Ahimsa Center- K-12 Teacher Institute Lesson Plan

<table>
<thead>
<tr>
<th>Title of Lesson:</th>
<th>Integrating Gandhian Principles of Communal Unity in Mathematics</th>
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<tr>
<td>Lesson By:</td>
<td>Kathleen Brown, Sulphur Springs School District, Mitchell Elementary School, Santa Clarita, CA</td>
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<td>Grade Level/ Subject Areas:</td>
<td>Class Size:</td>
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<tr>
<td>Teacher inservice, grades 4 – 6</td>
<td>teacher inservice – size not limited</td>
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<tr>
<td>Time/ Duration of Lesson:</td>
<td>3 hour inservice</td>
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<th>Objectives of Lesson:</th>
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<td>• To inform teachers about materials and instructional ideas that support mastery of number sense math standards; specific instructional materials include <em>If the World Were a Village</em> and <em>Material World</em>.</td>
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<td>• To support teachers’ instruction of place value, ratios, proportions and percentages and build on a Gandhian view communal unity by using meaningful, real-life data.</td>
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<td>• Data presented will provide the impetus for both the teachers and students they teach to consider choices, even small ones, which contribute to diminishing the gap in human inequalities.</td>
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<th>Lesson Abstract:</th>
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<td>Ratios expressed in the book, <em>If the World Were a Village</em>, and data and photographs from <em>Material World</em>, help teachers and students understand and value the diversity of the global world. This data provides teachers in grades 4 -6 with instructional material for key math standards. Additionally, the content of the books and the photographs stimulate a discussion of the Gandhian principle of communal unity and an awareness of socioeconomic differences that separate the world’s people in both body and spirit.</td>
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<th>Lesson Content:</th>
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<td>A general understanding of Gandhi and the Gandhian principles related to these lessons starts with displaying a timeline of the important dates in the life of Mohandas Gandhi (included in hard copy of this lesson) or go to <a href="http://www.mkgandhi.org/chronosketch.htm">www.mkgandhi.org/chronosketch.htm</a>.</td>
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Throughout his life, Gandhi sought to connect spiritually with those of different religions and cultures. His approach was always one of respect for those differences. When he traveled to London, England to study law, Gandhi carefully considered the clothing he wore and the food he would eat. He dressed in a manner he felt was respectful of the current norms. But, having promised his mother to not eat meat, he sought out restaurants that would prepare vegetarian food and also prepared simple vegetarian meals in his own apartment. Even in this earlier part of his life, he was being true to a developing sense of communal unity while maintaining his own identity.

When Gandhi left for South Africa by train, he continued to dress like a barrister and sat in a first class compartment reading a religious text; he was on a continual personal quest to be educated about all religions. He was thrown off the train when he refused to move to third class. Sitting in humiliation at the train station, he became deeply aware of prejudice and discrimination. This was
one of the early but many formative events in his life during which he contemplated how others used the differences in fellow human beings to create such vast appalling divisions.

Gandhi continued to develop and define his idea of the importance of communal unity. In writing about the Indians in South Africa, and in Transvaal in particular, he implored Indians to “put hands in their pockets for the common good” and he wrote that “no race or community has ever achieved anything without the communal spirit.”

Numerous historians have written about Gandhi’s moral vision of human life and about the significance of his ideas in our modern world. Lamont Hempel and Bhikhu Parekh are two of writers. Hempel wrote about Gandhi’s goal of ending the exploitation of the weak and afflicted. “Ending this exploitation involves not only a renunciation of greed and coercion, but also the creation of an economy that ceases, in Gandhi’s words, ‘to multiply wants’. The socially engineered creation of needs and desires for material things was perhaps the most insidious form of exploitation in Gandhi’s eyes.” Parekh spoke about Gandhi’s moral vision by explaining that the “Richness of individuals and society was to be judged by what they were and not what they had, by their virtues such as self-discipline, sense of dignity and pride, compassion concern for others…Accumulation of material goods, endless multiplication of wants, and constant titillation of increasingly jaded appetites not only did not raise human beings morally but invariably corrupted them…” In our modern world, where concepts such as “he who dies with the most toys wins” is a well-understood and often-sighted bumper sticker, and where even the most basic of human needs are not met for large populations of people, Gandhi’s ideas are indeed pertinent.

