



September 8, 2017

Tennessee Department of Education  
c/o Alison Gower  
710 James Robertson Parkway  
Nashville, TN 37243

Dear Ladies and Gentlemen of the Textbook and Instructional Materials Quality Commission:

We are grateful for the opportunity to be able to provide a written response to the Final Advisory Panelist Review. Houghton Mifflin Harcourt's *HMH Tennessee Science* program was uniquely crafted to meet the requirements of the Tennessee Academic Standards for Science and the needs of Tennessee teachers and learners in a comprehensive fashion from kindergarten through High School.

We remain excited to participate in the adoption process. After the panelists' initial reviews, we took great care to address specifically the concerns that were raised about several grade levels, frequently going above and beyond the specifics of the issue raised. Our efforts met with success for all grades, except Grade 3 of *HMH Tennessee Science*.

For the reasons described in detail below, we respectfully request that the Commission include Grade 3 of *HMH Tennessee Science* on the Recommended List for Section C to be presented to the State Board of Education in October.

### **Grade 3—Executive Summary**

Our Grade 3 program was reconsidered by the advisory panel and did not pass the post appeal process, for reasons that remain unclear to us still.

According to communication received from the Department of Education, the process for advisory panels requires that two of three panelists must conclude that there is 100% alignment. We elected to focus our efforts in responding to two of the panelists to attempt to achieve the 100% alignment required. This was the approach that was successful in meeting 100% alignment for all grades except Grade 3.

Panelist "51912319\_HMH\_thirdgrade\_76" had a single objection and indicated we were in compliance for the remainder of the criteria.

Panelist "51912319\_HMH\_3rd\_grade\_rubric" had three outright objections, and indicated we were in compliance for the remainder of the criteria (albeit with several notes of concern about student

accessibility to coverage in our student-facing Inquiry Flipcharts, which are distributed to the Teacher for placement at each lab group's work area).

Our understanding of the process is that if we could sufficiently address those four unique objections from these two reviewers, our program would be compliant.

To those ends, we made adjustments in Grade 3 to 38 student edition pages (and their corresponding teacher edition pages), adjusted an additional 10 teacher edition pages, removed 12 pages deemed to be extraneous content, and added 28 all-new pages, now labeled as pages 475–502.

At this point, we have not been informed which issue(s) resulted in the failure to pass post-appeal, so we shall rehearse the details of the objections and our actions in response in the remainder of this letter, as it remains our opinion that Grade 3 of *HMH Tennessee Science* met the criteria for inclusion on the recommended list, just as our other grades did.

#### **Details—Panelist "51912319 HMH thirdgrade 76"**

This panelist identified a single criteria preventing us from achieving 100% alignment, related to their judgment that while *HMH Tennessee Science* Grade 3 met most of the following standard, the program had "a lack of internal structures":

##### **"3.LS1 From Molecules to Organisms: Structures and Processes**

1) Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction."

In response to this concern, we provided the following information to the advisory panel about changes made to 18 different student edition pages (and corresponding teacher edition pages):

"We have revised Student Edition pages 224, 225, 226, 228, 230–232, 234, 237, 238, 242, 244, 248, 249, 250, 254, 256, 258 and the corresponding Teacher Edition pages to provide more content and activities to support this standard. Explicit references to internal structures of plants, aquatic animals, and land animals have been added, along with student interactions about these structures.

On Student Edition pages 224–226 and 228, we added more content about the internal structures of seeds, cones, flowers, and spores. On Student Edition page 237, we added more content about the internal structures of frogs, grasshoppers, chickens, jackrabbits, fish, and skunks. On Student Edition pages 232 and 258, an Apply Concepts question has been revised to ask students about internal structures of plants and animals. On Teacher Edition pages 225 and 249, the Summarize Ideas activity has been updated to provide more focus on internal structures. In the Teacher Edition pages 234, 237, and 248, under Develop Science Concepts, the questions have been revised to provide more focus on internal structures."

#### **Details—"Panelist 51912319 hmh 3rd grade rubric"**

As described above, this panelist identified three specific objections, and several additional notes, as described below:

In the first objection, the panelist suggests that our correlation to the following standard included some pages that were not pertinent, along with other pages that definitely were pertinent:

### "3.LS4: Biological Change: Unity and Diversity...

...3) Explain how changes to an environment's biodiversity influence human resources."

In response to this concern, instead of merely adjusting the correlation, we added content to nine student edition pages in order to better support the standard, as described below:

"We have revised Student Edition pages 317–321, 324–326, and 328 and the corresponding Teacher Edition pages to provide more content and activities to support this standard.

On Student Edition page 317 we added the sentence *Floods can happen very suddenly and kill plants and animals that are used as human resources*. On Student Edition page 319 we added the sentence *This can reduce the numbers and kinds of plants and animals available for human resources*. An Apply Concepts question on Student Edition page 328 has been revised as *How can changes to an environment's biodiversity affect human resources?* The Develop Inquiry Skills on Teacher Edition page 315 has been updated to provide more focus on how changes to an environment influence human resources. Please note the Summarize Ideas activity has been updated on Teacher Edition page 319. In Develop Science Concepts on page 320 a question has been added. *How do changes caused to an environment by building a dam influence resources?*"

In this panelist's second objection, he or she indicates that Unit 2 Lesson 4 lacks instruction and background for the following standard, unless students are provided with the Inquiry Flipchart:

### "3.ETS1: Engineering Design...

...2) Apply evidence or research to support a design solution."

