

*Thank you*

FOR YOUR  
INTEREST IN  
CORWIN

Please enjoy this complimentary excerpt from Engaging in Culturally Relevant Math Tasks.

[LEARN MORE](#) about this title!

## RESPONDING WITH HOPE

The Hope Wheel (Figure 4.6) was created by Dr. Lou Matthews in 2019 with the intention of supporting educators and leaders with new ways of crafting lesson learning sessions to respond to racial and social injustice, as well as social crises. The Hope Wheel is composed of six social response verbs: *Love*, *Protest*, *Restore*, *Create*, *Inspire*, and *Invest*. The verbs were drawn from themes based on notions of empowerment and what makes a “strong Black community,” which includes ways to draw from and build on community wealth, community health and safety, community wisdom, community love, collective power, and justice (see Matthews, 2018).

In the same way that Bloom’s taxonomy has provided verbs that teachers can use in their tasks to prompt students to think at various levels, the Hope Wheel provides teachers with verbs that can be used to plan for CRMT experiences for their students.

The Hope Wheel helps us create what we see as “hope” standards—goals and objectives reimaged for justice and cultural inquiry. With these verb categories, we want teachers to extend the process of unpacking standards and using them to design task goals. Using this information, teachers can select, adapt, and modify standards and intentions as part of the creation process.

## ADAPTING CONTENT STANDARDS WITH HOPE VERBS

One approach is to select an existing content standard and then use the Hope Wheel to sharpen the focus and build out a context for relevance and agency (remember, standards are often vague in this regard). The following is an example of this approach in action, using a middle school statistics standard.

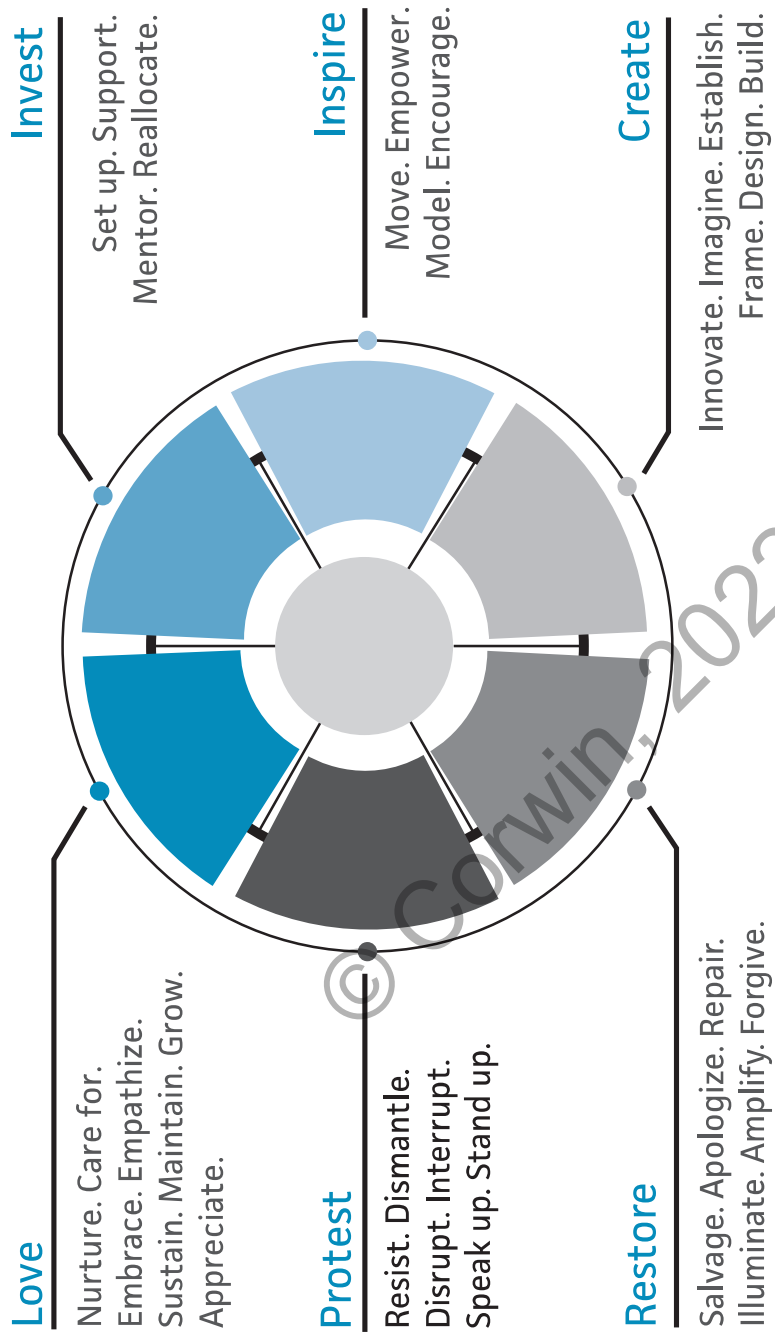
### *Massachusetts Curriculum Framework Standard*

