



CURRICULUM SPOTLIGHTS Nº1

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INTEGRATED JEWISH EDUCATION AT THE TORONTO HESCHEL SCHOOL

GRADE
FOUR

Integrated learning describes a theory and process of cross-disciplinary thinking that gives students the skills they need for a complex world. It bridges academic disciplines and silos of knowledge. It develops flexible and critical thinking skills. Children understand their integrated Jewish-Canadian identity and their individuality within community. Thinking Jewish and Jewish thinking combine academic excellence with the wonders of an integrated mind, body, and spirit.

The Science of Sound and the Sound of Science

AN INTERDISCIPLINARY APPROACH IN GRADE 4

BY NECHAMA DROOKMAN AND SHACHAR LEVEN

“**T**ekkiah... Truah... Shvarim... Tekkkiah Gedolah...” Grade 4 students lie still, mindfully listening, as jarring blasts of a shofar echo off their classroom walls. How does the sound smell, feel, or taste? What colours does it bring to mind? While it’s not surprising that questions like these can ignite imaginative thinking in poetry class, they can also play a role in learning the science of sound.

Receiving the prestigious Princess of Asturias Award in Spain in 1989, the late Stephen Hawking, author of *A Brief History of Time*, pondered,

What can be done to harness interest, and give the public the scientific background it needs to make informed decisions on subjects like acid rain, the greenhouse effect, nuclear weapons, or genetic engineering?

He answered his own question by saying,

Clearly, the basis must be what is taught in schools. But science in schools is often presented in a dry and uninteresting manner. Children learn it by rote to pass examinations. But they don’t see its relevance to the world around them.¹

Relevance matters. In elementary school, teaching science as a certain approach to the physical world makes students associate it with terminology, formulae, and method. When teachers present science as a separate discipline, a branch of knowledge unto itself, students gain the narrow view that it is simply a matter of content. We choose to teach science differently.

Our Grade 4 students encounter “Sound” as their first unit of study when they arrive at school in September. The unit encompasses discipline-specific notions, such as decibels, sound waves, amplitude, and frequency, but also broadens from the scientific context to a multivalent narrative that includes a variety of classes and disciplines in tandem.

The concept of “sound” jumps from the science textbook into a language arts lesson. In the words *Tekkiah... Truah... Shvarim... Tekkkiah Gedolah*, students are reading transcriptions for how the shofar lets us transform sound into linguistic form. They recognize that sound is language, words that are spoken as well as written down. They realize that beautiful poems are born from blasts, blows, honks, and whistles; the low-pitched *Truah* evokes melancholy while the high-pitched shrill *Shvarim* inspires upbeat frenetic verses.

Language itself is sound. Sound patterns for words offer endless possibilities for meaning. The science of sound sneaks into poetry through onomatopoeia (glubba-glubba-glubbity-glubs), alliteration (woods...lovely, dark and deep), and rhyme (stars that over-sprinkle/...heavens seem to tinkle). Students learn to harness the musical, “sound-like” elements of language in order to understand and compose poetry.

The poetic device that delivers an author’s intended meaning and linguistic effect is the variation of sound. A student may hear, “The sky was blue and I was happy,” and imagine a smiling person under a blue sky. He/she may realize that the more evocative “a sapphire-streaked sky and a sunshiny smile” opens minds and hearts to a different intensity or more specific options. Sounds rouse feelings and paint vivid mental images.

In second-language learning, hearing and speaking the “sounds” of Hebrew help with discerning grammatical variances—יָלָדִים שְׂמָחִים שְׂרִים וְרוֹקְדִים לִידוֹת חֲכָמוֹת צוֹחָקוֹת וְרָצוֹת (*Yiladim smechim sharim u rockdim/Yeladot chachamot tzochakot u rat-zot*). Grade 4 students play strategic “sound-based” games to master Hebrew’s linguistic patterns. They use rhythm and rhyme, clapping a beat and chanting pairs of pronouns and verbs in order to internalize the conjugation pattern. They learn grammar by pairing sound with movement. Familiarity and fun with beats and sound paradigms bring Hebrew alive. A second-language learner can learn to conjugate verbs through rote memorization and repetitive writing, but it is a less than optimal mnemonic plan.

Ears are an obvious, but less than usual, focus for students' evolving experience of Jewish prayer and liturgy. During the weekly Kabbalat Shabbat service, where the prayer Mizmor LeDavid (Psalm 29) reveals King David's perception of the nature of God's voice, the children read that David describes God's voice as resonating in the water, in fire, and in the majestic (הדר). God's voice "shatters the Cedar trees...and shakes the wilderness." Using the science of pitch, amplitude, and timbre, students decode and differentiate one allegory from the next, visualizing and internalizing the metaphoric "sounds" of God. "What does the voice of God sound like to me?" students wonder. "What does the voice of God sound like to others?" Their complex understanding of sound lets them engage with the prayer personally and spiritually with God.