David Smith, author of If the World Were a Village, establishes a village of 100 people and displays the differences in these villagers’ religion, nationality, education, economic status and lifestyle. Ratios are written based on 100 as the whole and this helps the reader construct an appreciation and potentially value the differences. For example, in this hypothetical village, 32 people are Christian, 20 are Muslim, 13 are Hindus, 15 are non-religious (list continues); to appreciate diversity of languages, in this village 22 speak a Chinese dialect, 9 speak English, 9 speak Hindi, 7 speak Spanish (list continues). Students exposed to concepts such as these might better recognize that they have similarities rather than differences with many in a global world. Those that recognize the differences may learn to value the diversity rather than overlook it or develop bigotry.

In this same village, if all the money in the village were divided equally, each person would have about $5500 per year. But in the global village… the richest 20 people have more than $9000 per year and the poorest 20 people each have less than $1 a day. A further example from the text that points out the disparity in economic stability and possessions is in this village, 76 people have electricity but 24 do not and most of the 76 only use the electricity for light at night, not for TVs, computers, radios or other entertainment technology. Gandhi wrote about economic equality and said that the lack of equality was a form of non-violence. He wrote that there needs to be a “leveling down of the few rich in whose hands is concentrated the bulk of the nation’s wealth on the one hand, and leveling up of the semi-starved naked millions on the other. A non-violent system of government is clearly an impossibility so long as the wide gulf between the rich and the hungry millions persists…” Additional resources that can assist students in recognizing the disparity of economic equality in
our global world are The Material World posters by Peter Menzel. His subject is 12 families from different countries, including the United States, India, China and Japan. These families are photographed outside their homes with all of their material possessions. These photographs provide a very strong stimulus for discussion about similarities and differences on many levels. In analyzing the posters, students can note accumulations in material possessions that are not necessary basic life but rather are luxury items, such as 4 television sets and clothing stacked in huge piles. These material accumulations can be compared to photographs of families with 2 or 3 crude pots, no cooking appliances, floor mats for beds, and one small pile of clothing that is all that is worn by 7 family members. Additionally, the posters include statistical data about the average family in that country. Numerical comparisons can be made in a variety of ways that address the math standards. For example, in the United States, 78% live in urban areas, while in Mali, 26% live in urban areas. Adult illiteracy in the United States is 3% and in Mali it is 64%. Using the photographs and statistical data, students can quite readily come to at least a surface recognition of the disparity in economic equality in our global world. Gandhi cared that people would recognize and then act about changing to adjust for this disparity. He wrote: “It is a trite saying that one half of the world knows not how the other lives. Who can say what sores might be healed, what hurts solved, were the doings of each half of the world’s inhabitants understood and appreciated by the other?”

Beginning in third and fourth grade, students are taught that a fraction is a part of a whole. In fifth grade, they are taught that the part can also be represented as a percentage by dividing the denominator into the numerator. Then in sixth grade, students develop stronger number sense and learn about ratios which compare one quantity of one item to a different quantity of another item. Further, sixth graders learn how to interpret ratios in different contexts. The data presented in If the World Were a Village can be shown as fractions, then percentages, and then on a more advanced level, can be used in different ratios comparing quantities such as the number of people per 100 who do not have access to adequate sanitation - 40 people – with the number of people who earn less than a $1 a day – 20 people. Creating these different ratios supports both math number sense and a deeper understanding of global family.