*Statistics and Probability 8.SP.A. Investigate patterns of association in bivariate data. 1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.*

This standard requires students to solve problems using the statistical thinking process. So much of the statistical thinking process involves using data to make decisions about resources.

*Engaging in Culturally Relevant Math Tasks: Fostering Hope in the Middle and High School Classroom* by Lou Edward Matthews, Shelly M. Jones, and Yolanda A. Parker. Copyright © 2023 by Corwin Press, Inc. All rights reserved.

**FIGURE 4.6** • The Hope Wheel ([www.thehopewheel.com](http://www.thehopewheel.com))



Source: Created by Lou Matthews, 2020.



To view and download a full-color version of the Hope Wheel®, please visit [www.loumatthews.live/hopewheel](http://www.loumatthews.live/hopewheel).

But we can elevate this to the realm of culturally relevant teaching when we envision how students, in community, can be empowered to use mathematics as they stand up for the rights of people. Using the Hope Wheel, we can choose the Protest verb “Stand up” to sharpen this focus even further. See how we created a “hope” instructional objective by adapting the original:

*We will stand up for improved voter booth distribution in a local neighborhood of the students’ choice, create a scatter plot from the city’s latest report on voting booth distribution, and prepare a presentation. In their presentation, students will identify the variables and demonstrate an analysis of the graph’s content.*

As you can see, this example shows how cognitively demanding math tasks can be framed so that they ask students to interact with their community in a meaningful way and empower them to take action (Protest). Also note in the example how we reframe the conversation as “We will” to denote the solidarity of the teacher with students.

Let’s take a look at adapting another content standard:

CCSS.MATH.CONTENT.7.NS.A.1

*Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.*

The concept of rational numbers is one of the most challenging areas students must contend with throughout elementary, middle, and high school. Many students struggle to learn rules and algorithms for fraction operations such as finding common denominators when adding and subtracting. For this reason, applying and extending understandings of rational numbers are core topics of focus for seventh-grade students. Extending how students represent rational numbers and their operations and applying these concepts to the real world ensures they can make greater connections to their own experiences.

Looking back, recall our discussion of the Culturally Relevant Math Practices ([www.relevantmath.org](http://www.relevantmath.org)) in Chapter 2. The CRMPs called for *expanded understandings* where children “expand understandings of mathematical concepts, algorithms, histories and cultures, to pursue solutions that matter.” The phrase “solutions that matter” rings powerfully here. Hope Wheel verbs (and their synonyms) provide the means to stretch student experiences. One example of an instructional objective focused on rational numbers that meets our vision of

the Hope Wheel is found embedded in a lesson on the Citizen Math website:

*Adapted Standard/Instructional Objective:*

*Students order and subtract integers to explore major milestones in human history and debate whether humans are innovating faster than we can keep up with the consequences. (www.citizenmath.com/lessons/about-time)*

This is an excellent example of how a teacher might use a Hope Wheel verb to adapt a standard such as this Common Core Math standard. In this particular lesson, the verb “debate” can be thought of as synonymous with the Hope Wheel verb “Protest,” as it requires students to think critically and consider the implications of the pace of technological innovation as they look through history. Using positive and negative integers to represent key milestones, students can then be asked to present their findings on a vertical or horizontal number line diagram, as requested in the original standard. Expanding understandings and engaging human experience are two Culturally Relevant Mathematics Practices made possible with this focus.