A culminating Social and Environmental Studies project requires students to explore a single source of sound, perhaps a soccer match, a lion's roar, or a baby's cries. Their task has four parts:

1. to explain the sound in the scientific language of decibels, frequency, and amplitude;
2. to identify emotions that it elicits in them;
3. to render or find images that mirror the emotion; and
4. to compose poems to convey these feelings. The project integrates learning from visual arts, language arts, and science for results that demonstrate an understanding of sound in its many dimensions.

To answer Stephen Hawking's concern, we teach Grade 4 science in an interdisciplinary manner. The *Oxford Dictionary* defines science as, "The intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment."² Our students engage in "intellectual and practical activity" that first notices, then examines sounds in all its forms, dimensions, behaviours, and attributes. Their "systematic study" covers the objective and the subjective; their senses, capabilities, emotions, and reflections. Their observations and experiments include language, arts, mathematics, prayer, song, and more. Our Grade 4 students will understand science as a wide open lens, through which they can view and consider the world at large.

1 Stephen Hawking, "Prince of Asturias Award for Concord 1989" (Speech), Princess of Asturias Awards, <http://www.fpa.es/en/princess-of-asturias-awards/laureates/1989-stephen-hawking.html?texto=discurso&especifica=0>

2 *English Oxford Living Dictionaries*, accessed July 12, 2018, <https://en.oxforddictionaries.com/definition/science>

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Past and Present at Home

THE GRADE 4 FAMILY HISTORY PROJECT

BY MALKA REGAN



In Grade 4, students are at a particular stage of childhood development and are figuring out their sense of place in their friendships and their communities. They question events and dilemmas in their network of personal relationships as well as those that are happening further afield. It's a prime moment for them to consider who they are in their family history, and the discoveries they make through the intergenerational lens of this project are impactful and enriching.

The Family History Project at Heschel integrates the Grade 4 theme, "We Tell Stories to Teach Values." When they listen to their relatives' life experiences, students become aware that their history is layered and that commonplace occurrences, decisions, and actions are significant and relevant. They see that thought and intention lay behind choices that were made, and that these decisions were sometimes made with generosity and devotion, sometimes through urgency, and sometimes by happenstance.

To begin, students identify a specific family member—of an older generation—whom they wish to interview. They write a letter to this relative, describe their research project,

and pose a few starter questions to give an idea of what they hope to learn in their research. In some cases, students already know details of the person's life and are interested to learn more. In other cases, they know very little.

The students prepare a list of open-ended questions that are meaningful to them and they take that list to the interview. This structure keeps the conversation rolling, although, of course, the student is free to investigate in new directions as additional information comes to light. As the children peer through this little window into their relative's life, the wider historical context of the time lived comes into focus and the questions flow.

The students also look for items, which we call "historical artifacts," from their relative's past: photos, old passports, letters, and work papers. Holding these pieces of history in their hands, the anecdotes and narratives become that more real. One parent mused how her daughter "came to understand a bit how stories become truth and truth becomes stories. The artifacts we uncovered from her great-grandparents' youth made her realize that the stories that she's heard are based on things that actually happened, and vice versa."

Children glimpse what is outside their personal experience and yet nonetheless belong to them.

In their role as historians, the students openly and unreservedly search for personal qualities and real-life experiences that they hadn't known were part of their relative's life or had the opportunity to ask about, and they harvest memories that prove inspiring, funny, tragic, and uplifting. The process enhances—or perhaps creates—intergenerational and intrafamilial relationships with real meaning. As much as understanding, the engagement evokes awe as their family's unique path comes into focus along with the wider historical backdrops of their heritage. One student wrote:

I researched my Great Bubbie. I learned that she had an amazing story of surviving in the Holocaust... Most people didn't even have a home or a family. If she could survive then with no home and no family, then we can (certainly) survive now [during the COVID-19] quarantine.

One student's interview with his grandfather revealed things that none of the family had known before. Yes, they knew he was an American soldier during World War II, but not that his commander was anti-Semitic and would send him out first to conduct reconnaissance in dangerous situations. At the grandfather's funeral a few years later, the attributes and stories gleaned through this Grade 4 project formed part of his eulogy.

