




Assessing Behaviors Using Rational Numbers

Contributors

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Objective

This activity helps students think about appropriate behavior while they learn about rational numbers. Specifically, the students' task is to assess behaviors that they see and experience in the school environment. Students will identify, define, compare and order behaviors that are both positive and negative. The activity uses number lines to help draw conclusions, reason and visualize concepts. The visuals created in this lesson can be used to prompt discussion about appropriate behavior. It is a good activity to do before students give input on school or classroom rules.

 **Time** one 60-minute class

Materials

- Post-it Notes (15 blue and 15 yellow for every group of four)
- Flip chart paper and felt pens
- Graph paper

Getting Started

Knowledge Now

Review the integer concept that students learned in Grade 7. Review the idea of positive and negative numbers in relation to behaviors. In this lesson, positive behaviors and negative behaviors will be expressed using a number line. Positive behaviors will be expressed in numbers greater than 0 and negative behaviors in numbers less than 0.

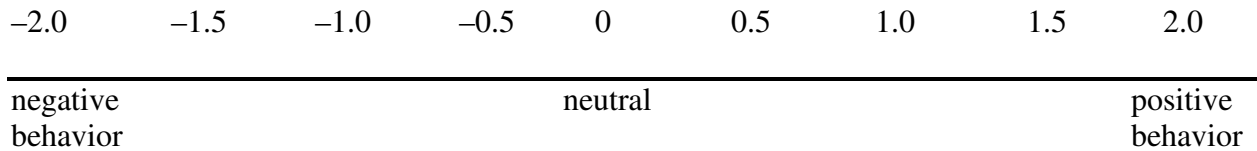
Engaging Interest

Ask students to brainstorm a list of all the behaviors they can think of that occur in school. Write the behaviors on the board without judging whether they are positive or negative.

Learning Activities

Organize the class into groups of four. Ask students to create two tables. Title one table "Positive Behaviors" and the other "Negative Behaviors." Ask students to list the behaviors in a column on the appropriate chart. Or write the positive behaviors on yellow Post-it Notes and the negative behaviors on blue Post-it Notes.

To help students visualize the concept of rational numbers, post a large number line at the front of the room. It should look like this:



Ask students to reproduce this line on a sheet of graph paper.

Explain that they will be required to rate behaviors according to the values on the number line. The lower the value, the worse the behavior; the more positive the behavior, the higher the value. Assign rational values to each behavior on the list. Remind students that -2.0 would be the worst behavior and $+2.0$ the best.

Ask students to graph their results on graph paper using the number line they created earlier. Use Student Handout I as a sample. Ask students to create their own graphs using behaviors they identified. Collect the graphs and grade them for accuracy.

Assessment/Analysis

Discuss the criteria students used to assign values to the behaviors.

Discuss which behaviors are appropriate for the school environment. These should be the positives (encourage students to make this connection).

Discuss the question, What do we need to do to make sure that everyone feels safe in the classroom and school?

If time permits, engage students in a discussion about behaviors in a number of different contexts such as church, hockey game, a movie or a family outing. Generate a discussion about appropriate behavior in each venue. What behaviors are respectful in all circumstances?

Application

- Use the student-generated lists of behaviors to help students develop a set of school or classroom conduct guidelines. The number line will help students differentiate between appropriate and inappropriate behaviors.
- Create a display on a trifold or bulletin board. Use line and bar graphs to show appropriate and inappropriate behaviors. Include thought-provoking questions such as “Why should you not kick someone when you have a disagreement?” or “What effect does smiling have?”

Math 8 Learner Outcomes

Number Concepts

- Use numbers to describe quantities.
- Represent numbers in multiple ways.
- Define, compare and order any rational numbers (reasoning, technology and visualization).

Safe and Caring Topics and Concepts

Living Respectfully

Establishing Ground Rules for School and Classroom Behavior

- Exploring what it means to be emotionally safe in the classroom

Respecting Diversity and Preventing Prejudice

Respecting Different Points of View Builds Community and Helps to Prevent or Resolve Conflict

Resolving Conflict Peacefully

Assessing Risk and Avoiding Violence

- Identifying conditions that increase the potential for violence
- Assessing the risk of violence in a variety of situations

Teaching Strategies

	Cooperative Learning	Inquiry Learning	Direct Instruction
Go to www.sacsc.ca for strategy descriptions	<ul style="list-style-type: none"> • Cognitive Coaching/ Metacognition • Problem Solving 		

Generalization and Transfer	Peer Teaching	Empathy/Affective Education	General Teaching Activities/Ideas
			<ul style="list-style-type: none"> • Creating Posters • News Centres • Interactive Bulletin Boards • Brainstorming

Supplementary Resources

- Any grade-appropriate math text that includes a chapter on rational numbers
- Teacher-generated list of positive and negative social behaviors (about 10 items)

Bar Graphing

Various behaviors are identified at the bottom of this graph. Rate each behavior (+2.0 being the most positive and -2.0 being the most negative).



Color all positive bars with a bright color (yellow, orange or red) and the negative bars with a dark color (dark blue, grey or black).