**ASK**

Choose a content standard from your grade level or content area. Use a Protest verb to adapt it.

Using the hope verb “Inspire,” we can adapt this same Common Core math standard to provide opportunity for students to be empowered to use fraction operations to do something they all love to do—make music.

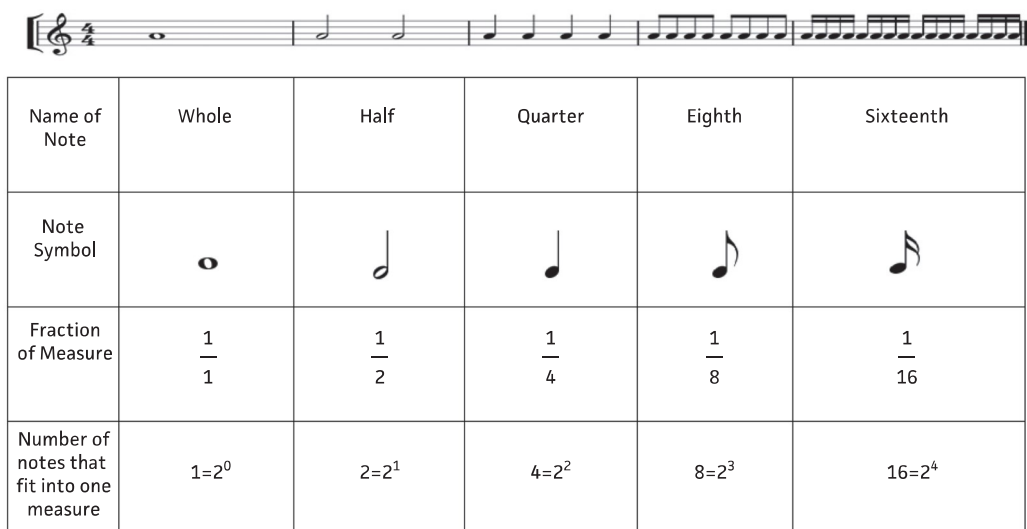
*Adapted Standard/Instructional Objective:*

*We will expand our understandings of multiplication and division of fraction operations as we explore the music that inspires our communities.*

With the instructional objective adapted from the standard, we see opportunities to create math experiences where students explore music of the community while connecting math concepts. Many students learn how to read sheet music starting around fourth grade and often don't recognize the extent of fraction operations in reading music (see Figure 4.7). This is a missed opportunity to connect math to something cherished in the “real world” of students' lives.

For example, a dotted half note ( $\text{♩}.$ ) is a half note plus half of a half note. You can use drawings to show  $\frac{1}{2}$  of  $\frac{1}{2}$  or you can use fraction multiplication to find  $\frac{1}{2}$  of  $\frac{1}{2}$  or half of any other note. In this scenario, students might be prompted to choose and examine popular community and cultural music. After learn-

**FIGURE 4.7** • The mathematics of musical notes



Source: Jones and Pearson (2013).

ing the notes, students can test their knowledge using fraction operations. Students will undoubtedly want to talk about songs they know and may even bring in sheet music of their favorite songs. They can learn about time signatures and discover that most popular songs are in 4/4 time, meaning there are four beats per measure (top number of the time signature) and the quarter note gets the beat (bottom number). Countless lessons on fractions can be created using music notation.

**IMAGINE**

Choose another standard and a different hope verb. Create an instructional objective using that verb.