Students found stories that were inspirational and motivational. One student learned her great-grandmother had had her own television show—a first for a woman at that time—and her sense of connection to a woman who broke barriers was very exciting. Another learned that her Saba was the chief engineer for the cranes used to build the CN Tower, and that he was one of the people to stand on its top. Yet another student wrote,

I learned that Mama was always caring and a great cook. I learned that in that time period, although Mama had a job, it was not common for women to work outside of their homes. Through this project I learned how proud I am to be named after such an inspirational woman.

Learning more about their own relatives enables children to see the interconnectedness of life, its ups and its downs, as this student wrote:

My great-grandfather, whom I was named after, was really interested in horseback riding and he loved all animals. My Bubbie, who I interviewed about my great-grandfather, had so many stories to tell me, and I found out that we had a lot in common. It was nice to hear her

stories, but it made her sad to think of him. But sad in a good way, because she was reminded of him by telling me her stories.

When a nine-year-old receives a story directly from an older relative, the child becomes an owner of happenstance, perseverance, and resilience in action, all of which are instrumental to the development of the child's social and emotional well-being. In 2001, psychologists Dr. Marshall Duke and Dr. Robyn Fivush researched intergenerational learning and found, "The more children knew about their family's history, the stronger their sense of control over their lives, the higher their self-esteem and the more successfully they believed their families functioned."¹

In the Grade 4 Family History Project, students glimpse circumstances, places, and times that are outside their personal experiences yet nonetheless belong to them. Their curiosity is opened up by a sense of right, and they begin to use the past to inform their present. Knowledge of family history reveals the marathon that history is. It offers up the good and the bad, the joy and the sorrow, and Grade 4 is just the right time to learn all that family stories can teach.

¹ Bruce Felter, "The Stories That Bind Us," *The New York Times*, March 15, 2013, para. 18, <https://www.nytimes.com/2013/03/17/fashion/the-family-stories-that-bind-us-this-life.html>

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Behind the Scenes

DRAMA TECHNIQUES FOR SECOND LANGUAGE LEARNING

BY ORLY BOROVICH &
NECHAMA DROOKMAN

Dramatic arts incorporates and emphasizes the very techniques that children use naturally to learn languages: gesture, improvisation, experimentation with voice and sound, repetition, iterative modification, and, of course, dialogue and conversation. Early childhood language development typically requires around five years, during which time children absorb and mirror their caregivers' communication skills to get their basic needs met. They communicate pain, hunger, or discomfort by crying or writhing their bodies; they express pleasure by giggling, smiling, and laughing. Later on, children experiment with newfound vocal chords to create combinations of real and nonsense words. Gradually, they begin producing coherent words and phrases, and eventually full sentences.

In second language learning, it is impossible to relive those original language development stages. Second language acquisition requires an accelerated process, not unlike a theatrical production. At the theatre, intentionally devised scripts, blocking, and acting techniques are employed to engage the audience in a range of human experiences in a concentrated amount of time. Theatre and drama mimic and intensify normal human speech and action. Similarly, effective second language instruction and learning mimics natural language processing in an intensified, intentional way.

Traditionally, second language teaching overly relies on reading, writing, and rote memorization. In fact, language learning is a full-body experience. Professors Giovanni Buccino and Marco Mezzadri, in their work on *embodied language processing*, posit that language acquisition is more effective when both cognitive and sensori-motor brain functions are at play.¹ In our Hebrew language lessons, students combine drama techniques for movement with vocalization in order to internalize new vocabulary and sentence structures. Rather than memorizing lists of vocabulary, students link words and phrases to meaning by reciting and enacting carefully scripted movement sequences called *sidrat tenuot*. The practice preserves vocabulary and its meaning in the muscle memory of the body.

Like theatre, language learning is part of a broader cultural context. Jewish culture, tradition, and pedagogy privileges voice and speech. According to biblical tradition, the world is spoken into existence ("And God said..."). Victoria Hannah, Israeli singer and language researcher, describes how Hebrew letters and vowels hold inherent meaning within their very shapes and sounds. In her talk "Music and Brains: The Surprising Link,"² Hannah states that "in the Jewish tradition, the letters are not divided and are not



separated from the meaning, and the meaning is not separated from the physical existence and from the sound.” Inspired by Hannah’s work on articulation and meaning, we employ a drama voice warm-up activity that teaches the final sound of Hebrew verbs. This final sound conveys the pronoun declension associated with each verb. Students chant:

Ani ni ni ni ni ni...amarti ti ti ti ti...
Ata ta ta ta ta ta...amarta ta ta ta ta...
Anachnu nu nu nu nu nu...amarnu nu nu nu nu...
Atem em em em em em...artem em em em...