In response, we added all 28 of the Inquiry Flipchart pages to the back of the student edition, and we also made additional changes to the program to provide more instruction and background, as described below:

"We have revised the interaction on Student Edition page 61 and the corresponding Teacher Edition page to focus more on how to apply evidence to support a solution. On Teacher Edition pages 160A–160B, 216A–216B, 276A–276B, 368A–368B, and 444A–444B, citing evidence or applying research have been integrated into S.T.E.M. Engineering and Technology activities in which students must explain design solutions as part of the Engineering Design Process. On Teacher Edition page 276B, under Use Models, students are prompted to *do research about migration technology in order to better inform and support their proposed design solution* and to then *cite evidence or research as needed in support of their design solution* when they complete a summary under After the Activity."

The panelist's third objection in **Part B. Focus**, indicated two locations that he or she believed included information that goes into more detail than is needed to fulfill the standards. Their comments are reproduced below:

"There is some added weather information in my opinion that goes into more detail than needed and there is extra information in Unit 8 Lesson 1 on stars and seasons when the standard is only stating that students need to know physical properties of the inner and outer planets. Seasons are not age appropriate and do not align with the standard."

As for the first part of the objection, we believe that the weather content we provide is actually relevant to the standards and provides much-needed background for student comprehension of weather conditions and other content within the unit.

For each of the weather-related standards, here is an itemized description of why we included the content provided in each set of pages and which standards they believe they support:

### **"3.ESS2: Earth's Systems**

#### **3.ESS2.1 Explain the cycle of water on Earth.**

p. 375 Lesson Opener entitled "What Is the Water Cycle?"

pp. 376–377 Information on distribution of water on Earth, such as salt water, fresh water, and frozen water, is necessary to explain the different locations on earth's surface that participate in the water cycle.

pp. 378–379 Information on the three common states of matter of water described in terms of how they are found in air, bodies of water on land, clouds, precipitation, glaciers, is necessary to further understand how each state of matter is related to the water cycle.

pp. 380–381 Information on changes of state because evaporation and condensation are primary mechanisms of the water cycle.

pp. 382–383 Details of the water cycle (with diagram)

pp. 384–386 Sum It Up! and Brain Check (Lesson Review)

pp. 387–388 Information and questions about Careers in Science: Hydrologist

#### **3.ESS2.2 Associate major cloud types (nimbus, cumulus, cirrus, stratus) with weather conditions.**

p. 389 Lesson Opener entitled "What Is Weather?"

pp. 390–391 Connection of the water cycle to conditions of the atmosphere as weather, including the major cloud types.

#### **3.ESS2.3 Use tables, graphs, and tools to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.**

pp. 392–393 Description of how different weather conditions are measured, and which tools are used to measure precipitation, temperature, and wind.

pp. 394–395 Why It Matters feature describing how weather relates to students' daily lives in terms of choices made in protecting themselves from a variety of weather conditions.

pp. 396–397 Description of several types of severe weather that impact Tennessee: Hurricanes (including their tendency to become slow large storms after reaching land), thunderstorms, tornadoes, and blizzards.

pp. 398–400 Sum It Up! and Brain Check (Lesson Review)

pp. 401–402 Inquiry Flipchart worksheet

pp. 403–404 S.T.E.M. Engineering and Technology activity evaluating raincoats and ponchos, and challenging students to design a better solution for rainy weather.

(see also p. 406–407 for graphs and tables of weather conditions)

#### **3.ESS2.4 Incorporate weather data to describe major climates (polar, temperate, tropical) in different regions of the world."**

p. 405 Lesson Opener "What Is Climate?"

p. 406–407 Difference between climate and weather with graphs and tables of weather condition data.

p. 408–409 Description of polar, temperate, and tropical climate zones.

p. 410–411 Description of some factors (air current, ocean currents) that impact climate.

p. 412–414 Sum It Up! and Brain Check (Lesson Review)

In relation to the second part of the objection, about Unit 8 Lesson 1 on Stars and Seasons, we removed all 12 pages of that lesson, as described below:

"We have removed all references to *stars* and *seasons* in the materials. The lesson *Why is the Sun Important to Life on Earth?* on Student Edition pages 337–348 has been removed. The corresponding Teacher Edition pages have also been removed. The Table of Contents on Student Edition page xiii and on Teacher Edition page T19 have been updated accordingly. The review items on pages 369–372 have also been changed to remove all references to stars and seasons. Additional updates have been made at the unit-level on Student Edition page 336 and Teacher Edition page 336."

Finally, in relation to the many notes that this reviewer added about student access to the Inquiry Flipcharts, please note our action in response to the second objection. We added all 28 of the Inquiry Flipchart pages to the back of the Student Edition, thus ensuring students will have access to those pages.

## **CONCLUSION**

Given the evidence of the good-faith effort that Houghton Mifflin Harcourt has made to respond directly and thoroughly to each of the objections raised, we respectfully request that the Commission include Grade 3 of *HMH Tennessee Science* on the Recommended List for Section C to be presented to the State Board of Education in October.

If the Commission has concerns about any of these items that we can resolve through further discussion, we would welcome the opportunity to work together, because our goal remains to do all we can to support excellence in science learning for all the students and teachers of Tennessee.

Warmest regards,

A handwritten signature in black ink that reads "Mark Grayson". The signature is written in a cursive style with a stylized "M" and "G".

Mark Grayson  
Senior Director of Science Product Management  
Houghton Mifflin Harcourt

cc: Peggy Smith-Herbst, Senior Vice President, HMH Studios  
Mary Connolly, Vice President, Product Management  
Don Back, Senior Vice President of Sales, National General Manager  
Gerald Barr, Director of Sales