### CREATING TASK GOALS FROM HOPE VERBS

Another effective way to use the Hope Wheel is to create or adapt tasks directly—that is, rather than starting with a content standard as the foundation, teachers can follow a process that starts with the Hope Wheel itself: (1) Choose a hope verb to set the intention of the task, (2) create a context that illuminates that verb, and (3) choose mathematics content to embed within this context. Note that aligning with a content standard is not always possible and may not always be a priority. We have seen teachers use the Hope Wheel in ways that envision math classroom environments beyond content. We love this!

Consider the following vignette.

*Engaging in Culturally Relevant Math Tasks: Fostering Hope in the Middle and High School Classroom* by Lou Edward Matthews, Shelly M. Jones, and Yolanda A. Parker. Copyright © 2023 by Corwin Press, Inc. All rights reserved.

## VIGNETTE 9: REMIXING THE MATHEMATICS CURRICULUM



Image source: iStock.com/FatCamera

When students came back to in-person learning after the pandemic subsided, they really needed time to talk to each other. It took some time for me to engage students in the mathematics. The beauty of the moment was that as students talked, I listened. I learned a lot about what they had gone through, including learning about some of the traumatic experiences they previously had learning mathematics. I immediately told them that we would not be using the assigned textbook but instead would do real-life math. From that moment, I had buy-in from most of my middle school mathematics class. I asked them about what was going on in their lives. I then had to learn how to use that information in planning my math lessons. I would take inventory of what everyone else was doing in the district. I would do this by looking at the content in the textbook and then “remixing it to make something new.” At times, I would allow my students to work with me to put together a lesson that they would find value in.

—Mr. E. Taylor

### TRY THIS!

1. Choose a hope verb.
2. Then, generate a relevant context.
3. Finally, choose math content and embed within the context.

Mr. Taylor went on to create a lesson rooted in the Create verb. He had students use their ingenuity to make an argument to a parent about purchasing one brand of sneakers over another brand. The idea was that although one brand of sneakers was more expensive—let’s say Yeezys versus Jordans because they manufacture fewer pairs of Yeezys—the Yeezy purchase would eventually yield a better investment. Students would need to make their argument by showing an understanding of using proportional relationships to solve a multistep percentage problem (CCSS.MATH.CONTENT.7.RP.A.3).

Another example of using the Hope Wheel is to engage students in a school or classroom community issue such as bullying. We might start with choosing a verb from the wheel (in this case, Restore) and creating a math task appropriate for your grade level. Consider the following objective:

Students will propose a statistical question they could ask about bullying. For example, if they are interested to know who the bullies are in their school they might ask the question, “Are the bullies in this school upper-class students?” They can collect data, choose and create an

### IMAGINE

Now you try it! Choose a hope verb. Choose a common occurrence in your school or community. Now choose a math task that can be embedded within this real-world context.

*Engaging in Culturally Relevant Math Tasks: Fostering Hope in the Middle and High School Classroom* by Lou Edward Matthews, Shelly M. Jones, and Yolanda A. Parker. Copyright © 2023 by Corwin Press, Inc. All rights reserved.

appropriate data display, and then analyze the data and report on it. For purposes of not calling out bullies by name, the data collected could be the numbers of bullies by grade level. The final step is to discuss ways of Restoring the harm done to classmates by bullies—not necessarily an endeavor in mathematics, but important, nonetheless.

---

*No curriculum, standards, or wording will lead to the automatic creation of culturally relevant teaching without powerful new thinking about the nature of mathematics, who it is for, and what it can be used for.*

---

No curriculum, standards, or wording will lead to the automatic creation of culturally relevant teaching without powerful new thinking about the nature of mathematics, who it is for, and what it can be used for. We believe that the Hope Wheel provides for such thinking. What should be taken from our use of the Hope Wheel and our deconstructing of content standards is that planning work for culturally relevant mathematics tasks begins with careful and deliberate attention.

© Corwin, 2022