Which translates as:

I, I, I, I said said said said
You, oo, oo, oo, oo said, said, said, said
We, ee, ee, ee, ee said, said, said, said

Through this exercise sound and meaning converge in an activity that also trains students’ articulation and enunciation skills. Rote memorization is replaced with action and satisfying sound play.

The Passover Haggadah teaches that if a child does not know how to ask a question, a parent should “open the mouth for him,” implying that we must prompt our children to speak regardless of their abilities. Counter to the notion that speech is just thought put into words, Jewish tradition suggests that often words precede, or at least, help to initiate thought. The psychologist Lev Vygotsky explains how thought and speech interact in complex ways to form meaning. Oftentimes, young children experiment with words and sounds prior to knowing their meaning. Meaning, then, is formed in the response of the caregiver or other contextual feedback to the child’s utterance.³

Theatre and drama equip teachers with techniques to construct the meaningful contexts and feedback mechanisms that language learning requires. We have begun to incorporate one such technique called “choral call and response” into our Hebrew classes. In this carefully staged exercise, we prompt students to *act* as if they cannot hear one another, while they converse. One student makes declarative statements, while a second replies with a question, prompting the first student to respond again emphatically.

Student Alef: “I ate an apple yesterday.”

Student Bet: “What?”

Student Alef: (somewhat louder) “I ate an apple yesterday.”

Student Bet: “What?”

Student Alef: (shouting) “I ate an apple yesterday!”

Student Bet: “Oh! *You* ate an apple yesterday!”

Entire class: (proclaim) “*She/he* ate an apple yesterday!”

The dramatization enables students to practise transitioning between first, second, and third person pronouns and verb declensions as they ask and respond to questions. They learn to shift between pronouns and declensions not by reciting them from a chart but by responding to each other in conversation where the shifts make sense.

The choral call and response exercise is based on the concept of situational language teaching (SLT). SLT was developed by British linguists Harold Palmer and A.S. Hornby in order to mitigate the instinct of learners to translate grammar and vocabulary from their language of origin to their second language of study.⁴ The tactic immerses students in an authentic conversation that draws out the grammatical structures under instruction.

As techniques for language learning, theatre and drama are never just about “putting on plays.” Nevertheless, staging a performance in a second language is another powerful mechanism to consolidate language learning. As students commit second language scripts to memory and rehearse enthusiastically with others, language becomes deeply ingrained in the body and mind. Practising the mindfulness, relaxation, and breathing techniques used by performers empowers students with techniques to reduce performance anxiety and gain confidence—all in another language! Finally, when the curtain rises and the lights come on and students perform for peers and parents in their second language, the learning receives its ultimate reward: social meaning and relevance.

We don’t just learn another language for a test. We learn language to communicate thoughts and emotions, and to receive in return a response—laughter, tears, and appreciative applause. In Hebrew it’s called *nachas*.

1 Giovanni Buccino and Marco Mezzadri, “Embodied Language and the Process of Language Learning and Teaching,” in *Emotion in Language*, ed. Ulrike Luedtke (Amsterdam: John Benjamins Publishing, 2015), pp. 191–207, https://www.researchgate.net/publication/286441243_Embodied_language_and_the_process_of_language_learning_and_teaching

2 Victoria Hanna, “Music and Brains: The Surprising Link: An Interface Between Music, Cognition and Neuroscience,” presentation at the Jerusalem Academy of Music and Dance, February 2013, <https://www.youtube.com/watch?v=fGliOFFUkoQ>

3 Lev Vygotsky, *Thought and Language*, trans. Alex Kozulin (Boston: MIT Press, 1986).

4 Shafaat Hussain, “Oral Approach and Situational Language Teaching: A Short Review,” *PARIPEX: Indian Journal of Research*, Vol. 4, No. 6 (June 2015), pp. 197–199, https://www.researchgate.net/publication/314895766_Oral_Approach_and_Situational_Language_Teaching_A_Short_Review

Staging a performance in a second language is a powerful mechanism to consolidate language learning.



CURRICULUM SPOTLIGHTS shine on our classrooms, school-wide programs and educational approach. They come from THINK, a semi-annual journal produced by The Lola Stein Institute (LSI), the research and publication arm of The Toronto Heschel School. THINK presents contributions from educators, parents, and community members on integrated Jewish education, critical themes on raising children today, and the interactivity of school and community.

There are many activities described in the Curriculum Spotlights, some of which may not be in current practice. The Toronto Heschel School's activities and curriculum evolve constantly as its educators continue to add wisdom and inspiration, but the ideas and philosophy remain constant.



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