Notes on Lesson Content

1) Indian Opinion, January 21, 1904
2) Gandhi’s Significance Today, Lamont C Hempel
3) “Gandhi on Poverty Eradication and People’s Empowerment”, address by B. Parekh
4) If the World Were a Village, David Smith
5) Constructive Programme, MK Gandhi
6) Indian Opinion, June 2, 1906

California State Content Standards: Grade Six
Math

- Number Sense (NS) 1.2 Interpret and use ratios in different contexts…
- NS 1.4 Calculate given percentages of quantities…
- Mathematical Reasoning (MR) 1.2 Analyze problems by identifying relationships…and missing information…and observing patterns.
- MR 2.4 Use a variety of methods…including symbols, charts, graphs, tables…to explain mathematical reasoning.
### History/ Social Science

- Analysis Skills 1: Students frame questions that can be answered by historical study and research.

### Guiding Question:

- Can instruction of Gandhian principles be successfully infused into curriculum other than social studies/history and literature studies?

### Materials Needed:

- California Math Content Standards, grades 3 – 6
- *If the World Were a Village*, by David J. Smith (one book per teacher provided by the district following registration for this teacher inservice)
- computer/projector/screen
- *Material World*, by Peter Menzel, posters and optional instructional text

### Lesson Context:

At this teacher inservice, grade 4 – 6, teachers will be encouraged to infuse “character education” into curricular areas where it has not typically been presented, specifically math. The district has been using the Character Counts program, and the six pillars of character can be referenced, but the specific goal of this inservice is to provide teachers with instructional ideas from the book, *If the World Were a Village*, from the posters and book, *Material World*, and from Gandhi’s teachings; the instructional materials have a correlation with Gandhian principles of communal unity and economic equality. Teachers should be able to use the additional material as data to construct math problems while continuing to use the McGraw-Hill math series for instruction on computation skills. This instruction can enhance the current character and diversity education program by expanding students’ awareness of the global world. The intent is that teachers in attendance would take these ideas for use in their own classroom, present them to other teachers in formal workshops, or present the ideas through other teacher interaction such as staff meetings. **The digital story, Making Math Matter, will be used immediately after introductions and setting the agenda for the inservice; its use is as a “hook” into the goal of the inservice.**

### Teaching Activities:

Introductions and agenda for inservice.

1) Digital story, “Making Math Matter”
2) Gandhi timeline on transparency
3) Short presentation on key events in Gandhi’s life that channeled to his principle of communal unity and value on economic equality
4) Transparency or power point slides of significant quotes on communal unity and economic equality
5) Short overview of *If the World Were a Village* (read selected pages)
6) Teachers partner with another and walk around the room studying Material World posters and taking notes on any aspect they might use for instruction in their classroom
7) Teachers work in small group to develop one short instructional plan that includes reference to a chapter of study in the math text. The lesson will vary somewhat based on the particular standards for the grade level, but will most likely address number sense standards.
of fractions, percentages and/or ratios. Teachers should use data from If the World Were a Village as part of their guided instruction and also present some of the data for students to create their own problems. More advanced 4th or 5th graders, or any 6th graders could be asked to select data from the Material World posters and write their own ratio and percentages to create additional ways to consider the families and their belongings.

8) Teachers share whole group.

9) Evaluation

**Assessment/ Evaluation:**
Per district policy for inservices, teachers will be asked to evaluate the inservice using previously established evaluation forms.

The district will purchase a copy of *If the World Were a Village* for all teachers attending the workshop. Teachers will report back to the presenter a month after the inservice. They will be asked to share a critique of the instruction they implemented.

**Extension Activities/ Enrichment**
Students photograph four rooms in their home, or two rooms in their apartment, that contain many of their family’s material possessions. Suggest that students photograph the student’s bedroom and the family room where the TV is kept. Students post the photographs and write a detailed and complete list of every possession in view, including those possessions not clearly visible but known to be in that room, such as something behind a couch or in a cabinet. Students can refer to the Material World posters as a model.

**Bibliography:**

Gandhi, MK. *The Constructive Programme.*


Parekh, Bhikuh. “Gandhi on Poverty Eradication and People’s Empowerment.” satyagrahaconference.com/bhikhuparekh.pdf
