stress and the least amount of stress. Compile data from the class to create a line graph that ranks the top five causes of stress in the class. Go through each stressors and tally the number of students that had it listed in their top five.

3. Have students witness the power of positive thinking by viewing these videos:

[Water Crystals Experiment](#)

[Rice Experiment](#)

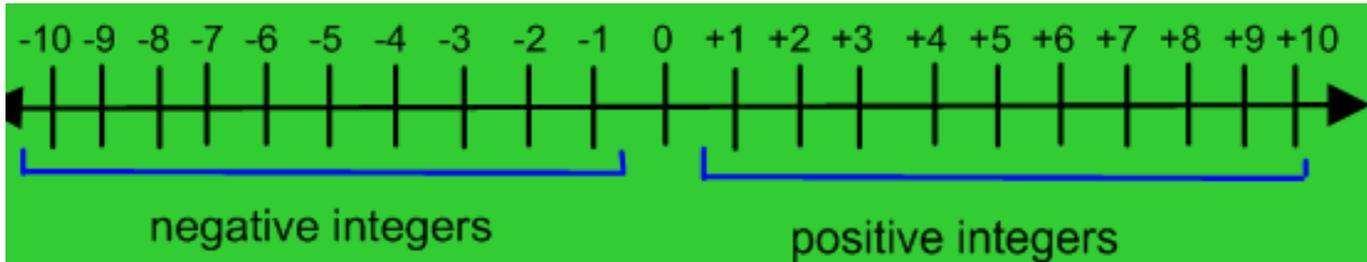
VII. Assesement:

- Number lines, bar graphs, and line graphs.

Ranking Stresses

Life is full of stress. Some good, some bad. Assess different areas of your life to determine which experiences, activities, and relationships are the source of the most stress for you. Assign either a negative or positive number value between -5 and +5 to each item listed. The most stressful and negative one receiving a -5 and the most positive and least stressful being assigned a value of +5.

- ___ Try outs
- ___ Friendships
- ___ Boy/girl relationships
- ___ Grades/homework/tests
- ___ Busy schedule
- ___ Family responsibilities (chores etc.)
- ___ Parental expectations
- ___ Sibling relationships
- ___ Lack of sleep
- ___ Physical changes
- ___ Being sick



An **integer** is a whole positive or negative number. It can be any one of the following :

-3,-2,-1, 0, +1, +2, +3

Integers that are greater than zero (to the right of zero) are **positive**. Integers that are less than zero (to the left of zero) are **negative**.

Teen Stress Busters

Lifelong Mental Health Management: Adolescence

www.lifelongmentalhealth.com

It's not going away – let's learn to deal with it

No matter how much we try to avoid it, stress is always with us. It's an inevitable part of life. And as stress is often linked with change, teenagers should be especially prepared to deal with its causes and symptoms. The good news is that there are lots of things that can be done to reduce the impact of stress.

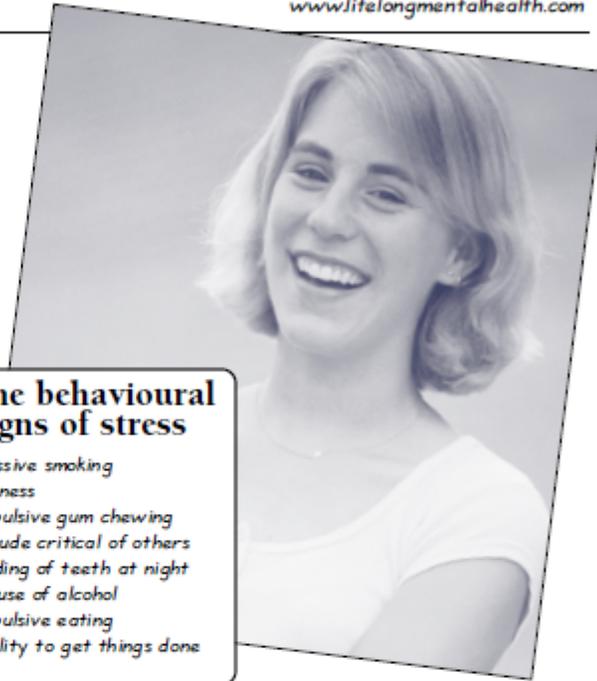
Prevention is the easiest – either by learning what makes us stressed and avoiding the situation, or by preparing our bodies to deal with stress better. A healthy body and a balanced lifestyle also allow us to recover from stress much faster.

Also, the ability to recognize the signs of stress allows us to take action to relieve stress, eg. go for a bike ride.



Some behavioural signs of stress

- ◆ excessive smoking
- ◆ bossiness
- ◆ compulsive gum chewing
- ◆ attitude critical of others
- ◆ grinding of teeth at night
- ◆ overuse of alcohol
- ◆ compulsive eating
- ◆ inability to get things done



Eight ways to reduce the impact of stress in your life

1. Watch what you eat and drink

- ◆ Reduce caffeine, salt, saturated fats and refined carbohydrates.
- ◆ Eat foods high in fibre that are rich in vitamins, especially Vitamin B.
- ◆ Drink five to six glasses of water a day.

2. Get out and exercise

- ◆ Stretching can reduce headaches and back pain.
- ◆ Regular exercise can improve mood and increase tolerance to pain.

3. Relax and have fun

- ◆ Humour helps you to forget your worries

4. Pursue a balanced lifestyle and realistic expectations

- ◆ Focus on what is important, not necessarily on what is considered urgent.
- ◆ Remember – enjoyment in one part of your

life (such as sports) can help offset stress in another (such as academics)

5. Keep an eye out for stress

- ◆ Be aware of what makes your life more stressful
- ◆ Make a note of how you react to stressful situations

6. Find a support network

- ◆ Friends and family can offer support in difficult times. (Talking it out can help.)

7. Stay positive and realistic

- ◆ Stress is inevitable and a normal part of life.
- ◆ Remember that a positive attitude can help reduce the effect of stress

8. Attend to your spiritual health

- ◆ Having a sense of connection and purpose makes life much easier

WARNING SIGNALS

- ◆ dizziness
- ◆ ringing in the ears
- ◆ back pain
- ◆ tired neck, shoulders
- ◆ racing heart
- ◆ sleep difficulties
- ◆ indigestion
- ◆ tiredness
- ◆ stomach aches
- ◆ sweaty palms
- ◆ restlessness
- ◆ headaches

